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QUALITY DEER MANAGEMENT (QDM) SURVEY: DEER MANAGEMENT UNIT 414

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ABSTRACT

A survey was completed to determine whether hunters and landowners supported mandatory QDM regulations in Deer Management Unit (DMU) 414. The Michigan Department of Natural Resources (MDNR) supports the voluntary implementation of QDM practices on private land in Michigan. Mandatory regulations should be imposed in a DMU only when it can be shown that a clear majority (66%) of hunters and landowners support implementation. Questionnaires were sent to a random sample of landowners and hunters; 81% of the landowners and 84% of hunters returned their questionnaire. About 80% of landowners owning land in DMU 414 and 71% of people hunting deer in DMU 414 supported implementing mandatory QDM regulations in DMU 414. Support from both landowners and hunters was sufficient to recommend implementation of mandatory QDM regulations for DMU 414.

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 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.



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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, Wildlife Unlimited of Dickinson County and U.P. Whitetails of Dickinson County requested that the MDNR implement mandatory QDM regulations in DMU 414. This DMU was located in portions of Dickinson, Menominee, and Iron counties in the Upper Peninsula (Figure 1). These groups requested a change in buck harvest regulations so that a larger portion of yearling bucks would be protected from harvesting by hunters, thereby allowing these bucks to become older. These groups sought to change the definition of a legal buck to a deer with three or more points on one antler. The current definition of a legal buck is a deer with an antler greater than three inches in length. These groups also supported the harvest of sufficient antlerless deer annually to stabilize or reduce overall deer numbers to keep deer numbers 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 DMU 414.

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 1,453 randomly selected hunters and landowners from DMU 414. The survey was designed to produce estimates that would be accurate within a margin of error of plus or minus five percentage points.

Although DMU 414 included small portions of Iron and Menominee counties (Figure 1), only landowners from Dickinson County were included in the sample. A list of property parcels ≥ 5 acres in Dickinson County were obtained from property tax records for Breitung, Norway, and Waucedah townships in Dickinson County. Property tax records were organized by property parcels, rather than by landowner. Thus, people owning multiple parcels were in the property tax records multiple times. Before landowners were randomly selected to receive a questionnaire, duplicate landowner names were removed from the property tax lists.

Property tax records from Norway and Waucedah townships included a legal description for each parcel. These legal descriptions were used to exclude parcels lying outside DMU 414 from the sample. Property tax records from Breitung Township did not include legal descriptions so some parcels lying outside DMU 414 were included in the sample.

The probability of being included in the random sample was different for landowners in Breitung Township than for landowners in the other townships because the property tax records for Breitung Township included parcels outside DMU 414. To account for the varying probability of being included in the sample, the estimate of landowner support was calculated using a stratified random sampling design (Cochran 1977). Each landowner was assigned to one of two groups (strata): (1) landowners from Breitung Township or (2) landowners from Norway or Waucedah townships within DMU 414. The stratified sampling design accounted

for the varying probabilities of being selected from the two strata so that estimates could be reliably extrapolated from the sample to all landowners owning a parcel of land that was at least 5 acres.

Although DMU 414 included small portions of Iron and Menominee counties (Figure 1), only hunters from Dickinson County were included in the sample of hunters receiving a questionnaire. The estimate of hunter support was calculated using a simple random sampling design (Cochran 1977). A random sample of these hunters was obtained from lists of people that indicated that they had hunted in Dickinson County during either 1998 or 1999. These lists represented randomly selected people included in annual deer harvest surveys that were conducted by the Wildlife Division (Frawley 1999, 2000). For these harvest surveys, hunters reported the county where they hunted deer, rather than the DMU where they hunted. Thus, the hunter sample included some hunters that had hunted outside of DMU 414.

People receiving the questionnaire were asked to report whether they supported the mandatory QDM regulations for DMU 414. 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. Moreover, opinions of hunters that did not hunt within DMU 414 and landowners that did not own land within DMU 414 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 confidence limit 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 nonresponse bias.

The random sample of people receiving the questionnaire included 665 landowners and 822 hunters, including 34 people that were included in both the landowner and hunter samples (Table 1). The landowner sample included 331 landowners from Breitung Township and 334 people from Norway or Waucesah townships. Questionnaires were initially mailed during mid-January 2001. A reminder note and up to two follow-up questionnaires were mailed to nonrespondents. Although 1,453 people were sent the questionnaire, 19 surveys were undeliverable resulting in an adjusted sample size of 1,434 (i.e., minus undeliverable questionnaires). Questionnaires were returned by 1,187 people, yielding a 83% adjusted response rate.

RESULTS AND DISCUSSION

Questionnaires were originally mailed to 665 landowners and 822 hunters, but questionnaires were undeliverable to 10 landowners and 9 hunters. Thus, the adjusted sample size was 655 landowners and 813 hunters. Questionnaires were returned by 530 landowners (81%) and 686 hunters (84%) (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 $80 \pm 2\%$ of landowners owning land in DMU 414 supported implementing mandatory QDM regulations (Table 2). In contrast, $18 \pm 2\%$ of the landowners did not support mandatory QDM regulations and $2 \pm 1\%$ did not have an opinion about the regulations. Among hunters that hunted in DMU 414, about $71 \pm 5\%$ supported implementing mandatory QDM regulations (Table 3). About $27 \pm 5\%$ of the hunters did not support mandatory QDM regulations and $2 \pm 1\%$ did not have an opinion about the regulations. Support from both landowners and hunters exceeded the minimum support level of 66% that was required to recommend implementation of mandatory QDM regulations for DMU 414 by the Wildlife Division to the Natural Resources Commission.

LITERATURE CITED

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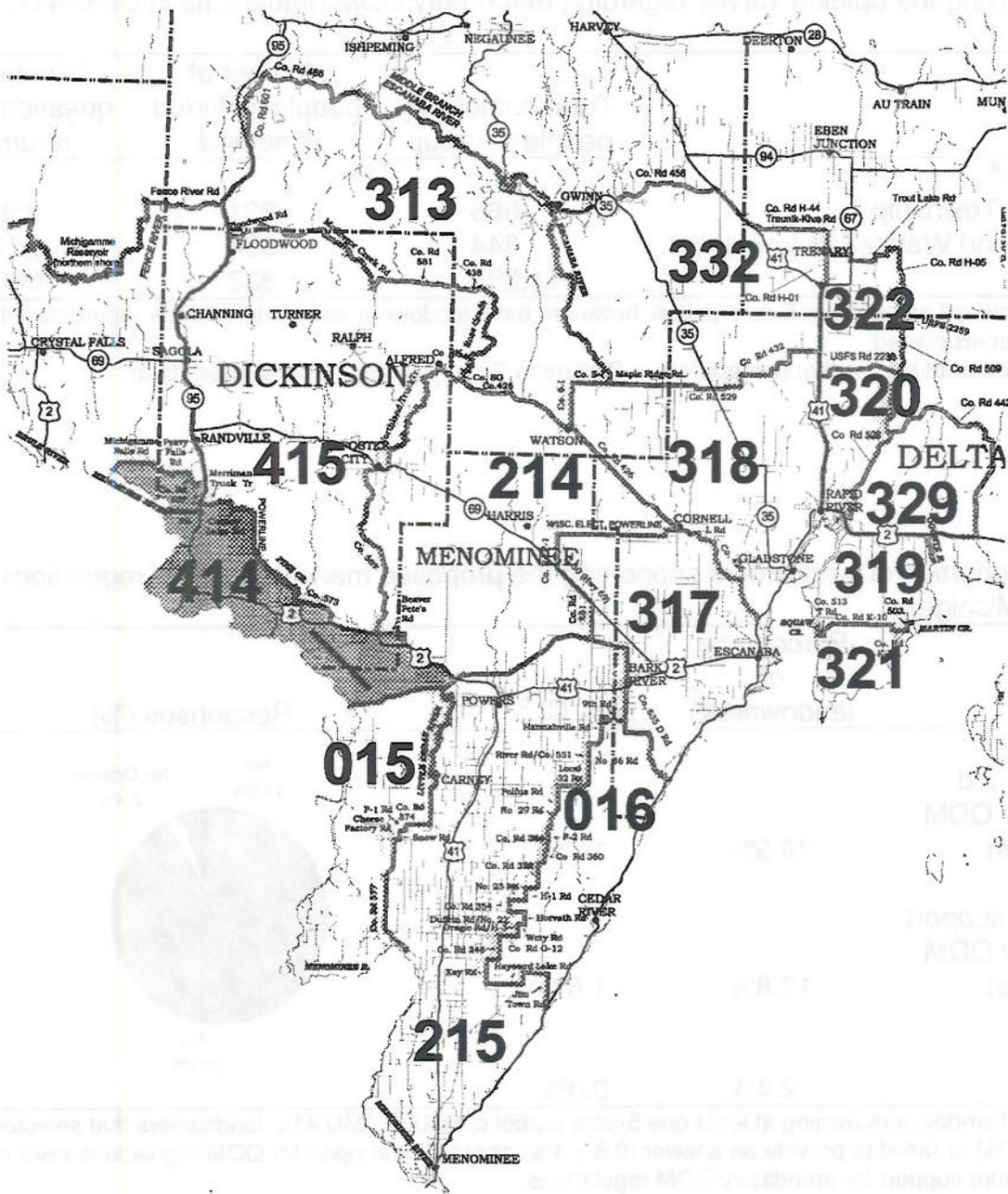


Figure 1. Deer Management Unit 414 (shaded area) in south-central Upper Peninsula of Michigan, 2000.

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 414, Michigan.

Group	Total number of people in group	Number of people included in sample	Number of questionnaires returned
Landowners ^a			
Breitung Township	685	331	259
Norway and Waucedah townships	344	334	271
Hunters ^b	11,398	822	686

^aLandowners owned at least one 5-acre parcel; however, each landowner was counted once regardless of number of parcels owned.

^bEstimated number of people that hunted deer in Dickinson County in 1999 (unpublished data).

Table 2. Proportion of landowners supporting the proposed mandatory QDM regulations in DMU 414, Michigan.

Response	Percentage of landowners ^a	95% CL ^b	Responses (%)
Yes (Supported mandatory QDM regulations)	79.9%	1.7%	<p>A pie chart illustrating the distribution of responses regarding support for mandatory QDM regulations. The largest slice, representing 'Yes' support, is 79.9% and is shaded dark grey. The 'No' response is 17.8% and is unshaded. The 'No Opinion' response is 2.4% and is shaded light grey.</p>
No (Did not support mandatory QDM regulations)	17.8%	1.6%	
No opinion	2.4%	0.6%	

^aPercentage of landowners owning at least one 5-acre parcel of land in DMU 414; landowners that selected “don’t care” ($3.2 \pm 1\%$) or failed to provide an answer ($0.6 \pm 1\%$) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

^b95% confidence limits.

Table 3. Proportion of hunters supporting the proposed mandatory QDM regulations in DMU 414, Michigan.

Response	Percentage of hunters ^a	95% CL ^b	Responses (%)
Yes (Supported mandatory QDM regulations)	71.1%	4.9%	<p>A pie chart illustrating the distribution of responses regarding support for mandatory QDM regulations. The largest slice, representing 'Yes' support, is 71.1%. The 'No' response accounts for 27.3%, and 'No Opinion' represents the smallest slice at 1.6%.</p>
No (Did not support mandatory QDM regulations)	27.3%	4.8%	
No opinion	1.6%	1.3%	

^aPercentage of hunters that hunted deer in DMU 414; hunters that selected “don’t care” (4.1 ± 1%) or failed to provide an answer (0.3 ± 1%) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

^b95% confidence limits.

Appendix A

Table 2. Proportion of hunters supporting the proposed mandatory QDM regulations in Unit 414, Michigan.

Quality Deer Management Survey Questionnaire for Deer Management Unit 414



Percentage of hunters that number of in Unit 414; hunters that selected "no opinion" (n = 1) is 1.0% of total sample. n = 279. Percentages may not sum to 100% due to rounding.



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 414. The proposal requests that: (1) a legal buck be defined as a deer with at least 3 points on one antler; (2) antlerless harvest quotas would be developed annually by the wildlife management unit supervisors for consideration by the Natural Resources Commission, and (3) the regulation be in place for five years beginning with the fall 2001 deer hunting seasons.

1. Do you hunt in the management unit affected by the proposed regulation (see map on reverse side)? 1 Yes 2 No

2. Do you own land in the management unit affected by the proposed regulation (see map on reverse side)? 1 Yes 2 No

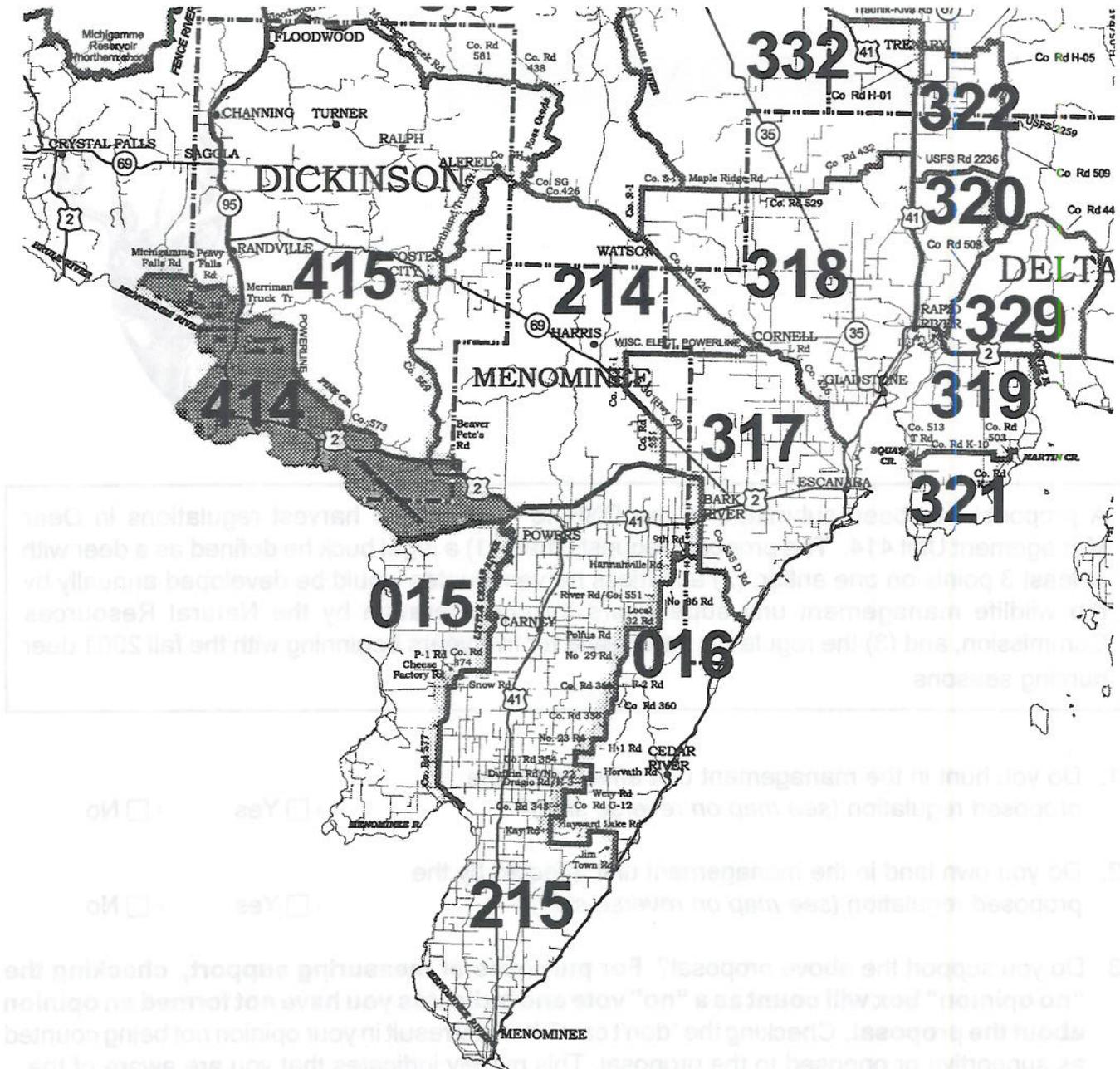
3. Do you support the above proposal? **For purposes of measuring support, checking the "no opinion" box will count as a "no" vote and indicates you have not formed an opinion about the proposal.** Checking the "don't care" box will result in your opinion not being counted as supportive or opposed to 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.

1 Yes 2 No 3 No Opinion 4 Don't care

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

Deer Management Unit 414 in Central Upper Peninsula

Shaded area will be affected by proposed regulation changes



Deer Management Unit 414 includes portions of Menominee, Dickinson, and Iron counties bounded by a line beginning at the junction of highway US-2 and the Soo Line railroad in Section 2, T38N R27W, then southwesterly to the Menominee river in section 20, T38N R28W, upstream along the Menominee river to the confluence of the Menominee and Brule rivers in section 16, T41N R31W, northwesterly on Michigamme Falls road in Iron county to Peavy Falls road in Dickinson county, easterly on Peavy Falls road to county road 607, southeasterly on county road 607 to Johnson road, westerly on Johnson road to highway M-95, southerly on highway M-95 to Merriman truck trail in section 27, T41N R30W, easterly on Merriman truck trail to Carney Lake road, southeasterly on Carney Lake road to the Wisconsin Electric highline in section 32, T41N R29W, southerly on the Wisconsin Electric highline to Pine creek in section 12, T40N R30W, southeasterly along Pine creek to county road 573 in section 3, T39N R29W, southeasterly on county road 573 to highway US-2 in section 18, T39N R28W, easterly on highway US-2 to Beaver Pete's road which runs on the north edge of sections 23 and 24, T39N R28W, easterly on Beaver Pete's road to the north-south road in section 19, T39N R27W, southerly on that road to highway US-2, easterly on highway US-2 to the point of beginning.