



Michigan Department of Natural Resources
Wildlife Division Report No. 3629
January 2017

2015 MARTEN AND FISHER HARVEST SURVEY

Brian J. Frawley

ABSTRACT

A survey was completed to determine the number of harvest tag holders who set traps for marten and fisher, the number of animals caught, the types of traps used, and the number of days spent trapping. In 2015, 3,059 furtakers obtained a harvest tag to trap marten or fisher, compared to 2,992 tag holders in 2014 (2% increase). About 24% of the tag holders set traps specifically for marten (730 trappers) and 23% set traps for fisher (705). Trappers spent about 5,211 days targeting marten, captured 421 marten, and registered 348 marten. Trappers pursuing other species caught an additional 90 marten and registered 11 of these non-target marten. The number of trappers targeting marten and their trapping effort increased significantly between 2014 and 2015 by 24% (730 versus 590 trappers) and 21% (5,211 versus 4,302 days), respectively. However, the number of marten registered was not significantly different between 2014 and 2015 (359 versus 313). Trapper effort per registered marten also did not differ significantly between 2015 than 2014 (15.0 versus 14.2 days). An estimated 705 trappers spent 5,734 days targeting fisher, captured 362 fisher, and registered 264 fisher. Trappers pursuing other species caught 113 additional fisher and registered 11 of the non-target fisher. The number of trappers seeking fisher increased significantly by 31% from 2014 and their trapping effort increased significantly by 22%. The number of fisher registered by all trappers increased significantly by 66% between 2014 and 2015. In addition, trapper effort per registered fisher decreased significantly between 2015 than 2014 (21.8 versus 29.4 days).



A contribution of Federal Aid in Wildlife Restoration, Michigan Project W-147-R

Equal Rights for Natural Resource Users

The Michigan Department of Natural Resources provides equal opportunities for employment and access to Michigan's natural resources. Both State and Federal laws prohibit discrimination on the basis of race, color, national origin, religion, disability, age, sex, height, weight or marital status under the U.S. Civil Rights Acts of 1964 as amended, 1976 MI PA 453, 1976 MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the 1990 Americans with Disabilities Act, as amended.

If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write:
Human Resources, Michigan Department of Natural Resources, PO Box 30473, Lansing MI 48909-7973, or
Michigan Department of Civil Rights, Cadillac Place, 3054 West Grand Blvd, Suite 3-600, Detroit, MI 48202, or
Division of Federal Assistance, U.S. Fish & Wildlife Service, 4401 North Fairfax Drive, Mail Stop MBSP-4020, Arlington, VA 22203.

For information or assistance on this publication, contact Michigan Department of Natural Resources, Wildlife Division, P.O. Box 30444, MI 48909.
This publication is available in alternative formats upon request.

INTRODUCTION

The Natural Resources Commission and Department of Natural Resources (DNR) have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are important management tools used to help accomplish this statutory responsibility. The main objectives of this harvest survey were to determine the number of trappers who set traps for marten (*Martes americana*) and fisher (*M. pennanti*), the types of traps used, the number of days trapped, and the number of animals captured.

Efforts to restore the American marten and fisher have been successful throughout the Upper Peninsula (UP) (Williams et al. 2007). As a result, the first modern fisher trapping season was initiated in 1989, and the first modern marten trapping season was initiated in 2000.

In 2015, the marten and fisher trapping season was December 1-15 in the entire UP, except Drummond Island, Pictured Rocks National Lakeshore, and Seney National Wildlife Refuge. In order to trap either marten or fisher, trappers were required to obtain a free harvest tag, in addition to a Fur Harvester License. Trappers were limited to one marten or one fisher in 2015. Successful trappers were required to register all fisher and marten taken by December 18, 2015. Regulations mandate any fisher or marten captured in excess of the limit or outside of the season (i.e., incidental captures) be released alive by trappers. If these incidental captures could not be released alive, trappers were required to transfer the incidental catches to the DNR. Trappers could use body-gripping (e.g., conibear) traps, foothold traps, and live retraining cage traps to capture marten and fisher.

METHODS

A questionnaire (Appendix A) was sent to everyone who obtained a marten or fisher harvest tag in 2015 (3,059 tag holders). Trappers receiving the questionnaire were asked to report if they set traps for marten or fisher, number of days spent afield (i.e., effort), number of marten and fisher caught and released alive, and number of marten and fisher registered (registration estimates included incidentally caught animals that were not returned to the trapper). The number of days spent afield was reported as the number of days in which a trapper had at least one trap set. Trappers were asked to report whether any marten and fisher captured were taken in traps set for them or taken in traps set for another species. Trappers were also asked to indicate their impression of the status of the marten and fisher populations in the county where they primarily trapped (i.e., absent, stable, increasing, or decreasing).

Questionnaires were mailed to all harvest tag holders during early January 2016, and up to two follow-up questionnaires were mailed to nonrespondents. Although all tag holders were sent a questionnaire, not everybody returned their questionnaire. To extrapolate from the tag holders that returned their questionnaire to all people obtaining harvest tags, estimates were calculated using a simple random sampling design (Cochran 1977).

