



Michigan Department of Natural Resources  
Wildlife Division Report No. 3569  
July 2013

Printed by Authority of: P.A. 451 of 1994  
Total Number of Copies Printed: .....30  
Cost per Copy: .....\$1.82  
Total Cost: .....\$54.60

Michigan Department of Natural Resources

## 2012 BEAR HARVEST REPORT FOR THE RED OAK BEAR MANAGEMENT UNIT

Brian J. Frawley

### ABSTRACT

*A study area consisting of portions of Alcona, Alpena, Montmorency, and Oscoda counties represented 5% of the area of the Red Oak Bear Management Unit (BMU), yet about 22% of the black bears registered from the Red Oak BMU since 2000 were taken in the study area. The Michigan Department of Natural Resources contacted bear hunters licensed for the Red Oak after the 2012 hunting season to determine hunter participation, hunting methods, bear harvest, and hunter satisfaction. This information could be used to assess whether the study area should be managed independently from the remainder of the Red Oak BMU. In 2012, an estimated 715 hunters spent 3,823 days afield and harvested about 261 bears in the Red Oak BMU. About 36% of hunters harvested a bear. Hunter success and effort required to harvest a bear was not significantly different inside and outside the study area in 2012. Bear hunters in the study area more often hunted on private land only (78% versus 40%), and they more often harvested a bear on private land than hunters outside the study area (90% versus 41%). A slightly higher proportion of the bear hunters in the study area relied on bait to attract bears than hunters outside the study area (92% versus 86%). A greater proportion of hunters inside the study area rated their opportunities to see a bear as very good or good than hunters outside the study area (46% versus 38%). Fewer hunters in the study area experienced interference with another bear hunter than hunters outside the study area (12% versus 21%).*



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, Lansing MI 48909.  
This publication is available in alternative formats upon request.

## INTRODUCTION

Beginning in 1990, the Michigan Department of Natural Resources (DNR) created black bear (*Ursus americanus*) management units (Figure 1), including the Red Oak Bear Management Unit (BMU), and limited the number of bear hunting licenses issued for each unit. The Natural Resources Commission annually sets license quotas for each management unit based on DNR recommendations. Licenses are then allocated among eligible applicants.

The DNR and Natural Resources Commission have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest and opinion surveys are some of the management tools used by the DNR to accomplish its statutory responsibility. Our objectives were to estimate hunter participation and success in the Red Oak BMU and inside and outside the study area within the BMU. This information could be used to assess whether the study area should be managed separately from the remainder of the Red Oak BMU.

During 2000-2012, nearly 22% of the black bears registered from the Red Oak BMU were taken in the study area consisting of portions of Alcona, Alpena, Montmorency, and Oscoda counties (Figure 2). In 2012, this study area represented 5% of the area of the Red Oak BMU. Thus, the study area has been contributing disproportionately to the harvest within the Red Oak BMU based on land area. Furthermore, the proportion of bears taken from the study area has been generally increasing since 1990 (Figure 3).

The number of bear hunting licenses available (license quota) in the Red Oak BMU for 2012 was reduced 30 percent from previous years because of concerns of a declining bear population. Only 835 licenses were available to bear hunters in 2012, compared to 1,195 in both 2011 and 2010.

In 2012, the Red Oak BMU bear season was September 21-29 and October 5-11. Except for the special archery-only hunt during October 5-11, hunters could harvest bears with a firearm, crossbow, or archery equipment. Hunters 10-years-old or older could use a crossbow to hunt bear. Hunters using a crossbow, excepting those with a disability and in possession of a DNR-issued crossbow permit, were required to obtain a free crossbow stamp.

Hunting licenses were valid on all land ownership types and allowed a hunter to take one bear of either sex, excluding cubs and female bears with cubs. Hunters could use bait throughout all hunting periods, but dogs could be used only during September 22-29 (i.e., prior to the archery-only season). Furthermore, the first day of hunting in the Red Oak BMU was restricted to hunting with bait only (i.e., September 21), and the last two days were restricted to hunters using dogs (i.e., September 28-29). All successful bear hunters were required to present their harvested bear at a registration station. (A tally of the registration data is not presented in this report.)

## METHODS

Following the 2012 bear hunting season, a questionnaire (Appendix A) was mailed to 683 people that had purchased a bear hunting license valid for the Red Oak BMU (resident,

senior, nonresident bear licenses, and comprehensive lifetime license). The people selected for the sample were bear hunting license buyers that had not previously reported their hunting activity online for the annual statewide bear harvest survey (Frawley 2013). Hunters reported whether they hunted, number of days spent afield, whether they harvested a bear, and their hunting methods. Hunters also reported whether other hunters (including bear hunters) caused interference during their hunt. Successful hunters were asked to report harvest date, sex of the bear taken, and harvest method. All hunters were asked to rate their hunting experiences.

Estimates were calculated using a simple random sampling design (Cochran 1977). The mean number of days required to harvest a bear was calculated using the number of bears registered by hunters at mandatory check stations as an auxiliary variate (ratio estimator).

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. It is very difficult to measure these biases; thus, 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).

Questionnaires were mailed initially during late November 2012, and up to one follow-up questionnaire was mailed to nonrespondents. Although 683 people were sent the questionnaire, 7 surveys were undeliverable, resulting in an adjusted sample size of 676. Questionnaires were returned by 468 people, yielding a 69% adjusted response rate.

## RESULTS

In 2012, hunters purchased 747 bear hunting licenses for the Red Oak BMU, a decline of 29% from last year. The decline in bear license purchases was nearly identical to the reduction in available tags for the Red Oak BMU (30%). Nearly  $96 \pm 1\%$  of the license buyers hunted bear (Table 1). These hunters spent an estimated 3,823 days afield ( $\bar{x} = 5.3$  days/hunter) and harvested 261 bears. The average number of days required to harvest a bear in the Red Oak BMU was 14.7 days in 2012.

