

# Comprehensive Deer Management Survey Results and Analysis

January, 2004

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Protecting and conserving our fish, wildlife, plants,  
and their habitats for the people of Vermont

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## Background

For much of the 20<sup>th</sup> century, deer hunters have preferred to pursue and harvest bucks instead of does. This preference still persists today in Vermont. Hunter preference for large bodied, large antlered deer has sometimes been attributed to aging hunter demographics and to the focus of popular literature and television within the past decade. Many southeastern states have adopted antler restrictions during this time period. The impetus for antler restrictions among southern states has generally been to help alleviate long-term habitat destruction and poor antler development associated with chronic deer overpopulation.

Management efforts by southeastern state wildlife agencies have kept habitat as the focus of deer management. However, northern hunters have focused more on increasing antler and body size of bucks to bolster hunter satisfaction when calling for changes in deer management practices.

Advocacy groups such as the Quality Deer Management Association (QDMA) have promoted antler restrictions. They have focused on management actions aimed at developing older age structures among buck populations in order to enhance the number of older bucks having well-developed antlers.

Vermont hunters have indicated a strong interest in developing an older age buck population during public outreach meetings and surveys dating back to 1997. Support for changes in deer management involving antler restrictions among Vermont hunters has ranged regionally between 40% and 70%. Legislation introduced during the 2003 General Assembly to restrict the harvest of young bucks south of Vermont Route 4 has spurred the department to again examine this question prior to completion of the current ten-year management plan cycle. During the series of annual public meetings held in March of 2003, one of the focus questions pertained to Quality Deer Management. Support for changes in antler restrictions ranged from 40% to well over 90% depending on meeting location. In response to hunter interest expressed at these meetings, the department conducted a statewide survey of randomly selected deer hunters in 2003. This survey was designed to objectively assess hunter interest in antler regulations and hunter satisfaction. The department recognizes that management of white-tailed deer in Vermont is not merely a matter of managing deer numbers. Deer management must also consider and deal with the attitudes and behavior of people, habitat quantity and quality, how deer management activities impact other species as well as issues related to prevention of diseases and other threats to herd health such as Chronic Wasting Disease.

## Survey Methods

Five thousand names and addresses were randomly selected from the department's 2002 hunting license database. A two-page mail questionnaire (Appendix 1) was designed to assess hunter satisfaction and preference for various deer management options. These options included categorical questions concerning the acceptability of possible decreases in total buck kill, need for increased numbers of antlerless permits to control herd growth, a time limited experimental period, the various Wildlife Management Units (WMUs) for experimental management actions. Questions also were designed to assess current hunting satisfaction as well as the age and number of years of hunting experience of surveyed hunters. The term Comprehensive Deer Management (CDM) is used here to refer to deer management concepts including Quality Deer Management.

Questionnaires with a post-paid return envelope were mailed to recipients the week of August 18. Recipients were asked to return questionnaires by September 2. Ten days following the initial mailing a reminder postcard was sent to all addresses. On September 8, a final reminder postcard was sent. Due to time constraints, a non-response follow up was not conducted.

Survey Return Rate, Hunter Demographics, and Hunter Distribution

Invalid addresses accounted for 209 blank returns, leaving a total of 4791 potential recipients. Valid responses were received from 2122 of the potential recipients for a return rate of 44%. Of the total responses, 99.8% indicated that they were deer hunters. This percentage is consistent with previous department surveys which reported deer hunting participation among hunting license holders to be 95% or greater. Respondents averaged 42.3 years of age with 27.2 years of hunting experience. Again, these results are similar to those reported in the 1998 QDM/ Hunter Satisfaction survey.

The distribution of respondents related to WMU where majority of deer hunting time is spent was determined from the 1545 correctly completed responses. Incorrect responses (check marks) were received from 541 respondents. Based on the frequency distribution of the valid responses, WMU B had the greatest participation with 6.8% of the responses followed by WMUs J1 (5.8%), H1 (4.8%), and K2 (4.4%). WMUs J2 and N were each identified by 8% of the respondents as their WMU of choice during archery season. The greatest number of hunters selected WMU B (6.8%) for rifle season and WMU B again (7%) for muzzleloader season. Complete responses for distribution of hunter participation preference by season and WMU are reported in Table 1.