A 95% confidence limit (CL) was calculated for each estimate. In theory, the CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies that the true

value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. Because it is very difficult to measure these biases, estimates were not adjusted for these possible biases.

Statistical tests are used routinely to determine the likelihood that the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating that the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003).

RESULTS AND DISCUSSION

In 2015, 3,059 trappers obtained a harvest tag to trap either marten or fisher, compared to 2,992 tag holders in 2014 (2% increase). Men obtained most of the marten and fisher harvest tags (2,920). Women obtained 138 harvest tags, and the sex of one tag holder was unknown. Of the 2,989 people receiving the questionnaire, 1,706 responded (57% response rate). Questionnaires could not be delivered to 70 harvest tag holders.

Marten

About 24% of the tag holders set traps specifically for marten (730 trappers, Table 1). About $50 \pm 3\%$ of these trappers successfully captured at least one marten. The trappers targeting marten spent 5,211 days trapping ($\bar{x} = 7.1 \pm 0.4$ days/trapper), captured 421 marten (74 released alive), and registered 348 marten (Table 2). Trappers targeting other species caught 90 additional marten. Eleven of these non-target marten were registered and 79 were released alive. Among trappers seeking marten, the greatest numbers of marten were captured in Marquette (100), Chippewa (48), and Iron (41) counties.

The number of trappers targeting marten increased significantly by 24% (730 versus 590 trappers) and their trapping effort increased significantly by 21% (5,211 versus 4,302 days, Figure 1) between 2014 and 2015. However, the number of marten registered by all trappers (including trappers targeting marten and trappers that caught non-target marten) was not significantly different between 2014 and 2015 (359 versus 313 marten, Figure 1). Among trappers targeting marten, the mean number of days of effort per registered marten was 15.0 ± 1.8 days in 2015, which was not significantly different from the 2014 estimate (14.2 days, Figure 2).

The mean number of days of effort per registered marten was correlated with the mean value of marten pelts during 2000-2015 (Pearson product moment correlation coefficient [r] = 0.70, probability of obtaining this result [P] < 0.01) (Figure 3). The correlation between trapping effort and pelt prices ($r = 0.59$, $P = 0.02$) was also significant, but the correlation between the number of trappers and pelt prices was not significant ($r = 0.43$, $P = 0.1$).

Most trappers used body-gripping type traps (e.g., conibears) to capture marten ($79 \pm 3\%$), although foothold traps also were used frequently ($30 \pm 3\%$). Among trappers using body-

gripping traps, the mean number of body-gripping traps set per day was 4.6 ± 0.3 . Among trappers using foothold traps, the mean number of foothold traps set per day was 3.6 ± 0.4 .

Thirty-four percent of marten trappers ($\pm 3\%$) believed marten numbers were increasing in the county where they trapped most often, while $30 \pm 3\%$ thought marten numbers were stable, $6 \pm 2\%$ thought marten were declining, $3 \pm 1\%$ indicated marten were not present, and $26 \pm 3\%$ did not comment on the status of marten.

Fisher

About 23% of the marten and fisher tag holders set traps for fisher (705 trappers, Table 1). About $39 \pm 3\%$ of these trappers successfully captured at least one fisher. Trappers targeting fishers spent 5,734 days trapping (8.1 ± 0.4 days/trapper), captured 362 fisher (99 released alive), and registered 264 fisher (Table 3). Trappers targeting other species caught 113 additional fisher (102 released alive) and registered 11 incidental catches. Among trappers seeking fisher, the greatest numbers of fisher were captured in Marquette (75), Gogebic (39), and Dickinson (38) counties.

Between 2014 and 2015, the number of trappers targeting fisher increased significantly by 31% (705 versus 537 trappers in 2014) and their trapping effort increased significantly by 22% (5,734 versus 4,709 days, Figure 4). The number of fisher registered by all trappers (including trappers targeting fisher and trappers that caught non-target fisher) increased significantly by 66% between 2014 and 2015 (274 versus 165 fisher, Figure 4). Among trappers targeting fisher, the mean number of days of effort per registered fisher was 21.8 ± 2.5 days in 2015, which was significantly fewer days per registered fisher than was reported in 2014 (29.4 days, Figure 5).

The correlations between the number of trappers and pelt prices ($r = 0.59$, $P < 0.01$) and between trapping effort and pelt prices ($r = 0.62$, $P < 0.01$) during 1997-2015 were significant. However, the mean number of days of effort per registered fisher was not significantly correlated with the mean value of fisher pelts ($r = 0.44$, $P = 0.06$; Figure 6).

Most trappers used body-gripping traps (e.g., conibears) to capture fisher ($73 \pm 3\%$), although foothold traps also were used frequently ($37 \pm 3\%$). Among trappers using body-gripping traps, the mean number of body-gripping traps set per day was 4.6 ± 0.3 traps. Among trappers using foothold traps, the mean number of foothold traps set daily was 3.6 ± 0.3 traps.

