



MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
Wildlife Division Report No. 3390  
March 2003

Printed by Authority of: P.A. 451 of 1994  
Total Number of Copies Printed: .....150  
Cost per Copy:.....\$0.432  
Total Cost: .....\$64.80  
Michigan Department of Natural Resources

## QUALITY DEER MANAGEMENT (QDM) SURVEY: DEER MANAGEMENT UNIT 059 (MONTCALM COUNTY)

Brian J. Frawley

### ABSTRACT

*A survey was completed to determine whether hunters and landowners supported proposed mandatory QDM regulations in Deer Management Unit (DMU) 059 (Montcalm County). A key feature of the proposed mandatory regulations was changing the definition of a buck to a deer with four or more points on one antler. The Michigan Department of Natural Resources (MDNR) supports the voluntary implementation of QDM practices on private land in Michigan. However, mandatory regulations should be imposed in a DMU only when it can be shown that a clear majority ( $\geq 66\%$ ) of hunters and landowners support implementation. Questionnaires were sent to a random sample of landowners and hunters; 76% of the landowners and 79% of hunters returned their questionnaire. About 44% of landowners owning land in Montcalm County, and 40% of people hunting deer in Montcalm County supported implementing mandatory QDM regulations. Support from both landowners and hunters was insufficient to recommend implementation of mandatory QDM regulations for DMU 059.*

### INTRODUCTION

Quality Deer Management (QDM) is a form of management that requires restrictive buck harvests and sustained antlerless harvests to produce a deer population that has a relatively equal sex ratio and that is in balance with its habitat. The Michigan Department of Natural



A contribution of Federal Aid in Wildlife Restoration, Michigan Project W-127-R

#### Equal Rights for Natural Resource Users

The Michigan Department of Natural Resources (MDNR) 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 Civil Rights Acts of 1964, as amended (MI PA 453 and MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the Americans with Disabilities Act). If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write the MDNR, HUMAN RESOURCES, PO BOX 30028, LANSING MI 48909-7528, or the MICHIGAN DEPARTMENT OF CIVIL RIGHTS, STATE OF MICHIGAN PLAZA BUILDING, 1200 6TH STREET, DETROIT MI 48226, or the OFFICE FOR DIVERSITY AND CIVIL RIGHTS, US FISH AND WILDLIFE SERVICE, 4040 NORTH FAIRFAX DRIVE, ARLINGTON VA 22203.

For information or assistance on this publication, contact: MDNR, WILDLIFE DIVISION, P.O. BOX 30444, LANSING, MI 48909-7944, <http://www.michigan.gov/dnr>. This publication is available in alternative formats upon request. TTY: Michigan Relay Center 1-800-649-3777

IC2578-68 (03/03/2003)

Resources (MDNR) supports the voluntary implementation of these practices on private land. The MDNR supports mandatory QDM regulations in a Deer Management Unit (DMU) if at least 66% of hunters and landowners in the affected DMU support these regulations.

The MDNR developed guidelines for considering and implementing QDM regulations with the assistance of private conservation groups and resource agencies (Quality Deer Management Working Group 1999). Following these guidelines, the Montcalm County Branch of the Quality Deer Management Association submitted a proposal to modify deer management regulations in Montcalm County (DMU 059) (Figure 1). This proposal requested a change in buck harvest regulations so that a portion of the yearling bucks would be protected from harvest and allowed to become older. This would be done by changing the definition of a legal buck within Montcalm County to a deer with four or more points on one antler. This would protect bucks with fewer points from harvest. The current definition of a legal buck in Montcalm County is a deer with an antler greater than three inches in length. The proposal also advocated harvesting enough antlerless deer annually to achieve an adult buck to adult doe ratio of 1:2 or lower and to stabilize or reduce overall deer numbers to keep deer populations in balance with the habitat.

The Wildlife Division has the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Opinion surveys are a management tool used by the Wildlife Division to accomplish its statutory responsibility. The main objectives of this opinion survey were to determine whether hunters and landowners supported proposed mandatory QDM deer harvest regulations in Montcalm County.

## **METHODS**

This survey was done in accordance with guidelines developed for evaluating proposed mandatory QDM regulations in Michigan (Quality Deer Management Working Group 1999). A questionnaire was sent to 2,517 randomly selected hunters and landowners from Montcalm County. The survey was designed to produce estimates that would be accurate within a margin of error of plus or minus five percentage points.

Lists of property parcels  $\geq 5$  acres were obtained from the equalization office in Montcalm County. The property tax records were organized by property parcel identification numbers, rather than by landowner names. Therefore, people owning multiple parcels were in the property tax records multiple times. To create a list of landowners (without multiple parcels per landowner), the property tax records were merged, and then parcels owned by the same landowner were combined. As this list was compiled, publicly owned land and parcels within cities and villages were also excluded. The final landowner list consisted of 5,179 landowners. From the final landowner list, 1,093 landowners were randomly selected to receive a questionnaire (i.e., simple random sampling design, Cochran 1977).

The estimate of hunter support was also calculated using a simple random sampling design. A random sample of hunters was obtained from lists of people that indicated they had hunted in Montcalm County during 2000-2001. These lists represented randomly selected people included in annual deer harvest surveys that were conducted by the Wildlife Division (Frawley

2001, 2002). The final list consisted of 1,458 hunters. Mailing addresses were missing for 6 of these hunters; therefore, questionnaires were sent to 1,452 hunters.

People receiving the questionnaire were asked to report whether they supported the mandatory QDM regulations for Montcalm County. Response options to the question on the proposal were “yes,” “no,” “undecided,” and “don’t care” (Appendix A). The percentage of support was measured by dividing the number of “yes” responses by the sum of those responses indicating “yes,” “no,” or “undecided.” People who indicated “don’t care” or who did not provide an answer were not used to estimate support for the proposed QDM regulations. A screening question was asked of everybody that received the questionnaire to determine whether they still hunted or owned land in Montcalm County. The opinions of hunters that did not hunt in Montcalm County and landowners that did not own land in Montcalm County were not included when estimating support for the proposed QDM regulations.

Estimates of support for the mandatory QDM regulations were calculated along with their 95% confidence limit (CL). This CL could be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with the estimate and implied that the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or nonresponse bias.

The random sample of people receiving the questionnaire included 1,093 landowners and 1,452 hunters, including 28 people that were included in both the landowner and hunter samples (Table 1). Questionnaires were initially mailed during December 2002. As many as two follow-up questionnaires were mailed to nonrespondents. Although 2,517 people were sent the questionnaire, 75 surveys were undeliverable resulting in an adjusted sample size of 2,442 (i.e., minus undeliverable questionnaires). Questionnaires were returned by 1,896 people, yielding a 78% adjusted response rate.

## **RESULTS AND DISCUSSION**

Questionnaires were originally mailed to 1,093 landowners and 1,452 hunters, but questionnaires were undeliverable to 50 landowners and 25 hunters. Thus, the adjusted sample size was 1,043 landowners and 1,427 hunters. Questionnaires were returned by 793 landowners (76%) and 1128 hunters (79%) (Table 1). Response rates of both groups exceeded the minimum response rate of 50% that was required in order to accept the results of the survey (Quality Deer Management Working Group 1999).

About 44% of the landowners owning land in Montcalm County supported implementing the proposed mandatory QDM regulations (Table 2). In contrast, 52% of landowners did not support mandatory QDM regulations and 4% did not have an opinion about the regulations. Among hunters that hunted in Montcalm County, about 40% supported the proposed mandatory QDM regulations (Table 3). About 56% of the hunters did not support the mandatory QDM regulations, and 3% did not have an opinion about the regulations. The support of both landowners and hunters failed to exceed the minimum support level of 66% that was required to recommend implementation of mandatory QDM regulations for Montcalm County by the Wildlife Division to the Natural Resources Commission.

## **ACKNOWLEDGEMENTS**

I thank all the landowners and hunters that provided information. Pat Bancroft, Theresa Riebow, Mindy Sweeney, and Becky Walker completed data entry. Mary Benson, Brent Rudolph, Rod Clute, and Valerie Tuovila reviewed a previous version of this report.

## **LITERATURE CITED**

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

Frawley, B. J. 2001. Michigan deer harvest survey report: 2000 seasons. Wildlife Division Report 3344. Michigan Department of Natural Resources, Lansing, USA.

Frawley, B. J. 2002. Michigan deer harvest survey report: 2001 seasons. Wildlife Division Report 3371. Michigan Department of Natural Resources, Lansing, USA.

Quality Deer Management Working Group. 1999. Procedure for initiation, evaluation, and review of mandatory quality deer management proposals. Wildlife Division, Michigan Department of Natural Resources, Lansing, USA.

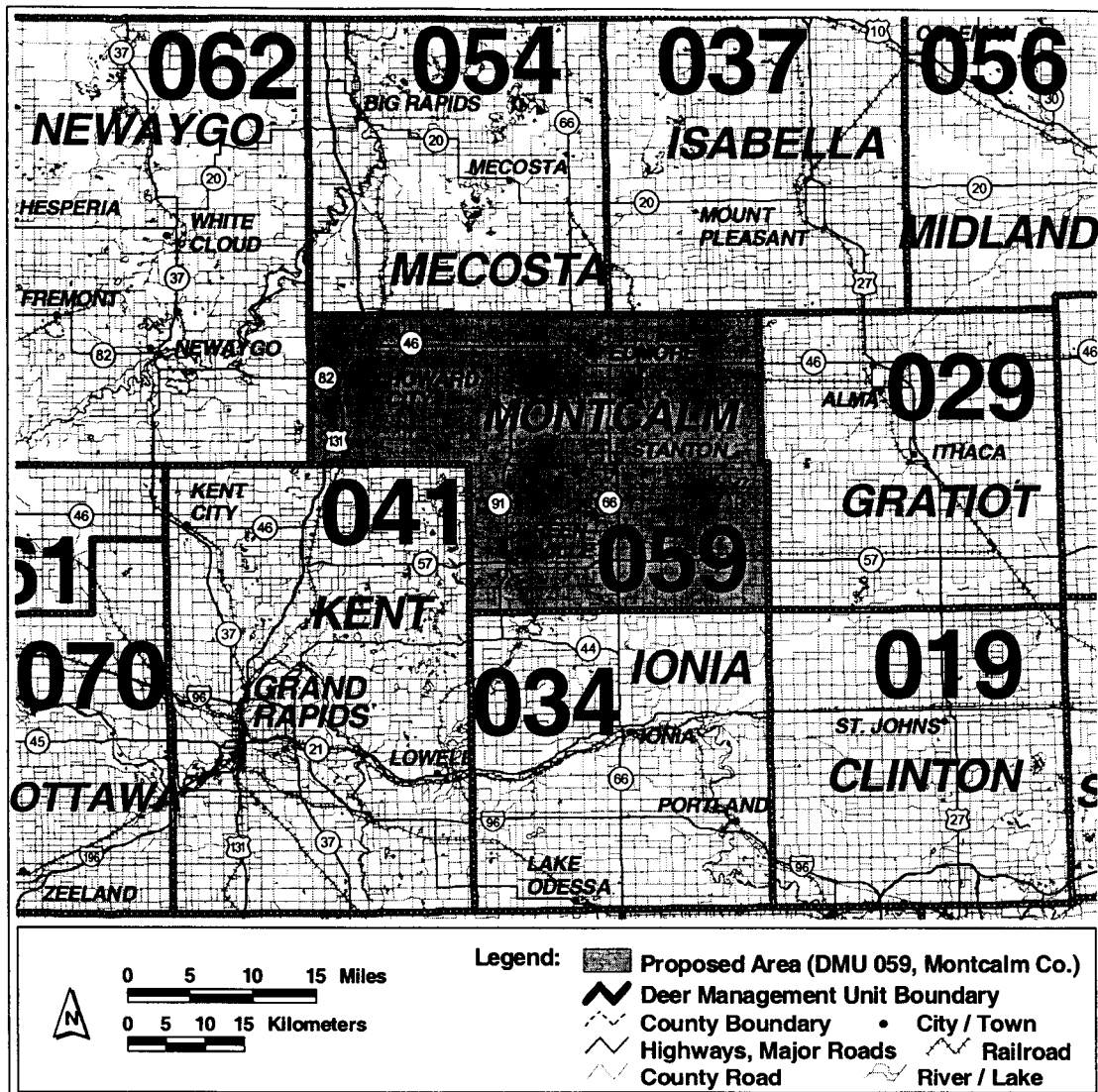


Figure 1. Deer Management Unit 059 (shaded area) in the central Lower Peninsula of Michigan (Montcalm County), 2002.

Table 1. Number of people within each group and number selected for the random sample of people receiving the opinion survey regarding mandatory QDM regulations in DMU 059 (Montcalm County), Michigan.

Group	Total number of people in group	Number of people included in sample <sup>a</sup>	Number of questionnaires that were undeliverable	Number of questionnaires returned	Response rate (%)
Landowners <sup>b</sup>	5,179	1,093	50	793	76%
Hunters <sup>c</sup>	18,045	1,452	25	1,128	79%

<sup>a</sup>Twenty-eight people were included in both the landowner and hunter samples; thus, the overall sample size consisted of 2,517 people.

<sup>b</sup>Landowners owned at least one 5-acre parcel; however, each landowner was counted once regardless of number of parcels owned.

<sup>c</sup>Estimated number of people that hunted deer in Montcalm County in 2001 (unpublished data).

Table 2. Proportion of landowners supporting the proposed mandatory QDM regulations in DMU 059 (Montcalm County), Michigan.

Response	Percentage of landowners <sup>a</sup>		Responses (%)	
		95% CL <sup>b</sup>		
Yes (Supported mandatory QDM regulations)	43.7%	3.3%		No 52.0%
No (Did not support mandatory QDM regulations)	52.0%	3.3%		No Opinion 4.2%
No opinion	4.2%	1.3%		Yes 43.7%

<sup>a</sup>Percentage of landowners owning at least one 5-acre parcel of land in Montcalm County; landowners that selected "don't care" ( $3.4 \pm 1\%$ ) or failed to provide an answer ( $0.1 \pm 1\%$ ) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

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

Table 3. Proportion of hunters supporting the proposed mandatory QDM regulations in DMU 059 (Montcalm County), Michigan.

Response	Percentage of hunters <sup>a</sup>	95% CL <sup>b</sup>	Responses (%)
Yes (Supported mandatory QDM regulations)	40.4%	2.9%	<p>A pie chart illustrating the distribution of responses regarding support for mandatory QDM regulations. The chart is divided into three segments: a large dark segment for 'No' (56.2%), a medium dark segment for 'Yes' (40.4%), and a small white segment for 'No Opinion' (3.3%). Labels with percentages are placed next to each segment.</p>
No (Did not support mandatory QDM regulations)	56.2%	2.9%	
No opinion	3.3%	1.1%	

<sup>a</sup>Percentage of hunters that hunted deer in Montcalm County; hunters that selected “don’t care” ( $1.7 \pm 1\%$ ) or failed to provide an answer ( $0.4 \pm 1\%$ ) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

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

## Appendix A

Quality Deer Management Survey Questionnaire for Deer  
Management Unit 059 (Montcalm County).





MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE BUREAU  
PO BOX 30030 LANSING MI 48909-7530

## QUALITY DEER MANAGEMENT SURVEY

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



*A proposal has been submitted to the DNR to modify deer harvest regulations in Deer Management Unit 059 (Montcalm County). The proposal requests that: (1) a legal buck be defined as a deer with at least 4 points on one antler; (2) an adequate number of antlerless deer be harvested annually to meet population goals and to achieve an adult buck to adult doe ratio of at least 1:2 after the hunting season, and (3) the regulation be in place for five years beginning with the fall 2003 deer hunting seasons.*

1. Do you hunt in Montcalm County (*see map on reverse side*)?    <sup>1</sup> ☐ Yes    <sup>2</sup> ☐ No
2. Do you own land in Montcalm County (*see map on reverse side*)?    <sup>1</sup> ☐ Yes    <sup>2</sup> ☐ No
3. Do you support the above proposal? **For purposes of measuring support, checking the "no opinion" box will count as a "no" answer and indicates you have not formed an opinion about the proposal.** Checking the "don't care" box will result in your opinion not being counted as supportive or opposed to the proposal. This merely indicates that you are aware of the proposal and don't care what the deer hunting regulations are for this area.  
  
<sup>1</sup> ☐ Yes                      <sup>2</sup> ☐ No                      <sup>3</sup> ☐ No Opinion                      <sup>4</sup> ☐ Don't Care

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

*Shaded area will be affected by proposed regulation changes*