About  $20 \pm 2\%$  of the bear hunters in the Red Oak BMU hunted within the study area (144 hunters, Table 1), harvesting 18% (46 bears) of the bear taken in the unit. These hunters spent 763 days afield ( $\bar{x} = 5.3$  days/hunter). The average number of days required to harvest a bear in the study area was 16.4 days. An estimated  $82 \pm 2\%$  of the bear hunters in the Red

Oak BMU hunted outside the study area (589 hunters). These hunters spent 3,060 days afield ( $\bar{x}$  = 5.2 days/hunter) and harvested 214 bears. The average number of days required to harvest a bear outside the study area was 14.3 days, which was not significantly greater than the effort required in the study area.

About 47% of the bear hunters in the Red Oak BMU hunted on private lands only, 36% hunted on public lands only, and 12% hunted on both private and public lands (Table 2). Among bear hunters hunting within the study area, 78% hunted on private lands only, 13% hunted on public lands only, and 9% hunted on both private and public lands. In contrast, 40% of hunters pursuing bears outside the study area hunted on private lands only, 43% hunted on public lands only, and 13% hunted on both private and public lands. The proportion of hunters using private lands was significantly greater among the hunters in the study area than for hunters outside the study area.

Bear hunters in the Red Oak BMU spent 1,764 days afield on private land, 1,604 days hunting on public land only, and 443 days hunting on both private and public lands (Table 3). Bear hunters active in the study area spent 569 days afield on private land, 115 days hunting on public land only, and 78 days hunting on both private and public lands. In contrast, hunters pursuing bears outside the study area hunted 1,195 days on private lands, 1,489 days on public lands, and 365 days hunting on both private and public lands.

Of the estimated 261 bear harvested in the Red Oak BMU in 2012, 50% of these bears (130) were taken on private land, and about 50% of the bears (131) were taken on public land (Table 4). About 90% of the bears taken within the study area and 41% of the bears taken outside the study area were taken on private lands, which was significantly different.

Nearly 36% of hunters harvested a bear in the Red Oak BMU (Table 1). Hunter success was not significantly different inside compared to outside the study area (32% versus 36%). About 44% of the bears taken in the Red Oak BMU were harvested during the first two days of the hunting season (Figures 4 and 5). Only about 6% of the harvested bear were taken in the last portion of the season (October 5-11). About 51% of the bears taken in the Red Oak BMU were males (133) and 48% were females (126; Table 5).

Most hunters in the Red Oak BMU (88%) used only firearms while hunting bear (Table 6). About the same proportion of the bear hunters in the study area used firearms to hunt bears as among hunters outside the study area (92% versus 87%). Most hunters in the Red Oak BMU (88%) used a firearm to harvest their bear (Table 7). Most hunters in the Red Oak BMU (87%) relied primarily on baiting as a means of locating and attracting bears (Table 8). A higher proportion of the bear hunters in the study area relied on bait to attract bears than hunters outside the study area (92% versus 86%).

About 75% of the harvested bears in the Red Oak BMU were taken with the aid of bait only to attract bears (Table 9). A higher proportion of bear harvested in the study area were taken with the assistance of bait only than the bear harvested outside the study area (100% versus 69%). Hunting success for hunters using bait only in the Red Oak BMU was 32%, while hunting success for hunters using dogs was 74% (Table 10).

About 39% of hunters in the Red Oak BMU rated the number of bear seen as very good or good and 36% rated the number of bear seen as poor or very poor (Table 11). A similar proportion of hunters inside the study area rated the number of bear seen as very good or good than among hunters outside the study area (46% versus 38%). About 34% of hunters in the Red Oak BMU rated their opportunities for taking a bear as very good or good and 40% rated their opportunities as poor or very poor (Table 11).

About 55% of hunters in the Red Oak BMU rated their overall hunting experiences as very good or good and 27% rated their hunting experiences as poor or very poor (Table 11). A similar proportion of hunters inside the study area rated their hunting experience as good or very good than among hunters outside the study area (52% versus 56%).

Hunter satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference. Nearly 30% of the hunters in the Red Oak BMU were interfered with by other hunters (Table 12). Most of this interference was caused by another bear hunter, with 19% of hunters reporting that other bear hunters interfered with their hunt. Hunters in the study area and outside the study area experienced similar levels of interference from hunters (all types of hunting) (29% versus 32%). Fewer hunters in the study area experienced interference with another bear hunter than hunters outside the study area (12% versus 21%).

## **DISCUSSION**

The differences between many estimates for the study area and the remainder of the Red Oak BMU likely reflect differences in land ownership patterns. About 95% of the study area was privately owned, while 65% of the area outside the study area was private lands. Thus, a greater proportion of hunters used private lands and took bears on private lands in the study area because these hunters were more dependent on private lands for hunting opportunities. In addition, interference among hunters was less frequent in the study area because private landowners likely limited hunter numbers on their properties.

During 2008-2012, hunter success and the effort required to harvest a bear has often been significantly different inside and outside the study area (Figures 6 and 7). Success was significantly greater and effort per harvested bear was significantly lower in the study area during 2009 and 2011. Furthermore, the overall satisfaction among bear hunters was significantly greater among hunters in the study area than among hunters outside the study area during 2009 and 2011 (Figure 8).

## **ACKNOWLEDGEMENTS**

I thank all the bear hunters that provided information. Sheree Kershaw and Theresa Riebow completed data entry. The figures of bear management units and the study area were prepared by Marshall Strong. Sarah Cummins, Amy Derosier, Russ Mason, Cheryl Nelson, and Mike Wegan reviewed a previous version of this report.