Table 1. WMU preference by season as reported by CDM survey respondents.

<u>WMU</u>	<u>Archery% (n=2122)</u>	<u>Rifle% (n=2121)</u>	<u>Muzzleloader% (n=2118)</u>
A	0.85	0.99	0.90
B	5.33	6.84	7.08
C	1.98	3.96	2.27
D1	2.36	4.10	2.79
D2	2.26	5.04	2.55
E	0.66	3.06	1.23
F1	1.23	1.89	1.37
F2	2.21	3.39	2.41
G	1.37	3.25	1.61
H1	2.78	4.76	3.54
H2	1.51	2.59	1.84
I	0.99	3.11	1.61
J1	3.86	5.85	4.15
J2	7.98	4.24	3.78
K1	0.99	1.98	1.51
K2	2.50	4.43	4.25
L	0.71	2.69	1.27
M1	0.42	1.37	0.85
M2	1.32	2.22	1.89
N	7.98	2.69	2.22
O1	0.66	1.08	0.80
O2	1.46	2.83	2.27
P	0.71	1.74	0.80
Q	0.99	1.60	1.27
'Did Not Hunt' or Not Answered	46.90	24.28	45.75

## Hunter Satisfaction

In general, more hunters are satisfied with their deer hunting experiences in Vermont during the past 5 years than are those who are not satisfied (42% satisfied vs. 31% dissatisfied). Compared to 1998 survey results, satisfaction has declined with an increase in those reporting undecided or neutral (27%) opinions. Looking at the question of support for greater antler restrictions to protect a larger portion of young bucks, 66% of respondents supported and 24% opposed this management action while 10% reported a neutral position. Of hunters expressing satisfaction with their hunting experience, 59% supported experimental antler regulation changes while 30% were opposed and 11% were neutral. Of hunters expressing dissatisfied with their hunting experience over the last 5 years, 75% supported experimental antler regulation changes while 18% were opposed and 7% were neutral. All of the qualifying criteria including the possible need for increased antlerless permits received a majority of support. Support for antler restrictions with other conditions included received a range of support between 56% (Antlerless Permit Increases) and 67% (Establish CDM in an Experimental Unit). Tables 2a and 2b present the support for outcomes by WMU of rifle season preference.

Table 2a. Response (%) of hunters to questions about Hunting Satisfaction, Limiting Young Buck Harvest with Antler Restrictions, and Potential Buck Harvest Decrease.

WMU	Hunting Experience		Limit Young Buck Kill		Antlerless Permit Inc.		Buck Kill Decrease		n
	Satisfied	Dissatisfied	Support	Oppose	Support	Oppose	Support	Oppose	
A	56	26	68	20	67	18	63	11	27
B	52	24	63	16	69	21	70	19	159
C	39	17	68	18	63	22	84	5	62
D1	28	47	66	26	61	22	83	17	78
D2	39	32	65	27	58	27	85	6	77
E	40	25	70	23	60	18	70	10	80
F1	42	36	67	24	67	17	72	5	36
F2	36	34	67	20	68	18	86	13	44
G	41	31	61	21	74	15	78	7	74
H1	50	25	67	21	62	27	71	15	104
H2	46	37	60	30	61	24	60	23	56
I	30	36	69	22	64	26	75	8	53
J1	40	35	74	13	62	22	79	11	127
J2	34	28	65	23	54	30	67	23	92
K1	44	33	81	9	61	22	74	5	39
K2	30	36	71	22	66	19	81	4	99
L	38	36	67	31	58	36	85	2	55
M1	21	43	89	3	61	16	87	13	23
M2	58	18	69	16	75	15	88	3	40
N	40	38	59	28	57	18	70	6	70
O1	58	18	62	25	75	15	87	2	24
O2	27	38	63	23	75	18	80	3	40
P	52	18	50	37	42	30	60	8	40
Q	56	15	65	17	46	24	74	13	46

Table 2b. Responses (%) of hunters to questions about Experimenting in All Seasons, Length of Test Period, and Selecting a Test WMU.

