

2021-2022 Virginia Trapper Harvest Survey

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By

Scott Klopfer

Conservation Management Institute, Virginia Tech

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ABSTRACT

A mail survey was conducted following the 2021-2022 season to quantify trapper harvest and effort for furbearer species. Surveys were mailed to 1,500 randomly selected trappers who held annual or multi-year trapping licenses valid during the 2021-2022 season ($N=1,947$). Of the 1,500 surveys mailed, 392 (26.1%) were returned and all contained some usable data. Of the trappers who responded, 238 (60.7%) reported that they trapped during the 2021-2022 season and provided all data requested (active trappers), and 146 (37.2%) reported that they did not trap (non-active trappers). Another eight respondents were removed due to incomplete species or location data deficiencies, so most estimates were based on data reported by 238 trappers.

On average, active trappers set 13.3 (SE \pm 0.1) traps for 32.8 (SE \pm 1.6) days during the 2021-2022 season. Response data was used to estimate trapping experiences of non-respondents and calculate total harvest, number of trappers, trapping effort, and catch per unit effort for each furbearer species statewide and by region. Trappers harvested an estimated statewide total of 36,106 \pm 4,144 furbearers. Raccoons and muskrat were the most-harvested species with estimated totals of 10,891 \pm 2,330 and 5,375 \pm 1,153, respectfully. Observations of fishers least weasels, and spotted skunks were also reported by trappers, but only spotted skunks were trapped.

GOAL & OBJECTIVE

To quantify 2021-2022 statewide trapper effort and furbearer harvest and obtain additional occurrence information for rare furbearer species (i.e., fisher, spotted skunk, and least weasel).

METHODS

A total of 1,947 persons purchased annual or multi-year Virginia trapping licenses valid during some portion of the 2021-2022 trapping season (Table 1a). From that total, a random sample of 1,500 persons with valid addresses was selected using information from the Virginia Department of Wildlife Resources license database and a web-based tool to remove undeliverable addresses. The sample represented 77.0% of all license holders who held a valid license for some portion the 2021-2022 season. In late July 2022, each trapper was mailed a one-page (front and back) questionnaire (Appendix A), cover letter (Appendix B), and a postage-paid return envelope. Trappers were also provided with an option to complete the survey online. A reminder postcard (Appendix C) was sent to

non-respondents on 22 September 2022 (N=1,263). A third and final mailing identical to the first was sent on 28 November 2022 to survey recipients who did not respond to the previous two mailings (N=1,214). No surveys were reported as undeliverable so the effective sampling total was 1,500. Trapping season date information is provided in Appendix D. Survey response data (i.e., harvest and effort data) were entered into an online database (Question Pro) where they were reviewed for quality and cleaned prior to statistical analyses.

Data Analysis — Descriptive and inferential statistical analyses were conducted in Microsoft Excel or RStudio (R Core Team 2018) with the assistance of R library packages “dplyr” (Wickham et al. 2018) and “survey” (Lumley 2017). Raw harvest data (county, species, number harvested, days trapped, number traps) were imported from the database, and used to create and append additional variables to the matrix, including trap region (Appendix E), number of trap days, whether the data record represented target or non-target efforts and if trap efforts were successful. Successful harvest data were considered non-target harvest, or “bycatch”, if the respondent reported take but zero trap days (either 0 days trapped or 0 traps set), or if the species was marked as “non-target” in the response.

We attempted to utilize all data provided whenever possible. For example, respondents may provide information about their harvest but neglect to identify the county in which the catch occurred. That information was retained when analyzing state-level response rates but was omitted from other estimates; therefore, the number of respondents included for each level of analysis may differ. This results in differences in calculated metrics that are presented in data tables.

Input data for inferential statistical analyses conducted with R package “survey” were prepared by summarizing (subset) harvest data by individual trappers (rows) and species (columns) for the parameter of interest. Using these new input matrices, statewide and regional statistics (Tables 9–12) were estimated using the “svydesign()” function in R which allows for the incorporation of a finite population correction factor (FPC). Standard errors (SE) are presented to provide a measure of precision around estimated parameters (e.g., *estimated* total number of furbearer species harvested) and were calculated by dividing the standard deviation (SD) by the square root of the appropriate sample size.

As is recommended when sampling is conducted without replacement from more than 5% of a finite population, a finite population correction factor (FPC) was used to calculate SE (i.e., more than 5% of the population of 2021-2022 trappers were sampled; 392 samples; finite population = 1,947 trapping licenses) (Lumley 2010; Thompson 2012).

RESULTS SUMMARY

A total of 392 (26.1% effective response rate) license holders responded to the survey (Table 1b). Of the 392 surveys returned, all were considered usable responses for some aspect of the analysis. Of the 392 total returned surveys, 246 (62.8%) reported trapping activity during the 2021-2022 season (active trappers) and 146 (37.2%) reported no trapping activity (non-active trappers). Those respondents that supplied all the requested data (N=238) reported trapping a total of 7,806 days (average 32.8 days per trapper), setting 13.3 traps per day (Table 3), and harvesting 7,133 furbearers (Tables 5). When results were extrapolated statewide, an estimated 1,186 trappers (Table 10) harvested a total of 36,167 ± 4,144 furbearers (Table 11). By species, total statewide trapper harvest was estimated to be 10,891 raccoon, 5,375 muskrat, 4,741 red fox, 4,619 opossum, , 3,747 beaver, 3,032 coyote, 1,151 gray fox, 1,065 skunk, 684 otter, 436 bobcat, 289 mink, 76 nutria, and 0 long-tailed weasel (Table 11). Average harvest per season for trappers targeting certain species was highest for raccoon, followed by beaver, opossum, red fox, striped skunk, otter, gray fox, mink, muskrat, bobcat, coyote, nutria, and long-tailed weasel (Table 12). Trapper responses by license type and reported numbers of trappers, effort, and harvest from response data are presented in Tables 1–8. Extrapolated statewide and regional trapping effort and harvest estimates for all furbearer species are presented in Tables 9–12. Rare furbearer observations are reported in Table 13.

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TABLES & FIGURES

Table 1a. Summary of trapping licenses sold for the 2021-2022 season (excluding lifetime licenses).

License Type	Total		Sample	
	N	%	N	%
County/City Resident Trapping	670	34.4	523	34.9
Non-Resident State Trapping	39	2.0	28	1.9
Resident 65 and older Trapping	150	7.7	106	7.1
Resident Junior State Trapping	80	4.1	65	4.3
Resident State Trapping	939	48.2	724	48.3
Resident State Trapping - 2 Years	41	2.1	33	2.2
Resident State Trapping - 3 Years	10	0.5	7	0.5
Resident State Trapping - 4 Years	18	0.9	14	0.9
Total	1,947		1,500	

Table 1b. Summary of trapping licenses sold in Virginia that were valid during the 2021-2022 season, license types represented in the survey sample, and license types represented by those who responded (active and non-active trappers) to the 2021-2022 Virginia Trapper Harvest Survey.

License Type	No. licensed trappers	% of licensed trappers	No. in survey sample	% in survey sample	No. of respondents	% Return for License Type ¹	No. active trappers	% of respondents ²	No. non-active trappers	% of respondents ²
Annual	1,839	94.5	1,418	94.5	355	25.0	223	62.8	132	37.2
Multi-year	69	3.5	54	3.6	16	29.6	7	43.8	9	56.2
Non-resident	39	2.0	28	1.9	11	39.3	9	81.8	2	18.2
Unknown	0	0.0	0	0.0	10	---	7	70.0	3	30.0
Total	1,947		1,500	100.0	392	26.1	246	62.8	146	37.2

¹ Derived by dividing the number of respondents by the total number in the survey sample for each license type

² Derived by dividing the number of active/non-active trappers by the total number of respondents for each license type

Table 2. Number of Virginia trappers by number of counties trapped and physiographic region during the 2021-2022 season.