Twenty-seven percent of fisher trappers ($\pm 3\%$) believed fisher numbers were increasing in the county where they trapped most often, while $32 \pm 3\%$ thought fisher numbers were stable, $7 \pm 2\%$ thought they were declining, $2 \pm 1\%$ indicated fisher were absent, and $32 \pm 3\%$ did not comment on the status of fisher.

ACKNOWLEDGEMENTS

I thank all of the marten and fisher trappers that provided information. Theresa Riebow completed data entry. Adam Bump and Dwayne Etter reviewed a draft version of this report.

LITERATURE CITED

Abraham, J. and M. Dexter. 2016. Minnesota fur buyers survey for the 2015-2016 hunting and trapping season. Unpublished report, Division of Fish and Wildlife, Minnesota Department of Natural Resources, St. Paul, USA.

Cochran, W. G. 1977. Sampling techniques. John Wiley & Sons, New York. USA.

Lohr, J. 2016. Wisconsin fur buyers report, 2015-2016. Unpublished report. Wisconsin Department of Natural Resources, Madison, USA.

Payton, M. E., M. H. Greenstone, and N. Schenker. 2003. Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? *Journal of Insect Science* 3:34.

Williams, B. W., J. H. Gilbert, and P. A. Zollner. 2007. Historical perspective on the reintroduction of the fisher and American marten in Wisconsin and Michigan. United States Department of Agriculture, Forest Service, General Technical Report NRS-5, Newton Square, Pennsylvania, USA.

Table 1. Estimated harvest tag holders that attempted to trap marten or fisher in Michigan during 2015 season.

Species sought by tag holders	%	95% CL ^a	Total	95% CL ^a
Trapped for only marten	9	1	267	27
Trapped for only fisher	8	1	242	26
Trapped for both marten and fisher	15	1	463	35
Trapped for either marten or fisher	32	1	972	45
Trapped for marten ^b	24	1	730	41
Trapped for fisher ^c	23	1	705	41

^a95% confidence limits.

^bSum of trappers that trapped only marten and trappers that trapped both marten and fisher.

^cSum of trappers that trapped only fisher and trappers that trapped both marten and fisher.

Table 2. Estimated number of trappers, trapping effort, marten captured (including all incidental catches and releases), marten released alive, and marten registered (including incidental catches) during the 2015 Michigan trapping season.

Type of trapper and area trapped	Trappers		Trapping effort (days)		Marten captured ^a		Marten released alive		Marten registered ^b	
	Total	95% CL	Total	95% CL	Total	95% CL	Total	95% CL	Total	95% CL
<i>Trappers that set traps targeting marten</i>										
Alger	43	11	312	98	27	11	0	0	27	11
Baraga	50	12	262	78	32	10	2	2	30	10
Chippewa	79	15	488	115	48	14	5	4	43	12
Delta	25	9	212	86	9	5	2	2	7	5
Dickinson	9	5	93	58	7	9	7	9	0	0
Gogebic	50	12	432	116	20	9	5	4	14	7
Houghton	75	15	477	116	36	12	7	6	29	9
Iron	59	13	398	109	41	12	4	3	38	11
Keweenaw	27	9	190	73	18	10	7	6	11	6
Luce	68	14	490	117	38	11	2	2	36	10
Mackinac	30	10	224	81	4	3	0	0	4	3
Marquette	131	20	810	151	100	23	29	14	72	15
Menominee	7	5	90	60	0	0	0	0	0	0
Ontonagon	43	11	308	91	27	9	2	2	25	9
Schoolcraft	50	12	386	109	11	7	2	2	9	5
Unknown	5	4	39	35	4	3	0	0	4	3
Subtotal ^d	730	41	5,211	400	421	41	74	21	348	32
<i>Trappers that captured marten in traps set to catch another species</i>										
Alger	0	0	NA	NA	0	0	0	0	0	0
Baraga	5	4	NA	NA	20	15	20	15	0	0
Chippewa	0	0	NA	NA	0	0	0	0	0	0
Delta	0	0	NA	NA	0	0	0	0	0	0
Dickinson	2	2	NA	NA	14	19	14	19	0	0
Gogebic	2	2	NA	NA	2	2	0	0	2	2
Houghton	2	2	NA	NA	2	2	0	0	2	2
Iron	5	4	NA	NA	5	4	2	2	4	3
Keweenaw	2	2	NA	NA	4	5	4	5	0	0
Luce	2	2	NA	NA	2	2	2	2	0	0
Mackinac	0	0	NA	NA	0	0	0	0	0	0
Marquette	2	2	NA	NA	38	49	38	49	0	0
Menominee	0	0	NA	NA	0	0	0	0	0	0
Ontonagon	0	0	NA	NA	0	0	0	0	0	0
Schoolcraft	2	2	NA	NA	4	5	0	0	4	5
Unknown	0	0	NA	NA	0	0	0	0	0	0
LP ^c	0	0	NA	NA	0	0	0	0	0	0
Subtotal ^d	29	9	NA	NA	90	55	79	55	11	7
Grand total^d	735	41	5,211	400	511	73	152	62	359	33

^aAll marten removed from traps, including all incidental catches and releases.

^bIncluded incidentally caught marten that were not returned to the trapper.

^cCounties in the Lower Peninsula.

^dNumber of trappers does not add up to totals because trappers could trap in more than one county. Column totals for trapping effort and capture may not equal statewide totals because of rounding errors.

Table 3. Estimated number of trappers, trapping effort, fisher captured (including all incidental catches and releases), fisher released alive, and fisher registered (including incidental catches) by trappers during the 2015 Michigan trapping season.

Type of trapper and county trapped	Trappers		Trapping effort (days)		Fisher captured ^a		Fisher released alive		Fisher registered ^b	
	Total	95% CL ^c	Total	95% CL ^c	Total	95% CL ^c	Total	95% CL ^c	Total	95% CL ^c
<i>Trappers that set traps targeting fisher</i>										
Alger	41	11	307	98	20	13	11	10	9	5
Baraga	41	11	247	81	9	5	0	0	9	5
Chippewa	36	10	224	76	0	0	0	0	0	0
Delta	27	9	206	84	9	6	4	3	5	4
Dickinson	41	11	393	118	38	19	14	17	23	8
Gogebic	57	13	538	133	39	15	16	10	23	8
Houghton	63	14	522	130	29	10	5	4	23	8
Iron	81	15	644	142	36	12	4	5	32	10
Keweenaw	20	8	176	76	13	7	2	2	11	6
Luce	50	12	391	106	16	7	0	0	16	7
Mackinac	29	9	185	70	11	6	0	0	11	6
Marquette	111	18	791	155	75	21	27	12	48	12
Menominee	29	9	316	110	11	6	0	0	11	6
Ontonagon	38	11	271	86	23	13	11	10	13	6
Schoolcraft	57	13	457	122	32	11	4	3	29	9
Unknown	11	6	68	44	2	2	2	2	0	0
Subtotal ^d	705	41	5,734	429	362	44	99	29	264	27
<i>Trappers that captured fisher in traps set to catch another species</i>										
Alger	2	2	NA	NA	2	2	0	0	2	2
Baraga	5	4	NA	NA	11	8	11	8	0	0
Chippewa	0	0	NA	NA	0	0	0	0	0	0
Delta	0	0	NA	NA	0	0	0	0	0	0
Dickinson	4	3	NA	NA	29	30	29	30	0	0
Gogebic	5	4	NA	NA	5	4	2	2	4	3
Houghton	4	3	NA	NA	7	7	7	7	0	0
Iron	13	7	NA	NA	23	15	22	13	2	2
Keweenaw	2	2	NA	NA	5	7	5	7	0	0
Luce	2	2	NA	NA	2	2	2	2	0	0
Mackinac	0	0	NA	NA	0	0	0	0	0	0
Marquette	7	5	NA	NA	16	13	16	13	0	0
Menominee	0	0	NA	NA	0	0	0	0	0	0
Ontonagon	4	3	NA	NA	9	10	7	9	2	2
Schoolcraft	2	2	NA	NA	2	2	2	2	0	0
Unknown	2	2	NA	NA	2	2	0	0	2	2
Subtotal ^d	52	12	NA	NA	113	40	102	39	11	6
Grand total ^d	724	41	5,734	429	475	70	201	60	274	28

^aAll fisher removed from traps, including all incidental catches and releases.

^bIncluded incidentally caught fisher that were not returned to the trapper.

^c95% confidence limits.

^dNumber of trappers does not add up to statewide total because trappers could trap in more than one county. Column totals for trapping effort and capture may not equal statewide totals because of rounding errors.

