

## **TRAPPING HARVEST STATISTICS**

Division of Fish and Wildlife  
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## 2018 TRAPPER HARVEST SURVEY

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### INTRODUCTION

The Minnesota Department of Natural Resources (MNDNR) annually conducts a mail survey of licensed trappers. Annual harvest estimates from the survey data are used to help assess and set trapping regulations and season structure. Beginning in 2000, survey cards were sent to all trappers with a valid mailing address. Beginning in 2017, we excluded license holders <18 years old at the time of the survey, which represents ~3% of license sales. Information concerning registered harvest (fisher, marten, bobcat, and otter) is obtained from mandatory registration of these animals. Details regarding methods and results can be found in the Registered Furbearer Harvest report on the DNR website.

### METHODS

The sampling frame consisted of all individuals with active MNDNR trapping licenses (all types) except for youth <18 years old who were excluded from the survey, listed in the Electronic License System (ELS) database in late February 2019. There were 6,815 active trapping licenses in the ELS database, which consisted of 4,853 Resident Regular Trappers, 11 age - eligible (of 186) Resident Junior Trappers, 1,200 Resident Senior Trappers, 559 “active” Lifetime Trappers, and 11 Nonresident (MN landowners) license holders. License type was reclassified as “adult” (regular, lifetime, and non-resident) or “youth” for analysis purposes.

The MNDNR Trapper Harvest Survey is a census but the response rate is <100% (mean = 68%, range: 56–79%). Thus, uncertainty in harvest estimates is strictly a function of non-response (missing data) rather than random sampling. However, if non-response (unit and item) is completely random then data from respondents can be treated as a random sample, which is how the Trapper Harvest Survey has been analyzed historically. The critical assumption is that non-response is completely random (e.g., if you repeated the survey, non-respondents would be a random subset of licensed trappers). For consistency with previous analyses, the response data was treated as a random sample.

A postcard survey (Figure 1) was sent to all trapping license holders ( $\geq 18$ -yr old) with a valid mailing address at the close of the license year. Trappers that returned the survey questionnaire within three weeks were marked returned and eliminated from follow-up mailings. A single follow-up mailing was sent to non-respondents. Returned questionnaires were checked for completeness, consistency, and biological practicability. Cards were marked with numeric county codes corresponding to the trapper’s written information. Data from each usable card was converted to an electronic database. Dual key-entry and quality control checks were used to minimize transcription errors. Data was tabulated using Viking Data Entry VDE+ software and statistically analyzed using R programming language (R version 3.5.2 (2018-12-20); R Development Core Team 2018) to summarize responses.

## **RESULTS**

We mailed out 6,676 surveys, 77 surveys were undeliverable and 3,674 were returned for an adjusted response rate of 55.7%. Sixty five percent of respondents reported setting traps for at least one species (Table 1, Figure 2). Historic trapper estimates are presented in Table 2, Table 3, and Table 4.

## **ACKNOWLEDGMENTS**

This project was funded in part by the Wildlife Restoration Program. Special thanks to John Giudice for continued statistical support and critical review.



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RETURN SERVICE REQUESTED

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**Dear Trapper:**

You are being asked as a trapping license buyer to assist us in evaluating the 2018-2019 trapping season (**March 2018-February 2019**). For Spring Beaver, please report only animals taken between **March 2018** and **May 15, 2018**. We need this information to estimate the season's harvest and to help set future furbearer trapping seasons. Similar to past years we are also asking for the **average number of traps you checked per day** for each species. If a trap is set for multiple species, count the trap for both species when answering the question. For example, if you ran 20 mink/coon traps each day, enter 20 traps/day for both mink and coon.

**YOUR RESPONSE IS NEEDED  
EVEN IF YOU DID NOT SET TRAPS THIS YEAR.**

Please fill out the attached questionnaire and mail as soon as possible. A reminder will be sent to individuals not returning the questionnaire within three weeks. No envelope or stamp is necessary; just tear along the perforation and drop into a mailbox.