No. of Counties Trapped	No. of Active Trappers	% of Trappers
One	202	82.1
Two	25	10.2
Three or more	13	5.3
No county reported	6	2.4
Total	246	100.0

Region Trapped	No. of Active Trappers ¹	% of Trappers ²
Northern Mountain	37	15.4
Southern Mountain	60	25.0
Northern Piedmont	50	20.8
Southern Piedmont	64	26.7
Tidewater	80	33.3
Not Given	6	2.5

¹ An individual trapper may trap in multiple regions; hence, the summation of these values will exceed the total number of trapper respondents

² Derived by dividing number of trappers in region by total number of trappers that reported county information (N=240)

Table 3. Targeted furbearer trapping efforts reported by respondents to the 2021 - 2022 Virginia Trapper Harvest Survey (N= 238).

Target species	No. trappers that targeted species	% of total active trappers	Total no. days trapped	Average no. days trapped	Average no. traps set per day per trapper	Total no. of trap days ¹
Beaver	80	33.6	1,948	24.4	6.6	12,857
Bobcat	76	31.9	2,181	28.7	8.4	18,320
Coyote	145	60.9	4,931	34.0	11.3	55,720
Gray Fox	93	39.1	2,888	31.1	13.1	37,833
Long-tailed Weasel	0	0.0	-	0.0	0.0	0
Mink	27	11.3	824	30.5	6.7	5,521
Muskrat	61	25.6	1,555	25.5	11.8	18,349
Nutria	1	0.4	40	40.0	14.0	560
Opossum	46	19.3	1,684	36.6	10.7	18,019
Otter	49	20.6	1,193	24.3	5.7	6,800
Raccoon	149	62.6	4,248	28.5	10.4	44,179
Red Fox	127	53.4	3,891	30.6	11.3	43,968
Striped Skunk	21	8.8	562	26.8	11.1	6,238
All Species	238		7,806	32.8	13.3	103,820

¹ Total number days trapped x average number traps set per day per trapper

Table 4. Reported number of successful trappers by species for target and non-target trapping efforts in Virginia, 2021-2022 (N = 238 number of trappers who supplied necessary data).

Species	# Successful trappers					
	Target		Non-target		Total	
	No.	% ¹	No.	% ²	No.	% ³
Beaver	74	92.5	2	1.3	76	31.9
Bobcat	38	50.0	3	1.9	41	17.2
Coyote	98	67.6	1	1.1	99	41.6
Gray Fox	60	64.5	1	0.7	61	25.6
Long-tailed Weasel	0	0.0	0	0.0	0	0.0
Mink	19	70.4	3	1.4	22	9.2
Muskrat	57	93.4	5	2.8	62	26.1
Nutria	1	100.0	1	0.4	2	0.8
Opossum	43	93.5	74	38.5	117	49.2
Otter	42	85.7	7	3.7	49	20.6
Raccoon	144	96.6	21	23.6	165	69.3
Red Fox	95	74.8	6	5.4	101	42.4
Striped Skunk	18	85.7	31	14.3	49	20.6

¹ of total active trappers who reported targeting the species (see Table 3)

² of total active trappers who did not target that species (238 - # target)

³ of total active trappers who supplied necessary data (N=238)

Table 5. Reported harvest by species for target and non-target trapping efforts in Virginia, 2021-2022 (N=238).

Species	Target harvest	% of total	Non-target harvest	% of total	Total harvest
Beaver	723	97.8	16	2.2	739
Bobcat	83	96.5	3	3.5	86
Coyote	597	99.8	1	0.2	598
Gray Fox	226	99.6	1	0.4	227
Long-tailed Weasel	0	0.0	0	0.0	0
Mink	54	94.7	3	5.3	57
Muskrat	1,039	98.0	21	2.0	1,060
Nutria	8	53.3	7	46.7	15
Opossum	421	46.2	490	53.8	911
Otter	126	93.3	9	6.7	135
Raccoon	1,952	90.9	196	9.1	2,148
Red Fox	902	96.5	33	3.5	935
Striped Skunk	78	37.1	132	62.9	210
Total	6,209	87.2	912	12.8	7,121

Table 6. Frequency distribution of trappers by total number of each species harvested in 2021-2022 ($N=238$ active trappers providing species and capture numbers). Note, when interpreting this table, the number of trappers that harvested “0” individuals includes trappers that actively targeted the species and those who did not target the species.

Total number harvested during season	Total no. of trappers in each harvest category												
	Beaver	Bobcat	Coyote	Gray Fox	Long-tailed Weasel	Mink	Muskrat	Nutria	Otter	Opossum	Raccoon	Red Fox	Striped Skunk
0	164	200	140	178	238	219	181	236	195	196	94	143	220
1–5	46	34	66	48	0	16	25	0	20	37	58	68	14
6–10	11	4	13	9	0	2	8	2	5	4	38	14	2
11–15	5	0	11	2	0	1	7	0	7	0	21	1	1
16–20	6	0	5	0	0	0	5	0	6	1	8	3	1
21–25	1	0	0	0	0	0	2	0	3	0	6	1	0
26–50	4	0	3	1	0	0	5	0	2	0	11	5	0
51–75	0	0	0	0	0	0	1	0	0	0	1	1	0
76–100	0	0	0	0	0	0	2	0	0	0	0	0	0
>100	1	0	0	0	0	0	2	0	0	0	1	2	0

Table 7. Reported harvest of furbearer species and percent of statewide harvest by region in Virginia, 2021-2022 (N=286 records, exceeds total number of respondents since some trappers reported harvest of a species in more than one region). Total number of records in each region are provided.

Species	State total harvest No.	Region											
		Northern Mountain		Northern Piedmont		Southern Mountain		Southern Piedmont		Tidewater		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Beaver	739	58	7.8	115	15.6	74	10.0	92	12.4	396	53.6	4	0.5
Bobcat	86	4	4.7	4	4.7	32	37.2	23	26.7	20	23.3	3	3.5
Coyote	598	93	15.6	32	5.4	167	27.9	151	25.3	140	23.4	15	2.5
Gray Fox	227	8	3.5	5	2.2	31	13.7	64	28.2	111	48.9	8	3.5
Long-tailed Weasel	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mink	57	13	22.8	3	5.3	25	43.9	1	1.8	15	26.3	0	0.0
Muskrat	1,060	70	6.6	70	6.6	397	37.5	33	3.1	489	46.1	1	0.1
Nutria	15	0	0.0	0	0.0	0	0.0	0	0.0	15	100.0	0	0.0
Opossum	911	163	17.9	114	12.5	169	18.6	252	27.7	189	20.7	24	2.6
Otter	135	7	5.2	14	10.4	30	22.2	43	31.9	35	25.9	6	4.4
Raccoon	2,148	698	32.5	330	15.4	349	16.2	395	18.4	342	15.9	34	1.6
Red Fox	935	184	19.7	275	29.4	59	6.3	95	10.2	306	32.7	16	1.7
Striped Skunk	210	61	29.0	39	18.6	28	13.3	63	30.0	16	7.6	3	1.4
Grand Total	7,121	1,359	19.1	1,001	14.1	1,361	19.1	1,212	17.0	2,074	29.1	114	1.6
Number of records	286	37		45		57		60		80		7	

Table 8. Reported harvest of furbearer species by county in Virginia, 2021-2022 (N=246 trappers providing necessary data).