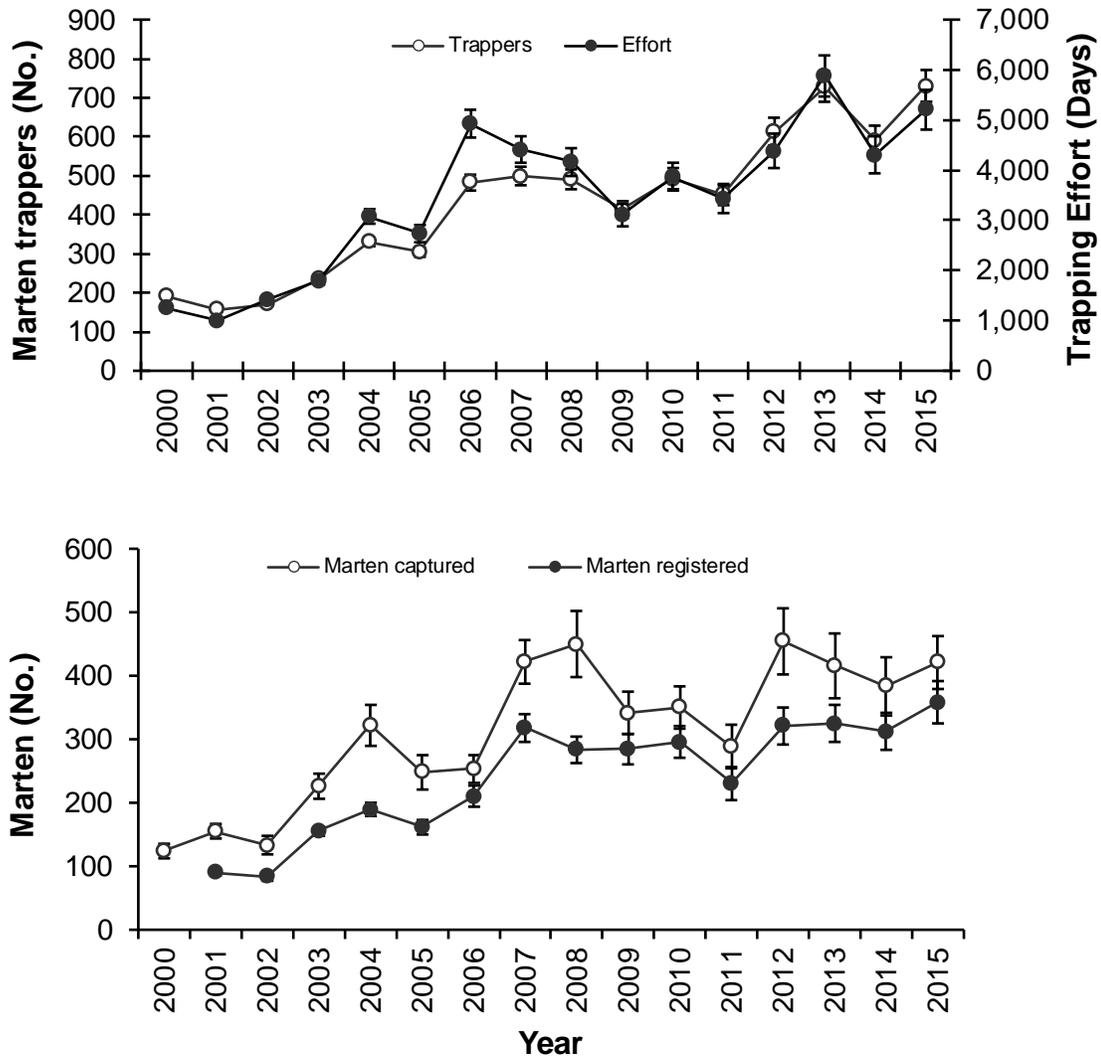


Figure 1. Estimated number of trappers, trapping effort (days), and number of marten captured and registered in Michigan, 2000-2015. Registration total was not estimated in 2000. Beginning in 2006, the estimates of marten captured and registered included incidental animals that the trapper was not allowed to keep; estimates from previous years excluded incidental animals. Estimates of trappers and effort included only trappers specifically targeting martens, but estimates of marten captured and registered included the take by all trappers (i.e., included marten taken by trappers not targeting marten).

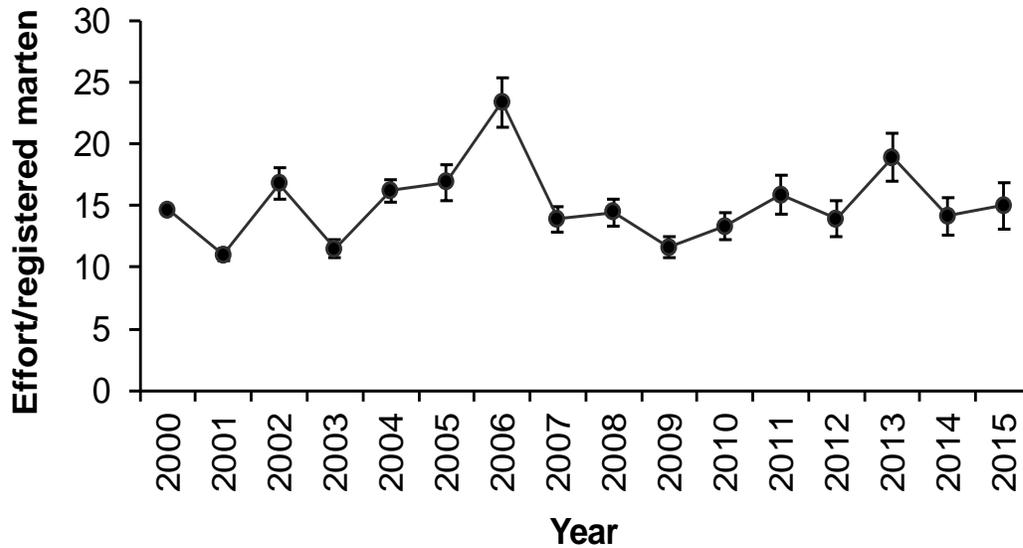


Figure 2. Estimated mean number of days required to harvest a marten in Michigan during 2000-2015. Vertical bars represent the 95% confidence interval. Estimates of effort/registered marten included only trappers targeting martens.