## **LITERATURE CITED**

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

Frawley, B. J. 2013. 2012 Michigan black bear hunter survey. Wildlife Division Report 3569. Michigan Department of Natural Resources, Lansing. 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.



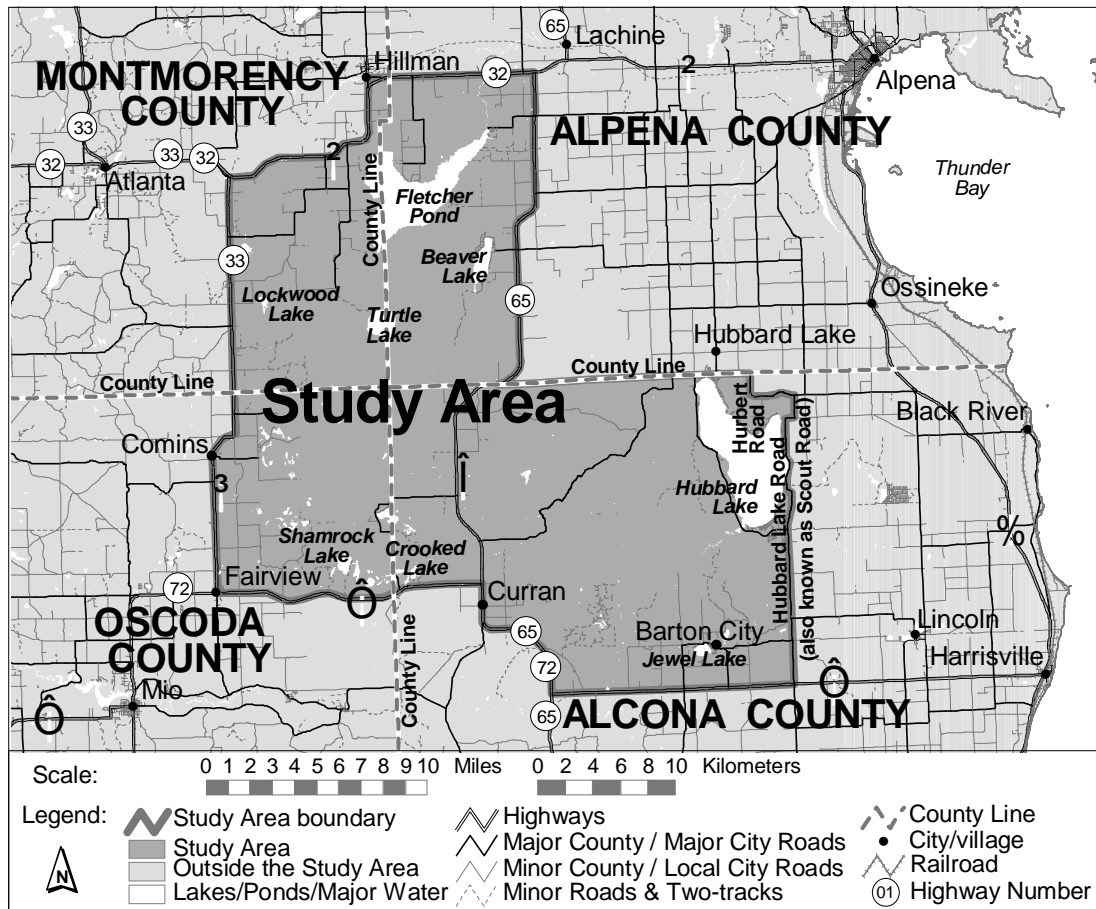


Figure 2. Study area (shaded) within the Red Oak BMU in Michigan.



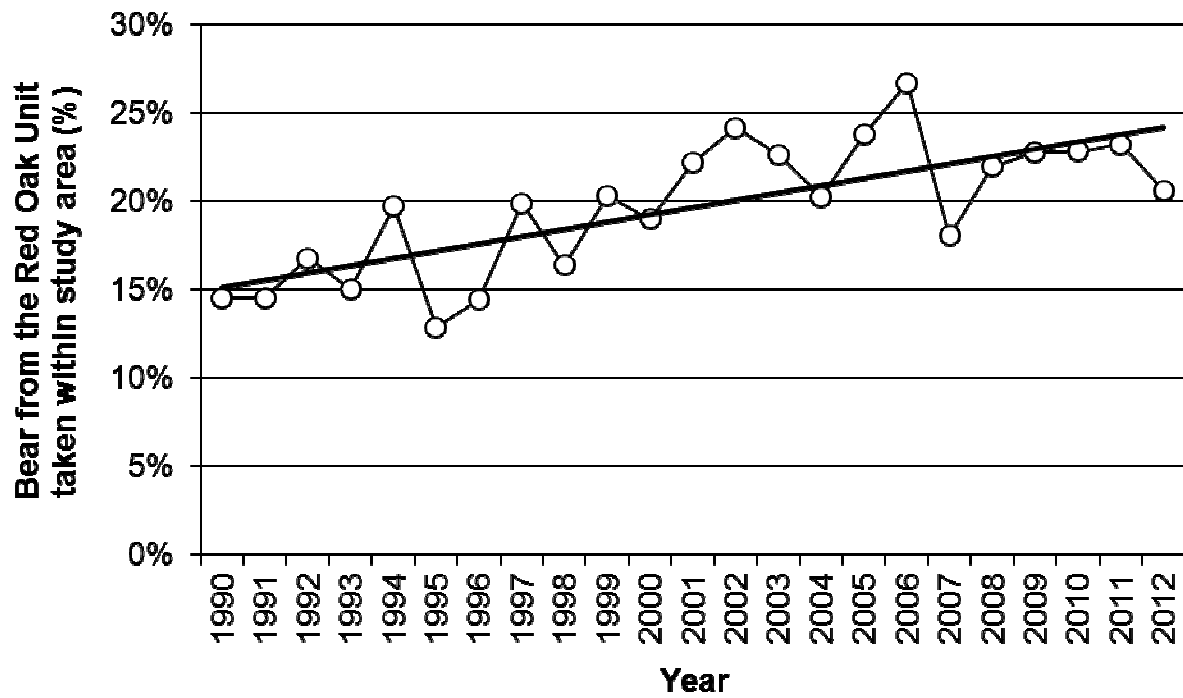


Figure 3. Proportion of bear taken in the Red Oak Bear Management Unit originating from the study area.