WMU	Experiment in all Seasons		5 Year Test Period		CDM in an Exp. WMU		n
	Support	Oppose	Support	Oppose	Support	Oppose	
A	54	36	59	32	68	14	27
B	67	25	64	20	69	18	159
C	75	14	68	17	75	12	62
D1	59	28	56	23	45	22	78
D2	60	26	59	22	65	17	77
E	67	21	70	23	74	18	80
F1	57	26	59	24	62	17	36
F2	68	23	64	17	70	16	44
G	65	25	61	23	67	12	74
H1	69	23	65	22	74	19	104
H2	59	25	63	23	67	20	56
I	67	18	71	14	74	13	53
J1	66	17	72	15	78	14	127
J2	64	21	63	22	67	20	92
K1	81	9	78	14	79	11	39
K2	68	24	71	19	77	16	99
L	62	28	66	26	71	20	55
M1	90	7	72	10	86	3	23
M2	69	16	71	10	71	10	40
N	54	35	57	26	68	21	70
O1	58	25	58	37	71	24	24
O2	58	32	51	23	58	23	40
P	60	34	59	38	59	30	40
Q	53	26	70	14	70	12	46

Choice for the location of possible experimental WMUs as a function of the greatest frequency of responses by hunters was reported for those who indicated where they spent most of their time hunting during the rifle season. WMU J1 was the most often chosen WMU at 11.7%. This was followed by WMUs B (8.9%), K2 (6.4%), and H1 (6.3%). The entire range of response frequencies are presented below in Table 3.

Table 3. Frequency distribution of hunter's preference for experimental deer management unit.

WMU	Preference %	WMU	Preference %
A	1.74	J1	11.74
B	8.90	J2	5.35
C	4.00	K1	2.52
D1	5.03	K2	6.45
D2	4.97	L	3.55
E	5.23	M1	1.48
F1	2.32	M2	2.58
F2	2.84	N	4.52
G	4.77	O1	1.55
H1	6.32	O2	2.58
H2	2.45	P	2.58
I	3.42	Q	2.97

This simple examination only answers the question of where hunters would prefer to establish an experimental deer management unit. However, it does not consider the affect of human population distribution or impact on the individual who supports the management concept. The frequency distribution reported in Table 3 is largely a function of where the greatest number of hunters reside (e.g. WMU B). It could also, in part, represent hunter preference without consideration of present hunting conditions experienced by respondents. In other words, a hunter might support experimental antler restrictions but not within the WMU where he or she hunts. To examine this question more closely, WMU hunted in was compared with WMU support for antler restrictions among all hunters who responded favorably to experimental antler restrictions. Analyzing responses in this way provides a more accurate assessment of hunter preference for experimental WMUs where antler restrictions would be supported.

Results examined in this way indicate that WMUs J1 (71%), J2 (70%), B (69%), K2 (66%), G (65%), H1 (64%), A (64%) have greatest support among hunters who both support experimental antler restrictions and have indicated a preference for experimentation within the WMU where they hunt. A complete reporting of WMU preference is located in Table 4.

Table 4. WMU choice for experimentation among hunters who support CDM in the WMU they hunt in.

WMU	Experimental WMU Preference%	Rifle Season Part. %	Rifle Season n	% Support for CDM	Support n	WMU Preference n	Support Ratio	%Support in own WMU
A	1.74	0.99	22	68	15	27	0.55	64
B	8.90	6.84	159	63	100	146	0.69	69
C	4.00	3.96	89	68	61	67	0.90	48
D1	5.03	4.10	92	66	61	80	0.76	48
D2	4.97	5.04	114	65	74	85	0.87	52
E	5.23	3.06	70	70	49	84	0.58	45
F1	2.32	1.89	42	67	28	37	0.76	46
F2	2.84	3.39	75	67	50	46	1.09	49
G	4.77	3.25	75	61	46	77	0.59	65
H1	6.32	4.76	104	67	70	105	0.66	64
H2	2.45	2.59	56	60	34	38	0.88	59
I	3.42	3.11	71	69	49	57	0.86	42
J1	11.74	5.85	127	74	94	187	0.50	71
J2	5.35	4.24	92	65	60	85	0.70	70
K1	2.52	1.98	43	81	35	39	0.89	48
K2	6.45	4.43	99	71	70	106	0.66	66
L	3.55	2.69	60	67	40	59	0.68	58
M1	1.48	1.37	29	89	26	24	1.08	43
M2	2.58	2.22	49	69	34	41	0.82	58
N	4.52	2.69	57	59	34	72	0.47	62
O1	1.55	1.08	24	62	15	24	0.62	46
O2	2.58	2.83	60	63	38	41	0.92	64
P	2.58	1.74	38	50	19	40	0.48	33
Q	2.97	1.60	34	65	22	46	0.48	52

Thirty eight percent of the respondents indicated that they would not travel outside of their WMU to hunt an area having experimental antler restriction, 37% would travel up to 1 hour, 15% would travel up to 2 hours, and 10% would travel 2 hours or more.