County	Species												
	Beaver	Bobcat	Coyote	Gray Fox	Long-tailed Weasel	Mink	Muskrat	Nutria	Opossum	Otter	Raccoon	Red Fox	Striped Skunk
Accomack	0	0	1	18	0	0	196	0	35	7	93	173	3
Albemarle	0	0	0	0	0	0	0	0	2	0	4	0	0
Alleghany	2	2	4	0	0	0	4	0	26	2	35	2	5
Amelia	13	0	11	1	0	0	0	0	6	4	30	11	6
Amherst	2	0	1	0	0	0	0	0	0	0	4	1	0
Arlington	0	0	0	0	0	0	0	0	0	0	0	0	0
Augusta	40	0	20	8	0	2	11	0	43	1	42	35	12
Bath	3	0	0	0	0	0	0	0	7	1	26	0	8
Bedford	10	6	32	6	0	2	28	0	57	20	75	4	9
Bland	0	0	0	0	0	1	28	0	10	2	15	3	2
Botetourt	0	8	35	5	0	5	15	0	29	3	40	0	9
Brunswick	0	3	2	0	0	0	2	0	0	0	7	4	0
Buchanan	0	0	0	0	0	0	0	0	7	0	10	0	1
Buckingham	18	0	14	0	0	0	0	0	1	0	6	2	4
Campbell	0	2	2	7	0	0	0	0	6	10	25	3	5
Caroline	50	0	20	2	0	0	6	0	25	4	11	9	1
Carroll	13	7	25	13	0	8	61	0	23	5	62	25	4
Charles City	17	3	47	4	0	0	22	0	21	0	37	20	2
Chesapeake City	20	1	6	9	0	0	0	0	2	0	3	15	1
Chesterfield	20	0	1	0	0	1	12	0	4	1	4	1	0
Clarke	7	0	49	0	0	0	0	0	53	0	524	114	6
Craig	0	0	1	0	0	0	0	0	2	0	2	0	0
Culpeper	16	0	1	0	0	0	0	0	1	0	22	0	1
Cumberland	6	3	6	9	0	0	0	0	36	0	31	10	16
Dinwiddie	13	2	8	0	0	0	3	0	10	2	51	0	1
Essex	22	3	4	0	0	0	3	0	15	3	2	0	1
Fairfax	0	0	0	0	0	0	0	0	1	1	0	0	0
Fauquier	0	0	0	0	0	0	0	0	0	1	9	0	0
Floyd	11	0	19	3	0	0	0	0	0	1	21	10	0
Fluvanna	0	1	7	0	0	0	35	0	48	0	60	25	36
Franklin	1	0	21	14	0	0	0	0	0	0	48	6	0
Frederick	2	0	6	0	0	0	0	0	4	0	23	11	0

Table 8 (continued). Reported harvest of furbearer species by county in Virginia, 2021-2022

County	Species												
	Beaver	Bobcat	Coyote	Gray Fox	Long-tailed Weasel	Mink	Muskrat	Nutria	Opossum	Otter	Raccoon	Red Fox	Striped Skunk
Giles	2	0	0	0	0	1	1	0	3	0	1	1	0
Gloucester	21	0	0	0	0	0	0	0	0	12	3	0	0
Goochland	22	0	0	2	0	0	0	0	4	1	7	2	0
Greensville	0	1	8	0	0	0	0	0	0	0	0	0	0
Halifax	2	8	9	9	0	0	0	0	28	0	40	4	5
Hanover	2	1	0	0	0	0	0	0	0	0	2	1	1
Henrico	1	0	0	0	0	0	0	0	0	2	0	0	0
Highland	0	0	0	0	0	7	0	0	0	0	0	1	0
Isle of Wight	32	0	4	2	0	0	0	0	3	0	9	12	0
James City	21	0	0	1	0	0	0	0	6	0	23	2	0
King and Queen	15	0	4	2	0	1	20	0	0	2	16	5	2
King George	4	0	0	0	0	0	0	0	0	0	0	0	0
King William	12	0	0	2	0	0	0	0	1	1	1	10	0
Lancaster	0	0	0	0	0	0	0	0	0	0	2	0	0
Lee	0	1	10	0	0	0	0	0	8	0	1	0	0
Loudoun	0	2	12	3	0	1	50	0	37	2	129	199	2
Louisa	4	0	3	0	0	0	2	0	6	1	10	6	0
Lunenburg	4	2	2	0	0	0	0	0	8	0	2	6	0
Mecklenburg	0	1	4	6	0	0	0	0	36	1	50	15	8
Middlesex	14	0	2	3	0	1	8	0	2	7	40	4	0
Montgomery	5	0	12	4	0	6	93	0	8	5	27	2	7
Nelson	0	0	1	0	0	0	0	0	24	0	11	6	0
New Kent	3	1	12	0	0	0	8	0	2	0	2	0	0
Northampton	0	0	0	0	0	0	0	0	1	0	5	13	1
Norton City	7	0	0	0	0	1	16	0	8	0	1	0	0
Nottoway	3	0	16	6	0	0	0	0	15	0	14	5	0
Orange	1	0	0	0	0	0	0	0	5	0	7	2	0
Other	4	3	15	8	0	0	1	0	24	6	34	16	3
Page	0	0	0	0	0	0	0	0	2	0	0	3	1
Patrick	2	1	20	4	0	0	5	0	7	6	4	3	0

Table 8 (continued). Reported harvest of furbearer species by county in Virginia, 2021-2022.

County	Species												
	Beaver	Bobcat	Coyote	Gray Fox	Long-tailed Weasel	Mink	Muskrat	Nutria	Opossum	Otter	Raccoon	Red Fox	Striped Skunk
Petersburg City	5	0	0	0	0	0	0	0	0	0	0	0	0
Pittsylvania	17	0	3	4	0	0	0	0	31	1	32	7	0
Powhatan	18	0	0	0	0	0	0	0	1	0	42	0	0
Prince Edward	4	1	11	0	0	0	1	0	12	0	8	8	14
Prince George	40	0	2	0	0	0	0	0	2	0	4	0	1
Prince William	1	0	9	0	0	0	0	0	0	0	27	46	0
Radford City	0	0	0	0	0	0	51	0	0	0	0	0	0
Richmond	0	1	6	0	0	0	0	0	12	0	2	5	0
Roanoke	1	0	0	1	0	0	0	0	0	0	27	0	0
Rockbridge	0	0	4	0	0	0	0	0	11	0	14	0	16
Rockingham	3	0	3	0	0	4	55	0	7	3	23	6	10
Russell	3	0	0	0	0	0	0	0	7	0	6	0	0
Salem City	0	0	0	1	0	0	0	0	0	0	6	0	0
Scott	8	4	8	0	0	1	8	0	9	4	44	4	0
Shenandoah	0	0	5	0	0	0	0	0	5	0	5	8	3
Smyth	0	0	5	0	0	0	4	0	0	0	0	0	0
Southampton	60	0	4	17	0	0	0	0	8	0	9	4	0
Spotsylvania	5	0	0	0	0	0	2	0	4	0	5	0	0
Stafford	3	0	0	0	0	1	3	0	1	1	14	2	0
Suffolk City	17	2	1	7	0	0	1	8	28	1	14	10	5
Surry	4	0	0	0	0	0	0	0	0	0	1	0	0
Sussex	87	0	31	15	0	13	17	0	14	0	7	21	0
Tazewell	4	3	0	0	0	0	12	0	2	4	13	1	0
Virginia Beach City	3	7	6	29	0	0	188	7	23	0	51	5	0
Warren	1	2	2	0	0	0	0	0	5	0	6	4	0
Washington	0	0	0	0	0	0	0	0	0	0	0	0	0
Westmoreland	0	0	1	0	0	0	0	0	3	0	0	5	0
Wise	23	11	34	2	0	1	12	0	30	0	27	1	0
Wythe	2	0	20	2	0	1	96	0	23	9	47	12	7
York	4	1	1	2	0	0	26	0	11	2	18	2	0
Grand Total	780	94	633	231	0	58	1106	15	961	139	2215	953	219

Table 9. Expanded statewide estimates of the total number of trappers by targeted furbearer species in Virginia, 2021-2022.

Species	Est. no. trappers	SE	95% confidence interval	
			Lower	Upper
Beaver	406	33	373	439
Bobcat	385	33	352	418
Coyote	735	34	701	769
Gray Fox	472	34	438	506
Long-tailed Weasel	0	0	0	0
Mink	137	22	115	159
Muskrat	309	31	278	340
Nutria	15	8	7	23
Opossum	233	28	205	261
Otter	248	28	220	276
Raccoon	755	34	721	789
Red Fox	644	35	609	679
Skunk	106	20	86	126

Table 9a. Expanded statewide estimates of the total number of trappers by targeted furbearer species in the Northern Mountain region of Virginia, 2021-2022 (N=37).

Species	Est. no. trappers	SE	95% confidence interval	
			Lower	Upper
Beaver	46	12	34	58
Bobcat	46	12	34	58
Coyote	117	14	103	131
Gray Fox	56	13	43	69
Long-tailed Weasel	0	0	0	0
Mink	35	11	24	46
Muskrat	46	12	34	58
Nutria	0	0	0	0
Opossum	30	10	20	40
Otter	25	10	15	35
Raccoon	142	12	130	154
Red Fox	106	14	92	120
Skunk	20	9	11	29

Table 9b. Expanded statewide estimates of the total number of trappers by targeted furbearer species in the Southern Mountain region of Virginia, 2021-2022 (N=57).

Species	Est. no. trappers	SE	95% confidence interval	
			Lower	Upper
Beaver	101	17	84	118
Bobcat	122	17	105	139
Coyote	183	17	166	200
Gray Fox	106	17	89	123
Long-tailed Weasel	0	0	0	0
Mink	66	15	51	81
Muskrat	117	17	100	134
Nutria	0	0	0	0
Opossum	51	13	38	64
Otter	71	15	56	86
Raccoon	157	17	140	174
Red Fox	112	17	95	129
Skunk	30	11	19	41

Table 9c. Expanded statewide estimates of the total number of trappers by targeted furbearer species in the Northern Piedmont region of Virginia, 2021-2022 (N=45).

Species	Est. no. trappers.	SE	95% confidence interval	
			Lower	Upper
Beaver	91	15	76	106
Bobcat	41	12	29	53
Coyote	101	15	86	116
Gray Fox	30	10	20	40
Long-tailed Weasel	0	0	0	0
Mink	10	6	4	16
Muskrat	35	11	24	46
Nutria	0	0	0	0
Opossum	41	12	29	53
Otter	35	11	24	46
Raccoon	142	15	127	157
Red Fox	96	15	81	111
Skunk	10	6	4	16

Table 9d. Expanded statewide estimates of the total number of trappers by targeted furbearer species in the Southern Piedmont region of Virginia, 2021-2022 (N=60).

Species	Est. no. trappers	SE	95% confidence interval	
			Lower	Upper
Beaver	86	16	70	102
Bobcat	112	17	95	129
Coyote	198	17	181	215
Gray Fox	142	18	124	160
Long-tailed Weasel	0	0	0	0
Mink	10	6	4	16
Muskrat	35	11	24	46
Nutria	0	0	0	0
Opossum	66	15	51	81
Otter	51	13	38	64
Raccoon	188	17	171	205
Red Fox	167	18	149	185
Skunk	20	9	11	29

Table 9e. Expanded statewide estimates of the total number of trappers by targeted furbearer species in the Tidewater region of Virginia, 2021-2022 (N=80).

Species	Est. no. trappers.	SE	95% confidence interval	
			Lower	Upper
Beaver	172	20	152	192
Bobcat	76	16	60	92
Coyote	193	20	173	213
Gray Fox	152	20	132	172
Long-tailed Weasel	0	0	0	0
Mink	30	11	19	41
Muskrat	96	17	79	113
Nutria	10	6	4	16
Opossum	86	17	69	103
Otter	61	15	46	76
Raccoon	203	20	183	223
Red Fox	177	20	157	197
Skunk	25	10	15	35

Table 10. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	406	33	373	439	10	6	4	16	411	33	378	444
Bobcat	385	33	352	418	15	8	7	23	401	33	368	434
Coyote	735	34	701	769	5	5	-	10	740	34	706	774
Gray Fox	472	34	438	506	5	5	-	10	477	34	443	511
Red Fox	644	35	609	679	30	11	19	41	674	35	639	709
Mink	137	22	115	159	15	8	7	23	152	23	129	175
Muskrat	309	31	278	340	25	10	15	35	330	31	299	361
Nutria	5	5	-	10	5	5	-	10	10	6	4	16
Opossum	233	28	205	261	375	33	342	408	608	35	573	643
Otter	248	28	220	276	35	12	23	47	284	30	254	314
Raccoon	755	34	721	789	106	20	86	126	852	32	820	884
Striped Skunk	106	20	86	126	157	24	133	181	264	29	235	293
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	1,186	10	1,176	1,196	507	35	472	542	1,186	10	1,176	1,196

Table 10a. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in the Northern Mountain region of Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	46	12	34	58	-	-	-	-	46	12	34	58
Bobcat	46	12	34	58	-	-	-	-	46	12	34	58
Coyote	112	12	100	124	-	-	-	-	112	12	100	124
Gray Fox	56	12	44	68	-	-	-	-	56	12	44	68
Red Fox	106	13	93	119	5	5	-	10	112	12	100	124
Mink	35	11	24	46	-	-	-	-	35	11	24	46
Muskrat	46	12	34	58	5	5	-	10	51	12	39	63
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	30	10	20	40	71	13	58	84	101	13	88	114
Otter	25	10	15	35	10	6	4	16	35	11	24	46
Raccoon	127	11	116	138	15	8	7	23	137	10	127	147
Striped Skunk	20	9	11	29	56	12	44	68	76	13	63	89
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	167	-	167	167	106	13	93	119	167	-	167	167

Table 10b. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in the Southern Mountain region of Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	96	16	80	112	-	-	-	-	96	16	80	112
Bobcat	112	16	96	128	-	-	-	-	112	16	96	128
Coyote	167	15	152	182	-	-	-	-	167	15	152	182
Gray Fox	101	16	85	117	-	-	-	-	101	16	85	117
Red Fox	112	16	96	128	-	-	-	-	112	16	96	128
Mink	61	14	47	75	10	6	4	16	71	15	56	86
Muskrat	117	16	101	133	5	5	-	10	117	16	101	133
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	41	12	29	53	91	15	76	106	132	16	116	148
Otter	71	15	56	86	10	6	4	16	81	15	66	96
Raccoon	142	16	126	158	30	11	19	41	172	15	157	187
Striped Skunk	30	11	19	41	25	10	15	35	56	13	43	69
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	243	5	238	248	112	16	96	128	243	5	238	248