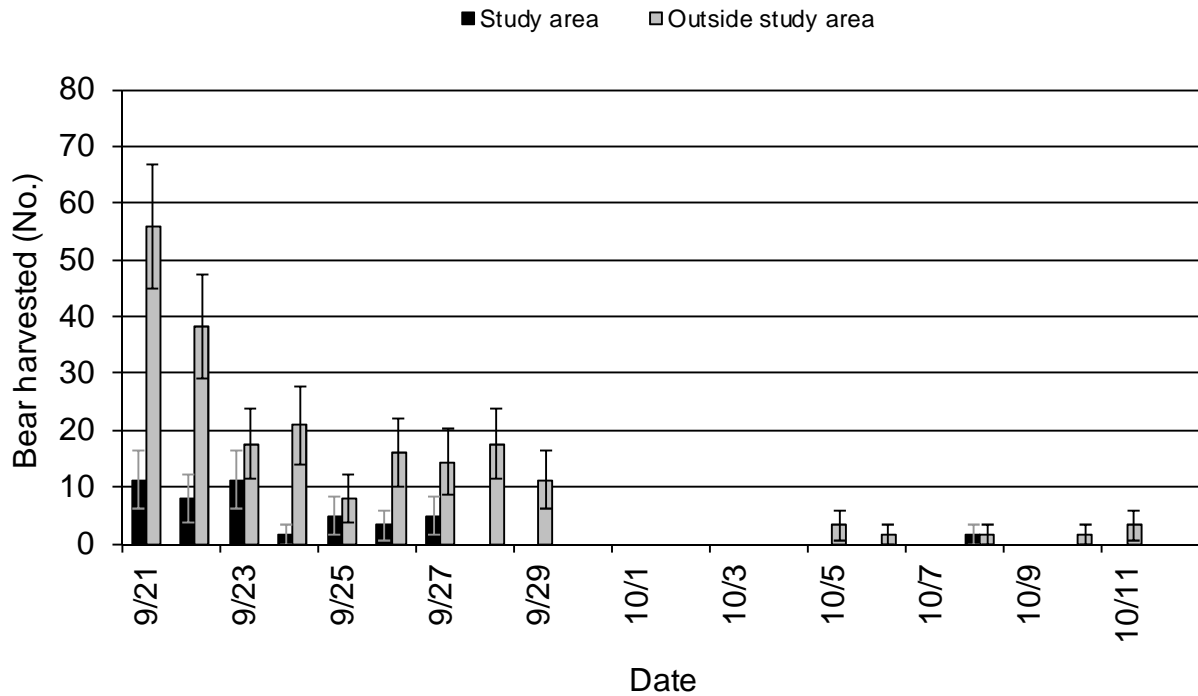


Figure 4. Estimated number of bears harvested in the Red Oak BMU by date during the 2012 bear hunting season (September 21-29 and October 5-11). Estimates presented separately for harvest within and outside the study area.

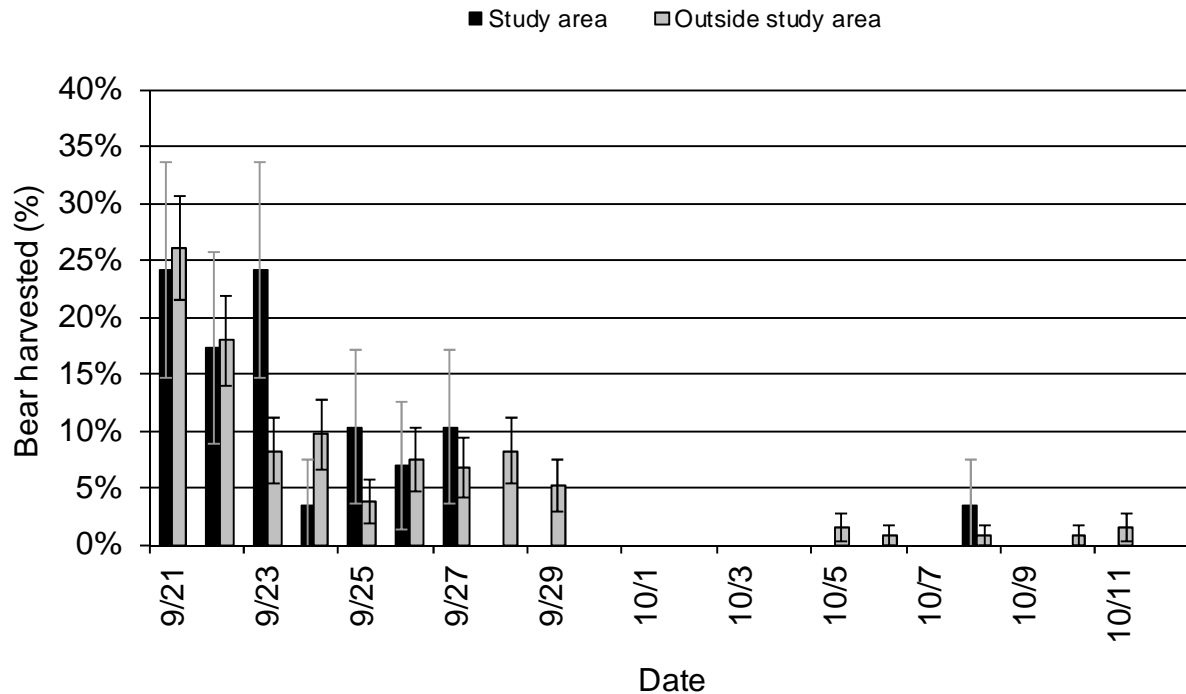


Figure 5. Estimated proportion of bears harvested in the Red Oak BMU by date during the 2012 bear hunting season (September 21-29 and October 5-11). Estimates presented separately for harvest within and outside the study area.