## Conclusions

The overall response rate of 44% is good and survey results should be considered reliable. The distribution of responses parallels public input received by the department via meetings, e-mail messages, telephone calls and letters during the past 5 years. Considering legislative initiatives and these other indicators of public interest, the department feels obliged to be responsive to the public and move forward with a scoping process to identify test parameters and experimental WMUs. Although, hunter preferences expressing social considerations are important criteria for gauging support and identifying candidate WMUs, any wildlife management experiment must also consider science based issues related to deer management. The department will weigh the impacts of this experiment on pre-existing deer herd and habitat characteristics.

Two thirds of the respondents supported CDM. While they had a common interest in change, they were not unified in how it should be done. Based on e-mail, US mail and telephone correspondence from hunters, many hunters want to see a change to suit their own personal deer hunting interest but may be generally content with their overall deer hunting experience (as demonstrated by the results of this survey). These survey results should be viewed as guidelines for the next step of planning and not a mandate to implement change based on social preference alone. The fact that many of the respondents who support changes in antler regulations wanted to see them in a WMU other than the one they hunt in should be interpreted as a very important point that could influence the development of the CDM experimental unit.

Because hunters believe strongly in their hunting values, they may be unwilling to yield to other hunters' values. Differences in values among hunters are likely to become apparent as the details of any CDM experiment are developed. Issues such as 3-point versus 4-point restrictions, landowner privileges on posted land versus unposted land, bag limits, season lengths, season timing, and antlerless deer harvesting are some of the topics that are potentially divisive. Divisive issues have the potential to water-down support for any change in antler regulations and antlerless permit quotas.

The antler restriction aspect of the experiment has to date been billed primarily as a means for expanding hunter opportunity and increasing hunter satisfaction via possible increased opportunity to harvest older aged bucks. That being the case, the department must have a clear set of goals and outcome expectations, and it must prepare to measure parameters related to hunter satisfaction at the end of the experiment. Through the duration of the experiment, the department should continue to measure parameters such as age structure of the buck population, sex ratio, total population number, hunter effort, rate of deer sighting, and hunter success rate must be monitored to monitor changes associated with antler restrictions or any other management action. These other parameters may provide insight into what, when, how, and why any observed changes occur.

Based on whether or not any resulting changes are positive or negative, it will then be possible to make sound decisions based on science and hunter satisfaction concerning whether or not to continue experimental regulations or expand their application to other WMUs. Although an experimental approach will take time, it could have the advantages of minimizing public resistance to change, limiting potential adverse impacts, and providing specific details on why experimental regulations do or do not achieve objectives. This approach should minimize risk while proactively addressing the issue of deer hunting opportunity, which will most certainly become increasingly contentious if no effort is made to address the issue.

## Recommendations

- 1) Based on the survey results Vermont's deer management team recommends developing a proposal that would outline an experimental Comprehensive Deer Management (CDM) strategy in three Wildlife Management Units (WMUs). The purpose of the experiment will be to see if hunter satisfaction increases from its 2003 level and to see if the age structure of the buck population in the harvests shifts to older age classes.
- 2) Wildlife Management Units B, K2 and J1 should be the top candidates as areas for the CDM experiment based on the survey results and biological information.
- 3) The department should obtain additional public input from public meetings held in each of the Wildlife Management Units proposed for CDM. The department should get further input from conservation organizations such as the Vermont Federation of Sportsmen's Clubs, the National Wildlife Federation, and Hunters, Anglers and Trappers as it moves to develop CDM plans for the three Wildlife Management Units.
- 4) The department should brief Fish and Wildlife Board members and legislators after it receives public input.
- 5) If the legislature and Fish and Wildlife Board make changes in law that result in CDM – WMU experimental units, the department will need to engage in significant outreach efforts to hunters regarding regulatory changes and the definition of a “legal antlered buck” in affected WMUs.
- 6) The duration of the CDM experiment should be for five years.
- 7) The experiment must not allow the deer herd to increase beyond its carrying capacity. Herd growth will need to be monitored, and increased antlerless permits may need to be issued to offset any growth in the total deer population in the experimental units.
- 8) The increased antler size regulation should be in effect for all seasons except youth season in the experimental WMUs.
- 9) After the five-year test period the department should re-evaluate the experiment to determine how satisfaction has changed from previous satisfaction levels. Depending on what level of satisfaction is measured, the experiment might continue or be discontinued.
- 10) In future examination of CDM, the department should be prepared to identify and address the biological and social concerns raised by the public.