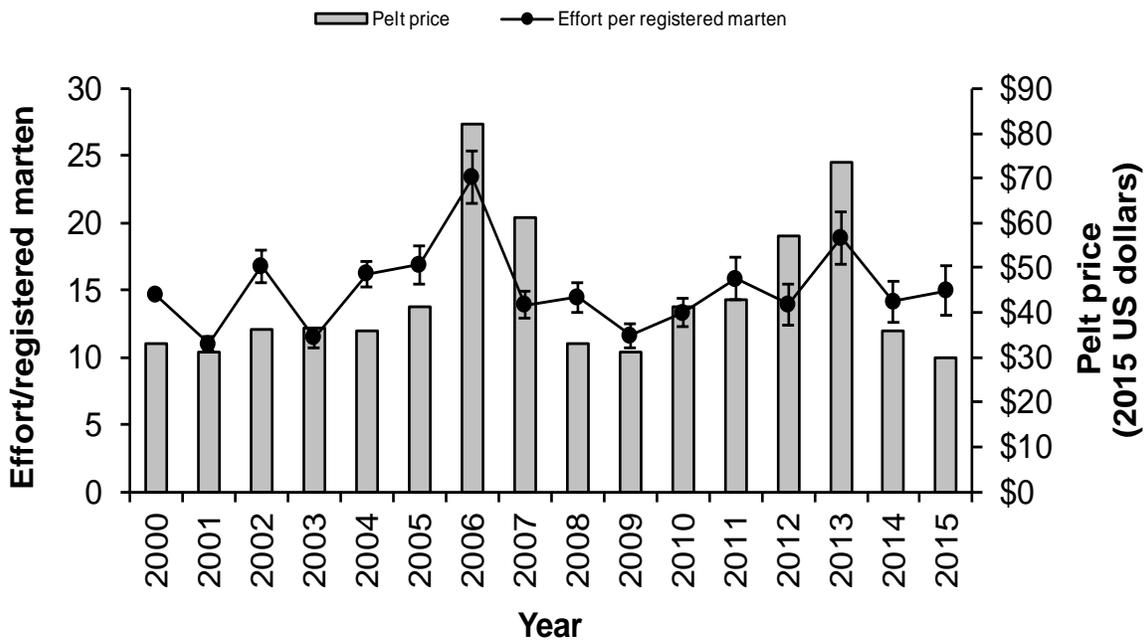


Figure 3. Estimated mean number of days required to harvest a marten in Michigan and the mean pelt value during 2000-2015. Vertical bars represent the 95% confidence interval. Pelt prices were the mean of values reported from Minnesota (e.g., Abraham and Dexter 2016). Pelt price were adjusted for inflation and reported in 2015 dollars. Estimates of effort/registered marten included only trappers targeting martens.

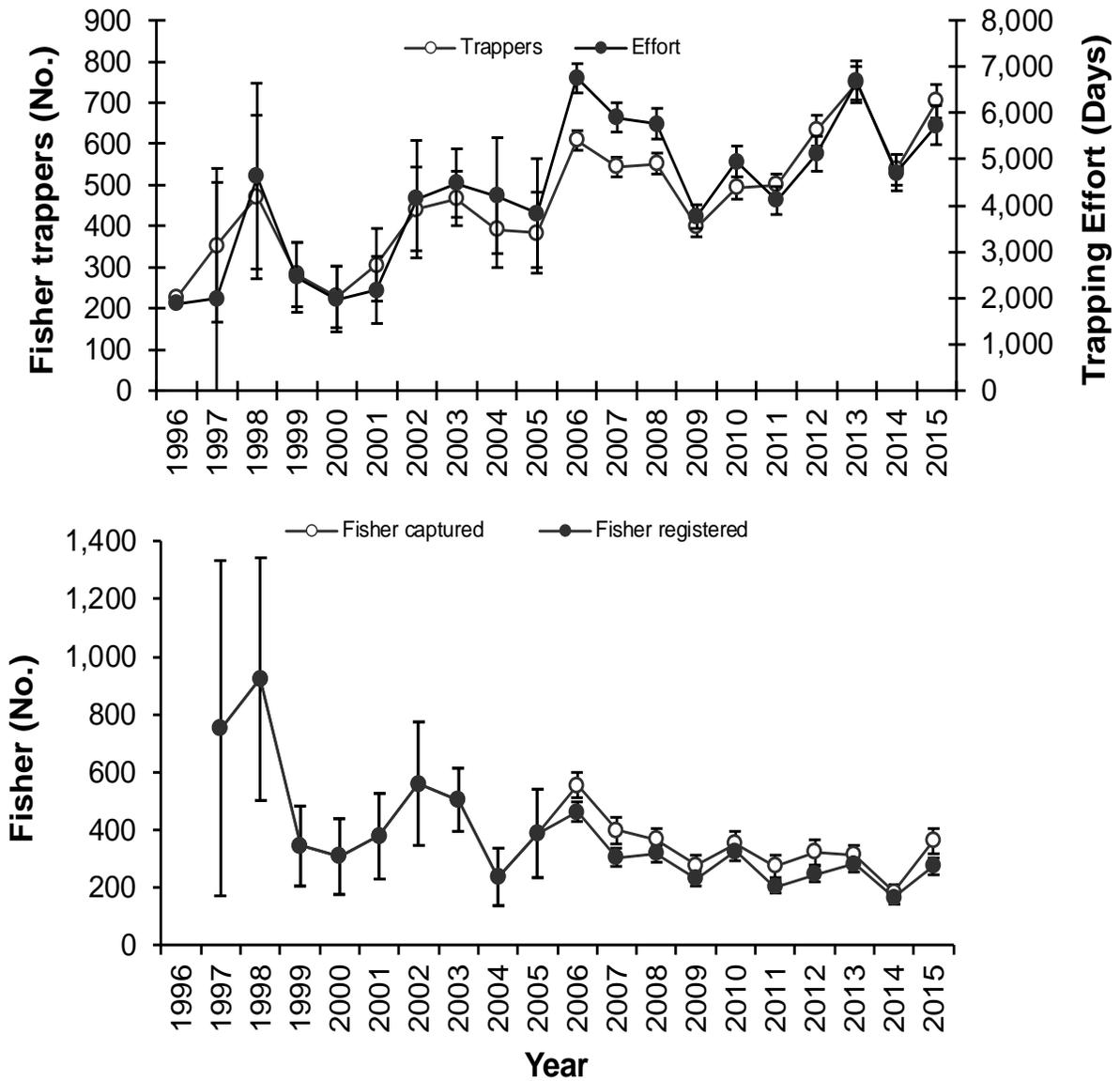


Figure 4. Estimated number of trappers, trapping effort (days), and number of fisher captured and registered in Michigan, 1996-2015. Estimates of trappers and effort included only trappers targeting fishers, but estimates of fisher captured and registered included the take by all trappers (i.e., included fisher taken by trappers not targeting fisher).

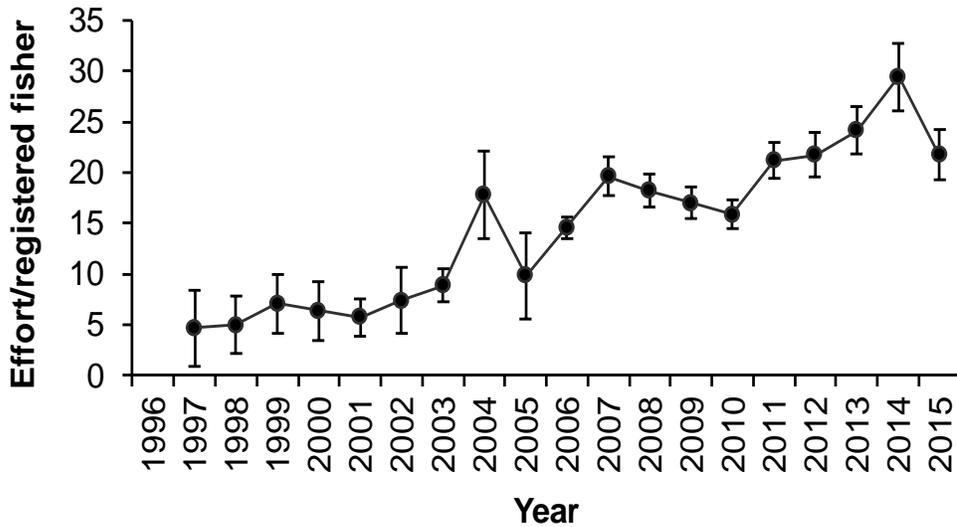


Figure 5. Estimated mean number of days required to harvest a fisher in Michigan during 1997-2015. Vertical bars represent the 95% confidence interval. Estimates of effort/registered fisher included only trappers targeting fishers.

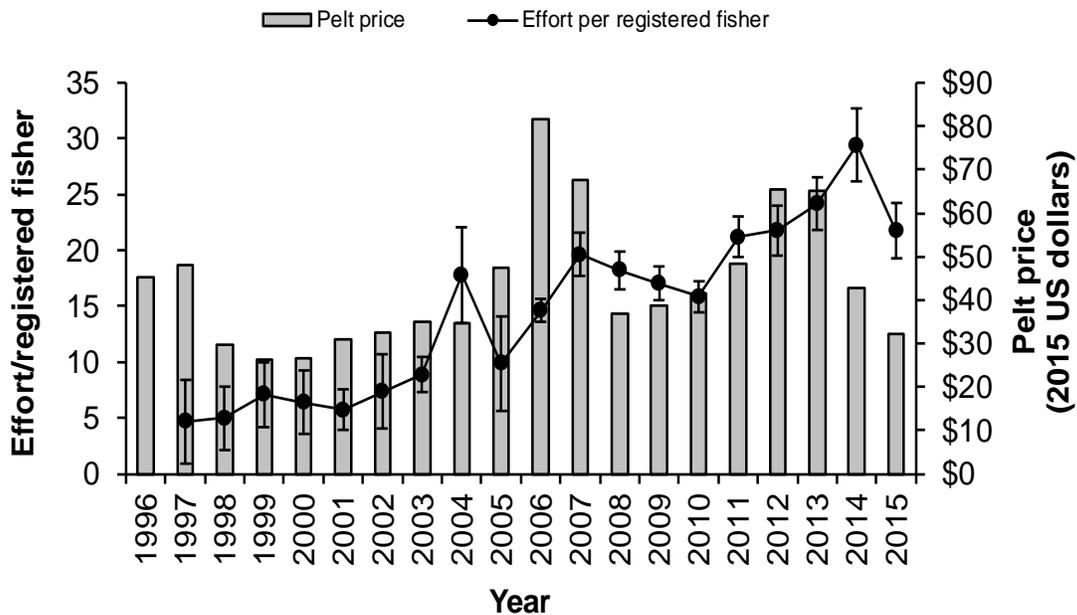


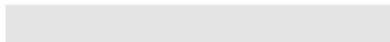
Figure 6. Estimated mean number of days required to harvest a fisher in Michigan and the mean pelt value during 1996-2015. Vertical bars represent the 95% confidence interval. Pelt prices were the mean of values reported from Minnesota (e.g., Abraham and Dexter 2016) and Wisconsin (e.g., Lohr 2016). Pelt price were adjusted for inflation and reported in 2015 dollars. Estimates of effort/registered fisher included only trappers targeting fishers.

Appendix A. The questionnaire sent to people who obtained a marten or fisher harvest tag in 2015.



2015 MARTEN AND FISHER HARVEST REPORT

This information is requested under authority of Part 435, 1984 PA 451, M.C.L. 324.43539.



It is important that you complete and return this questionnaire even if you did not trap or capture a marten or fisher.

1. Did you place traps for marten during the 2015 season (December 1-15)?

¹ Yes ² No, Skip to question number 5.

2. If you trapped during the 2015 marten season, please complete the following table.

COUNTY TRAPPED FOR MARTEN (List each county that you trapped for marten.)	NUMBER OF DAYS TRAPPED FOR MARTEN	NUMBER OF MARTEN CAUGHT AND RELEASED (Count only martens you released alive from your traps.)	NUMBER OF MARTEN CAUGHT AND REGISTERED (Count all marten that were registered including incidental catches that were not returned to you.)

3. How many of the following traps did you set for marten in 2015?

(For each type, record the average number used per day.)

_____ Foothold
_____ Conibear
_____ Other (Please specify _____)

4. What is the status of marten in the area (county) you trapped most often in 2015?

¹ Increasing ² Decreasing ³ Stable ⁴ Not present ⁵ Not sure

5. Did you incidentally catch any marten while trapping for other species that you have not already reported in Question #2.

¹ Yes ² No, Skip to question number 7.

6. If you answered yes in the previous question, please report the location and number of incidental martens you captured. Please do not report marten already reported in question #2.

COUNTY WHERE INCIDENTAL MARTEN CAUGHT (List each county that you caught an incidental marten.)	NUMBER OF INCIDENTAL MARTEN CAUGHT AND RELEASED (Count only incidental martens you released alive from your traps.)	NUMBER OF INCIDENTAL MARTEN CAUGHT AND REGISTERED (Count incidental marten that were registered including catches that were not returned to you.)

7. Did you place traps for fisher during the 2015 season (December 1-15)?

¹ Yes ² No, skip to question #11.

8. If you trapped during the 2015 fisher season, please complete the following table.

COUNTY TRAPPED FOR FISHER (List each county that you trapped for fisher.)	NUMBER OF DAYS TRAPPED FOR FISHER	NUMBER OF FISHER CAUGHT AND RELEASED (Count only fishers you released alive from your traps.)	NUMBER OF FISHER CAUGHT AND REGISTERED (Count all fisher that were registered including incidental catches that were not returned to you.)

9. How many of the following traps did you set for fisher in 2015?

(For each type, record the average number used per day.)

_____ Foothold
 _____ Conibear
 _____ Other (Please specify _____)

10. What is the status of fisher in the area (county) you trapped most often in 2015?

¹ Increasing ² Decreasing ³ Stable ⁴ Not present ⁵ Not sure

11. Did you incidentally catch any fisher while trapping for other species that you have not already reported in Question #8.

¹ Yes ² No, Skip to question #13.

12. If you answered yes in the previous question, please report the location and number of incidental fisher you captured. Please do not report fisher already reported in question #8.

COUNTY WHERE INCIDENTAL FISHER CAUGHT (List each county that you caught an incidental fisher.)	NUMBER OF INCIDENTAL FISHER CAUGHT AND RELEASED (Count only incidental fisher you released alive from your traps.)	NUMBER OF INCIDENTAL FISHER CAUGHT AND REGISTERED (Count incidental fisher that were registered including catches that were not returned to you.)

13. Do you have any comments or suggestions about marten or fisher management in Michigan?

Please return questionnaire in the enclosed postage-paid envelope.
 Thank you for your help!

www.michigan.gov/dnr