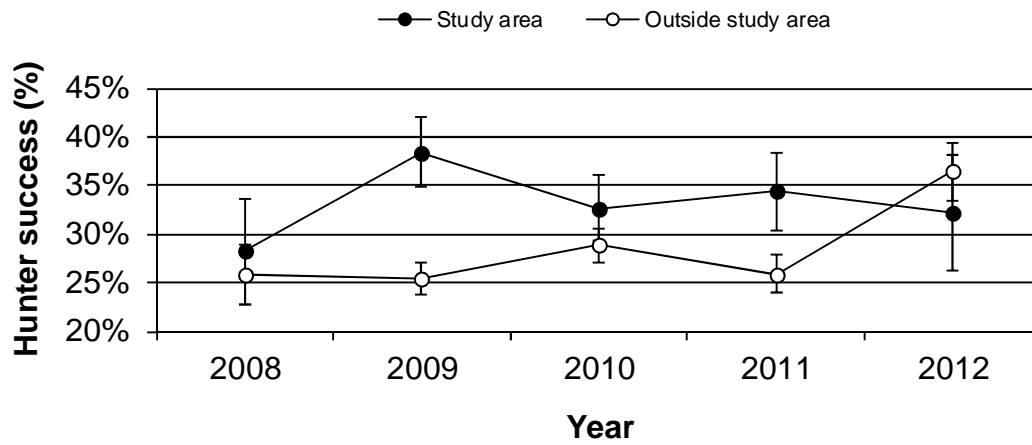


Figure 6. Proportion of bear hunters that harvested a bear during 2008-2012, inside and outside of the study area.

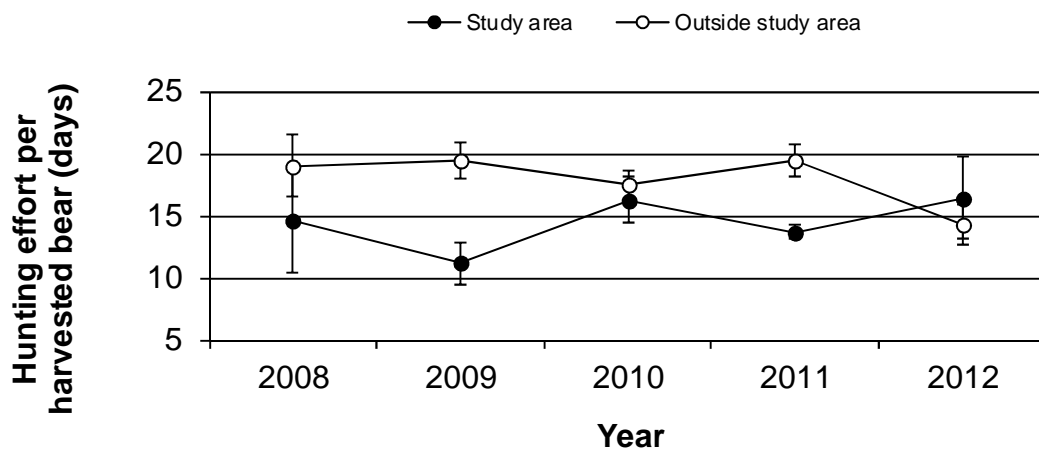


Figure 7. Mean number of days of hunting effort per harvested bear during 2008-2012, inside and outside of the study area.

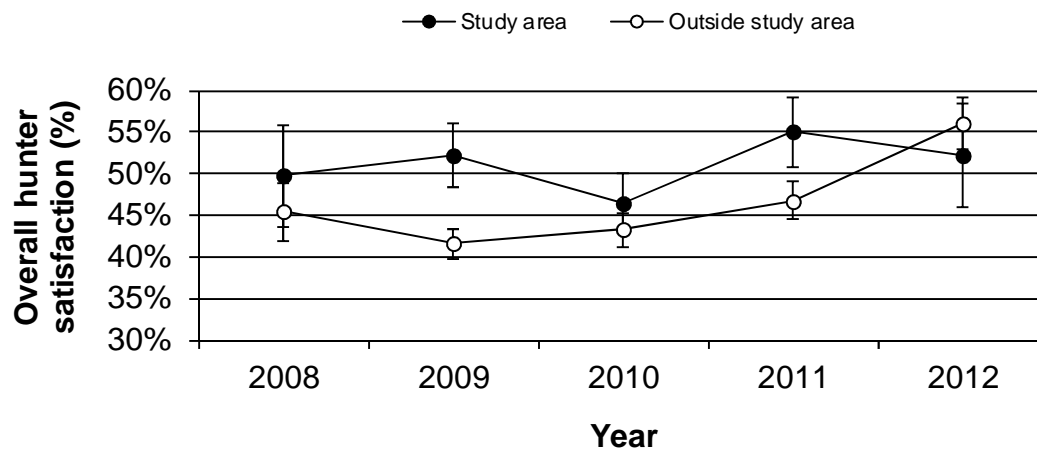


Figure 8. Proportion of bear hunters reporting their overall satisfaction with their bear hunt was either very good or good during 2008-2012, inside and outside of the study area.

Table 1. Estimated number of hunters, harvest, hunter success, hunting effort, mean days hunted, and mean effort per harvested bear during the 2012 Michigan bear hunting season in the Red Oak BMU.

