

## **MAIL SURVEY OF MULTI-ZONE BUCK HUNTERS, 1999**

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### **INTRODUCTION**

In 1992, the multi-zone buck (MZB) license was introduced. This new license allowed license buyers to hunt deer during any legal firearms season except during the 3B season, special permit hunts or the muzzle-loader season. License holders were not allowed to apply for antlerless permits but were allowed to hunt with others ("party hunt") and kill both bucks and antlerless deer for other members of the party. Cost of this special license was \$44, twice the cost of a normal deer hunting license.

In 1992, a limit of 20,000 MZB licenses were offered by lottery. Only 5,711 MZB licenses were sold, however, and in subsequent years the MZB licenses were sold over the counter without limit. Since that time, sales of these licenses have increased steadily and by 1998, an estimated 44,739 licenses were sold. This increase is strongly linear ( $r^2 = 0.96$ ) and if this trend continues, as many as 95,000 MZB licenses could be sold by the year 2005.

The following mail survey was conducted to get a better understanding of where and when MZB license buyers were hunting, and whether they were successful. It also attempted to determine what proportion of MZB license buyers "party" hunted and how many deer they killed for other party members. Questions were included to determine which zone/season option MZB hunters had used previously and attempted to determine why hunters purchased a MZB license.

### **METHODS**

A mailing list of 1998 MZB license buyers was created by the Management Information Services Bureau (MIS) from license copies. Because the writing on MZB license copies was often illegible, MIS matched the drivers license number from the MZB license with that on a master file created by the Department of Public Safety, to obtain the correct name and current mailing address. Paper copies of all hunting licenses were returned by the County Auditors gradually throughout the winter and were sorted according to type (MZB, Archery, Firearms). The data entry cut-off date for MZB licenses, was arbitrarily set at 31 March. A total of 35,405 names and addresses were included in the database which represented 79% of the total MZB licenses sold.

A random sample of 3,500 names (10%) was selected for the survey. The survey consisted of 5 basic questions printed on an 8 ½" x 14" double folded card (Appendix A). Return postage was provided. The first survey mailing was sent on 13 April, a first reminder (2,486) on 4 May, and a second reminder (1,830) on 12 June. When the Post Office returned surveys with an address correction, we amended the mailing list and sent a new survey on the next mailing. Ultimately, a total of 313 surveys (9%) were returned with no forwarding address.

As of 1 August, 2,161 surveys were returned. Fifty of the recipients returned 2 surveys and 2 individuals returned 3. When there were multiple returns, the second and third surveys were not included in the data base. Ninety of the recipients removed their name and identifying number from the survey before returning it. To prevent duplication we chose not to include these surveys

in the data set because they may have returned subsequent reminder surveys with a mailing label. A final tally of 2,015 surveys were included in the analysis (questions 2 - 5) for a return rate of 63%.

The first question (Appendix A) requested specific information about where individuals hunted each day of the season. Among the surveys that were returned, 12% of the respondents left the first question blank and an additional 5% used X's (rather than Zone numbers) to indicate when they hunted. Analyses of the first question were restricted to surveys that included zone numbers (n = 1665).

On surveys in which the hunters did identify which zone they hunted by date, 4.3% of the hunter days occurred when specific zones were closed (e.g. hunting zone 4 on 9 November). Hunter days in closed seasons were removed from the data set before analysis of the first question.

## RESULTS

### Question 1.

Multi-zone buck hunters had the opportunity to hunt a maximum of 16 days, however, survey respondents averaged only 5.5 days hunting. This average is skewed low by the number of MZB respondents that hunted exclusively in Zone 4. Generally, if respondents hunted in only one season, the average number of days hunted was below average while if they hunted in 2 or more seasons, the average number of days hunted was above average (Table 1). In cases where the respondents hunted in 3 seasons, they averaged 8.5 days (n=122); and in 4 seasons, they averaged 11.6 days (n=5).

Despite the fact that MZB hunters could hunt in any open season (except 3B), 22% limited their hunting to only 1 season (Table 1). Seventy percent hunted in 2 seasons and only 8% hunted in 3 or 4 seasons. None of the respondents hunted in all 5 seasons.

Table 1. Mean days hunted and proportion of sample ( ) of respondents that hunted in 1 or 2 hunting seasons.

	1A	2A	3A	4A	4B
1A	5.4 (6%)	8.4 (9%)	7.4 (1%)	6.5 (1%)	6.6 (6%)
2A		3.9 ( 7%)	5.1 (<1%)	4.9 (2%)	6.7 (4%)
3A			3.7 (1%)	3.7 (<1%)	7.7 (<1%)
4A				1.9 (6%)	5.0 (46%)
4B					2.4 (2%)

Sixty-two percent of the respondents hunted all or part of the 4A season and 84% of these hunted all or part of the 4B season as well.

