

2004 Vermont Moose Season Summary

Five hundred and thirty-nine moose were harvested in Vermont's 2004 moose season. The hunting weather was quite favorable throughout most of the season as cool and dry conditions prevailed. Overall success rate was 65%, down from 68% in 2003. The lower success rate was due at least in part to the large increase in permits issued for the hunting units in the Northeast Kingdom. Approximately 81 tons (an estimated 162,000 lbs) of boneless moose venison was harvested.

A total of 13,382 valid applications were received for the 2004 Vermont moose season (11,301 residents and 2,081 non-residents). The chances of drawing a permit were 1 in 15 for residents (765 permits allocated) and 1 in 24 for non-residents (85 permits allocated). Of the 521 residents who were issued either-sex permits, 87% received permits for their unit of first choice (**Appendix A**).

Either-sex permits were issued to 568 permittees across 17 Wildlife Management Units (WMUs). In addition, 265 permits for antlerless moose were issued for WMUs D2, E1 and E2, for a total of 833 permits issued. Two percent (17) of the 850 authorized permits were never claimed by the original permit winners.

Harvest Dates & Success Rates

Vermont's 12th moose season began on the third Saturday in October (16th). One hundred fifty-seven moose (29% of the harvest) were taken on opening day (**Table 1**) and over 80% of the total moose harvested had been taken by the fourth day. Either-sex permit holders recorded a 69% overall success rate (down only slightly from 70% in 2003). Fifty-five percent of antlerless permit holders were successful, down from 62% the previous year. Nearly 63% (473/753) of resident hunters were successful, as were 82% (66/80) of non-residents. Success rates by WMU and Permit Type are given in **Table 2**.

Table 1. 2004 Vermont Moose Harvest Distribution by Date, Sex, and Age Class

DATE	BULLS	COWS	CALVES	TOTAL	PERCENT
October 16	95	58	4	157	29
October 17	69	68	11	148	27
October 18	37	35	7	79	15
October 19	28	27	2	57	11
October 20	25	22	4	51	9
October 21	8	30	9	47	9
Totals	262	240	37	539	100

Table 2. 2004 Vermont Moose Hunter Success Rates by WMU and Permit Type

WMU	BULLS	COWS	MALE CALVES	FEMALE CALVES	TOTAL HARVEST	PERMITS ISSUED	PERCENT SUCCESS	2003 SUCCESS RATE
B	--	2			2	4	.50	.60
C	6	1			7	9	.78	.40
D1	16	7		1	24	35	.69	.68
D2A	--	21	2	1	24	49	.49	.55
D2E	40	21	3	1	65	90	.72	.78
D2(E&A)	40	42	5	2	89	139	.64	.71
E1A	--	45	2	5	52	80	.65	.73
E1E	62	28	1	4	95	126	.75	.72
E1(E&A)	62	73	3	9	147	206	.71	.73
E2A	3	56	5	6	70	36	.51	.57
E2E	70	34	1	1	106	150	.71	.76
E2(E&A)	73	90	6	7	176	286	.62	.66
G	3	1		1	5	10	.50	.60
H1	6	6		1	13	4	.93	.67
H2	1	1			2	5	.40	.60
I	9	4			13	20	.65	.70
J1	10	1		1	12	17	.71	.90
J2	7	4			11	20	.55	.64
L	6	2			8	15	.53	.60
M1	4	1			5	15	.33	.80
O1	9	1			10	14	.71	.50
P	6	3		1	10	15	.67	.73
Q	4	1			5	9	.56	-
Totals	262	240	14	23	539	833	.65	.68

Biological Data

Two hundred sixty-two (48.6%) of moose taken were bulls, 240 (44.5%) were cows, and 37 (6.9%) were calves (14 males and 23 females). Completely-dressed carcass weights were obtained from 475 moose, or 88% of the total harvest. Thirty-five bulls weighed over 800 lbs, including the largest which weighed 964 lbs and was taken in Norton. The average completely-dressed weight of 13 male calves, 38 yearling bulls and 150 older bulls was 251, 449 and 726 lbs, respectively. The average beam diameter of 43 yearlings was 35.4 mm. Comparisons of yearling weights and beam diameters are shown in **Figures 1 and 2**.

