

TRAPPING HARVEST STATISTICS

Division of Fish and Wildlife
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2016 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. 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) listed in the Electronic License System (ELS) database in late February 2017. There were 7,044 active trapping licenses in the ELS database, which consisted of 5,138 Resident Regular Trappers, 287 Resident Junior Trappers, 1,064 Resident Senior Trappers, 543 “active” Lifetime Trappers, and 12 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 = 70%, 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 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 3.4.1; R Development Core Team 2017) to summarize responses.

RESULTS

We mailed out 7,044 surveys, 104 surveys were undeliverable and 4,016 were returned for an adjusted response rate of 57.9%. Sixty four percent of respondents (adults = 63%, youth =

74%) 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 2016-2017 trapping season (**March 2016-February 2017**). For Spring Beaver, please report only animals taken between March 2016 and May 15, 2016. 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

2016 Trapper Report

- Did you set traps / snares in Minnesota during the 2016-2017 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.

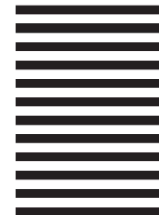
<i>Species Trapped</i>	<i>Number YOU Trapped All Season</i>	<i># Days Trapped All Season</i>	<i>Average # Traps/Snares Checked Per Day</i>	<i>County You Trapped In Most</i>
Muskrat	80			
Mink	32			
Gray Fox	96			
Striped skunk	34			
Coyote (brush wolf)	97			
Beaver (Mar-May '16)	81			
Beaver (Oct '16-Feb '17)	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			



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Figure 1. Trapper survey card 2016.

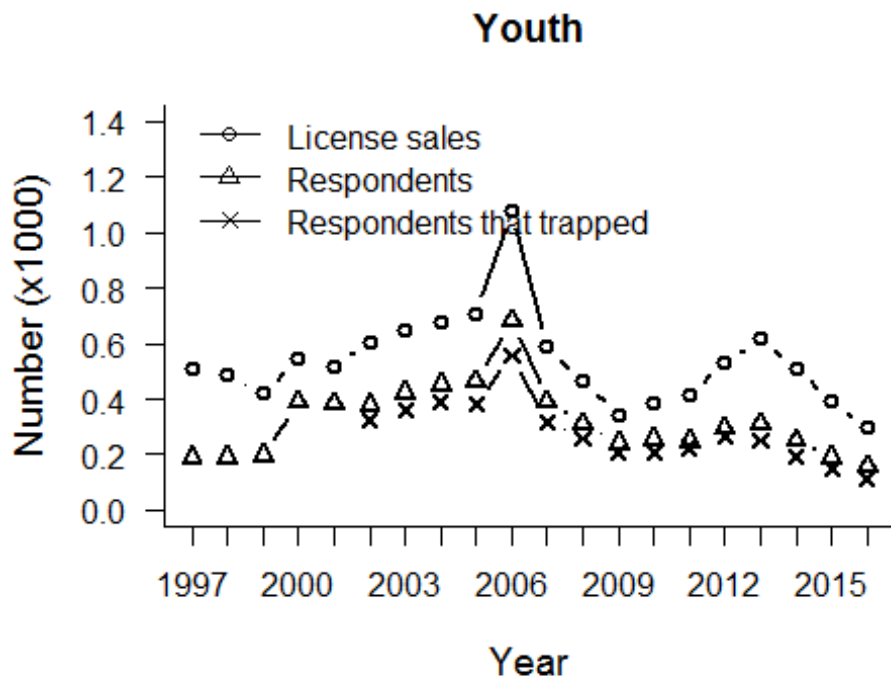
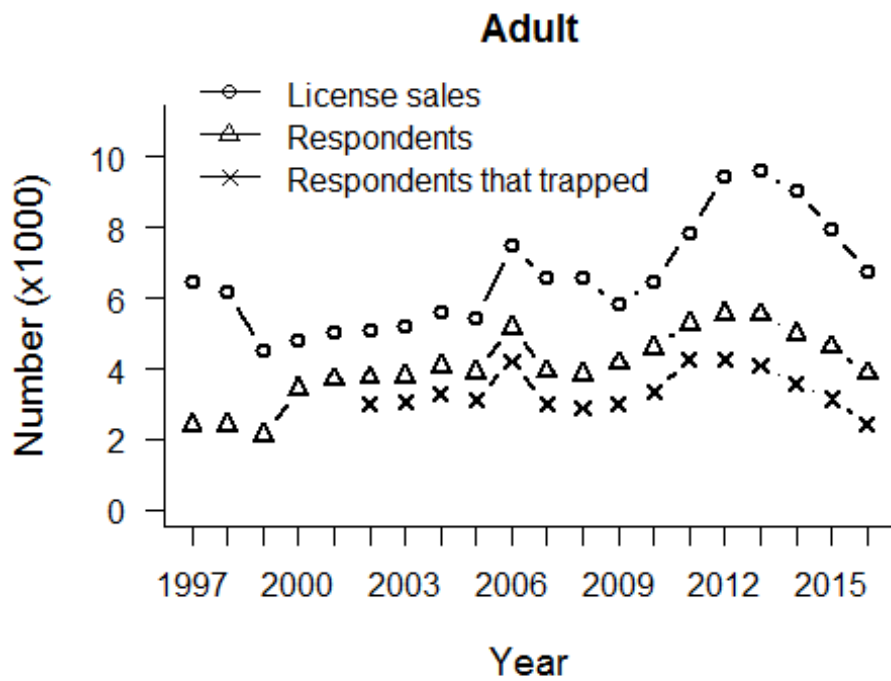


Figure 2. Trapper license sales and mail survey response by age class (Adult vs Youth), 1997-98 through 2016-17.

Table 1. Use of trapper licenses, 2004-05 through 2016-17.

Year		Returns from mail survey	Projections from license sales
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a
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 ^a

^a excludes duplicates.

Table 2. Estimated number of trappers of various furbearers, 2004-05 through 2016-17.

	Estimated number of trappers												
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Muskrat	2269	2351	4228	2371	2393	2088	2760	4,320	4,110	3,410	2,902	2,218	1,797
Mink	2085	1864	3033	2168	2044	1541	1847	2,470	3,110	2,780	2,158	1,587	1,049
Short-tailed weasel	470	349	864	595	511	417	546	800	690	510	666	289	195
Long-tailed weasel	299	211	694	434	345	254	333	560	540	480	519	265	174
Raccoon (Sept -Feb)	2505	2315	3766	3189	3150	2320	2567	4,060	4,680	4,660	4,182	2,781	2,032
Raccoon (Mar -Aug) ^a	406	322											
Striped skunk	1161	1023	1644	1485	1488	949	1130	1,800	1,940	1,610	1,541	1,234	907
Eastern spotted skunk	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Badger	310	219	347	330	293	206	229	310	360	390	284	247	193
Opossum	1037	957	1511	1392	1169	701	645	830	1,100	1,110	575	463	469
Red fox (Sept -Feb)	1179	991	1608	1320	1232	1006	1068	1,900	2,240	2,080	2,012	1,434	1,048
Red fox (Mar -Aug) ^a	110	85											
Gray fox	451	407	806	654	657	529	555	970	1,180	1,060	1,035	684	446
Coyote	826	857	1379	1203	1141	888	998	1,720	2,360	2,200	2,396	1,981	1,479
Beaver (Oct - Feb)	2171	1965	2659	2008	1877	1650	1722	2,360	2,620	2,710	2,189	1,894	1,642
Beaver (previous Spring)	1449	1455	1710	1408	1257	1260	1367	1,510	1,810	1,150	1,305	1,145	1,130

^a Raccoon and red fox season continuous May 1994 thru March 15, 2006.

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, 2004-05 through 2016-2017.

Estimated take per successful trapper reporting that species													
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Muskrat	32	39	58	32	34	48	66	82	59	36	39	51	49
Mink	11	10	9	9	9	9	8	7	6	6	5	5	6
Short-tailed weasel	6	7	10	7	7	8	10	10	7	5	8	4	5
Long-tailed weasel	4	4	6	5	3	4	6	6	4	3	5	3	3
Raccoon (Sept -Feb)	23	22	21	24	23	20	23	25	18	16	15	11	12
Raccoon (Mar Aug) ^a	13	12											
Striped skunk	8	7	7	8	7	7	8	7	7	6	6	6	7
Eastern spotted skunk	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Badger	2	2	2	2	2	2	2	2	2	2	2	2	2
Opossum	14	13	14	13	10	8	7	6	7	7	7	4	5
Red fox (Sept -Feb)	4	4	5	4	3	3	4	4	4	3	4	3	3
Red fox (Mar -Aug) ^a	4	3											
Gray fox	2	2	3	3	3	3	2	3	3	2	2	2	2
Coyote	5	5	4	5	4	5	5	6	5	5	5	6	5
Beaver (Oct -Feb)	14	14	13	11	12	12	10	12	10	9	8	8	8
Beaver (previous Spring)	27	25	25	19	23	20	22	20	20	9	16	14	17

^a Raccoon and red fox season continuous May 1994 thru March 15, 2006.

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, 2003-04 through 2016-2017^a

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Trapper license sales ^b	5,841	6,271	6,163	8,557	7,167	7,027	6,158	6,885	8,280	9,998	10,224	9,540	8,334	7,044
Estimated harvest ^c														
Muskrat	69,131	72,079	91,271	243,360	75,439	80,157	98,524	180,505	352,030	242,120	120,500	111,998	112,219	87,958
Mink	16,716	21,478	18,048	26,084	18,626	16,647	13,207	13,853	15,770	18,460	14,710	10,211	7,745	5,439
Short-tailed weasel	3,519	2,679	2,223	8,145	4,155	3,515	3,128	4,914	7,300	4,500	2,360	4,806	1,083	930
Long-tailed weasel	1,781	1,007	651	3,494	2,013	1,118	838	1,732	3,020	2,030	1,410	2,568	734	466
Raccoon (Oct - Feb)	53,534	56,848	48,966	78,571	73,498	71,893	45,118	57,245	98,240	79,800	70,380	58,868	29,963	22,874
Raccoon (Mar -Aug) ^f	4,933	4,940	3,594											
Striped skunk	8,474	8,704	6,881	10,773	10,811	10,354	6,194	8,023	12,250	12,620	9,430	7,956	6,349	5,458
Eastern spotted skunk ^g	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Badger	552	455	339	461	499	424	316	344	490	570	600	347	376	286
Opossum	11,251	14,313	11,754	20,442	17	11,296	4,963	4,193	4,400	6,780	6,720	3,524	1,814	2,124
Red fox (Oct - Feb)	6,721	4,684	3,528	6,783	4,060	3,500	2,984	3,311	7,250	7,540	5,710	6,040	4,061	2,707
Red fox (Mar -Aug) ^f	635	334	222											
Gray fox	915	898	797	1,703	1,360	1,320	1,084	1,110	2,100	2,550	1,940	1,902	1,161	715
Coyote	3,805	3,607	3,915	5,315	5,355	4,532	3,797	4,292	8,780	11,130	9,010	11,703	10,084	7,308
Beaver (Oct- Feb)	22,801	28,716	26,029	33,966	21,813	21,075	18,178	17,048	26,620	24,590	23,220	15,671	14,181	13,070
Beaver (previous Spring)	26,363	37,861	35,252	41,652	26,286	27,815	25,008	29,118	29,500	34,600	10,110	20,820	15,966	19,004
Registered harvest ^d														
Otter	2,766	3,450	2,846	2,720	1,861	1,938	1,544	1,814	2,294	3,171	2,824	2,148	1,955	1195
Lynx ^g	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Bobcat ^e	483	631	590	890	702	853	884	1,012	1,711	1,875	1,038	1,380	766	485
Fisher	2,517	2,552	2,388	3,251	1,682	1,712	1,259	903	1,473	1,293	1,146	919	756	399
Marten	3,214	3,241	2,653	3,788	2,221	1,823	2,073	1,842	2,525	1,472	1,014	1,055	877	551

^a Includes data for all seasons from October through April of years indicated.

^b 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, 2017 - 7,044 trapping licenses were sold in 2016: 287 (4.1%) were junior licenses, 5,138 (72.9%) were Regular adult licenses, 1,064 (15.1%) were Senior licenses, 543 (7.7%) were Lifetime licenses, and 12 (<1%) were Nonresident (MN Landowner) licenses. Duplicate licenses excluded.

^c Based upon trappers' responses to mail surveys. ^d Registered harvest information as reported from annual, mandatory registration.

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

^g Lynx (1984) and Eastern spotted skunk (1996) listed as Special Concern and threatened species (respectively) and are fully protected.



MINNESOTA FUR BUYERS SURVEY FOR THE 2016-2017 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 2017, 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 in 2016-17 and the “average price” paid to those hunters and trappers based on all fur purchased. A total of 29 usable surveys were received, for a return rate of 76 percent.

Calculations of average pelt price for each species 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 2016-17 was \$283,280, an 18 percent decrease from the previous season.

Table 1. Minnesota fur prices as reported by licensed fur dealers, 2016-17.

Species	Number Pelts	Minimum Price	Maximum Price	Weighted Mean
Muskrat	22958	1.50	3.50	2.65
Mink Female	955	3.00	10.00	6.20
Mink male	817	3.00	10.00	7.47
Raccoon	7133	0.00	7.25	4.92
Red Fox	804	3.00	23.00	10.52
Gray Fox	134	8.00	15.00	10.33
Coyote	2853	7.70	22.00	17.39
Bobcat	148	25.00	75.00	35.88
River Otter	152	10.00	30.00	21.05
Beaver 10-12	2533	5.00	10.00	8.14
Beaver 3-4	4949	5.00	10.00	7.33
L.T. Weasel	0	0.00	0.00	0.00
S.T. Weasel	123	1.00	1.65	1.41
Striped Skunk	52	1.00	7.00	4.00
Badger	69	3.00	15.00	7.86

Species	Number Pelts	Minimum Price	Maximum Price	Weighted Mean
Opossum	77	0.00	1.53	1.32
Fisher Male	33	25.00	40.00	28.00
Fisher Female	55	30.00	40.00	37.07
Marten Male	81	18.00	40.00	29.94
Marten Female	73	18.00	40.00	30.41
Deer Hides	10969	2.50	6.00	4.00
Bear Hides	32	25.00	50.00	32.97

Table 2. Average price per pelt paid to hunters and trappers in Minnesota, 2006-07 through 2016-17

Species	Average pelt prices paid hunters and trappers in Minnesota (dollars)										
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Muskrat	5.79	2.96	1.85	4.43	5.33	5.86	7.91	8.72	4.85	2.28	2.65
Mink (female)	13.18	9.05	7.45	8.02	9.33	11.54	17.53	13.72	7.45	4.99	6.20
Mink (male)	18.04	12.32	9.14	9.37	13.66	14.68	18.27	18.11	10.50	6.18	7.47
S.T. Weasel	3.58	3.18	3.57	3.02	1.50	2.10	2.51	0.00	2.00	1.41	0.00
L.T. Weasel	4.35	5	2.21	3.12	2.87	4.02	4.10	2.35	1.78	1.46	1.41
Raccoon	11.92	14.32	9.34	9.18	10.87	12.57	16.60	16.58	8.64	5.11	4.92
Striped Skunk	4.46	5.27	2.56	3.66	3.29	3.55	5.00	4.14	3.86	3.65	4.00
Badger	15.71	13.92	7.70	8.81	10.43	13.47	14.54	13.72	9.52	9.57	7.86
Opossum	1.52	1.76	1.21	1.30	2.64	5.80	1.52	1.52	1.17	1.98	1.32
Red Fox	17.68	14.69	11.79	10.85	13.35	22.87	33.52	30.90	20.41	11.86	10.52
Gray Fox	22.36	30.09	14.08	11.55	14.64	15.11	19.20	21.27	14.17	10.64	10.33
Coyote	17.76	13.51	7.12	8.62	9.47	17.99	22.04	21.30	25.10	21.48	17.39
Bobcat	101.07	93.41	74.74	42.77	71.44	98.18	144.79	88.63	66.67	57.46	35.88
Beaver (fall-winter)	18.35	14.6	14.63	12.49	11.95	14.29	18.47	16.52	12.40	8.77	8.14
Beaver (spring)	14.81	17.77	9.36	14.47	14.50	19.96	12.80	14.77	10.69	8.24	7.33
Otter	42.85	29.49	24.33	35.65	34.53	51.40	72.12	61.32	34.57	30.03	21.05
Fisher (male)	76.33	63.09	22.27	34.45	38.19	47.69	62.38	61.32	41.76	34.88	28.00
Fisher (female)	67.82	48.24	37.22	34.90	37.31	39.59	63.02	67.73	50.87	34.39	37.07
Marten (male)	74.04	58.72	30.61	26.76	39.80	42.32	56.57	74.10	38.92	30.83	29.94
Marten (female)	66.09	50.05	28.19	29.95	36.57	39.49	54.29	70.94	32.20	28.89	30.41
Deer Hides	4.51	3.92	3.53	4.44	4.41	3.95	5.18	6.09	5.59	5.62	4.00
Bear Hides	43.03	36.57	29.81	43.00	33.38	28.79	30.28	42.63	32.94	46.03	32.97