Table 10c. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in the Northern Piedmont region of Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	76	14	62	90	-	-	-	-	76	14	62	90
Bobcat	41	12	29	53	5	5	-	10	46	12	34	58
Coyote	101	15	86	116	-	-	-	-	101	15	86	116
Gray Fox	30	10	20	40	-	-	-	-	30	10	20	40
Red Fox	91	14	77	105	5	5	-	10	96	15	81	111
Mink	10	6	4	16	5	5	-	10	15	8	7	23
Muskrat	35	11	24	46	10	6	4	16	46	12	34	58
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	30	10	20	40	41	12	29	53	71	14	57	85
Otter	35	11	24	46	10	6	4	16	46	12	34	58
Raccoon	127	14	113	141	10	6	4	16	137	14	123	151
Striped Skunk	10	6	4	16	10	6	4	16	20	9	11	29
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	193	6	187	199	56	13	43	69	193	6	187	199

Table 10d. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in the Southern Piedmont region of Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	71	15	56	86	5	5	-	10	76	15	61	91
Bobcat	106	16	90	122	-	-	-	-	106	16	90	122
Coyote	188	15	173	203	-	-	-	-	188	15	173	203
Gray Fox	137	17	120	154	-	-	-	-	137	17	120	154
Red Fox	157	16	141	173	5	5	-	10	162	16	146	178
Mink	10	6	4	16	-	-	-	-	10	6	4	16
Muskrat	35	11	24	46	5	5	-	10	41	12	29	53
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	66	14	52	80	86	16	70	102	152	16	136	168
Otter	51	13	38	64	-	-	-	-	51	13	38	64
Raccoon	177	16	161	193	15	8	7	23	193	15	178	208
Striped Skunk	20	9	11	29	46	13	33	59	66	14	52	80
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	264	-	264	264	117	16	101	133	264	-	264	264

Table 10e. Expanded statewide estimates of the total number of successful target and non-target trappers by furbearer species in the Tidewater region of Virginia, 2021-2022.

Species	Target				Non-target				Total			
	Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI		Est. no. trappers	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	147	19	128	166	5	5	-	10	147	19	128	166
Bobcat	76	16	60	92	10	6	4	16	86	16	70	102
Coyote	167	19	148	186	5	5	-	10	172	19	153	191
Gray Fox	132	18	114	150	5	5	-	10	137	18	119	155
Red Fox	157	19	138	176	15	8	7	23	172	19	153	191
Mink	20	9	11	29	-	-	-	-	20	9	11	29
Muskrat	76	16	60	92	-	-	-	-	76	16	60	92
Nutria	5	5	-	10	5	5	-	10	10	6	4	16
Opossum	71	15	56	86	86	16	70	102	157	19	138	176
Otter	56	14	42	70	5	5	-	10	61	14	47	75
Raccoon	183	19	164	202	35	11	24	46	213	18	195	231
Striped Skunk	20	9	11	29	20	9	11	29	41	12	29	53
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	345	-	345	345	117	18	99	135	345	-	345	345

Table 11. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in Virginia, 2021-2022 (N= 238).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	3,666	848	2,818	4,514	81	68	13	149	3,747	851	2,896	4,598
Bobcat	421	71	350	492	15	8	7	23	436	72	364	508
Coyote	3,027	421	2,606	3,448	5	5	-	10	3,032	421	2,611	3,453
Grey Fox	1,146	193	953	1,339	5	5	-	10	1,151	193	958	1,344
Red Fox	4,573	1,136	3,437	5,709	167	115	52	282	4,741	1,139	3,602	5,880
Mink	274	81	193	355	15	8	7	23	289	81	208	370
Muskrat	5,268	1,150	4,118	6,418	106	60	46	166	5,375	1,153	4,222	6,528
Nutria	41	36	5	77	35	32	3	67	76	48	28	124
Opossum	2,135	366	1,769	2,501	2,484	330	2,154	2,814	4,619	454	4,165	5,073
Otter	639	121	518	760	46	17	29	63	684	122	562	806
Raccoon	9,897	2,321	7,576	12,218	994	324	670	1,318	10,891	2,330	8,561	13,221
Skunk	395	112	283	507	669	189	480	858	1,065	216	849	1,281
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	31,482	3,966	27,516	35,448	4,624	714	3,910	5,338	36,106	4,144	31,962	40,250

Table 11a. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in the Northern Mountain region of Virginia, 2021-2022 (N=33).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	294	170	124	464	-	-	-	-	294	170	124	464
Bobcat	20	11	9	31	-	-	-	-	20	11	9	31
Coyote	472	228	244	700	-	-	-	-	472	228	244	700
Grey Fox	41	36	5	77	-	-	-	-	41	36	5	77
Red Fox	928	527	401	1,455	5	5	-	10	933	527	406	1,460
Mink	66	34	32	100	-	-	-	-	66	34	32	100
Muskrat	330	119	211	449	25	23	2	48	355	120	235	475
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	421	208	213	629	406	123	283	529	826	223	603	1,049
Otter	25	12	13	37	10	6	4	16	35	13	22	48
Raccoon	3,519	2,236	1,283	5,755	20	11	9	31	3,539	2,236	1,303	5,775
Skunk	152	82	70	234	157	55	102	212	309	92	217	401
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	6,267	3,172	3,095	9,439	624	157	467	781	6,891	3,164	3,727	10,055

Table 11b. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in the Southern Mountain region of Virginia, 2021-2022 (N=49).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	375	103	272	478	-	-	-	-	375	103	272	478
Bobcat	162	52	110	214	-	-	-	-	162	52	110	214
Coyote	847	168	679	1,015	-	-	-	-	847	168	679	1,015
Grey Fox	157	43	114	200	-	-	-	-	157	43	114	200
Red Fox	299	87	212	386	-	-	-	-	299	87	212	386
Mink	117	42	75	159	10	6	4	16	127	42	85	169
Muskrat	1,952	513	1,439	2,465	61	55	6	116	2,013	519	1,494	2,532
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	314	128	186	442	543	121	422	664	857	159	698	1,016
Otter	142	40	102	182	10	6	4	16	152	40	112	192
Raccoon	1,404	275	1,129	1,679	365	147	218	512	1,770	283	1,487	2,053
Skunk	66	34	32	100	76	34	42	110	142	46	96	188
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	5,836	704	5,132	6,540	1,065	244	821	1,309	6,901	779	6,122	7,680

Table 11c. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in the Northern Piedmont region of Virginia, 2021-2022 (N=40).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	583	229	354	812	-	-	-	-	583	229	354	812
Bobcat	15	10	5	25	5	5	-	10	20	11	9	31
Coyote	162	59	103	221	-	-	-	-	162	59	103	221
Grey Fox	25	16	9	41	-	-	-	-	25	16	9	41
Red Fox	1,268	906	362	2,174	127	114	13	241	1,394	910	484	2,304
Mink	10	6	4	16	5	5	-	10	15	8	7	23
Muskrat	340	211	129	551	15	10	5	25	355	210	145	565
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	127	49	78	176	451	208	243	659	578	209	369	787
Otter	51	18	33	69	20	14	6	34	71	22	49	93
Raccoon	1,364	320	1,044	1,684	309	268	41	577	1,673	396	1,277	2,069
Skunk	15	10	5	25	183	159	24	342	198	159	39	357
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	3,960	1,090	2,870	5,050	1,115	571	544	1,686	5,075	1,523	3,552	6,598

Table 11d. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in the Southern Piedmont region of Virginia, 2021-2022 (N=52).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	461	139	322	600	5	5	-	10	466	139	327	605
Bobcat	117	35	82	152	-	-	-	-	117	35	82	152
Coyote	766	154	612	920	-	-	-	-	766	154	612	920
Grey Fox	325	76	249	401	-	-	-	-	325	76	249	401
Red Fox	472	111	361	583	10	9	1	19	482	111	371	593
Mink	5	5	-	10	-	-	-	-	5	5	-	10
Muskrat	162	85	77	247	5	5	-	10	167	85	82	252
Nutria	-	-	-	-	-	-	-	-	-	-	-	-
Opossum	695	197	498	892	583	138	445	721	1,278	212	1,066	1,490
Otter	218	93	125	311	-	-	-	-	218	93	125	311
Raccoon	1,947	309	1,638	2,256	56	30	26	86	2,003	305	1,698	2,308
Skunk	127	66	61	193	193	76	117	269	319	97	222	416
Long-tailed Weasel	-	-	-	-	-	-	-	-	-	-	-	-
All Species	5,293	527	4,766	5,820	852	191	661	1,043	6,145	585	5,560	6,730

Table 11e. Expanded statewide estimates of the total number of target and non-target furbearer species harvested in the Tidewater region of Virginia, 2021-2022 (N=68).