Because such a large proportion of the respondents hunted in Zone 4, the following analyses separate the respondents into two groups: 1) respondents that hunted exclusively in Zone 4 (E4Z) and 2) all other respondents. Individuals in the latter group may have hunted in Zone 4, but did not do so, exclusively.

### **Question 2**

A total of 543 of the respondents (33%) indicated that they had tagged a buck with their MZB license. Significantly more of the E4Z respondents tagged a buck (36%) than those that did not hunt exclusively in Zone 4 (28%,  $X^2=12.8$ ,  $p<0.05$ ).

### **Question 3**

Overall, respondents that hunted with others had a significantly higher success rate with 36% indicating that they had tagged a buck ( $X^2 = 13.6$ ,  $p<0.05$ ). Only 26% of respondents that did not hunt with others reported tagging a buck. Respondents that hunted exclusively in Zone 4, however, did not have a higher success rate ( $X^2=1.8$ ,  $p=0.18$ ) when they hunted with others. Only among the non-E4Z respondents, was the success rate dependent on hunting with others ( $X^2=15.8$ ,  $p<0.05$ ).

Over 70% of the respondents indicated that they did hunt deer with others and that they were allowed to kill deer for others in the group. There was no significant difference in this statistic, however, between respondents that did or did not hunt exclusively in Zone 4 ( $X^2=0.44$ ,  $p=0.51$ ). The success rate of respondents at killing a deer for someone else was lower than it was for themselves. Only 19% of the respondents that hunted with others, indicated that they had killed a deer for someone else. This statistic did not differ between respondents that did or did not hunt exclusively in Zone 4 ( $X^2=2.4$ ,  $p=0.12$ ). Respondents that reported harvesting deer for someone else indicated that they had killed an average of 2.0 deer (1.5 bucks and 1.3 does, not including their own buck.). Again, these averages did not differ between respondents that did or did not hunt exclusively in Zone 4 ( $t=0.95$ ,  $-0.12$ , and  $-0.19$  for both sexes, antlerless, and bucks respectively,  $p>0.35$ ).

### **Question 4**

Almost 60% of the respondents who purchased MZB licenses in 1998 were recruited from the hunters that normally hunted in the 4A or 4B seasons. The remaining hunters were recruited from 1A (19%), 2A (16%), 3A (2%), 3B (1%), Muzzle loading (<1%), and 3.1% from respondents that indicated that they didn't hunt deer with firearms prior to buying a MZB license.

Most respondents did not shift hunting zones because they purchased a MZB license (Table 2). That is, on opening day of the 1998 season, the majority of respondents hunted in the same zone as the one that they normally hunted, when they had not purchased a MZB license. Zone 4 hunters were the most loyal with 96% of the formerly 4A hunters and 90% of the 4B hunters continuing to hunt on the opening day of the 4A season.

Table 2. Proportion of respondents that continued to hunt in same zone on opening day (shaded diagonal) compared with the proportion of respondents that shifted to different zones/seasons (unshaded).

Hunted 1 <sup>st</sup> Day	Previous Zone/Season Option							Muzzle Loader	Didn't Hunt
	1A	2A	3A	3B	4A	4B			
1A	69%	6%	0%	0%	1%	4%	14%	8%	
2A	12%	77%	18%	0%	2%	5%	29%	18%	
3A	3%	<1%	50%	38%	<1%	1%	0%	0%	
4A	16%	17%	32%	63%	96%	90%	57%	79%	

### Question 5

The opportunity to hunt in both the 4A and 4B seasons was listed by 77% the E4Z respondents (Table 3). Not surprisingly, this was significantly higher than for the group that did hunt exclusively in Zone 4 ( $X^2=472, p<0.05$ ).

The opportunity to hunt more days was cited most often (69%) by all of the respondents as the reason they purchased a MZB license. Over 82% of the E4Z respondents listed this as a reason for purchasing their MZB license. Of the remaining respondents, significantly fewer, only 55%, indicated that this was a reason for purchasing a MZB license ( $X^2=135, p<0.05$ ).

Very few respondents indicated that they purchased a MZB license so that they would have the opportunity to kill more deer. This was true regardless of whether or not respondents hunted in exclusively in Zone 4.

A significantly lower proportion of the E4Z respondents (44%) indicated that they wanted the “Opportunity to hunt close to home and elsewhere in the state” ( $X^2=174, p<0.05$ ). Over 75% of the non-exclusive respondents indicated that this was a consideration in their purchase.

There was also a significant difference between groups in the proportion of respondents that indicated that they “...live near a zone boundary and (they) can hunt both zones” ( $X^2=59, p<0.05$ ). Only 12% of E4Z respondents indicated that this was an important reason while 26% of the others listed this as a consideration.