The heaviest cow weighed 734 lbs and was taken in Brighton. The average weight of 18 calves, 39 yearling cows and 170 older cows was 219, 419 and 572 lbs, respectively. Complete sets of paired ovaries collected from 120 cows were sectioned and examined for evidence of ovulation. The ovulation rate was 0.35 ova/cow for 17 yearlings, 1.03 for 33 two-year-olds, 0.93 for 15 three-year olds, and 1.22 for 44 cows \geq 4 years old. **Figure 3** shows ovulation rates by age classes for the 2 most recent 5-year periods.

A central incisor was also collected from 499 adult moose, then cleaned and shipped to Montana for aging by the counting of cementum annuli. The average age of the 260 bulls and 239 cows was 3.85 and 4.23 years, respectively (**Figure 4**). Nineteen percent of these moose were yearlings, and 45% were \geq 4 years of age. The oldest bull and cow were 14 and 15 years, respectively.

Town of Kill

Moose were taken in 94 different towns. The towns with the highest harvests were Granby (42), East Haven (36), Averill (32), Norton (29), Ferdinand (28), Lemington (25), Bloomfield (23), and Lewis (21). **Figure 5** shows the geographic distribution of the moose harvest by township and WMU.

Scouting

Moose hunter surveys were returned by 618 of the 833 permittees, 92% of whom reported that they scouted prior to the hunting season. Average time spent scouting was 25.5 hours/party, and the average number of moose seen per hour scouted was 0.14 (approximately 1 moose seen for every 7 hours of scouting effort). A comparison of scouting data between WMUs is presented in **Table 3**.

Successful Hunters

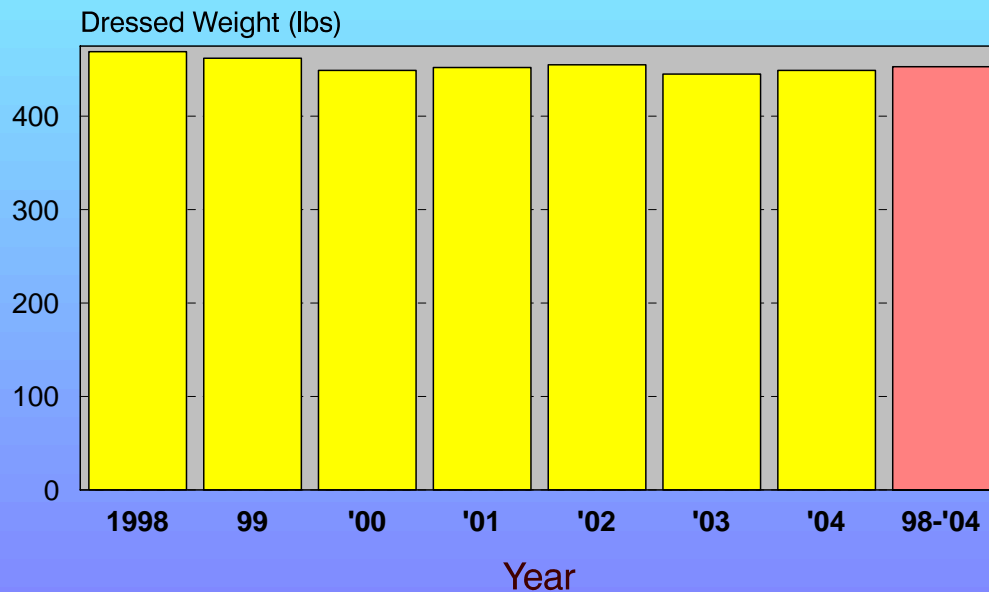
Guides accompanied 396 (73%) of all successful hunters. Subpermittees took 99 (18%) of the moose killed. Non-resident hunters who bagged a VT moose hailed from 13 other states or provinces as follows: NH (19), NY (13), CT (12), MA (9), NJ (3), PA (2), CO (2), and 1 each from GA, IN, ME, MT, NE, and Quebec. All moose were taken with rifles except for 5 that were taken with a muzzleloader.

Unsuccessful Hunters

One hundred and seventy-three of the survey respondents were unsuccessful hunters, 72 (42%) of which hunted all 6 days. Thirty-three hunted for 5 days, 28 for 4, 16 for 3, 19 for 2, 2 for 1, and 3 for 0 days. Nearly 43% of unsuccessful hunters also used guides. One hundred and twelve of the unsuccessful hunters saw a total of 352 moose, and 89 (or 52% of all unsuccessful hunters who hunted at least 1 day) passed up moose that they believed they could have taken (67 bulls, 56 cows, and 29 calves). In addition, 18 hunters with antlerless permits encountered a total of 51 bulls that they said they could have taken.

Fig. 1. Yearling Male Carcass Weight

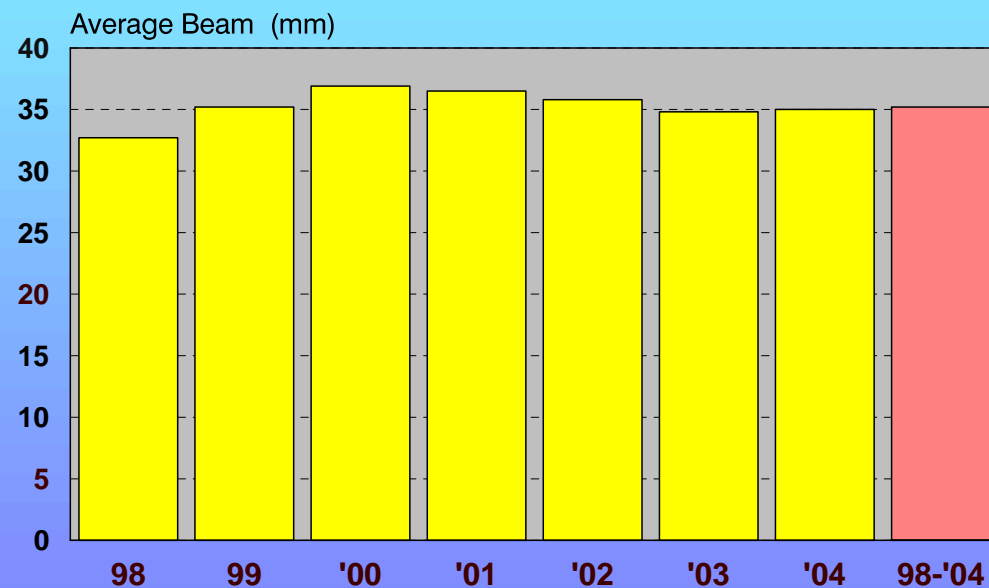
Vermont Moose Harvests



147 Total Moose

Fig. 2. Yearling Beam Diameter

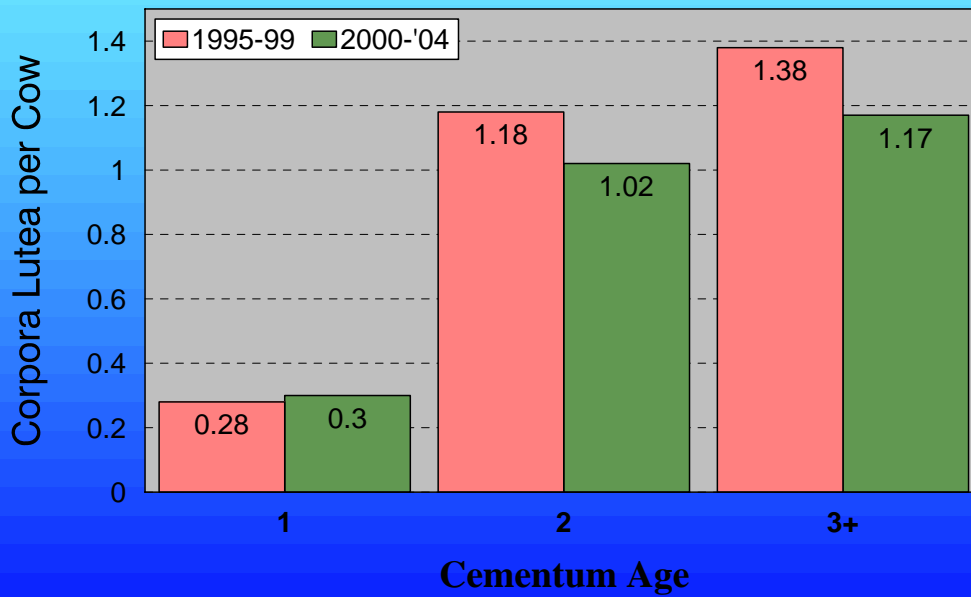
Vermont Moose Harvests



146 Total Moose

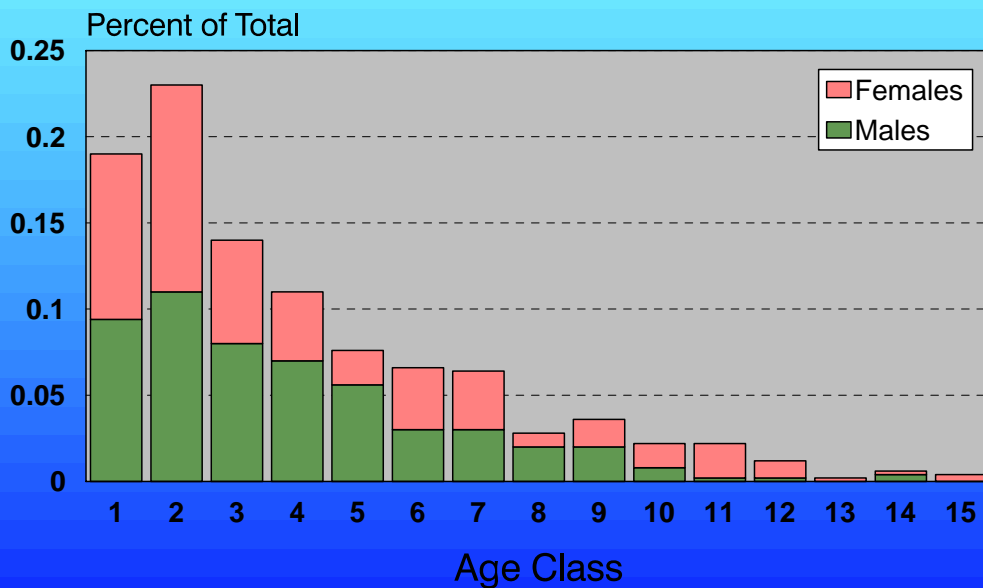
Fig. 3. Ovulation Rate for Legally Harvested Females

