# TRAPPING HARVEST STATISTICS

Division of Fish and Wildlife 500 Lafayette Road, Box 20 Saint Paul, MN 55155-4020 (651) 259-5207

# 2012 TRAPPER HARVEST SURVEY

Margaret Dexter, Wildlife Research Unit

# 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.

# **METHODS**

The sampling frame consisted of all individuals with active MNDNR trapping licenses (all types) listed in the Electronic License System (ELS) database in late February 2013. There were 9,998 active trapping licenses in the ELS database, which consisted of 7,873 Resident Regular Trappers, 510 Resident Junior Trappers, 1,175 Resident Senior Trappers, 432 "active" Lifetime Trappers, and 8 Nonresident (MN landowners) license holders. License type was reclassified as "adult" or "youth" for analysis purposes.

The MNDNR Trapper Harvest Survey is a census but the response rate is <100% (mean = 80%, range: 59–91%). Thus, uncertainty in harvest estimates is strictly a function of non-response 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, response data were treated as a random sample.

A postcard survey (Figure 1) was sent to all trapping license holders 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. Follow-up mailings were sent to non-respondents at intervals of three weeks. For this year, in an effort to reduce postage and printing costs the number of follow-up mailings was reduced to one.

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. Duel key-entry and quality control checks were used to minimize transcription errors. The data were tabulated using Viking Data Entry VDE+ software and analyzed using the R programming language (ver. 3.0; R Development Core Team 2009).

### **RESULTS**

There were 9,983 licensed trappers (99.8%) with deliverable addresses for the mail survey; 5,844 of these individuals returned useable questionnaires (response rate = 58.5%; Figure 2). Ninety-five percent of respondents were adults, which is similar to the proportion of adult licensees in the ELS database. However, young adults (18-25) were less likely to respond to the survey than older adults (Figure 3). Seventy eight percent of respondents (adults = 77%, youth = 90%) reported setting traps for at least one species (Table 1).

Table 2 presents estimated number of trappers, take per trapper, and estimated harvest for the 2012-13 trapping season. Historic trapper estimates are presented in Table 3 and Figures 4 and 5.



Minnesota Department of Natural Resources Division of Fish and Wildlife Wildlife Research Unit 500 Lafayette Road, Box 20 St. Paul, MN 55155

RETURN SERVICE REQUESTED

#### 2012 Trapper Report

- Indicate your harvest, the number of days you trapped for each species, the average number of traps
  you had set 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 Set Per Day	County You Trapped In Most
Muskrat	80				
Mink	32				
Gray Fox	96				
Striped skunk	34				
Coyote (brush wolf)	97				
Beaver (Mar-April '12)	81				
Beaver (Oct '12-Feb '13)	82				
Pine marten	37				
Otter	38				
Fisher	36				
Badger	35				
Long-tailed weasel	31				
Short-tailed weasel	30				
Opossum	10				
Bobcat	98				
Raccoon	94				
Red Fox	95				

Figure 1. Trapper survey card 2012.

#### Dear Trapper:

You are being asked as a trapping license buyer to assist us in evaluating the 2012-2013 trapping season (March 2012-February 2013). For Spring Beaver, please report only animals taken between March 2012 and April 2012. 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 set 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. No envelope or stamp is necessary; just tear along the perforation and drop into a mailbox.

THANK YOU FOR YOUR COOPERATION

Ed Boggess, Director Division of Fish and Wildlife Department of Natural Resources



Minnesota Department of Natural Resources Division of Fish and Wildlife Wildlife Research Unit 500 Lafayette Road, Box 20 St. Paul, MN 55155



BUSINESS REPLY MAIL
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# MNDNR Trapper Mail Survey

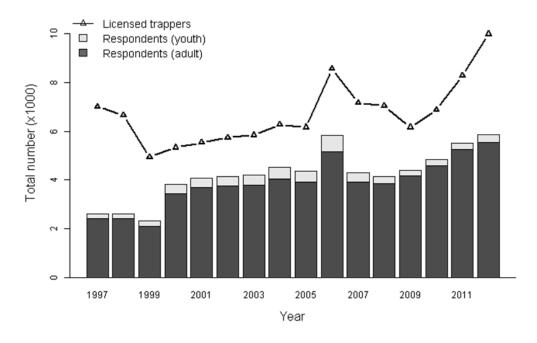


Figure 2. Trapper response to mail surveys, 1997 -98 through 2012-13.

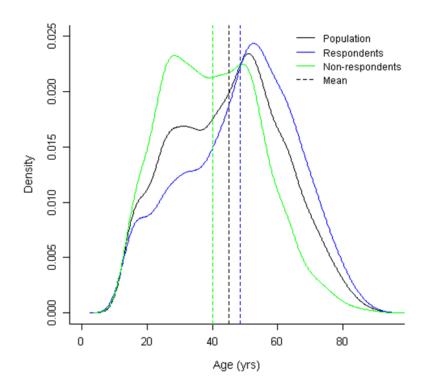


Figure 3. Response by age for trapper harvest survey, 2012-13.

Table 1. Use of trapper licenses, 2000-01 through 2012-13.

		Return from mail survey	Projections from license sales
2000-01	Trapped	2,897 (75.9%)	4,051
	Did not trap	920 (24.1%)	1,286
	•	3,817 (100.0%)	5,337 <sup>a</sup>
2001-02	Trapped	3,332 (81.5%)	4,510
	Did not trap	<u>754 (18.5%)</u>	1,024
		4,086 (100.0%)	5,534 <sup>a</sup>
2002-03	Trapped	3,344 (80.6%)	4,615
	Did not trap	804 (19.4%)	<u>1,111</u>
		4,148 (100.0%)	5,726 <sup>a</sup>
2003-04	Trapped	3,412 ( 81.1%)	4,737
	Did not trap	793 ( 18.9%)	<u>1,104</u>
		4,205 (100.0%)	5,841 <sup>a</sup>
2004-05	Trapped	3,697 ( 81.9%)	5,136
	Did not trap	<u>815 ( 18.1%)</u>	<u>1,135</u>
		4,512 (100.0%)	6,271 <sup>a</sup>
2005-06	Trapped	3,495 ( 80.0%)	4,930
	Did not trap	<u>875 ( 20.0%)</u>	<u>1,233</u>
		4,370 (100.0%)	6,163 <sup>a</sup>
2006-07	Trapped	4,782 ( 81.9%)	7,008
	Did not trap	<u>1,053 ( 18.1%)</u>	<u>1,549</u>
		5,835 (100.0%)	8,557 <sup>a</sup>
2007-08	Trapped	3,322 ( 77.2%)	5,533
	Did not trap	980 ( 22.8%)	<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>	1,532
		5,517 (100.0%)	$8,280^{a}$
2012-13	Trapped	4,537 (77.6%)	7,747
	Did not trap	<u>1,307 ( 22.4%)</u>	2,236
		5,844 (100.0%)	9,983ª

<sup>&</sup>lt;sup>a</sup> excludes duplicates.

 $Table\ 2.\ Estimated\ number\ of\ trappers,\ mean\ harvest/trapper,\ and\ total\ harvest\ in\ Minnesota,\ 2012-13.$ 

				Estimated total	
	Estimated trappers	95% CI	Mean harvest/ trapper	harvest	95% CI
Muskrat	4,110	81	58.9	242,120	15,680
Mink	3,110	77	5.9	18,460	1,340
Short-tailed weasel	690	42	6.5	4,500	570
Long-tailed weasel	540	37	3.7	2,030	320
Raccoon	4,680	82	17.1	79,800	4,440
Striped skunk	1,940	65	6.5	12,620	850
Badger	360	31	1.6	570	80
Opossum	1,100	52	6.2	6,780	590
Red fox	2,240	69	3.4	7,540	500
Gray fox	1,180	53	2.2	2,550	200
Coyote	2,360	70	4.7	11,130	810
Beaver (Mar-Apr 2012)	1,810	64	19.1	34,600	2,460
Beaver (Oct '12-Feb '13)	2,620	73	9.4	24,590	1,820

Table 3. Minnesota trapper license sales and estimated annual harvest, 1998-99 through 2012-2013<sup>a</sup>

	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Trapper license sales <sup>b</sup>	6,652	4,936	5,337	5,534	5,725	5,841	6,271	6,163	8,557	7,167	7,027	6,158	6,885	8,280	9,998
Estimated harvest <sup>c</sup>	Estimated harvest <sup>c</sup>													<u> </u>	
Muskrat	131,439	97,333	85,555	100,819	75,190	69,131	72,079	91,271	243,360	75,439	80,157	98,524	180,505	352,030	242,120
Mink	36,152	26,808	22,590	28,684	19,894	16,716	21,478	18,048	26,084	18,626	16,647	13,207	13,853	15,770	18,460
Short-tailed weasel	2,400	1,763	2,586	4,160	2,895	3,519	2,679	2,223	8,145	4,155	3,515	3,128	4,914	7,300	4,500
Long-tailed weasel	1,863	1,619	1,354	2,243	1,138	1,781	1,007	651	3,494	2,013	1,118	838	1,732	3,020	2,030
Raccoon (Oct - Feb )	63,680	37,435	32,460	60,292	61,221	53,534	56,848	48,966	78,571	73,498	71,893	45,118	57,245	98,240	79,800
Raccoon (Mar -Aug ) <sup>f</sup>	6,849	4,263	3,702	6,468	4,137	4,933	4,940	3,594							
Striped skunk	9,181	5,266	4,580	7,168	7,901	8,474	8,704	6,881	10,773	10,811	10,354	6,194	8,023	12,250	12,620
Eastern spotted skunk g	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Badger	400	319	205	407	358	552	455	339	461	499	424	316	344	490	570
Opossum	6,916	5,907	5,351	5,127	8,491	11,251	14,313	11,754	20,442	17	11,296	4,963	4,193	4,400	6,780
Red fox (Oct - Feb )	6,347	6,508	6,165	6,870	7,851	6,721	4,684	3,528	6,783	4,060	3,500	2,984	3,311	7,250	7,540
Red fox (Mar -Aug ) <sup>f</sup>	458	379	357	447	612	635	334	222							
Gray fox	976	743	468	525	892	915	898	797	1,703	1,360	1,320	1,084	1,110	2,100	2,550
Coyote	1,637	2,372	2,112	2,369	3,641	3,805	3,607	3,915	5,315	5,355	4,532	3,797	4,292	8,780	11,130
Beaver (Oct 12- Feb 13)	38,720	30,564	24,802	35,963	23,592	22,801	28,716	26,029	33,966	21,813	21,075	18,178	17,048	26,620	24,590
Beaver (Mar 12-Apr 12)	55,262	36,189	37,455	41,829	33,721	26,363	37,861	35,252	41,652	26,286	27,815	25,008	29,118	29,500	34,600
Registered harvest	I			ı		I		ı						I	
Otter	1,946	1,635	1,578	2,301	2,145	2,766	3,450	2,846	2,720	1,861	1,938	1,544	1,814	2,294	3,171
Lynx <sup>g</sup>	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Bobcat <sup>e</sup>	103	206	231	250	544	483	631	590	890	702	853	884	1,012	1,711	1,875
Fisher	2,695	1,725	1,674	2,119	2,660	2,517	2,552	2,388	3,251	1,682	1,712	1,259	903	1,473	1,293
Marten	2,299	2,423	1,629	1,928	2,839	3,214	3,241	2,653	3,788	2,221	1,823	2,073	1,842	2,525	1,472

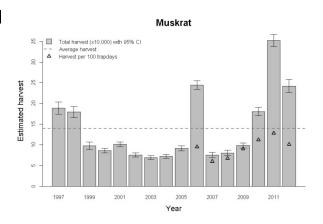
<sup>&</sup>lt;sup>a</sup> Includes data for all seasons from October through April of years indicated.

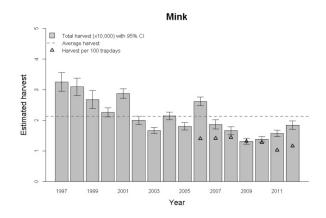
<sup>&</sup>lt;sup>b</sup> Separate licenses were issued for juveniles (13-17 years old) and adults (18 and older), beginning in 1982. Nonresident (MN Landowner) licenses started in 2004. Senior trapping licenses were first issued in 2007. Lifetime Licenses became available for free when renewing lifetime sports or small game licenses in 2007. As of April, 2013 - 9,998 trapping licenses were sold in 2012 510 (5.1%) were junior licenses, 7,873 (78.7%) were Regular adult licenses, 1,175 (11.7%) were Senior licenses, 432 (4.3%) were Lifetime licenses, and 8 (<1%) were Nonresident (MN Landowner) licenses. Duplicate licenses excluded.

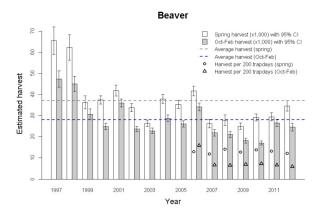
<sup>&</sup>lt;sup>c</sup> Based upon trappers' responses to mail surveys.

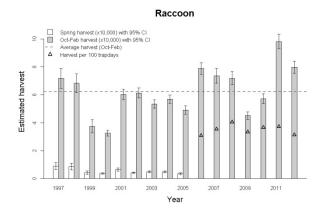
e Registered harvest for bobcat includes animals taken by hunting. f Raccoon and red fox season continuous May 1994 thru March 15, 2006.

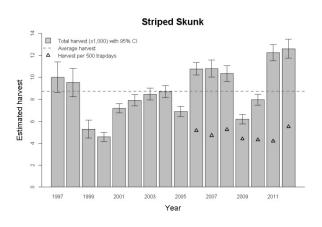
<sup>&</sup>lt;sup>g</sup> Lynx (1984) and Eastern spotted skunk (1996) listed as Special Concern and threatened species (respectively) and are fully protected.











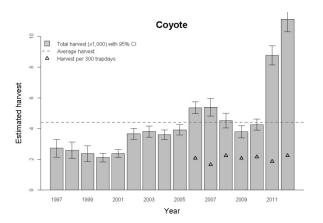
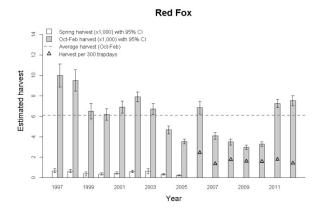
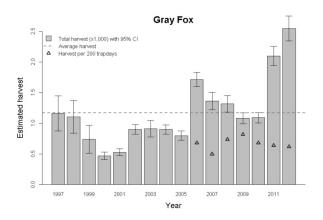
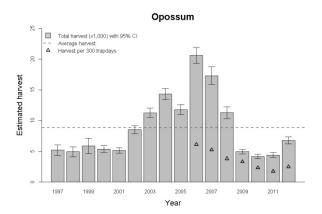
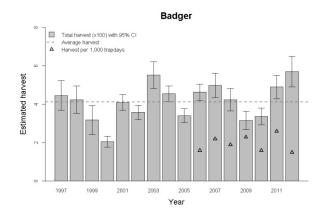


Figure 4. Historic harvest by Minnesota trappers, 1997-2012









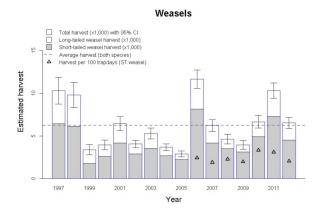
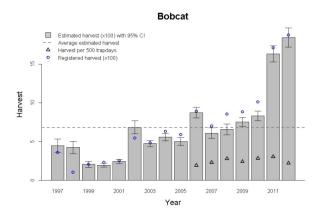
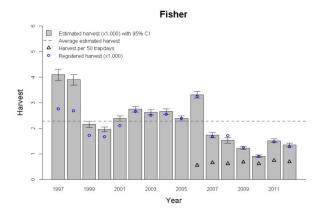
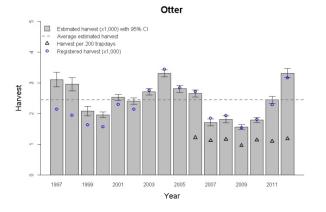


Figure 4. (continued).







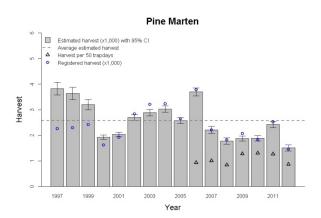


Figure 5. Registered fur harvest, 1997-2012.

# MINNESOTA FUR BUYERS SURVEY FOR THE 2012-2013 HUNTING AND TRAPPING SEASON

Jason Abraham, Wildlife Season Setting/Furbearer Specialist Margaret Dexter, Wildlife 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 August 2013, questionnaires were mailed to the 43 licensed fur buyers in Minnesota. The survey asked them to report the number and type of fur purchased from Minnesota trappers and hunters in 2021-13 and the "average price" paid to those hunters and trappers based on all furs purchased. A total of 32 usable surveys were received, for a return rate of 74 percent. Calculations of average pelt price for each species (Table 1) were weighted according to the number of pelts purchased by each buyer. Average pelt prices for the past 15 years are summarized in Table 2. Total estimated value of the furbearer harvest to trappers and hunters in 2011-12 was \$1,970,338.77, a 23 percent decrease from 2012-2013.

Table 1. Minnesota fur prices as reported by licensed fur dealers, 2012-13.

Species	Number Pelts	Minimum Price	Maximum Price	Weighted Mean
Muskrat	51773	5.00	10.05	7.91
Mink Female	2519	9.00	25.00	17.53
Mink male	3587	10.00	25.00	18.27
Raccoon	32587	10.00	18.10	16.60
Red Fox	1307	10.00	50.00	33.52
Gray Fox	389	10.00	30.00	19.20
Coyote	4235	10.00	121.00	22.04
Bobcat	285	75.00	181.00	144.79
River Otter	814	30.00	85.00	72.12
Beaver 10-2	5742	8.00	20.50	18.47
Beaver 3-4	2286	10.00	22.00	12.80
L.T. Weasel	27	1.00	6.00	2.51
S.T. Weasel	704	1.00	7.00	4.10
Striped Skunk	529	2.00	31.00	5.00
Badger	104	10.00	22.50	14.54
Opossum	177	1.00	3.50	1.52
Fisher Male	277	45.00	80.00	62.38
Fisher Female	86	40.00	90.00	63.02
Marten Male	124	45.00	80.00	56.57
Marten Female	21	40.00	80.00	54.29
Deer Hides	22881	3.00	6.12	5.18
Bear Hides	39	5.00	40.00	30.28

Table 2. Average price per pelt paid to hunters and trappers in Minnesota, 2002-03 through 2012-13.

Average pelt prices paid hunters and trappers in Minnesota (dollars)

	Average pent prices paid numers and trappers in winnesota (donars)										
Species	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-2013
Muskrat	2.11	2.05	1.9	2.81	5.79	2.96	1.85	4.43	5.33	5.86	7.91
Mink (female)	6.52	7.23	10.22	10.23	13.18	9.05	7.45	8.02	9.33	11.54	17.53
Mink (male)	9.55	11.41	11.34	14.29	18.04	12.32	9.14	9.37	13.66	14.68	18.27
S.T. Weasel	2.63	2.53	2.52	2.6	3.58	3.18	3.57	3.02	1.50	2.10	2.51
L.T. Weasel	1.94	3.34	3.05	2.56	4.35	5	2.21	3.12	2.87	4.02	4.10
Raccoon	10.33	11.45	10.49	9.61	11.92	14.32	9.34	9.18	10.87	12.57	16.60
Striped Skunk	5.81	4.66	3.95	3.77	4.46	5.27	2.56	3.66	3.29	3.55	5.00
Badger	13.18	14.23	12.94	13.4	15.71	13.92	7.70	8.81	10.43	13.47	14.54
Opossum	1.22	1.23	1.51	1.4	1.52	1.76	1.21	1.30	2.64	5.80	1.52
Red Fox	22.08	20.02	17.28	16.96	17.68	14.69	11.79	10.85	13.35	22.87	33.52
Gray Fox	9.05	13.64	12.58	15	22.36	30.09	14.08	11.55	14.64	15.11	19.20
Coyote	16.12	18.37	15.24	13.57	17.76	13.51	7.12	8.62	9.47	17.99	22.04
Bobcat	71.54	95.9	98.99	95.74	101.07	93.41	74.74	42.77	71.44	98.18	144.79
Beaver (fall-winter)	10.05	12.57	13.62	14.48	18.35	14.6	14.63	12.49	11.95	14.29	18.47
Beaver (spring)	9.99	11.09	13.8	16.49	14.81	17.77	9.36	14.47	14.50	19.96	12.80
Otter	61.16	85.33	87.23	88.89	42.85	29.49	24.33	35.65	34.53	51.40	72.12
Fisher (male)	26.7	27.15	30.02	36.03	76.33	63.09	22.27	34.45	38.19	47.69	62.38
Fisher (female)	25.44	25.71	27.47	31.46	67.82	48.24	37.22	34.90	37.31	39.59	63.02
Marten (male)	28	30.09	30.65	37.47	74.04	58.72	30.61	26.76	39.80	42.32	56.57
Marten (female)	27.3	26.7	27.42	31.53	66.09	50.05	28.19	29.95	36.57	39.49	54.29
Deer Hides	3.48	5.41	3.95	4.14	4.51	3.92	3.53	4.44	4.41	3.95	5.18
Bear Hides	40.56	41.55	46.61	39.3	43.03	36.57	29.81	43.00	33.38	28.79	30.28