Sixteen percent of the respondents indicated that they had additional reasons for purchasing a MZB license. Many of the hunters indicated that they bought the MZB license so that they could hunt with different hunting parties or family in different parts of the state. Some indicated that weather or unharvested crops affect when then can hunt and want the increased opportunity. Several indicated that they farmed or had other jobs that restricted when they could hunt and that the MZB license increased their flexibility. Numerous individuals indicated that with more opportunity to hunt they could be more selective and this gave them a better chance to harvest a

trophy buck.

Table 3. Proportion of respondents that listed specific reasons for purchasing a MZB license, broken down by whether or not they hunted exclusively in Zone 4. An \* indicates a significant difference ( $p < 0.05$ ).

	Hunt Both 4A and 4B Seasons	Opportunity to Hunt More Days	Opportunity to Kill More Deer	Hunt Close to Home and Elsewhere	Hunt Both Sides of Boundary
Exclusive 4A 4B Hunters	77%	82%	6%	44%	12%
All Others	24%*	55%*	6%	75%*	26%*

## DISCUSSION

The return rate (63%) is lower than desired in a mail survey and non-response bias should be considered when interpreting the results. The success reported by MZB hunters may be an index of this bias. Thirty-three percent of the respondents indicated that they had tagged a buck with their license. Registration data, however, indicated that only 25% of MZB license buyers tagged a buck on their license. While this difference is not excessive, it may indicate that successful hunters were more likely to return the survey than unsuccessful ones.

The delay between the end of the 1998 deer hunting season and the beginning of the mail survey must have influenced the return rate. The deer season for MZB hunters ended on 22 November but the first surveys were not mailed until 13 April, a delay of almost 5 months. The first question (Appendix A) requested specific information about where respondents hunted each day of the season. The complexity and timeliness of this question may have discouraged some from completing the survey.

The current system of paper licenses sold through county auditors makes it very difficult to improve the survey timing. License copies are returned by county auditors gradually through the winter and this delays the creation of a mailing list. By the 31 March cutoff date, only 79% of the licenses had been entered. Beginning with the 2000 hunting season, with the implementation of statewide electronic licensing, it should be possible to create a mailing list by the end of the hunting season and substantially reduce the delay in this type of survey.

If the MZB license was originally envisioned as a vehicle for increasing deer hunter opportunity, it has succeeded, modestly. The average MZB license buyer hunted 5.5 days in 1998. In statewide mail surveys in 1988 and 1989, the average license buyer hunted significantly fewer days (1988, 4.8 days,  $t = 11.1$ ,  $p < 0.05$ ; 1989, 5.0 days,  $t = 8.0$ ,  $p < 0.05$ ; Welsh 1990, 1991. Section of Wildlife. Unpubl. Reports). Assuming that regular license buyers (not including management or intensive harvest permits) hunted an average of 5.0 days in 1998, and that MZB license buyers hunted 5.5 days, the total number of days hunted in 1998 was almost 7% higher than in 1989.

The split season in Zone 4 was initiated in part to reduce crowding and thereby increase safety.

Survey results indicate that much of the interest in the MZB license was that it allowed Zone 4 hunters to hunt in both the 4A and 4B seasons. Based on the survey, 52% of the respondents hunted in both the 4A and 4B seasons. If MZB licenses sales continue to increase, crowding in the 4A season is likely to increase. By the year 2005, total 4A hunters could increase by 43% if MZB license sales increase at the current rate (Figure 1).

Over two thirds of the respondents indicated that they party hunted and 23% of these killed deer for other people. Although some respondents indicated that party hunting should not be allowed with a MZB license, a tradition has developed and it would be difficult to change this practice.














Many respondents wanted to expand options with a MZB license. Some commented that they should be allowed to apply for antlerless permits while others wanted MZB license holders to be able to hunt in the 3B and/or muzzle loader seasons.



## Appendix A

Please mark the appropriate answer, fold and return as soon as possible  
**Answer only for the 1998 Deer Season**

1. In the calendar below, write in the zone (1, 2, 3 or 4 -see map below) for each day that you hunted deer with firearms in November 1998.

November 1998						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
for example 4						7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22						
						

2. Did you tag an antlered buck (3" or longer antler) with your license? **Yes**

**No**

3. Did you hunt deer with others who would allow you to kill a deer for them? **Yes**

**No**

If you circled "Yes", did you kill a deer for someone else? **Yes** **No**

If **Yes**, how many antlered bucks \_\_\_\_\_, antlerless deer \_\_\_\_\_?

4. When you don't buy a Multi-Zone Buck License, what season do you usually hunt?

**1**      **2**      **3A**      **3B**      **4A**      **4B**      **Muzzle Loader**      **Didn't Hunt**

5. Why do you buy the Multi-Zone Buck License? (Check all that apply)

- I wish to hunt both the 4A and 4B seasons**
- Opportunities to hunt more days**
- Opportunity to kill more deer**
- Opportunity to hunt close to home and elsewhere in the state**
- I live near zone boundary and I can hunt both zones**
- Other** \_\_\_\_\_