1995-1999 vs. 2000-2004

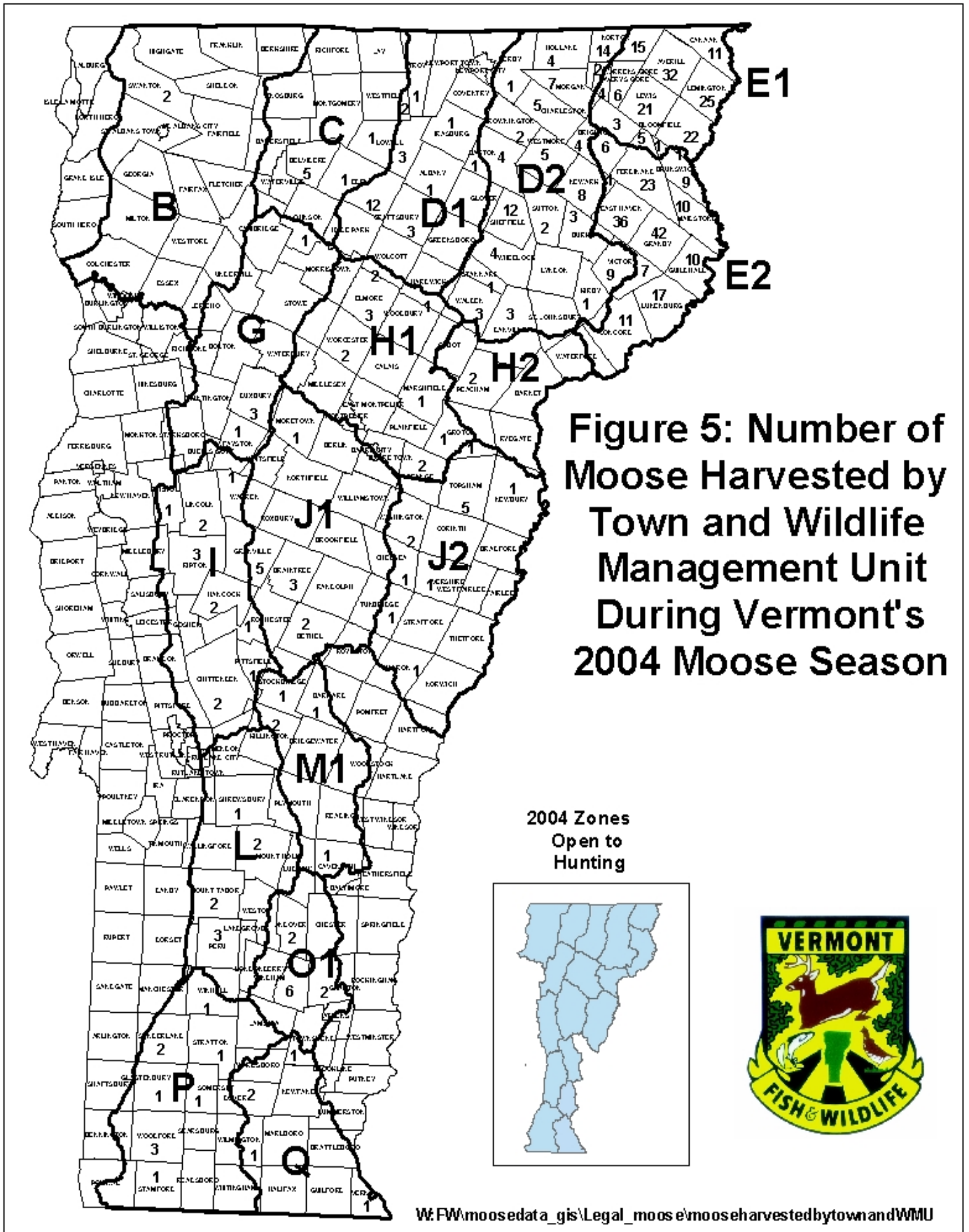


378 Total Cows

**Fig. 4. VT Moose Aged by Cementum Annuli
2004 Legal Harvest**



Ave. age = 3.85 years males (n = 260), 4.23 females (n = 239)
45% ≥ 4 years; n = 499



**Table 3. Moose seen per hour scouted from 618 hunter survey returns,
2004 Vermont Moose Hunt**

WMU	Permit Type ¹	Number Scouting	Moose Seen	Hours Scouted	Moose/Hr Scouted (MSHS)	MSHS 2003	Hours/hunter scouting
B	E	4	0	72	0.00	0.00	18
C	E	6	12	71	0.17	0.02	12
D1	E	22	43	410	0.10	0.10	19
D2	E	66	220	1633	0.14	0.11	25
D2	A	31	92	653	0.14	0.05	21
E1	E	96	476	2406	0.20	0.23	25
E2	E	103	475	2987	0.16	0.17	29
E1	A	47	261	1062	0.25	0.11	23
E2	A	87	231	2022	0.11	0.18	23
G	E	5	2	99	0.02	0.10	20
H1	E	11	29	195	0.15	0.11	18
H2	E	4	1	174	0.01	0.00	44
I	E	17	44	502	0.09	0.09	30
J1	E	10	37	275	0.14	0.12	27
J2	E	16	32	471	0.07	0.08	29
L	E	9	20	359	0.06	0.03	40
M1	E	10	4	214	0.02	0.12	21
O1	E	11	30	390	0.08	0.16	35
P	E	12	32	387	0.08	0.12	32
Q	E	3	14	144	0.10	----	48
Total		570	2,055	14,526	0.14	0.126	25.5
ALL	E only	405	1,471	10,789	0.14	0.125	26.6
E1 & E2	E	199	951	5393	0.18	0.19	27

¹E = either sex, A = antlerless only

Appendix A: 2004 Vermont Moose Applications by WMU

WMU	Resident Either-sex Permits Issued	Resident Applicants Receiving First Choice	
		Number	Percent
B	4	4	1.00
C	9	8	.89
D1	30	21	.70
D2	81	74	.91
E1	117	114	.97
E2	135	116	.86
G	9	9	1.00
H1	14	13	.93
H2	4	0	0
I	18	18	1.00
J1	18	17	.94
J2	18	11	.61
L	14	10	.71
M1	14	13	.93
O1	13	7	.54
P	14	14	1.00
Q	9	3	.33
Totals	521	452	.87