Area	Hunters		Harvest		Hunter success		Hunting effort		Days hunted per hunter ( $\bar{x}$ )		Days hunted per harvested bear ( $\bar{x}$ )	
	No.	95% CL <sup>a</sup>	No.	95% CL <sup>a</sup>	%	95% CL <sup>a</sup>	Days	95% CL <sup>a</sup>	Days	95% CL <sup>a</sup>	Days	95% CL <sup>a</sup>
Inside study area	144	16	46	10	32%	6%	763	107	5.3	0.4	16.4	3.4
Outside study area	589	17	214	19	36%	3%	3,060	190	5.2	0.3	14.3	1.7
Red Oak BMU <sup>b</sup>	715	8	261	20	36%	3%	3,823	188	5.3	0.3	14.7	1.5

<sup>a</sup>95% confidence limits.

<sup>b</sup>Area inside and outside study area combined. Number of hunters does not add up to total in Red Oak BMU because hunters could hunt both inside and outside study area. Number of bear harvested and hunting effort may not add up to total for Red Oak BMU because of rounding error.

Table 2. Estimated number and proportion of hunters hunting on private and public lands during the 2012 bear hunting season.

Management unit	Land type															
	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL <sup>a</sup>	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
Inside study area	112	15	78	5	19	7	13	4	13	5	9	4	0	0	0	0
Outside study area	235	19	40	3	251	20	43	3	75	12	13	2	27	8	5	1
Red Oak BMU <sup>b</sup>	339	21	47	3	261	20	36	3	88	13	12	2	27	8	4	1

<sup>a</sup>95% confidence limits.

<sup>b</sup>Area inside and outside study area combined. Number of hunters does not add up to total in Red Oak BMU because hunters could hunt both inside and outside study area.

Table 3. Estimated number of days of hunting effort on private and public lands during the 2012 Michigan bear hunting season.

Management unit	Land type							
	Private lands		Public lands		Both private and public lands		Unknown	
	Total	95% CL	Total	95% CL	Total	95% CL	Total	95% CL
Inside study area	569	91	115	47	78	39	0	0
Outside study area	1,195	127	1,489	160	365	82	11	12
Red Oak BMU <sup>a</sup>	1,764	143	1,604	164	443	98	11	12

<sup>a</sup>Area inside and outside study area combined. Column totals may not equal management unit totals because of rounding errors.

Table 4. Estimated bear harvest in Red Oak BMU on private and public lands during the 2012 bear hunting season, summarized by area.

Ownership	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Private	90	7	42	10	41	5	88	13	50	5	130	16
Public	10	7	5	3	59	5	126	16	50	5	131	16

Table 5. Sex of bears harvested in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Ownership	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Male	38	11	18	6	54	5	115	15	51	5	133	16
Female	62	11	29	8	46	5	98	14	48	5	126	16
Unknown	0	0	0	0	1	1	2	2	1	1	2	2

Table 6. Equipment used to hunt bear in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Equipment	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Firearm	92	3	133	16	87	2	513	19	88	2	630	15
Bow <sup>a</sup>	19	5	27	8	30	3	176	18	28	3	198	18
Crossbow	2	2	3	3	5	1	29	8	4	1	32	8

<sup>a</sup>Included recurve, compound, and long bows.



Table 7. Equipment used to harvest bear in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Equipment used to harvest bear	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Firearm	93	6	43	10	87	4	186	18	88	3	229	19
Bow <sup>a</sup>	7	6	3	3	12	3	26	8	11	3	29	8
Crossbow	0	0	0	0	1	1	3	3	1	1	3	3

<sup>a</sup>Included recurve, compound, and long bows.

Table 8. Hunting methods used to locate and attract bears in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Primary hunt method	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Bait only	92	3	133	16	86	2	504	19	87	2	624	15
Dogs only	0	0	0	0	6	2	37	9	5	1	37	9
Dogs & bait	3	2	5	3	5	1	29	8	4	1	30	8
Other	2	2	3	3	1	1	6	4	1	1	10	5
Unknown	2	2	3	3	2	1	13	5	2	1	14	6

Table 9. Hunting methods used to harvest bears in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Hunt method when bear harvested	Area											
	Study area				Outside study area				Red Oak BMU			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Bait only	100	0	46	10	69	5	149	17	75	4	195	18
Dogs only	0	0	0	0	17	4	37	9	14	3	37	9
Dogs & bait	0	0	0	0	12	3	26	8	10	3	26	8
Other	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	1	1	3	3	1	1	3	3

Table 10. Bear hunter success in the Red Oak BMU, summarized by primary hunting method used and area hunted.

Hunt method <sup>a</sup>	Area					
	Study area		Outside study area		Red Oak BMU	
	%	95% CL	%	95% CL	%	95% CL
Bait only	35	6	31	3	32	3
Dogs only	0	0	91	7	91	7
Dogs & bait	33	33	56	14	53	14
Other	0	0	0	0	0	0
Dogs <sup>b</sup>	33	33	76	8	74	8

<sup>a</sup>Hunters were grouped together based on their most commonly used hunt method; however, some hunters used more than one hunt method.

<sup>b</sup>Combined hunters using dogs only and hunters using dogs and bait.

Table 11. Proportion and number of bear hunters satisfied with the number of bear seen, opportunities to take a bear, and their overall bear hunting experience in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Hunters rating	Area											
	Study area				Outside study area				Red Oak BMU <sup>a</sup>			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Bear seen - very good or good hunt rating	46	6	66	12	38	3	221	19	39	3	277	20
Bear seen - poor or very poor hunt rating	33	6	48	10	37	3	216	19	36	3	259	20
Opportunities to take bear - very good or good hunt rating	37	6	53	11	34	3	200	18	34	3	245	19
Opportunities to take bear - poor or very poor hunt rating	38	6	54	11	41	3	242	19	40	3	290	20
Overall hunt - very good or good hunt rating	52	6	75	12	56	3	330	21	55	3	392	21
Overall hunt - poor or very poor hunt rating	12	4	42	10	27	3	158	17	27	3	195	18

<sup>a</sup>Estimates for the entire Red Oak BMU may not equal sum of estimates for inside and outside study area because some hunters hunted both inside and outside study area.

Table 12. Proportion and number of bear hunters that experienced interference by other hunters in the Red Oak BMU during the 2012 bear hunting season, summarized by area.

Hunters response	Area											
	Study area				Outside study area				Red Oak BMU <sup>a</sup>			
	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL
Interfered by another hunter	29	6	42	10	32	3	187	18	30	3	218	19
Interfered by another bear hunter	12	4	18	6	21	3	126	16	19	2	138	16

<sup>a</sup>Estimates for the entire Red Oak BMU may not equal sum of estimates for inside and outside study area because some hunters hunted both inside and outside study area.

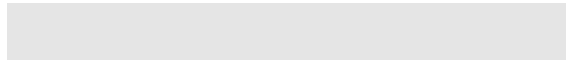
## Appendix A

### 2012 Michigan Bear Harvest Questionnaire for the Red Oak BMU



## MICHIGAN BEAR HARVEST REPORT (RED OAK UNIT)

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



***It is important that you answer these questions even if you did not hunt or harvest a bear. You were selected to receive this survey because you purchased a 2012 bear hunting license valid for the Red Oak Management Unit in the northern Lower Peninsula.***

**1. Did you hunt bear in the Red Oak Management Unit during the 2012 season?**

<sup>1</sup> ☐ Yes      <sup>2</sup> ☐ No; (If you select "No", you are finished. Please return the survey.)

**2. Did you hunt bear using a firearm, crossbow, or bow during the 2012 bear season?**  
(please check all that apply)

<sup>1</sup> ☐ Firearm      <sup>2</sup> ☐ Crossbow      <sup>3</sup> ☐ Bow (recurve, compound, or long bow)

**3. What hunting method did you use most often when hunting bear during the 2012 bear season?** (please select only one item)

<sup>1</sup> ☐ Hunted over bait only      <sup>2</sup> ☐ Used dogs only (bait not used)  
<sup>3</sup> ☐ Used dogs started over bait      <sup>4</sup> ☐ Used other methods not involving dogs or bait

**4. If you used bait to attract bears, what was the total number of gallons you used during the legal baiting and hunting periods?** (Please write in the gallons used.)

Gallons

**5. At any time during the 2012 season, did you hire a guide's service to hunt bear in Michigan?**

<sup>1</sup> ☐ Yes      <sup>2</sup> ☐ No (If no, please skip to question 7.)

**6. If yes, what hunting techniques were used most often by the guide? (Please select only one item.)**

<sup>1</sup> ☐ Hunted over bait only

<sup>2</sup> ☐ Used dogs only (bait not used)

<sup>3</sup> ☐ Used dogs started over bait

<sup>4</sup> ☐ Used other methods not involving dogs or bait

**7. Did you kill a bear and put your kill tag on it? (If no, please skip to question 9.)**

<sup>1</sup> ☐ Yes

<sup>2</sup> ☐ No

**8. If your harvest tag was put on a bear, please fill in the information below**

**a. What date was the bear harvested?**

(please check [X] the box for the date of harvest)

September 2012						
S	M	T	W	T	F	S
					21	22
23	24	25	26	27	28	29

October 2012						
S	M	T	W	T	F	S
					5	6
7	8	9	10	11		

**b. What was the sex of the bear?**

<sup>1</sup> ☐ Male

<sup>2</sup> ☐ Female

<sup>3</sup> ☐ Not sure

**c. In what county was it harvested? (Please write in the county name.)**

**d. On what type of land was the bear harvested?**

<sup>1</sup> ☐ Private

<sup>2</sup> ☐ Public

**e. What weapon was used to harvest bear?**

<sup>1</sup> ☐ Firearm

<sup>2</sup> ☐ Crossbow

<sup>3</sup> ☐ Bow (recurve, compound, or long bow)

**f. What was the method of harvest?**

<sup>1</sup> ☐ Taken over bait

<sup>2</sup> ☐ Used dogs only (bait not used)

<sup>3</sup> ☐ Used dogs started over bait

<sup>4</sup> ☐ Used other methods not involving dogs or bait

**9. Did other hunters interfere with your bear hunting?**

<sup>1</sup> ☐ Yes

<sup>2</sup> ☐ No (Skip to question 11.)

**10. If you answered "yes" to the previous question, was the interference caused by other bear hunters?**

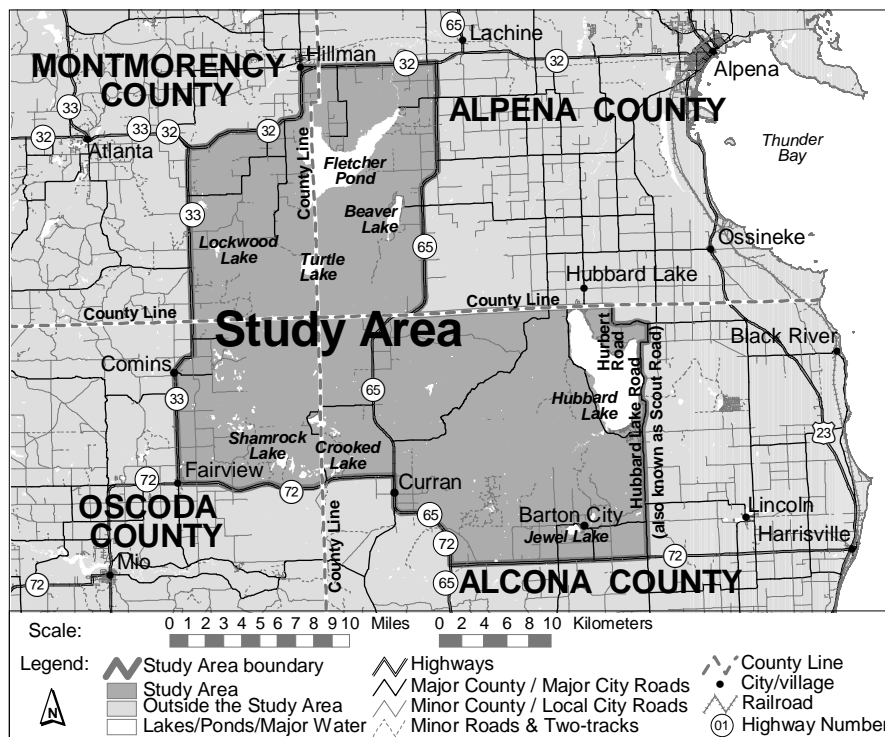
<sup>1</sup> ☐ Yes

<sup>2</sup> ☐ No



11. How would you rate the following for your 2012 bear hunting season: (Select one choice per item.)		Very Good	Good	Neutral	Poor	Very Poor	Not Applicable
	a. Number of bear you saw.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
	b. Number of opportunities you had to take a bear.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
	c. Your overall bear hunting experience.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

For the next three questions, we want to find out how often you may have hunted bear inside the study area that we have drawn on the figure. This study area includes parts of Alcona, Alpena, Montmorency, and Oscoda counties within the Red Oak Management Unit.



12. Did you hunt bear inside the study area outlined on the map during the 2012 season?

1 ☐ Yes      2 ☐ No; skip to question 15.

13. If you hunted inside this study area, please report the number of days for each county that you hunted bear in the following table.

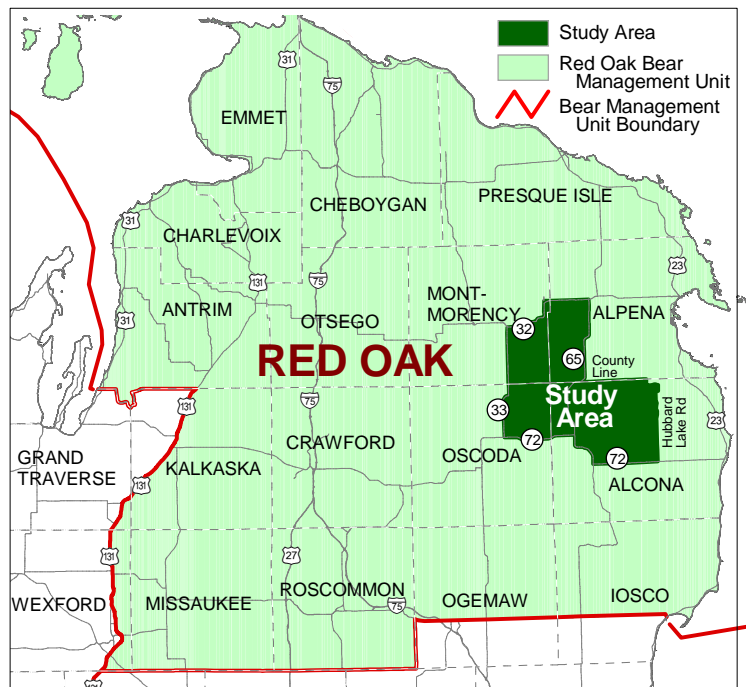
COUNTY HUNTED (List each county that you hunted for bear inside the study area)	NUMBER OF DAYS HUNTED	TYPE OF LAND
		1 <input type="checkbox"/> Private    2 <input type="checkbox"/> Public    3 <input type="checkbox"/> Both
		1 <input type="checkbox"/> Private    2 <input type="checkbox"/> Public    3 <input type="checkbox"/> Both
		1 <input type="checkbox"/> Private    2 <input type="checkbox"/> Public    3 <input type="checkbox"/> Both

14. Did you harvest a bear inside the study area outlined on the figure?

<sup>1</sup> ☐ Yes

<sup>2</sup> ☐ No

For the final two questions, we want to find out how often you may have hunted bear outside the study area that we have drawn on the figure. This study area includes parts of Alcona, Alpena, Montmorency, and Oscoda counties.



15. Did you hunt bear outside the study area shown on the figure during the 2012 season?

<sup>1</sup> ☐ Yes

<sup>2</sup> ☐ No; skip the final question if you did not hunt outside study area.

16. If you hunted outside of the study area outlined on the figure, please report the number of days for each county that you hunted bear in the following table.

COUNTY HUNTED (List each county that you hunted for bear <i>outside</i> the study area)	NUMBER OF DAYS HUNTED	TYPE OF LAND		
		<sup>1</sup> <input type="checkbox"/> Private	<sup>2</sup> <input type="checkbox"/> Public	<sup>3</sup> <input type="checkbox"/> Both
		<sup>1</sup> <input type="checkbox"/> Private	<sup>2</sup> <input type="checkbox"/> Public	<sup>3</sup> <input type="checkbox"/> Both
		<sup>1</sup> <input type="checkbox"/> Private	<sup>2</sup> <input type="checkbox"/> Public	<sup>3</sup> <input type="checkbox"/> Both
		<sup>1</sup> <input type="checkbox"/> Private	<sup>2</sup> <input type="checkbox"/> Public	<sup>3</sup> <input type="checkbox"/> Both

Please return questionnaire in the enclosed postage-paid envelope.

Thank you for your help!

[www.michigan.gov/dnr](http://www.michigan.gov/dnr)