THANK YOU FOR YOUR COOPERATION

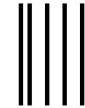
Lou Cornicelli, Wildlife Research Program Manager  
Division of Fish and Wildlife  
Department of Natural Resources

**2018 Trapper Report**

- Did you set traps / snares in Minnesota during the 2018-2019 trapping season?  
 No  Yes (Please check one)
- Indicate your harvest, the number of days you trapped for each species, the average number of traps you checked PER DAY for each species, and the county in which you trapped **most** for each species. Report only animals **YOU personally** trapped in Minnesota. Animals taken by hunting should **NOT** be reported here.

Species Trapped	Number YOU Trapped All Season	# Days Trapped All Season	Average # Traps/Snares Checked Per Day	County You Trapped In Most
Muskrat	80			
Mink	92			
Gray Fox	96			
Striped Skunk	34			
Coyote (brush wolf)	97			
Beaver (Mar-May '18)	81			
Beaver (Oct '18-Feb '19)	82			
Pine marten	37			
Otter	38			
Fisher	36			
Badger	35			
Long-tailed weasel	31			
Short-tailed weasel	30			
Opossum	40			
Bobcat	98			
Raccoon	94			
Red Fox	95			

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Figure 1. Trapper survey card 2018.

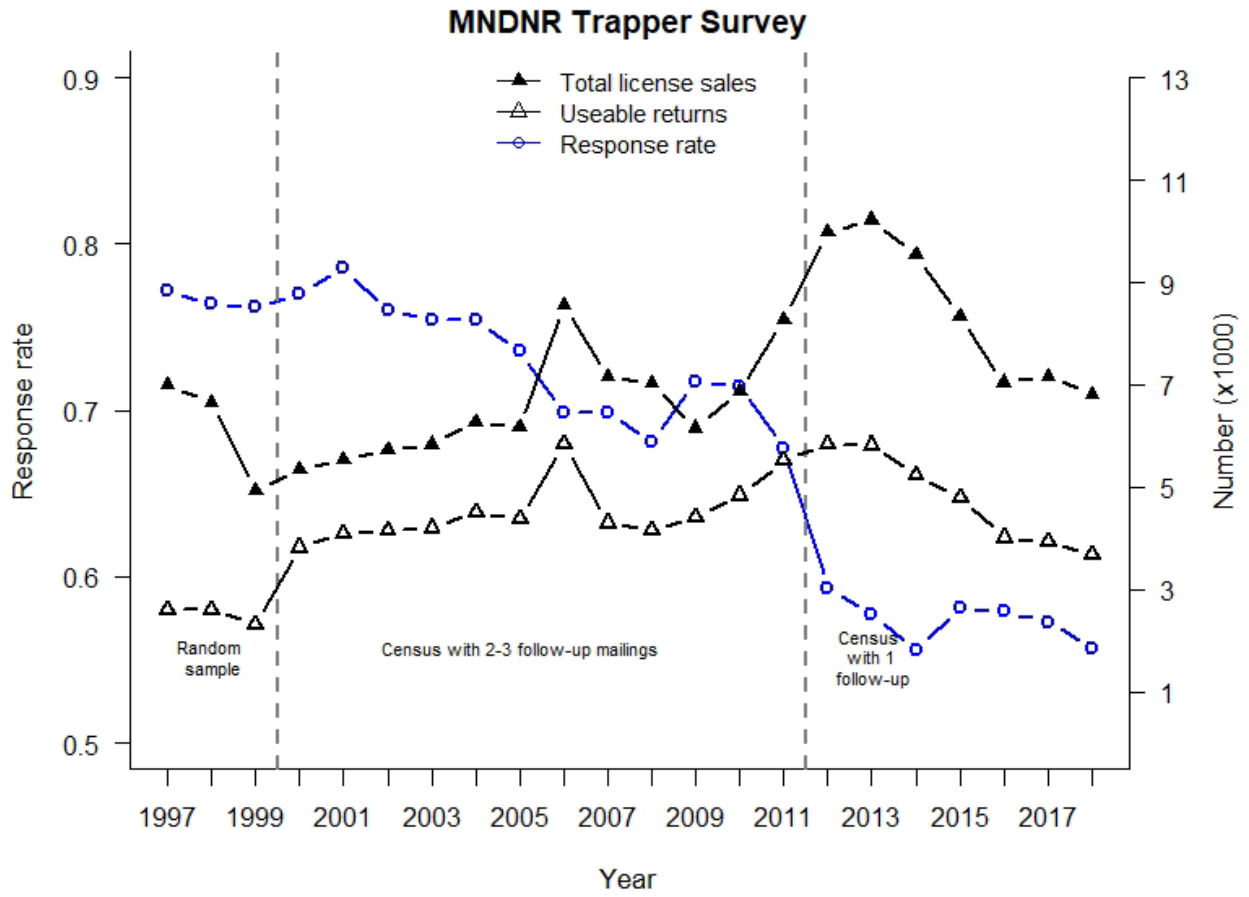


Figure 2. Trapper annual license sales and mail survey response, 1997-98 through 2018-19.

Table 1. Use of trapper licenses, 2007-08 through 2018-19.

Year		Returns from mail survey	Projections from license sales
2007-08	Trapped	3,322 (77.2%)	5,533
	Did not trap	<u>980 (22.8%)</u>	<u>1,634</u>
		4,302 (100.0%)	7,167 <sup>a</sup>
2008-09	Trapped	3,154 (75.7%)	5,319
	Did not trap	<u>1,012 (24.3%)</u>	<u>1,708</u>
		4,166 (100.0%)	7,027 <sup>a</sup>
2009-10	Trapped	3,202 (72.7%)	4,467
	Did not trap	<u>1,202 (27.3%)</u>	<u>1,677</u>
		4,404 (100.0%)	6,144 <sup>a</sup>
2010-11	Trapped	3,546 (73.2%)	5,032
	Did not trap	<u>1,298 (26.8%)</u>	<u>1,843</u>
		4,844 (100.0%)	6,875 <sup>a</sup>
2011-12	Trapped	4,498 (81.5%)	6,748
	Did not trap	<u>1,019 (18.5%)</u>	<u>1,532</u>
		5,517 (100.0%)	8,280 <sup>a</sup>
2012-13	Trapped	4,537 (77.6%)	7,747
	Did not trap	<u>1,307 (22.4%)</u>	<u>2,236</u>
		5,844 (100.0%)	9,983 <sup>a</sup>
2013-14	Trapped	4,342 (74.6%)	7,627
	Did not trap	<u>1,480 (25.4%)</u>	<u>2,597</u>
		5,822 (100.0%)	10,224 <sup>a</sup>
2014-15	Trapped	3,786 (72.2%)	6,888
	Did not trap	<u>1,459 (27.8%)</u>	<u>2,652</u>
		5,245 (100.0%)	9,540 <sup>a</sup>
2015-16	Trapped	3,296 (68.8%)	5,734
	Did not trap	<u>1,496 (31.2%)</u>	<u>2,600</u>
		4,792 (100.0%)	8,334 <sup>a</sup>
2016-17	Trapped	2,558 (63.7%)	4,487
	Did not trap	<u>1,458 (36.3%)</u>	<u>2,557</u>
		4,016 (100.0%)	7,044 <sup>a</sup>
2017-18	Trapped	2,654 (67.6%)	4,692
	Did not trap	<u>1,272 (32.4%)</u>	<u>2,249</u>
		3,926 (100.0%)	6,941 <sup>a</sup>
2018-19	Trapped	2,382 (64.8%)	4,326
	Did not trap	<u>1,292 (35.2%)</u>	<u>2,350</u>
		3,674 (100%)	6,676 <sup>a</sup>

<sup>a</sup> excludes duplicates.

Table 2. Estimated number of trappers of various furbearers, 2007-08 through 2018-19.

	Estimated number of trappers											
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Muskrat	2371	2394	2088	2760	4,320	4,110	3,410	2,902	2,218	1,797	1,882	1,583
Mink	2168	2045	1541	1847	2,470	3,110	2,780	2,158	1,587	1,049	1,084	995
Short-tailed weasel	595	512	417	546	800	690	510	666	289	195	283	166
Long-tailed weasel	434	346	254	333	560	540	480	519	265	174	190	151
Raccoon	3189	3150	2320	2567	4,060	4,680	4,660	4,182	2,781	2,032	2,168	1,952
Striped skunk	1485	1488	949	1130	1,800	1,940	1,610	1,541	1,234	907	840	798
Badger	330	293	206	229	310	360	390	284	247	193	167	164
Opossum	1392	1170	701	645	830	1,100	1,110	575	463	469	785	646
Red fox	1320	1233	1006	1068	1,900	2,240	2,080	2,012	1,434	1,048	1,258	1,091
Gray fox	654	657	529	555	970	1,180	1,060	1,035	684	446	458	381
Coyote	1203	1141	888	998	1,720	2,360	2,200	2,396	1,981	1,479	1,781	1,586
Beaver (Oct - Feb )	2008	1877	1650	1722	2,360	2,620	2,710	2,189	1,894	1,642	1,495	1,535
Beaver (previous Spring)	1408	1258	1260	1367	1,510	1,810	1,150	1,305	1,145	1,130	1,194	1,000

*Note:* Estimates prior to 2009 may differ from values published in previous reports because of rounding and more recent estimates were recomputed using a standardized historic dataset (vs. being carried forward from previous reports).



Table 3. Estimated take per trapper of various furbearers, 2007-08 through 2018-2019.

	Estimated take per successful trapper reporting that species											
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Muskrat	32	34	48	66	82	59	36	39	51	49	45	40
Mink	9	9	9	8	7	6	6	5	5	6	5	5
Short-tailed weasel	7	7	8	10	10	7	5	8	4	5	5	6
Long-tailed weasel	5	4	4	6	6	4	3	5	3	3	3	3
Raccoon	24	23	20	23	25	18	16	15	11	12	14	13
Striped skunk	8	7	7	8	7	7	6	6	6	7	6	5
Badger	2	2	2	2	2	2	2	2	2	2	2	2
Opossum	13	10	8	7	6	7	7	7	4	5	8	9
Red fox	4	3	3	4	4	4	3	4	3	3	4	4
Gray fox	3	3	3	2	3	3	2	2	2	2	2	2
Coyote	5	4	5	5	6	5	5	5	6	5	7	8
Beaver (Oct –Feb )	11	12	12	10	12	10	9	8	8	8	8	9
Beaver (previous Spring)	19	23	20	22	20	20	9	16	14	17	19	19

*Note:* Estimates may differ from values published in previous reports because of rounding and they were recomputed using a ratio of estimated totals (estimated harvest / estimated trappers), which were computed from the standardized, historic harvest dataset.

Table 4. Minnesota trapper license sales and estimated annual harvest, 2007-08 through 2018-2019<sup>a</sup>

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Trapper license sales <sup>b</sup></b>	7,167	7,027	6,158	6,885	8,280	9,998	10,224	9,540	8,334	7,044	7,163	6,815
<b>Estimated harvest <sup>c</sup></b>												
Muskrat	75,598	80,158	98,524	180,480	352,030	242,120	120,500	111,998	112,219	87,958	83,844	63,021
Mink	18,712	16,647	13,207	13,837	15,770	18,460	14,710	10,211	7,745	5,439	5,218	4,412
Short-tailed weasel	4,190	3,515	3,128	4,939	7,300	4,500	2,360	4,806	1,083	930	1,305	995
Long-tailed weasel	2,036	1,118	838	1,728	3,020	2,030	1,410	2,568	734	466	554	340
Raccoon	73,613	71,893	45,118	57,189	98,240	79,800	70,380	58,868	29,963	22,874	28,899	24,845
Striped skunk	10,811	10,355	6,194	7,979	12,250	12,620	9,430	7,956	6,349	5,458	4,476	3,961
Badger	499	424	316	337	490	570	600	347	376	286	278	221
Opossum	17,332	11,297	4,963	4,194	4,400	6,780	6,720	3,524	1,814	2,124	6,160	5,248
Red fox	4,091	3,501	2,984	3,303	7,250	7,540	5,710	6,040	4,061	2,707	4,500	3,530
Gray fox	1,367	1,321	1,084	1,093	2,100	2,550	1,940	1,902	1,161	715	736	611
Coyote	5,392	4,533	3,797	4,264	8,780	11,130	9,010	11,703	10,084	7,308	12,303	11,359
Beaver (Oct- Feb )	21,867	21,076	18,178	17,114	26,620	24,590	23,220	15,671	14,181	13,070	11,223	12,937
Beaver (previous Spring)	26,348	27,816	25,008	29,148	29,500	34,600	10,110	20,820	15,966	19,004	22,293	18,649
<b>Registered harvest <sup>d</sup></b>												
Otter	1,861	1,938	1,544	1,814	2,294	3,171	2,824	2,148	1,955	1,195	1,295	1,351
Lynx <sup>e</sup>	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Bobcat <sup>g</sup>	702	853	884	1,012	1,711	1,875	1,038	1,380	766	485	731	1,015
Fisher	1,682	1,712	1,259	903	1,473	1,293	1,146	919	756	399	477	510
Marten	2,221	1,823	2,073	1,842	2,525	1,472	1,014	1,055	877	551	979	665

<sup>a</sup> Includes data for all seasons from October through April of years indicated.

<sup>b</sup> Separate licenses were issued for juveniles (13-17 years old) and adults (18 and older), beginning in 1982. Nonresident (MN Landowner) licenses started in 2004. Senior trapping licenses were first issued in 2007. Lifetime Licenses became available for free when renewing lifetime sports or small game licenses in 2007. As of April, 2019-6,815 trapping licenses were sold in 2018: 186 (2.7%) were junior licenses, 4,853 (71.2%) were Regular adult licenses, 1,190 (17.5%) were Senior licenses, 572 (8.4%) were Lifetime licenses, and 14 (<1%) were Nonresident (MN Landowner) licenses. Duplicate licenses excluded.

<sup>c</sup> Based upon trappers' responses to mail surveys. <sup>d</sup> Raccoon and red fox season continuous May 1994 thru March 15, 2006.

<sup>e</sup> Lynx (1984) and Eastern spotted skunk (1996) listed as Special Concern and threatened species (respectively) and are fully protected.

<sup>f</sup> Registered harvest information as reported from annual, mandatory registration. <sup>g</sup> Registered harvest for bobcat includes animals taken by hunting.



## MINNESOTA FUR BUYERS SURVEY FOR THE 2018-2019 HUNTING AND TRAPPING SEASON

Jason Abraham, Season Setting/Furbearer Specialist  
Margaret Dexter, Policy and Research Unit

### INTRODUCTION

Fur buyers are individuals licensed by the State of Minnesota to buy and sell raw fur. They are required to keep complete records of all transactions and activities related to buying, selling, and disposing of raw furs. Each year buyers are sent a questionnaire asking them to submit information regarding the “average” price they paid to trappers for various furbearers the previous season.

### METHODS

In September 2019, questionnaires were mailed to the 38 licensed fur buyers in Minnesota. The survey asked them to report the number and type of fur purchased from Minnesota trappers and hunters and the “average price” paid to those hunters and trappers based on all furs purchased. A total of 28 usable surveys were received, for a return rate of 71 percent.

Calculations of average pelt price for each species were weighted according to the number of pelts purchased by each buyer. Total estimated value of the furbearer harvest to trappers and hunters in 2017-18 was \$517,506.47, a 2 percent increase from the previous season.

Table 1. Minnesota fur prices as reported by licensed fur dealers, 2018-19.

Species	Number Pelts	Minimum Price	Maximum Price	Weighted Mean
Muskrat	21906	1.50	3.41	2.38
Mink Female	943	2.00	7.27	6.02
Mink male	283	2.00	10.00	7.61
Raccoon	7223	2.00	8.63	7.30
Red Fox	635	6.00	18.00	10.93
Gray Fox	95	5.00	20.00	13.42
Coyote	4288	10.00	55.00	36.20
Bobcat	184	40.00	100.00	60.33
River Otter	313	19.17	31.56	25.07
Beaver 10-12	4526	3.75	11.00	8.30
Beaver 3-4	12345	4.00	13.92	8.95
L.T. Weasel	0	0.00	0.00	0.00
S.T. Weasel	115	1.00	3.00	2.45
Striped Skunk	97	2.00	9.00	5.25
Badger	31	5.00	30.00	7.94
Opossum	22	0.25	1.06	0.96
Fisher Male	33	25.00	55.00	43.03
Fisher Female	23	25.00	55.00	39.57
Marten Male	36	20.00	50.00	41.81
Marten Female	18	20.00	35.00	33.06
Deer Hides	23980	1.00	4.00	3.18
Bear Hides	15	30.00	65.00	32.33

Table 2. Average price per pelt paid to hunters and trappers in Minnesota, 2008-09 through 2018-19

Species	Average pelt prices paid hunters and trappers in Minnesota (dollars)										
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Muskrat	1.85	4.43	5.33	5.86	7.91	8.72	4.85	2.28	2.65	2.59	2.38
Mink (female)	7.45	8.02	9.33	11.54	17.53	13.72	7.45	4.99	6.20	5.80	6.02
Mink (male)	9.14	9.37	13.66	14.68	18.27	18.11	10.50	6.18	7.47	7.29	7.61
Raccoon	9.34	9.18	10.87	12.57	16.60	16.58	8.64	5.11	4.92	5.76	7.30
Red Fox	11.79	10.85	13.35	22.87	33.52	30.90	20.41	11.86	10.52	13.30	10.93
Gray Fox	14.08	11.55	14.64	15.11	19.20	21.27	14.17	10.64	10.33	11.32	13.42
Coyote	7.12	8.62	9.47	17.99	22.04	21.30	25.10	21.48	17.39	25.15	36.20
Bobcat	74.74	42.77	71.44	98.18	144.79	88.63	66.67	57.46	35.88	63.52	60.33
Otter	24.33	35.65	34.53	51.40	72.12	61.32	34.57	30.03	21.05	21.98	25.07
Beaver (fall-winter)	14.63	12.49	11.95	14.29	18.47	16.52	12.40	8.77	8.14	8.32	8.30
Beaver (spring)	9.36	14.47	14.50	19.96	12.80	14.77	10.69	8.24	7.33	10.39	8.95
L.T. Weasel	2.21	3.12	2.87	4.02	4.10	2.35	1.78	1.46	1.41	0.00	0.00
S.T. Weasel	3.57	3.02	1.50	2.10	2.51	0.00	2.00	1.41	0.00	2.79	2.45
Striped Skunk	2.56	3.66	3.29	3.55	5.00	4.14	3.86	3.65	4.00	7.12	5.25
Badger	7.70	8.81	10.43	13.47	14.54	13.72	9.52	9.57	7.86	9.09	7.94
Opossum	1.21	1.30	2.64	5.80	1.52	1.52	1.17	1.98	1.32	1.34	0.96
Fisher (male)	22.27	34.45	38.19	47.69	62.38	61.32	41.76	34.88	28.00	29.87	43.03
Fisher (female)	37.22	34.90	37.31	39.59	63.02	67.73	50.87	34.39	37.07	36.75	39.57
Marten (male)	30.61	26.76	39.80	42.32	56.57	74.10	38.92	30.83	29.94	36.90	41.81
Marten (female)	28.19	29.95	36.57	39.49	54.29	70.94	32.20	28.89	30.41	33.96	33.06
Deer Hides	3.53	4.44	4.41	3.95	5.18	6.09	5.59	5.62	4.00	4.14	3.18
Bear Hides	29.81	43.00	33.38	28.79	30.28	42.63	32.94	46.03	32.97	25.91	32.33