Species	Target				Non-target				Total			
	Est. No.	SE	95% CI		Est. No.	SE	95% CI		Est. No.	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Beaver	1,932	768	1,164	2,700	76	68	8	144	2,008	770	1,238	2,778
Bobcat	91	28	63	119	10	6	4	16	101	28	73	129
Coyote	705	262	443	967	5	5	-	10	710	261	449	971
Gray Fox	558	163	395	721	5	5	-	10	563	163	400	726
Long-tailed Weasel	1,526	425	1,101	1,951	25	13	12	38	1,552	424	1,128	1,976
Mink	76	60	16	136	-	-	-	-	76	60	16	136
Muskrat	2,479	981	1,498	3,460	-	-	-	-	2,479	981	1,498	3,460
Nutria	41	36	5	77	35	32	3	67	76	48	28	124
Opossum	492	159	333	651	466	131	335	597	958	192	766	1,150
Otter	172	59	113	231	5	5	-	10	177	59	118	236
Raccoon	1,491	292	1,199	1,783	243	105	138	348	1,734	296	1,438	2,030
Red Fox	20	11	9	31	61	30	31	91	81	32	49	113
Striped Skunk	-	-	-	-	-	-	-	-	-	-	-	-
All Species	9,583	1,969	7,614	11,552	933	263	670	1,196	10,516	2,032	8,484	12,548

Table 12. Statewide estimates and summary statistics for each furbearer species targeted in 2021- 2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for number of trappers and days trapped for each species are extrapolations from those estimates. Overall estimates (all species combined) were derived from the sample values reported by trappers directly rather than combining estimates by species.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	406	20.9	24.4	3.2	9,906	6.6	0.8	9.2	2.2	5.6	65,382
Bobcat	385	19.8	28.7	2.7	11,050	8.4	0.9	1.2	0.1	0.5	92,816
Coyote	735	37.8	34.0	2.4	24,990	11.3	1.0	1.2	-	1.1	282,387
Gray Fox	472	24.2	31.1	2.6	14,679	13.1	1.5	2.4	0.4	0.6	192,298
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	137	7.0	30.5	4.1	4,179	6.7	1.4	2.0	0.6	1.0	27,996
Muskrat	309	15.9	25.5	3.2	7,880	11.8	1.2	1.3	0.1	5.7	92,978
Nutria	5	0.3	40.0	-	200	6.0	-	-	-	-	1,200
Opossum	233	12.0	36.6	5.5	8,528	10.7	2.2	9.2	1.3	2.3	91,247
Otter	248	12.7	24.3	3.2	6,026	5.7	0.8	2.6	0.4	1.9	34,350
Raccoon	755	38.8	28.5	2.0	21,518	10.4	1.0	13.1	3.2	4.4	223,782
Red Fox	644	33.1	30.6	2.2	19,706	11.3	1.2	7.1	1.9	2.1	222,682
Skunk	106	5.4	26.8	4.7	2,841	11.1	2.8	3.7	0.9	1.3	31,533
All Species	1,186	60.9	32.8	1.6	38,901	13.3	0.1	26.2	3.0	6.1	517,381

¹ the total number of licenses is 1,947

Table 12a. Northern Mountain region estimates and summary statistics for each furbearer species targeted in 2021-2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for each species are extrapolations from those estimates. Estimates for all species are derived from the sample values reported by trappers directly rather than derived from by-species effort reporting.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	46	2.4	28.3	10.4	1,302	4.1	1.0	7.0	4.3	5.5	5,337
Bobcat	46	2.4	20.8	3.2	957	10.1	3.4	1.3	0.2	0.2	9,664
Coyote	112	5.8	27.8	4.0	3,114	10.0	1.8	1.2	0.1	1.5	31,136
Gray Fox	56	2.9	22.0	3.3	1,232	8.0	1.8	0.7	0.7	0.4	9,856
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	35	1.8	30.0	7.0	1,050	3.9	1.4	1.9	0.9	1.6	4,095
Muskrat	46	2.4	24.9	6.6	1,145	9.1	1.3	1.0	-	3.2	10,423
Nutria	0	0.0	-	-	0	-	-	-	-	-	0
Opossum	30	1.5	34.3	8.5	1,029	9.2	3.7	13.8	6.0	4.4	9,467
Otter	25	1.3	20.8	7.4	520	3.2	0.8	1.0	0.3	1.5	1,664
Raccoon	127	6.5	29.0	4.9	3,683	11.9	4.0	30.1	21.1	8.0	43,828
Red Fox	106	5.4	30.8	4.7	3,265	9.6	1.6	9.4	6.0	3.0	31,342
Skunk	20	1.0	36.8	9.4	736	11.0	2.3	7.5	3.1	1.9	8,096
All Species	167	8.6	31.2	3.9	5,215	12.8	2.7	41.5	18.8	9.4	66,748

Table 12b. Southern Mountain region estimates and summary statistics for each furbearer species targeted in 2021-2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for each species are extrapolations from those estimates. Estimates for all species are derived from the sample values reported by trappers directly rather than derived from by-species effort reporting.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	96	4.9	17.4	4.6	1,670	5.2	0.6	3.9	1.0	4.3	8,686
Bobcat	112	5.8	37.0	5.9	4,144	8.0	1.4	1.1	0.1	0.5	33,152
Coyote	167	8.6	37.3	6.8	6,229	11.5	1.7	1.2	0.1	1.2	71,635
Gray Fox	101	5.2	33.4	7.2	3,373	13.0	2.4	1.6	0.4	0.4	43,854
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	61	3.1	30.8	8.2	1,879	5.6	1.9	1.9	0.6	1.1	10,521
Muskrat	117	6.0	34.4	6.5	4,025	9.8	1.1	1.2	0.1	4.9	39,443
Nutria	0	0.0	-	-	0	-	-	-	-	-	0
Opossum	41	2.1	32.6	17.0	1,337	7.3	1.2	7.8	2.6	3.2	9,757
Otter	71	3.6	23.2	4.2	1,647	5.9	1.1	2.0	0.4	1.5	9,718
Raccoon	142	7.3	31.7	5.0	4,501	9.3	1.7	9.9	1.8	3.4	41,863
Red Fox	112	5.8	38.2	6.8	4,278	11.5	2.2	2.7	0.8	0.6	49,202
Skunk	30	1.5	32.0	14.6	960	10.7	6.9	2.2	1.0	0.6	10,272
All Species	243	12.5	35.0	4.3	8,505	11.4	1.2	19.1	1.9	6.0	96,957

Table 12c. Northern Piedmont region estimates and summary statistics for each furbearer species targeted in 2021-2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for each species are extrapolations from those estimates. Estimates for all species are derived from the sample values reported by trappers directly rather than derived from by-species effort reporting.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	76	3.9	34.5	12.1	2,622	8.4	2.4	9.8	3.4	2.6	22,025
Bobcat	41	2.1	28.3	8.3	1,160	9.6	5.1	1.5	0.2	0.1	11,139
Coyote	101	5.2	28.6	4.6	2,889	9.6	3.2	1.2	0.1	0.6	27,731
Gray Fox	30	1.5	25.3	8.5	759	18.7	9.0	0.7	0.5	0.2	14,193
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	10	0.5	21.0	7.0	210	11.0	1.0	1.0	-	0.4	2,310
Muskrat	35	1.8	18.5	5.0	648	9.4	2.2	1.6	0.3	5.6	6,087
Nutria	0	0.0	-	-	0	-	-	-	-	-	0
Opossum	30	1.5	75.5	28.1	2,265	7.7	3.3	6.7	2.6	0.7	17,441
Otter	35	1.8	28.3	9.2	991	2.8	0.7	1.8	0.3	1.8	2,773
Raccoon	127	6.5	31.8	6.8	4,039	10.0	2.3	9.6	2.2	3.4	40,386
Red Fox	91	4.7	34.3	6.2	3,121	10.7	3.7	13.9	10.9	3.8	33,398
Skunk	10	0.5	15.7	6.9	157	3.3	1.3	1.3	0.3	2.9	518
All Species	193	9.9	35.3	5.7	6,818	10.5	1.9	28.3	7.5	5.5	71,585

Table 12d. Southern Piedmont Mountain region estimates and summary statistics for each furbearer species targeted in 2021-2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for each species are extrapolations from those estimates. Estimates for all species are derived from the sample values reported by trappers directly rather than derived from by-species effort reporting.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	71	3.6	21.7	7.1	1,541	6.2	1.2	6.4	1.7	4.8	9,552
Bobcat	106	5.4	28.3	5.0	3,000	8.4	1.1	1.2	0.1	0.5	25,198
Coyote	188	9.7	40.7	5.3	7,652	12.6	1.5	1.2	0.1	0.8	96,410
Gray Fox	137	7.0	40.9	6.0	5,603	11.2	1.6	2.5	0.5	0.5	62,757
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	10	0.5	37.5	7.5	375	9.0	5.0	0.5	0.5	0.1	3,375
Muskrat	35	1.8	26.0	14.8	910	8.5	3.0	1.5	0.3	2.1	7,735
Nutria	0	0.0	-	-	0	-	-	-	-	-	0
Opossum	66	3.4	25.8	5.3	1,703	9.2	2.5	10.6	2.2	4.4	15,666
Otter	51	2.6	35.0	13.4	1,785	9.8	3.3	4.6	1.9	1.2	17,493
Raccoon	177	9.1	31.1	4.2	5,505	10.0	1.9	11.9	2.1	3.5	55,047
Red Fox	157	8.1	35.1	5.0	5,511	10.3	1.7	3.0	0.7	0.8	56,760
Skunk	20	1.0	23.0	4.5	460	11.5	3.0	6.3	2.2	2.4	5,290
All Species	264	13.6	36.4	3.6	9,613	12.1	1.3	23.9	2.0	4.6	116,314

Table 12e. Tidewater region estimates and summary statistics for each furbearer species targeted in 2021-2022. Note that data for averages, and related SE, are derived from the sample data. Estimates for each species are extrapolations from those estimates. Estimates for all species are derived from the sample values reported by trappers directly rather than derived from by-species effort reporting.

Species	Est. # trappers that targeted species	% of total licenses ¹	Avg. # days trapped per trapper	SE	Est. total # days trapped	Avg. # traps set per day per trapper	SE	Avg. season harvest per trapper	SE	Avg. harvest per 100 trap days per trapper	Est. total number of trap days
Beaver	147	7.6	25.2	5.6	3,704	7.7	2.0	15.1	6.2	6.8	28,524
Bobcat	76	3.9	23.7	6.1	1,801	8.3	1.3	1.2	0.1	0.6	14,950
Coyote	167	8.6	33.3	5.2	5,561	11.1	3.1	1.3	0.1	1.1	61,728
Gray Fox	132	6.8	26.1	3.1	3,445	14.9	4.1	4.2	1.2	1.1	51,333
Long-tailed Weasel	0	0.0	-	-	0	-	-	-	-	-	0
Mink	20	1.0	31.8	6.9	636	12.0	6.4	3.8	3.1	1.0	7,632
Muskrat	76	3.9	16.3	4.0	1,239	20.4	4.2	1.6	0.2	9.8	25,272
Nutria	5	0.3	40.0	-	200	6.0	-	8.0	-	3.4	1,200
Opossum	71	3.6	33.2	7.0	2,357	17.2	7.7	6.8	2.1	1.2	40,544
Otter	56	2.9	19.0	2.0	1,064	6.0	1.3	2.9	0.9	2.7	6,384
Raccoon	183	9.4	21.9	3.2	4,008	10.3	1.7	8.7	1.6	3.6	41,279
Red Fox	157	8.1	21.0	3.0	3,297	12.9	3.6	9.5	2.6	3.6	42,531
Skunk	20	1.0	19.7	8.3	394	6.7	1.8	1.0	0.6	0.8	2,640
All Species	345	17.7	27.5	3.1	9,496	13.5	1.9	26.0	4.5	7.5	128,192

Table 13. Rare furbearer observations based upon responses to the 2021-2022 Trapper Harvest Survey.

Species	No. observed	No. trapped	List of counties observed ¹ or feature reported	List of counties where trapped
Fisher	4	0	Botetourt, Frederick	None
Spotted Skunk	3	1	Prince George, New Kent, Wise	Prince George
Least Weasel	3	0	Bath, Carroll, Stafford	None

¹ county locations are provided where possible and are based on descriptions provided by respondents. Some determinations assumed based on county of trapping activity.

Appendix A: Survey Instrument



2021-2022 Virginia Trapper Harvest Survey



This is your 2021-2022 Virginia Trapper Harvest Survey. Please complete the survey and return it in the enclosed business reply envelope. Your response is completely confidential and very important. Please send in your response, even if you did not trap this season. If you have any questions or concerns, please contact Furbearer Project Leader Mike Fies at (540) 248-9390 or mike.fies@dwr.virginia.gov.

First, did you trap in Virginia between November 15, 2021 and February 28, 2022?

Yes No

If **NO**: Please stop here and return the survey in the postage-paid envelope.

If **YES**: How many days did you trap during the season dates listed above? _____

On average, how many traps did you have set per day (or night)? _____

Please complete the remainder of the survey on the opposite side of this page using the instructions below.

Instructions for Completing the Trapping Table (see opposite side of this page):

1. Please only report information for furbearers trapped during the general trapping season (Nov. 15, 2021 to Feb. 28, 2022). Do **not** report information for animals trapped under authorization of a Commercial Nuisance Animal Permit or other nuisance animals trapped outside the general season. Also, please do not include live foxes trapped for transport to foxhound training preserves.
2. For Primary and Secondary Target Species (animals you were targeting when you set the traps):
 - The **primary target** species is the animal you were most interested in catching in a particular trap set. If you were targeting multiple species with the same trap set (i.e. a dirt hole set for coyotes and foxes), please choose **one** species as your primary target and list the others as **secondary targets**.
 - For each **primary target** species, please circle "P" in the first column and indicate total # of days trapped, average # of traps set per day, and total # of animals trapped in each county. See beaver example for how to report primary target species trapping.
 - For each **secondary target** species, please circle "S" in the first column and list the same information as for target species, including the total # of days trapped, average # of traps set per day, and total # of animals trapped in each county. See red fox/gray fox/raccoon example for reporting a trap line with primary and secondary targets.
 - If you were unsuccessful at catching a targeted species, place a "0" for the total # of animals trapped, but still report the total # of days trapped and the average # of traps set per day for that species. See bobcat example for how to report unsuccessful target species trapping.
3. For Non-Target/Incidental Species (animals you were not intending to capture as either a primary or secondary target):
 - If you captured non-target/incidental animals, please report the total # of animals trapped, but place a "0" for the total # of days trapped and a "0" for the average # of traps set per day, since these animals were not the target of your traps. See opossum and striped skunk examples for how to report incidentally trapped animals.
4. For fisher, spotted skunk, and least weasel:
 - Please indicate if you observed or trapped these species during the past trapping season. If YES, please provide a detailed location where each animal was observed or trapped OR you may contact DWR Furbearer Project Leader Mike Fies at 540-248-9390 or mike.fies@dwr.virginia.gov to provide specific details.

PLEASE READ THE INSTRUCTIONS ON THE OPPOSITE SIDE OF THIS PAGE BEFORE COMPLETING THIS SURVEY.

	Write in the name of each county or city in which you trapped															
	County/City #1				County/City #2				County/City #3							
	Example	Buckingham														
	Primary (P), Secondary (S), or Non-Target (N)	# Days Trapped	Average # Traps Set Per Day	# Animals Trapped	Primary (P), Secondary (S), or Non-Target (N)	# Days Trapped	Average # Traps Set Per Day	# Animals Trapped	Primary (P), Secondary (S), or Non-Target (N)	# Days Trapped	Average # Traps Set Per Day	# Animals Trapped	Primary (P), Secondary (S), or Non-Target (N)	# Days Trapped	Average # Traps Set Per Day	# Animals Trapped
For each species, record whether it was a primary, secondary, or non-target species, total # of animals trapped, total # days trapped, and average # traps set per day (please see instructions on opposite side of page) →																
Beaver	P S N	15	10	17	P S N				P S N				P S N			
Bobcat	P S N	7	5	0	P S N				P S N				P S N			
Coyote	P S N				P S N				P S N				P S N			
Gray Fox	P (S) N	12	8	2	P S N				P S N				P S N			
Red Fox	P S N	12	8	10	P S N				P S N				P S N			
Mink	P S N				P S N				P S N				P S N			
Muskrat	P S N	30	15	55	P S N				P S N				P S N			
Nutria	P S N				P S N				P S N				P S N			
Opossum	P S (N)	0	0	25	P S N				P S N				P S N			
Otter	P S N				P S N				P S N				P S N			
Raccoon	P (S) N	8	12	9	P S N				P S N				P S N			
Striped Skunk	P S (N)	0	0	012	P S N				P S N				P S N			
Long-tailed Weasel	P S N				P S N				P S N				P S N			

	Fisher	Spotted Skunk	Least Weasel
<p>Please indicate if you observed or trapped any of the following species during this past trapping season. If YES, please provide a detailed location where the observation occurred. You may also provide details to DWR. Furearer Project Leader Mike Fies at 540-248-9390 or mike.fies@dwr.virginia.gov</p>	<p>Did you observe a fisher during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did you trap a fisher during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Detailed location: _____</p>	<p>Did you observe a spotted skunk during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did you trap a spotted skunk during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Detailed location: _____</p>	<p>Did you observe a least weasel during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did you trap a least weasel during the past trapping season?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Detailed location: _____</p>

Appendix B: Cover Letter (1st Mailing)



COMMONWEALTH of VIRGINIA Department of Wildlife Resources

Travis Voyles
*Acting Secretary of Natural
and Historic Resources*

Ryan J. Brown
Executive Director

May 27, 2022

Dear Trapper,

Enclosed you will find the 2021-2022 Virginia Trapper Harvest Survey from the Virginia Department of Wildlife Resources. If you provided trapping data during previous years, we greatly appreciate your past cooperation. Regardless of whether you have participated in the past, we hope that you will choose to fill out the survey this year. This voluntary survey provides the Department with important information to estimate the total statewide harvest of furbearers during the 2021-2022 trapping season. Using information provided in the 2020-2021 survey, we estimate that 945 trappers harvested 32,748 furbearers, averaging 35.6 traps set for 12.7 days.

This survey is being sent to a random sample of Virginia licensed trappers. It is important that every recipient send in a response. All information on this survey is **completely confidential**. No personally identifiable information from the survey will be stored in the database so that responses cannot be tied to an individual. A postage-paid envelope (addressed to our survey administrators at Virginia Tech) is enclosed for your convenience in returning the completed questionnaire.

If you prefer to fill out this survey online, we have provided this option to you. The online version can be accessed at <http://vatrappingsurvey.info>. Please do not send in a paper copy of the survey if you choose to respond online.

If you have questions or comments about this survey, please feel free to contact Mike Fies, Furbearer Project Leader, via email at mike.fies@dwr.virginia.gov, phone at (540) 248-9390, or by mail at Virginia Department of Wildlife Resources, P.O. Box 996, Verona, VA 24482.

Your assistance in providing trapping harvest information is greatly appreciated and important for protecting trappers' interests and effectively managing Virginia's furbearers into the future. Please try to complete and return the questionnaire **within the next 10 days**, if at all possible. Thank you in advance for your cooperation.

Sincerely,

Handwritten signature of Michael L. Fies in blue ink.

Michael L. Fies
Furbearer Project Leader
Virginia Department of Wildlife Resources

517 LEE HIGHWAY, P.O. BOX 996, VERONA, VA 24482
Equal Opportunity Employment, Programs and Facilities

Appendix C: Postcard Reminder



2021-2022 Virginia Trapper Survey Reminder



We haven't heard from you yet! This is a friendly reminder to please fill out and return the 2021-2022 Virginia Trapper Survey that was recently mailed to you. If you have already completed this **confidential** survey and returned it, please accept our sincere thanks and disregard this reminder notice. If you haven't returned the survey yet, please do so at your earliest convenience. If you prefer to respond online, you can do so at the following link: <http://vatrappingsurvey.info>. Your response is important to us and will help generate meaningful estimates of statewide furbearer harvests to effectively manage populations for future trappers. If you did not receive a questionnaire, it was misplaced, or you have questions about the survey, please feel free to contact me at 540-248-9390 or mike.fies@dwr.virginia.gov.

Thank you,

Mike Fies

Furbearer Project Leader

Virginia Department of Wildlife Resources

Appendix D: 2021–2022 Virginia Trapping Season Dates

There is a continuous open season to trap beaver, muskrat, opossum, and raccoon within the incorporated limits of any city or town in the Commonwealth, and in the counties of Arlington, Chesterfield, Fairfax, Henrico, James City, Loudoun, Prince William, Spotsylvania, Stafford, Roanoke, and York.

Species	Start of Season	End of Season
Beaver	December 1 st	February 28 th
Bobcat	November 15 th	February 28 th
Coyote	Continuous open season	
Fisher	Continuous closed season	
Fox ¹	November 15 th	February 28 th
Mink	December 1 st	February 28 th
Muskrat	December 1 st	February 28 th
Nutria	Continuous open season	
Opossum	November 15 th	February 28 th
Otter	December 1 st	February 28 th
Raccoon	November 15 th	February 28 th
Striped Skunk	Continuous open season	
Spotted Skunk	Continuous closed season ²	
Weasel	December 1 st	February 28 th

¹ Fox trapping is prohibited in Clarke (except on G. Richard Thompson WMA), Fauquier (except on Chester F. Phelps WMA and G. Richard Thompson WMA), Loudoun, and Rappahannock counties.

² Spotted skunk and the pelts of spotted skunk may not be sold.

Appendix E: Map of Trapping Regions in Virginia