## Vermont Fish and Wildlife Department 2003 Comprehensive Deer Management Survey

1. Do you hunt deer in Vermont? (Check one)    \_\_\_Yes    \_\_\_No

2. In which Wildlife Management Unit (WMU) do you spend MOST of your Vermont deer hunting time? (Identify one WMU for each season or check "I do not hunt")

ARCHERY	WMU _____	I do not hunt during the archery season _____
RIFLE	WMU _____	I do not hunt during the rifle season _____
MUZZLELOADER	WMU _____	I do not hunt during the muzzleloader season _____

3. What is your age? \_\_\_\_\_    4. How many years have you been deer hunting? \_\_\_\_\_

4. Over the last 5 years how would you rate your satisfaction with deer hunting in Vermont? (Circle the rating that best describes your level of satisfaction)

\_\_\_\_\_▶

1	2	3	4	5
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied

**The following are questions regarding Comprehensive Deer Management.**

5. Would you support or oppose a regulation limiting the size of bucks that hunters may take through antler point restrictions as a way to protect younger bucks in an experimental Wildlife Management Unit (WMU)? (**Circle the rating that best describes your opinion**)

\_\_\_\_\_▶

1	2	3	4	5
Strongly Support	Support	Neutral	Oppose	Strongly Oppose

6. Would you support or oppose Comprehensive Deer Management in an experimental Wildlife Management Unit, if this means an increase in the number of antlerless permits that are issued in the experimental WMU? (**Circle the rating that best describes your opinion**)

\_\_\_\_\_▶


1	2	3	4	5
Strongly Support	Support	Neutral	Oppose	Strongly Oppose

7. Would you support or oppose the Department managing for Comprehensive Deer Management in an experimental WMU if this means a temporary decline in the total number of bucks killed in the experimental WMU? (**Circle the rating that best describes your opinion**)

\_\_\_\_\_▶


1	2	3	4	5
Strongly Support	Support	Neutral	Oppose	Strongly Oppose

**8. Would you support or oppose managing for Comprehensive Deer Management, across all deer seasons except youth season (e.g. Archery, Rifle, and Muzzleloader seasons) in the experimental WMU? (Circle the rating that best describes your opinion)**

\_\_\_\_\_ 


1                      2                      3                      4                      5  
Strongly Support      Support              Neutral              Oppose              Strongly Oppose

**9. Would you support or oppose the FWD managing for Comprehensive Deer Management, if it were applied over a 5-year test period? (Circle the rating that best describes your opinion)**

\_\_\_\_\_ 

1                      2                      3                      4                      5  
Strongly Support      Support              Neutral              Oppose              Strongly Oppose

**10. Would you support or oppose the Department managing for Comprehensive Deer Management in an experimental WMU? (Circle the rating that best describes your opinion)**

\_\_\_\_\_ 

1                      2                      3                      4                      5  
Strongly Support      Support              Neutral              Oppose              Strongly Oppose

**11. If you circled # 1, 2 or 3 in Question 10 above, which Wildlife Management Unit (WMU) would you support using as a Comprehensive Deer Management test unit? (Identify one WMU – See attached Map)**

\_\_\_\_\_ Wildlife Management Unit

**12. Would you travel to a WMU managed for CDM?**

- \_\_\_\_\_ Would not travel outside my WMU
- \_\_\_\_\_ Yes, but less than 1 hour
- \_\_\_\_\_ Yes, less than 2 hours
- \_\_\_\_\_ Yes, more than 2 hours

\_\_\_\_\_

Please add any comments or thoughts you have: