

2010 VERMONT WHITE-TAILED DEER HARVEST REPORT



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FISH & WILDLIFE DEPARTMENT
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Most of the programs described in this report are funded through the *Federal Aid in Wildlife Restoration Program*. This program was initiated in 1937 as the Federal Aid In Wildlife Act and created a system where by taxes are paid on firearms, ammunition and archery equipment by the public who hunts. Today this excise tax generates over a hundred million dollars each year that are dedicated to state wildlife restoration and management projects across the United States. The State of Vermont use these monies for acquiring land, and for restoring and managing wildlife. These excise tax dollars, coupled with state hunting license fees have been the predominate source of money funding the successful restoration and management of Vermont's wildlife resources.

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The MISSION of the Vermont Fish & Wildlife Department is the conservation of fish, wildlife, and plants and their habitats for the people of Vermont.

Vermont Fish & Wildlife Department

Agency of Natural Resources

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2010 White-tailed Deer Report

Overview

In 2010 deer hunters harvested 15,523 deer throughout the state, a 2% increase from the 2009 harvest (Table 1). This slight increase in harvest was expected in 2010 given the mild winter of 2009-2010 (Figure 1). Winter severity is tracked regionally, and the winter of 2009-2010 was one of the mildest on record throughout the entire state (Figure 2).

Hunting conditions during the 2010 rifle season were less than ideal due to warm weather and lack of snow, but hunters still managed to harvest 6,663 antlered bucks, an 11% increase from 2009. A total of 8,430 antlered bucks, 15,523 deer, and almost one million pounds of venison were taken in all four 2010 deer seasons (Figure 3).

Weather was seasonable during archery and youth deer seasons. Success during the archery season was down slightly (4%) compared to 2009. Archers took 2,914 deer compared to 3,032 in 2009. Youth harvested 1,712 deer compared to 1,708 in 2009.

Weather conditions improved in time for the 2010 December muzzleloader season with colder temperatures and snow. Muzzleloader hunters took 4,232 deer compared to 4,480 (down 6%) in 2009. The number of antlered bucks taken during the 2010 muzzleloader season decreased 25% from 712 in 2009 to 535 in 2010.

Apples were again abundant statewide in 2010. Acorns were abundant and widespread throughout the state during the fall of 2010. Such abundant foods tend to spread deer widely, and with warm temperatures, deer move less during daylight hours. The abundance of food in summer and autumn of 2010 seems to be evidenced by record-heavy

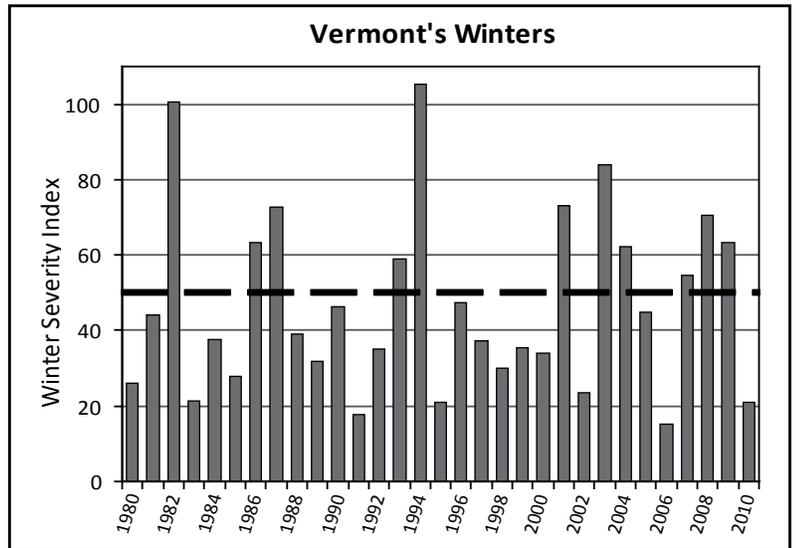


Figure 1. Statewide winter severity indices (WSI) in Vermont from 1980–2010. The horizontal dashed line equals a long-term average of about WSI=50. The department maintains 38 volunteer weather stations statewide. From 1 December through 15 April, one WSI point is recorded for each day with a temperature below 0°F and each day with greater than 18 inches of snow.

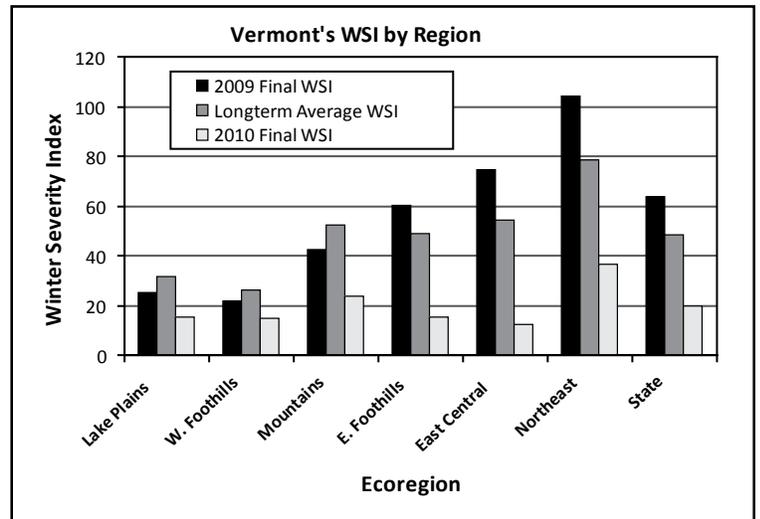


Figure 2. Regional long-term average winter severity versus that during the winter prior to the 2009 and 2010 hunting seasons. Winters were mild in every region across the state in 2010.

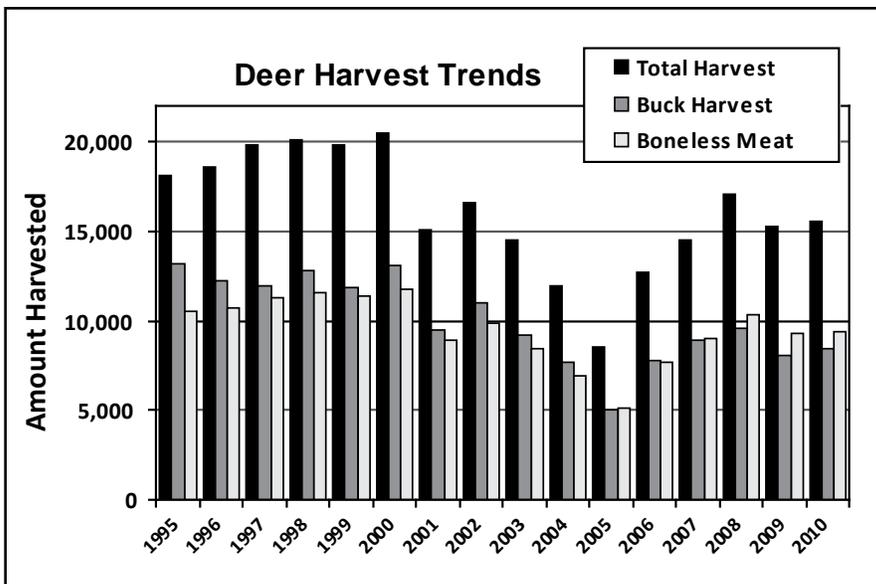


Figure 3. Annual total deer and antlered buck harvests in Vermont from 1995–2010. Boneless meat is represented as 100s of pounds, so the ten-thousand-line equals one-million pounds of meat. Harvest levels in the late 1990s are believed to be unsustainable, from an overabundant deer herd due to crash during a severe winter as happened in 2001.

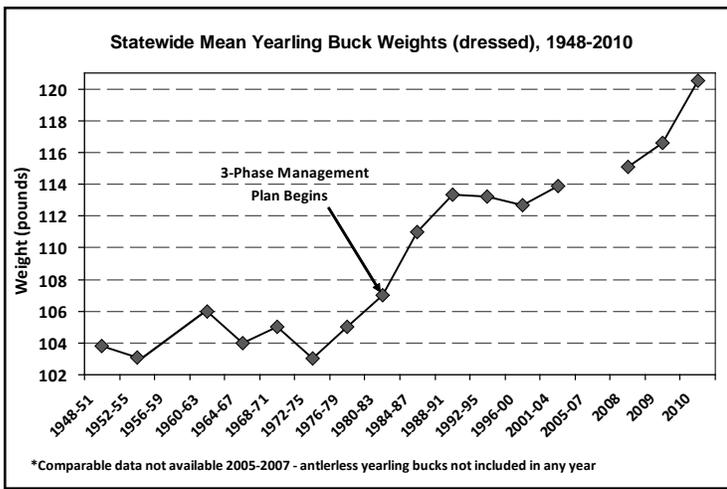


Figure 4. Yearling buck weights measured by department biologists from 1948–2010. Comparable data were gathered in 2008–2010 at biological check stations during Youth Weekend because “spike-horn” yearlings are legal during that weekend only. The 3-phase management plan was a bold effort to improve herd health by drastically reducing the chronically overabundant deer herd in the early 1980s, maintain low deer densities for several years to allow habitats to recover, and allow deer densities to slowly increase in the late-80s and early-90s. This plan worked. (Note the change in the time scale, designed to show the entire history of data collection and two most recent years of data at the same time).

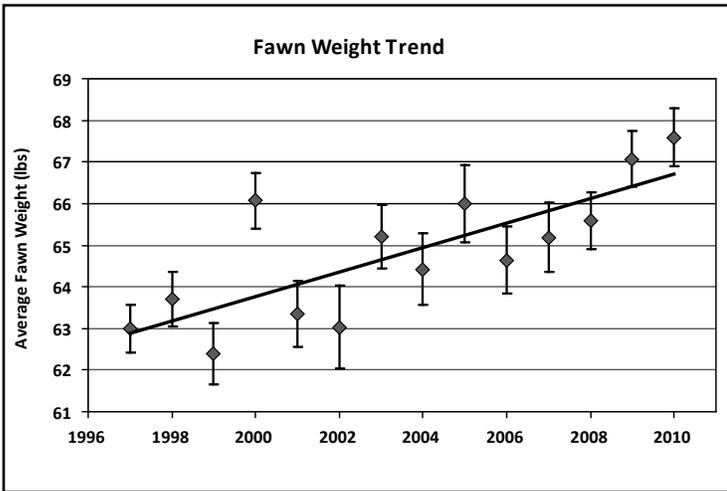
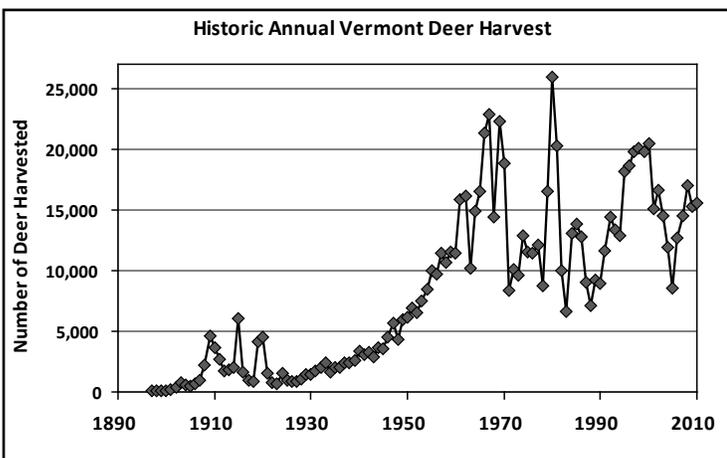


Figure 5. Annual average fawn weights (with 95% confidence limits) as reported by hunters to check stations from 1997–2010. All years exclude fawns reported over 99 pounds. The trend-line minimizes the distance between the annual points and the line itself. With bio-check stations now during Youth Weekend, the department will investigate the use of fawn weights as a more sensitive indicator of herd health, similar to the use of yearling buck weights. On average, fawns in 2010 weighed 4.5 pounds more than in 1997; this could be the difference between life and death during some winters.



deer weights (Figures 4 and 5). It is hoped that this signals a new trend in Vermont differing from the “boom and bust” trend of the past when the deer herd was weakened by years of overabundance. Vermont’s deer population was healthier in 2010, as indicated by fawn and yearling weights, than it has ever been in modern times (Figures 4 and 5). Deer were fatter and stronger going into winter, resulting in fewer deer succumbing to the stresses of winter. If this heralds the beginning of a new trend, we hope to see a moderation in the boom and bust cycles that have historically characterized Vermont’s deer population and harvest (Figure 6). It would provide steady opportunities for deer hunting and at the same time help maintain the health of the forest and deer habitat.

The 14-member Vermont Fish and Wildlife Board and Vermont deer hunters should be proud of this achievement. The health of Vermont’s deer has been enhanced by allowing adequate harvest of adult female deer during our hunting seasons. The Fish & Wildlife Department will continue to improve its methods and science-based hunting recommendations to the Fish and Wildlife Board. Vermont’s hunters and the Board can take credit for making deer management possible.

The 10-Year Big Game Management Plan describes the many negative biological and social impacts that result from overabundance of deer. That Plan discusses why about 15–20 deer per square mile is the proper prescription for most of Vermont at this time. This deer density is believed to be half of what used to exist in parts of Vermont in the 1960s, ‘70s, and even in the late ‘90s. The department recognizes that deer numbers are fewer now than they once were in much of southern Vermont. It is critical that deer numbers remain at current levels in order to maintain herd health and balance the population with what is now a lower carrying capacity. In contrast, there is room for growth of the deer herd in some parts of the state such as the northeast highlands and parts of the Green Mountains. Antlerless deer hunting has been minimized for several years in these areas to let deer numbers increase.

Deer populations do not always rebound quickly. The reasons for this can be complicated with various factors working together to prevent a herd from increasing. These factors include winter severity, available winter habitats, aging forests with little forage, competition for forage with moose, and predation by black bears, bobcats, coyotes, and domestic dogs. These factors vary in importance within different regions of the state. For example, domestic dogs can be a big problem where they are consistently allowed to harass overwintering deer.

Figure 6. Historic harvest of deer in Vermont since deer hunting was again made legal in 1897. Annual harvests of 20,000 deer have never been sustainable in Vermont. The department’s Big Game Team believes that annual harvests of 14,000–18,000 should be sustainable despite variable winter weather severity. Historically, annual harvests of 20,000 deer indicate an overabundance of deer in Vermont and a deer herd that will inevitably crash when a severe winter comes along.

Season Results and Comparisons

In 2010 hunters harvested 15,523 deer in the four Vermont deer seasons, a 2% increase from 2009. Harvest results by town are listed in Table 6.

Archery Season

Archery hunters reported a total of 2,914 deer during the 32-day split season (October 2–24 and December 4–12). This was a 4% decrease, down 118 deer, from the 2009 season. The archery harvest was comprised of 22% antlered bucks, 65% adult does, and 12% fawns (Table 1). The prevalence of does in the archery harvest demonstrates that bow hunting is an important mechanism for deer population management. Harvesting does prevents overabundant and unhealthy deer. Ninety two deer (3% of total archery harvest) were harvested during the December portion of the split season. With a bag limit of two deer during archery, both of which may be antlerless but only one can be antlered, hunting opportunity for archers has been good. All but one WMU in Vermont was open to the taking of antlerless deer during the archery season in 2010 (Figure 7).

Youth Season

Youth hunters maintained a strong presence in 2010. The 2010 youth deer hunting weekend harvest of 1,712 deer was virtually identical to the 2009 harvest of 1,708 deer. Youth hunters who qualified could harvest any one deer during November 6-7, 2010, the weekend prior to opening of rifle season. The youth harvest was comprised of 34% antlered bucks, 42% adult does, and 24% fawns (Table 1). Youths harvested at least 231 spike-antlered bucks which were 40% of all antlered bucks taken during youth weekend. With an estimated 7,000 spike-antlered yearling bucks statewide, 231 represents about 3% of the spike buck population. This clearly indicates that youth weekend has no real impact on the yearling buck population. However, it is very important that these spike bucks are harvested, as they provide the sample necessary for deer research and management purposes.

The youth season has become more important for deer management in Vermont since implementation of the antler restriction. The data gathered during youth season provides particularly valuable information because the youth harvest yields a representative cross-section of the deer population. Youth hunters on youth weekend are the only hunters able to legally harvest spike-antlered bucks. Not only does the youth hunting season help with the science of deer management, but it also helps with recruitment of youth hunters who will ensure the future of Vermont's hunting heritage and continued ability to manage the deer herd.

One of the measurements biologists use to monitor the health of a deer population is yearling antler

ARCHERY SEASON – 2,914 DEER HARVESTED

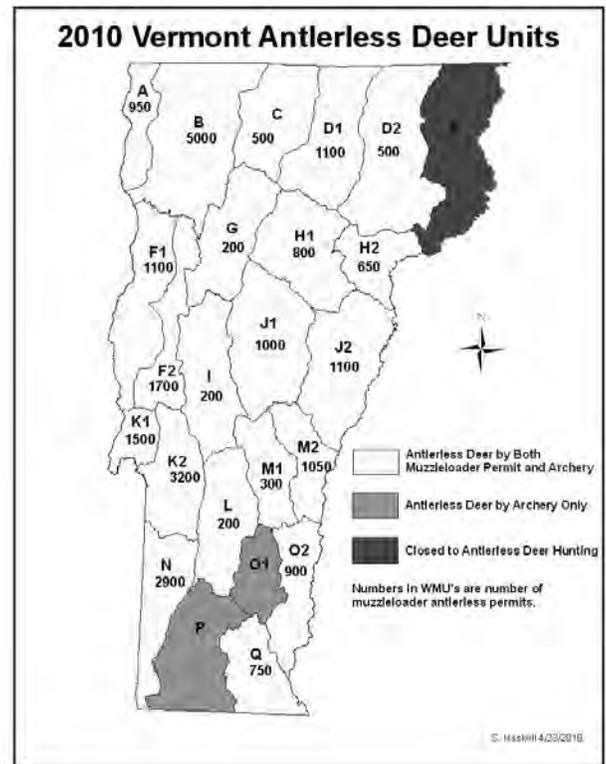
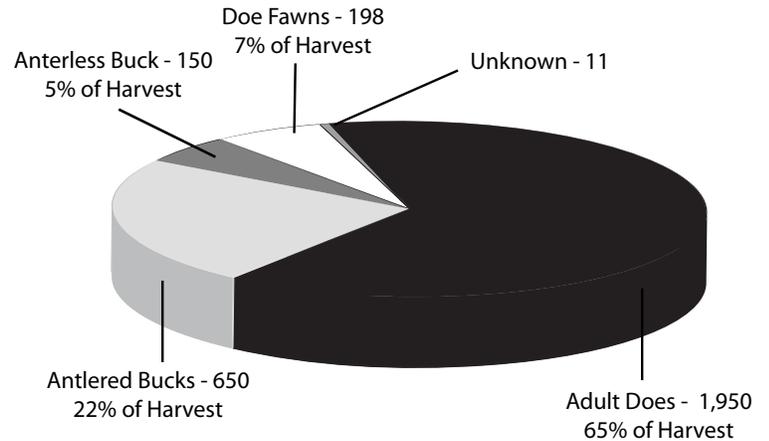


Figure 7. Vermont 2010 antlerless-deer Archery and Muzzleloader seasons. Numbers in WMUs are the recommended and approved number of permits during muzzleloader season.

YOUTH SEASON – 1,712 DEER HARVESTED

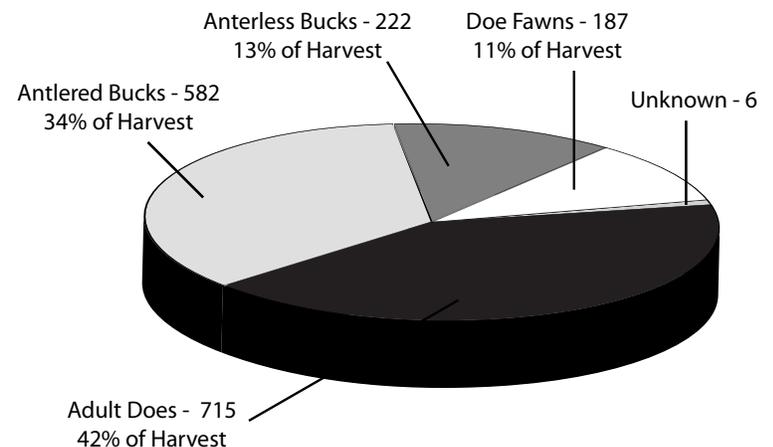
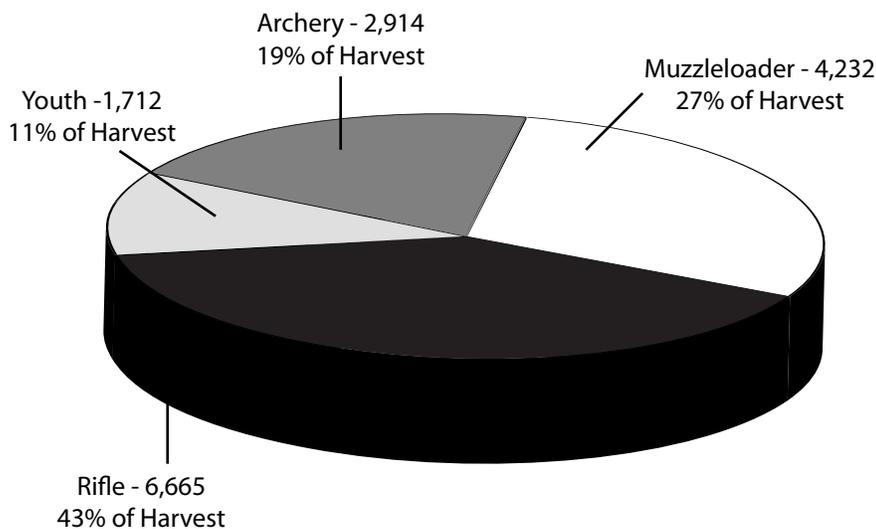


TABLE 1. 2010 LEGAL DEER HARVEST COUNTS AND PERCENTAGES BY SEASON AND AGE-SEX

Season		Adult Doe	Antlered Buck	Antlerless Buck	Fawn Doe	Unknown	Total
Archery	Count	1,905	650	150	198	11	2,914
	% within Season	65%	22%	5%	7%	<1%	-
	% within Deer Type	33%	8%	23%	30%	26%	-
	% of Total	12%	4%	1%	1%	0%	19%
Muzzleloader	Count	3,114	535	275	285	23	4,232
	% within Season	74%	13%	6%	7%	<1%	-
	% within Deer Type	54%	6%	43%	43%	55%	-
	% of Total	20%	3%	2%	2%	0%	27%
Rifle	Count	0	6,663	0	0	2	6,665
	% within Season	0%	100%	0%	0%	0%	-
	% within Deer Type	0%	79%	0%	0%	5%	-
	% of Total	0%	43%	0%	0%	0%	43%
Youth	Count	715	582	222	187	6	1,712
	% within Season	42%	34%	13%	11%	0%	-
	% within Deer Type	12%	7%	34%	28%	14%	-
	% of Total	5%	4%	1%	1%	0%	11%
Total	Count	5,734	8,430	647	670	42	15,523
	% of Total	37%	54%	4%	4%	<1%	100%

HARVEST TOTALS BY SEASON – 15,523 DEER HARVESTED



AGE AND SEX DISTRIBUTION OF HARVEST – 15,523 DEER HARVESTED

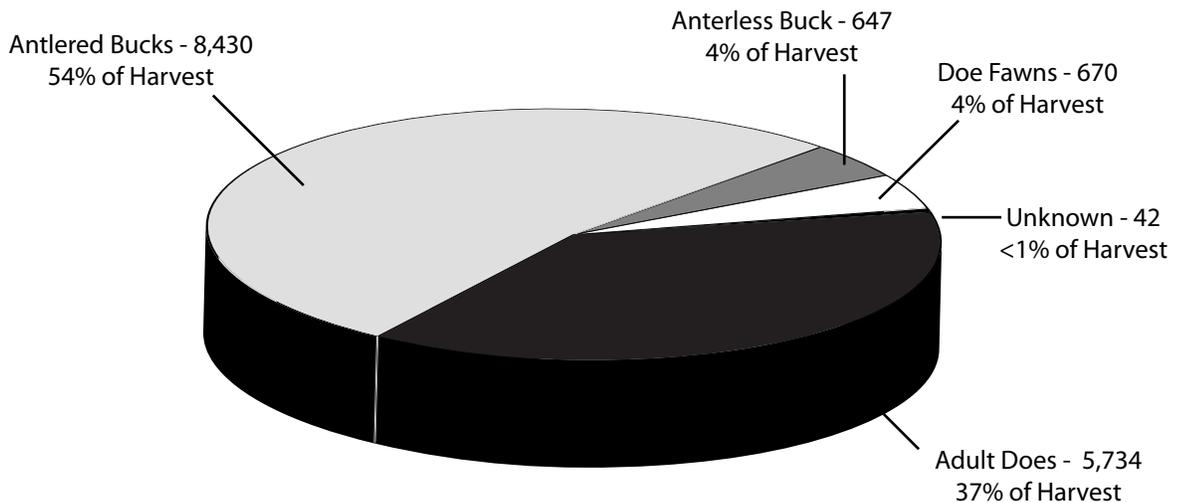


TABLE 2. 2010 LEGAL DEER HARVEST BY WILDLIFE MANAGEMENT UNIT AND SEASON

WMU	Archery Antlerless	Archery Buck	Youth Antlerless	Youth Buck	Rifle Buck	Muzzleloader Antlerless	Muzzleloader Buck	Unknown	Total Bucks	Buck/Sq-Mi	Total Antlerless	Total Deer	Deer/Sq-Mi	Sq. Miles*	2009 Total Bucks	2009 Total Deer
A	60	24	22	24	97	113	11	1	156	3.4	195	352	7.8	45	174	412
B	311	112	146	100	812	823	69	12	1,093	2.1	1,280	2,385	4.6	514	1,055	2,442
C	95	29	63	28	303	140	27	1	387	1.1	298	686	1.9	354	302	503
D1	143	63	119	43	412	261	55	2	573	1.5	523	1,098	2.9	376	466	869
D2	114	38	106	41	440	115	40	1	559	1.0	335	895	1.6	560	518	741
E	1	3	17	6	134	0	27	0	170	0.3	18	188	0.3	603	182	192
F1	84	27	44	21	185	121	10	1	243	1.1	249	493	2.2	221	179	414
F2	88	34	27	18	212	192	8	1	272	1.2	307	580	2.6	221	267	687
G	85	18	33	13	300	59	28	1	359	1.0	177	537	1.5	363	250	357
H1	141	33	60	13	319	149	29	1	394	1.0	350	745	1.9	395	422	776
H2	74	12	40	18	166	130	9	1	205	1.1	244	450	2.5	181	247	514
I	60	9	15	5	156	41	18	0	188	0.5	116	304	0.8	397	194	264
J1	133	37	68	24	380	161	23	2	464	0.9	362	828	1.7	491	455	870
J2	149	30	76	29	458	185	32	3	549	1.2	410	962	2.0	476	586	1,079
K1	32	14	28	24	139	120	8	2	185	1.9	180	367	3.7	98	193	443
K2	181	46	67	43	540	395	38	3	667	2.3	643	1,313	4.6	288	648	1,434
L	59	8	29	8	182	32	12	0	210	0.6	120	330	0.9	352	162	230
M1	37	9	9	13	150	44	8	0	180	0.8	90	270	1.1	239	141	175
M2	83	21	25	20	221	152	18	0	280	1.3	260	540	2.6	212	242	499
N	137	36	59	59	460	280	30	4	585	2.0	476	1,065	3.6	299	607	1,166
O1	14	2	2	3	78	0	1	0	84	0.4	16	100	0.5	191	83	93
O2	79	16	34	12	232	103	12	1	272	1.0	216	489	1.9	263	276	498
P	38	11	16	9	145	0	13	0	178	0.4	54	232	0.5	463	201	245
Q	52	18	17	8	141	58	9	4	176	0.6	127	307	1.1	273	189	334
Unk.	3	0	2	0	1	0	0	1	1		5	7		0	0	
Total	2,253	650	1,124	582	6,663	3,674	535	42	8,430	1.1	7,051	15,523	2.0	7,874	8,039	15,237

beam diameter. In 2008, biologists began operating their biological check stations during youth weekend (previously during opening weekend of rifle season) to gather representative data from all yearling bucks (Figure 4). Data from youth weekend will be important to monitor any change in the proportion of spike-antlered bucks in the population. Biologists measured 521 deer at 26 check stations statewide in 2010 (30% of youth harvest; Table 3). Data from harvested does and fawns will also be useful for deer management purposes.

The department will again advertise the locations of biological check stations with a press release and its website in autumn 2011. The data from these check stations are vital to deer research and management in Vermont. If you are a hunter or mentor during youth weekend, please be aware of the special biological check station locations where biologists hope to measure and age your deer. Even if you have already registered your deer at another check station, biologists are eager to collect the biological data from your deer, so please swing by one of the biological check stations if you can. It is never too soon to become involved in the research and management of your wildlife.

In 2009, Vermont's youth weekend was opened by legislative action to non-resident hunters from states open to Vermont youth hunters. It is hoped that this action continues to build opportunity and recruitment for both resident and non-resident youth hunters alike.

TABLE 3. 2010 AGE-SPECIFIC WEIGHTS OF DEER CHECKED BY BIOLOGISTS DURING YOUTH WEEKEND

Sex	Age	Mean	Std Dev	Minimum	Maximum	N
Female	0.5	60.4	10.1	43.0	97.0	59
	1.5	101.6	12.1	80.0	125.0	38
	2.5	115.4	14.5	91.0	152.0	49
	3.5	118.9	12.9	87.0	146.0	46
	4.5	119.2	13.3	91.0	150.0	33
	5.5+	116.1	10.6	90.0	144.0	27
Male	0.5	67.4	9.1	44.0	84.0	66
	1.5	117.4	16.0	69.0	170.0	139
	2.5	139.6	19.4	113.0	182.0	48
	3.5	156.1	23.5	130.0	200.0	14
	4.5	171.5	23.3	155.0	188.0	2
	5.5+	0.0	0.0	0.0	0.0	0
Total	All deer	106.8	29.6	43	200	521

*Ages determined by tooth wear and replacement. "N" equals number of deer examined, and 2 Standard Deviations from the Mean average include 95% of observations.

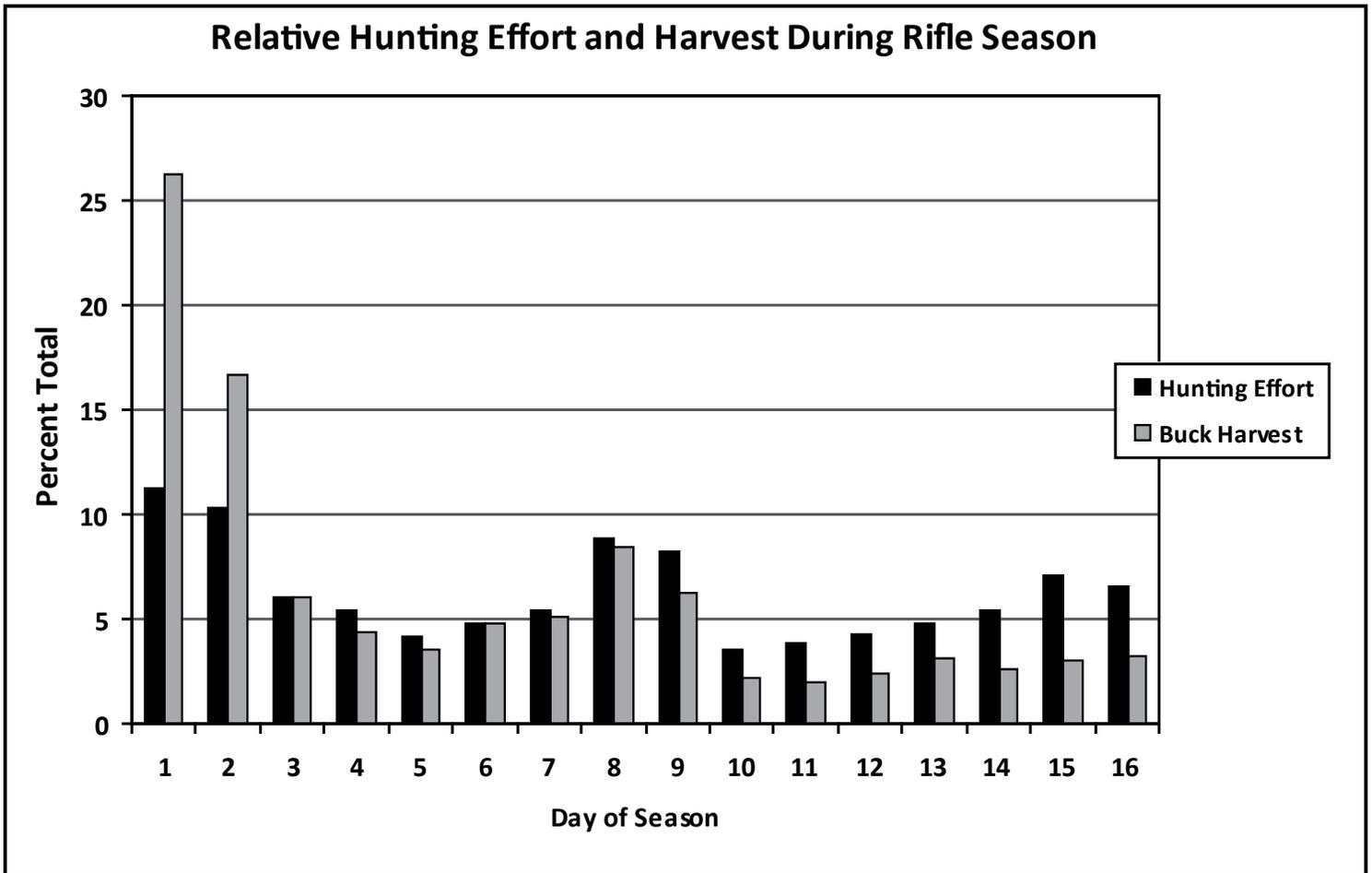


Figure 8. Standardized hunting effort and buck harvest during Vermont’s historic 16-day Rifle Season with day #13 on Thanksgiving. The daily buck harvest return given an amount of hunting effort is high during opening weekend. As the legal buck population gets reduced during the first week of rifle season, buck harvest returns get to be less than relative hunting effort. At this point, a hunter could increase his or her odds for success by moving to remote areas away from roads where fewer hunters have already been. The antler restriction guarantees that the buck population does not become too depleted.

Rifle Season

Rifle hunters reported a total of 6,663 antlered bucks during the traditional 16-day rifle season (November 13–28). This harvest was an 11% increase (647 bucks) from the 2009 rifle season harvest total of 6,016. Rifle harvest in 2010 increased in all counties except Bennington, Caledonia, Grand Isle, Washington, and Windham (Table 6; also see 2009 Harvest Report).

Hunter-effort surveys were randomly mailed to 5,000 licensed Vermont hunters again in 2010. There were 919 respondents that hunted, and 180 reporting that they did not hunt (22% return rate). Hunters reported an average of 43 hours afield during the 2010 rifle season. Sighting data from these surveys are used to monitor deer and moose population trends (Table 4). Timing of hunter effort within the deer rifle season is also useful for modeling population size and harvest rates. As usual, Saturday and Sunday of opening weekend saw the greatest hunting effort and yielded the greatest harvests among all 16 days of the season (Figure 8).

Hunters reported seeing an average of 2.22 deer per 10 hours of hunting with a sighting rate of 0.23 antlered bucks per 10 hours, or about 1 buck per 42 hours (Table 4). The buck sighting rate of 0.23 was nearly identical to the 2009 rate of 0.24. This is indicative of similar population levels.



TABLE 4. NUMBER OF DEER SEEN PER 10 HOURS HUNTING BY WMU AS REPORTED BY RIFLE HUNTERS

WMU	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Mean
A	1.53	1.35	2.00	6.03	2.72	3.51	4.57	4.47	3.04	1.48	4.08	3.48
B	3.20	2.14	3.35	3.18	2.10	3.62	3.56	4.07	3.35	2.98	3.04	3.46
C	1.78	1.14	2.07	2.67	1.23	2.41	1.87	3.20	2.73	2.90	2.40	2.44
D1	2.19	1.78	1.48	2.07	1.12	3.26	3.76	2.86	3.30	2.63	2.41	2.69
D2	1.26	1.59	1.74	1.69	1.01	2.70	2.03	3.43	2.79	2.39	2.35	2.30
E	1.05	0.48	0.26	0.53	0.52	0.75	1.16	1.89	1.08	0.97	0.86	0.96
F1	3.18	2.57	3.92	3.79	2.44	3.60	3.17	5.16	2.58	3.00	2.36	3.58
F2	2.68	1.92	3.50	2.66	2.09	3.11	3.01	3.85	3.63	1.69	3.48	3.16
G	1.98	1.10	1.42	2.79	1.69	1.57	1.86	2.93	2.04	2.18	1.68	2.12
H1	2.80	1.86	1.49	3.84	1.48	2.22	2.55	4.68	1.85	1.66	1.85	2.63
H2	3.37	1.60	2.60	2.88	1.95	2.71	2.86	3.15	2.74	2.46	2.23	2.86
I	1.80	1.19	2.18	1.63	1.05	1.63	1.32	3.07	1.04	1.57	1.42	1.79
J1	3.05	2.26	2.23	2.83	1.82	3.62	3.94	4.17	3.29	2.03	2.90	3.21
J2	2.48	1.94	2.92	4.08	2.60	3.40	3.33	4.25	2.29	1.88	2.39	3.15
K1	3.13	3.02	3.53	4.03	2.28	4.04	5.59	5.23	4.27	3.59	4.52	4.32
K2	2.67	2.73	2.71	1.98	2.33	3.49	2.57	3.07	4.02	3.03	1.96	3.06
L	1.75	1.84	2.28	1.24	1.23	1.62	1.52	1.79	1.73	1.80	1.58	1.84
M1	1.38	1.04	3.50	1.40	1.08	1.91	2.41	2.16	2.32	2.06	1.40	2.07
M2	3.39	3.75	2.28	3.63	2.31	3.94	4.37	4.58	3.32	2.23	2.50	3.63
N	4.28	2.10	3.75	2.81	3.53	3.13	3.25	2.79	3.24	3.65	2.25	3.48
O1	1.70	0.80	1.97	1.77	1.86	2.23	1.45	2.36	1.38	1.00	0.87	1.74
O2	1.69	1.54	2.82	2.00	1.03	2.39	2.49	3.99	2.03	1.86	1.42	2.33
P	0.70	0.73	1.62	0.87	1.80	2.10	1.22	1.24	1.17	1.00	0.73	1.32
Q	1.75	1.14	2.08	1.90	2.27	2.01	1.37	3.48	1.56	1.33	0.54	1.94
Total	2.36	1.82	2.43	2.56	1.75	2.75	2.74	3.51	2.64	2.24	2.22	2.70

Muzzleloader Season

Muzzleloader hunters harvested a total of 4,232 deer during the December 4–12 muzzleloader season. This was a 5% decrease in harvest compared to the 2009 total of 4,480 deer. The muzzleloader harvest was comprised of 13% antlered bucks, 74% adult does, and 13% fawns (Table 1). Muzzleloader hunters took 54% of the 2010 adult doe harvest. Muzzleloader hunters provide a major management tool, helping control total deer numbers in Vermont through shooting of antlerless deer.

The Fish and Wildlife Board allocated 25,600 antlerless-deer permits for the muzzleloader season by the initial lottery system. Out of 25,600 permits offered 19,146 were sold during the lottery. As in previous years hunters took advantage of a system allowing purchase of unallocated antlerless-deer tags. A total of 4,558 unallocated permits were purchased bringing the total to 23,704 permits sold. The unallocated permits were purchased primarily for WMUs A, F1, F2, K1, K2, and N. A total of 3,674 antlerless deer were taken for a success rate of about 16% in 2010 which was slightly lower than 2009. Many landowners (owning at least 25 acres of non-posted land) used their advantage in the antlerless lottery to secure a permit (Table 5).

MUZZLELOADER SEASON – 4,232 DEER HARVESTED

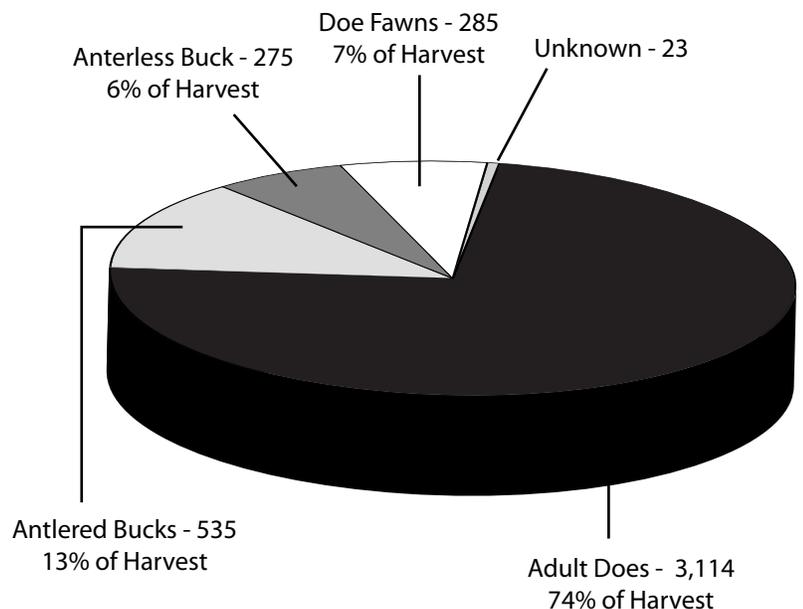


TABLE 5. 2010 MUZZLELOADER ANTLERLESS PERMIT ALLOTMENTS AND HARVEST BY WMU

WMU	Permits Available	Permits Distributed	Resident Status		Landowner Status		No. Permits Filled	% Success
			NonResident	Resident	Yes	No		
A	950	950	15	935	18	932	113	11.9
B	5,000	5,001	44	4,957	327	4,674	823	16.5
C	500	500	13	487	178	322	140	28.0
D1	1,100	1,100	32	1,068	183	917	261	23.7
D2	500	500	33	467	180	320	115	23.0
F1	1,100	1,100	20	1,080	32	1,068	121	11.0
F2	1,700	1,700	20	1,680	67	1,633	192	11.3
G	200	198	4	194	47	151	59	29.8
H1	800	800	21	779	147	653	149	18.6
H2	650	650	67	583	84	566	130	20.0
I	200	200	4	196	23	177	41	20.5
J1	1,000	1,001	94	907	161	840	161	16.1
J2	1,100	1,100	119	981	226	874	185	16.8
K1	1,500	877	36	841	25	852	120	13.7
K2	3,200	2,795	123	2,672	59	2,736	395	14.1
L	200	200	15	185	17	183	32	16.0
M1	300	300	19	281	18	282	44	14.7
M2	1,050	1,050	109	941	39	1,011	152	14.5
N	2,900	2,030	180	1,850	27	2,003	280	13.8
O2	900	900	91	809	73	827	103	11.4
Q	750	752	73	679	29	723	58	7.7
Total	25,600	23,704	1,132	22,572	1,960	21,744	3,674	15.5



Looking to the Future

During the past year, the Fish & Wildlife Department began the implementation of the new 10-year Big Game Plan for Vermont's four big game species (deer, moose, bear, and turkey). The plan is available in whole or in parts from the department's website (www.vtfishandwildlife.com). The Plan contains information about past, present and future deer management in Vermont. It is a guide for the next ten years that establishes meaningful goals and strategies for the department to achieve.

There are four topics in the deer section of the plan that have been or will need to be addressed: 1) antler point restrictions, 2) a split muzzleloader season with an opening before rifle season, 3) deer-urine scent lures as associated to risk of chronic wasting disease (CWD), and 4) realignment of WMUs. These topics are discussed below in this order.

Antler Point Restrictions

The antler restriction has worked. With the exception of the higher percentage of yearlings harvested in 2010 due to the previous mild winter, the age structure of the buck population has improved (Figure 9). It has worked because hunters have been counting antler points before they shoot. It was designed to increase age structure of the buck population, not increase overall deer numbers. We now have as many legal bucks in the state as we did before the antler restriction, but there are an additional 7,000–8,000 yearling and 2-year-old “spike-horns” out there that are pretty much guaranteed to survive the hunt. They also are now healthy and strong and have a good chance of surviving winter to show up as legal bucks the next year (Figure 10). We now no longer depend so much on recruitment of fawns to yearlings each year to support the annual buck harvest. The influence of poor fawn recruitment in any given year on subsequent buck harvests now occurs following a one-year lag period when these bucks are 2 ½ instead of 1 ½ years old. We now have more deer in older age classes that are better able to survive Vermont winters.

The antler rule was originally slated as a 5-year experiment that ended in 2009. The Vermont General Assembly has extended the Fish and Wildlife Board's authority to manage deer until 2014. This means that the Board can choose to change deer management rules based on the scientific research and advice of the department during this period. For biological purposes, there will be a continued need to

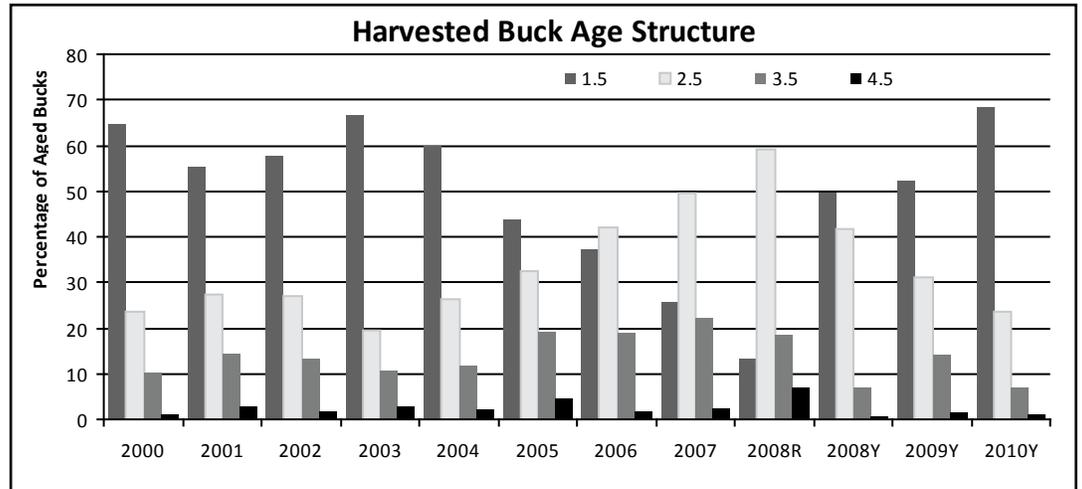


Figure 9. Age structure of Vermont bucks sampled by department biologists during opening weekend of Rifle Seasons 2000–2010 as determined by tooth wear and replacement. Data for 2008R represent the age structure of bucks taken during Rifle Season under the antler rule. It is noteworthy that 2008 may have been the first season in Vermont's history when more 3-year-old bucks were taken compared to yearlings. Data for 2008Y, 2009Y, and 2010Y represent age structure of bucks taken during Youth Weekend, with no antler rule in place, so are more representative of the actual population.

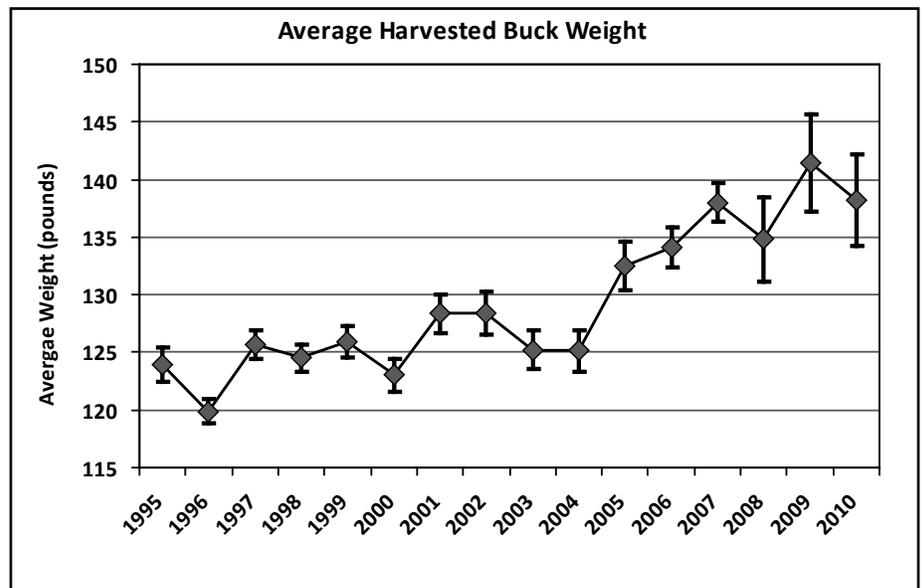


Figure 10. Statewide mean average weights (with 95% confidence limits) of Vermont bucks weighed by department biologists during opening weekend of Rifle Season from 1995–2007 and during Youth Weekend in 2008–2010. For comparison with Rifle Season data from 2005–2007, the 2008–2010 samples only consider bucks with at least 3 antler points. Reduced sample sizes in 2008–2010 cause less certainty around the averages (the larger confidence intervals). Average harvested buck weight has gone from about 125 pounds before the antler restriction to about 140 pounds now (also see Table 4). This results in more meat taken now given similar buck kills before and after the antler rule.



change deer management rules as conditions and the deer population change in Vermont.

There is a lot of controversy and confusion fueled by biologists and hunters around the country concerning potential genetic impacts of the selective pressure caused by antler restrictions on the future antler characteristics or other characteristics of white-tailed deer. There are complicating factors such as the does' contribution to antler characteristics and nutrition, as mentioned in the 10-Year Plan (see literature cited). Simply put, antler characteristics are heritable. Thus, selective pressures are likely to have impacts if great enough in magnitude and applied for a sufficient duration of time. The questions are: what is significant magnitude; and what is a sufficient duration of time. These questions currently remain unanswered. The current antler restriction in Vermont protects the smaller half of yearling bucks – the “spike-horns.” This means that the smaller bucks among each year class make up most of the bucks surviving to older age classes. Thus, these bucks that are initially smaller end up dominating future breeding. If the magnitude of selection and duration of time is great enough, the selection for smaller bucks will likely produce an increasing proportion of smaller bucks in the buck population. This is not a desirable outcome.

Antler beam diameter and antler point data have been collected for years and provide a measure of yearling antler development and a long-term record which can be used to identify any changes in trends in antler characteristics that may result from an antler restriction harvest regulation.

If biologists determine that the current antler restriction is having a negative impact on antler characteristics, a change in the antler restriction may be called for to correct the problem or even reverse the trend to improve antler characteristics. Should this be necessary, at least three options exist and include: 1) returning to the 3-inch antler requirement; 2) increasing the antler restriction from 2 to 3 points on one side;

or 3) implementing a slot limit approach that increases the size of the antler rule while making “spike horns” legal again. This last alternative would protect the larger yearlings, target the smaller yearlings, and create a selective pressure favoring larger antler characteristics.

Split Muzzleloader Season

The department's Big Game Plan also recommended the consideration of ways to allow for more of the antlerless deer harvest to occur prior to the existing December muzzleloader season. After evaluating the many alternatives, in 2010 the department contracted with Responsive Management, a company that specializes in fish and wildlife-related surveys, to do a telephone survey of resident licensed hunters to determine hunters' opinions on potential changes to the deer and moose hunting seasons.

Survey Results on Muzzleloader Deer Season

Based on the final “informed opinion” results from 515 hunters surveyed, the potential muzzleloader antlerless deer season had more support (59%) than opposition (35%), after respondents had been provided all the pertinent information. Three reasons for supporting the muzzleloader antlerless deer season were quite common: supporters think that there are too many deer in Vermont (31% of those in support), that there are not enough muzzleloader hunting opportunities (24%) and that taking female deer will help with effective deer population management (23%). Note that respondents could give more than a single reason. Conversely, the single most common reason for opposing is the perception that there are not enough deer in Vermont (52% of opponents), distantly followed by the feeling that enough deer are already harvested/that the deer themselves are under enough pressure with the existing seasons (19%). Again, note that respondents could give more than a single reason.

In response, the department recommended that the Fish and Wildlife Board establish an October muzzleloader season to be held for four days beginning Thursday after Columbus Day. The proposal also included expanding the archery season to October 1st through the 31st, except during the four day muzzleloader season, and increasing the bag limit for archery season to three deer, only one of which may be a buck.

Public comment during the Fish and Wildlife Board hearings was strongly opposed to the October antlerless-only muzzleloader season. The Fish and Wildlife Board rejected expanding both the muzzleloader and archery seasons, but approved an increase in the archery bag limit. While the increase in the bag limit may enhance hunting opportunities for archers, it is likely that the December muzzleloader season will remain the primary tool for harvesting antlerless deer.

Deer-urine Scent Lures

The Big Game Plan discussed how the use of deer-urine scent lures has unknown but undeniable risk of introducing chronic wasting disease (CWD). Transmission of CWD to deer from

scent lures could be indirect via ingestion of contaminated soils or direct if a deer ingests contaminated scent lures. Some of these products do in fact come from deer held in cages where their feces and urine are collected. It is known that the infective agent of CWD, a mutant protein, can be passed in feces and urine. It is also known that the captive deer trade continues to spread this and other diseases from state to state, from one facility to another, because disease-prevention rules have a history of violations. Additionally, it is known that 9 of 11 of deer-urine facilities recently audited in Michigan had not followed mandatory disease-testing regulations. A question: How important are deer scent lures to the Vermont deer hunting experience? Are they important enough to risk introduction of CWD into Vermont? At this time, the department recommends that hunters discard deer-urine scent lures, and only purchase synthetic deer lure product.

Prevention is “key” to management of CWD. When the disease becomes established in a deer population at more than a 1% infection rate, there exists no hope of eradicating the disease. A 10–15% infection rate has typically been found in white-tailed deer populations that have a history of CWD infection. Only about 8% of Vermont’s doe population is harvested annually by hunting to maintain population stability. If CWD caused an annual 10% loss in Vermont’s doe population, ending doe-hunting would still not stem the decline in Vermont’s deer population resulting from the infection. There would be fewer bucks to hunt as well. There is nothing that could be done to prevent a decline in Vermont’s deer population.

There would be a single chance to eradicate this disease if it is introduced to Vermont. Standard protocols for a state like Vermont call for reduction of free-ranging deer to 0–5 deer per square-mile within a 10-mile radius of the location of the initial location of an infected deer for a period of at least five years – that’s about 300 square-miles. Getting the population down to as close to zero as possible is important because if no deer exist to spread and perpetuate the disease, the disease cannot spread, and it is believed to die in soils within about five years. With 10% annual loss of does, only through this action could Vermont’s deer herd be spared from a terrible fate following CWD introduction.

Wildlife Management Units Realignment

The fourth issue for the coming year is a realignment of some of the Wildlife Management Units (WMUs) as recommended in the Big Game Plan. Select WMU boundary changes would be targeted to better account for differences in habitat conditions and deer densities. In particular, WMUs D, H, K, M, O and Q would be affected by the proposal set out in the plan. WMU boundaries; however, are set by statute, thereby requiring an act of the Vermont Legislature before they can be altered.

Other Thoughts for the Hunter

With lots of public lands spread across the state and Vermont’s tradition of open-hunting on private lands, Vermont has excellent and improving hunting opportunity. Hunters need to remember to be courteous of landowners. Take time to ask permission and get to know landowners whether or not they post their land.

In much of Vermont, the winter of 2010-2011 has been more severe than in previous years. Winter severity in March is particularly critical to over-winter deer survival as the energy demands of pregnant does increase dramatically. If severe conditions persist it is likely that we will see a decrease in the 2011 deer harvest along with fewer antlerless permits. However, due to recent liberal doe harvests in Vermont our deer population is healthier than ever. Yearling and fawn weights are up due to reduced competition for food resources making them more likely to survive the severe winter conditions. With this said, the most important point is that we are hoping we will no longer experience the wild swings in harvest that have plagued Vermont because our deer herd is healthier than ever due to the changes in management that have been made in recent years.

If you’ve ever wondered how the department makes its recommendations for annual antlerless deer harvests, you can read about the methods in the 2009 Antlerless Permitting and Youth Season Recommendation available in the library section of the department’s website (www.vtfishandwildlife.com).

The future looks bright for Vermont’s deer herd. The gains we have made in herd health and the condition of the habitat offers promise of successful deer seasons ahead.



TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest	
ADDISON	ADDISON	1	2	17	16	36	
	BRIDPORT	6	2	15	9	32	
	BRISTOL	6	1	22	14	43	
	CORNWALL	16	10	21	19	66	
	FERRISBURG	0	0	2	0	2	
	FERRISBURGH	18	12	38	29	97	
	GOSHEN	0	1	8	4	13	
	GRANVILLE	0	1	6	3	10	
	HANCOCK	0	0	0	1	1	
	LEICESTER	5	3	10	10	28	
	LINCOLN	14	3	20	14	51	
	MIDDLEBURY	13	6	30	29	78	
	MONKTON	15	1	15	17	48	
	NEW HAVEN	27	17	54	45	143	
	ORWELL	18	14	45	28	105	
	PANTON	4	5	7	3	19	
	RIPTON	8	2	20	5	35	
	SALISBURY	3	4	14	12	33	
	SHOREHAM	17	9	25	11	62	
	STARKSBORO	14	7	40	18	79	
	VERGENNES	1	0	0	1	2	
	WALTHAM	2	2	3	2	9	
	WEYBRIDGE	10	2	7	8	27	
	WHITING	6	4	10	1	21	
		TOTAL	204	108	429	299	1,040
	BENNINGTON	ARLINGTON	10	12	58	36	116
BENNINGTON		41	10	55	46	152	
DORSET		11	7	37	24	79	
GLASTENBURY		1	0	3	0	4	
LANDGROVE		1	0	0	0	1	
MANCHESTER		4	0	21	6	31	
PERU		0	1	3	1	5	
POWNAI		19	16	93	48	176	
READSBORO		6	4	10	0	20	
RUPERT		18	14	56	22	110	
SANDGATE		16	5	45	15	81	
SEARSBURG		0	0	6	0	6	
SHAFTSBURY		47	31	61	58	197	
STAMFORD		4	4	18	3	29	
SUNDERLAND		2	4	11	9	26	

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest
BENNINGTON (CONT.)	WINHALL	0	1	4	0	5
	WOODFORD	2	1	16	2	21
	TOTAL	182	110	497	270	1,059
CALEDONIA	BARNET	14	12	39	28	93
	BURKE	5	0	14	2	21
	DANVILLE	12	12	40	10	74
	GROTON	3	7	26	11	47
	HARDWICK	26	9	32	29	96
	KIRBY	0	3	8	3	14
	LYNDON	7	10	30	9	56
	LYNDONVILLE	0	0	2	0	2
	NEWARK	3	1	19	4	27
	PEACHAM	6	2	14	15	37
	RYEGATE	18	13	31	29	91
	SHEFFIELD	3	2	15	5	25
	ST JOHNSBURY	23	19	28	13	83
	STANNARD	0	1	3	3	7
	SUTTON	3	8	18	9	38
	WALDEN	4	3	19	6	32
	WATERFORD	22	17	44	37	120
	WHEELOCK	4	0	16	9	29
	TOTAL	153	119	398	222	892
	CHITTENDEN	BOLTON	5	0	32	10
BUELL'S GORE		0	0	0	1	1
BURLINGTON		2	0	0	0	2
CHARLOTTE		13	8	24	20	65
COLCHESTER		18	6	37	23	84
ESSEX		25	4	24	38	91
HINESBURG		12	5	20	32	69
HUNTINGTON		12	5	37	19	73
JERICO		22	5	34	21	82
MILTON		18	12	47	42	119
RICHMOND		8	5	35	22	70
SHELBURNE		17	1	13	2	33
ST GEORGE		1	0	1	0	2
UNDERHILL		24	11	45	29	109
WESTFORD		15	6	42	47	110
WILLISTON		11	3	15	8	37
TOTAL		203	71	406	314	994

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest
ESSEX	AVERILL	0	0	5	1	6
	AVERYS GORE	0	0	2	0	2
	BLOOMFIELD	0	1	17	6	24
	BRIGHTON	3	0	17	2	22
	BRUNSWICK	0	1	2	1	4
	CANAAN	0	2	11	4	17
	CONCORD	0	6	25	5	36
	EAST HAVEN	1	0	11	0	12
	FERDINAND	0	0	7	2	9
	GRANBY	0	0	3	1	4
	GUILDHALL	0	3	4	0	7
	ISLAND POND	0	3	0	0	3
	LEMINGTON	0	0	5	2	7
	LEWIS	0	0	3	1	4
	LUNENBURG	1	4	20	5	30
	MAIDSTONE	0	0	4	1	5
	NORTON	0	1	14	0	15
	VICTORY	0	0	3	1	4
	WARREN GORE	0	0	2	1	3
	TOTAL	5	21	155	33	214
FRANKLIN	BAKERSFIELD	17	7	56	49	129
	BERKSHIRE	20	23	65	59	167
	ENOSBURGH	35	26	47	26	134
	FAIRFAX	36	13	49	58	156
	FAIRFIELD	46	34	93	116	289
	FLETCHER	24	8	35	49	116
	FRANKLIN	31	22	77	74	204
	GEORGIA	21	27	33	64	145
	HIGHGATE	46	29	87	97	259
	MONTGOMERY	16	13	58	34	121
	RICHFORD	22	12	46	22	102
	SHELDON	18	13	46	51	128
	ST ALBANS	13	12	16	27	68
	SWANTON	25	19	39	49	132
	TOTAL	370	258	747	775	2,150
	GRAND ISLE	ALBURGH	29	15	34	43
GRAND ISLE		13	7	18	27	65
ISLE LA MOTTE		4	3	8	7	22
NORTH HERO		15	11	16	17	59
SOUTH HERO		24	11	23	29	87
TOTAL	85	47	99	123	354	

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest
LAMOILLE	BELVIDERE	3	2	14	9	28
	CAMBRIDGE	21	16	65	49	151
	EDEN	9	5	30	25	69
	ELMORE	5	5	22	9	41
	HYDE PARK	14	11	27	30	82
	JOHNSON	16	7	37	30	90
	MORRISTOWN	15	9	35	12	71
	STOWE	38	21	62	23	144
	WATERVILLE	12	9	13	13	47
	WOLCOTT	16	13	37	24	90
TOTAL	149	98	342	224	813	
ORANGE	BRADFORD	14	9	37	12	72
	BRAINTREE	4	6	21	15	46
	BROOKFIELD	3	5	33	11	52
	CHELSEA	18	13	43	19	93
	CORINTH	14	6	29	20	69
	FAIRLEE	4	8	20	7	39
	NEWBURY	33	22	65	37	157
	ORANGE	13	3	24	12	52
	RANDOLPH	29	12	46	45	132
	STRAFFORD	9	3	41	18	71
	THETFORD	25	15	53	17	110
	TOPSHAM	7	5	24	22	58
	TUNBRIDGE	19	15	51	20	105
	VERSHIRE	3	3	22	11	39
	WASHINGTON	4	2	23	10	39
	WEST FAIRLEE	3	3	12	3	21
WILLIAMSTOWN	35	24	40	31	130	
TOTAL	237	154	584	310	1,285	
ORLEANS	ALBANY	8	12	43	20	83
	BARTON	18	16	33	24	91
	BROWNINGTON	20	8	36	8	72
	CHARLESTON	15	17	39	15	86
	COVENTRY	4	13	35	13	65
	CRAFTSBURY	23	15	27	22	87
	DERBY	35	29	57	47	168
	GLOVER	7	14	21	12	54
	GREENSBORO	10	8	24	17	59
	HOLLAND	20	13	32	13	78
	IRASBURG	26	19	40	25	110
	JAY	3	0	20	4	27

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest
ORLEANS (CONT.)	LOWELL	8	9	34	6	57
	MORGAN	12	15	34	14	75
	NEWPORT	11	5	6	11	33
	NEWPORT CENTER	28	16	44	52	140
	TROY	18	20	33	18	89
	WESTFIELD	2	2	16	4	24
	WESTMORE	8	5	26	1	40
	TOTAL	276	236	600	326	1438
RUTLAND	BENSON	18	21	65	54	158
	BRANDON	15	4	36	14	69
	CASTLETON	16	16	60	31	123
	CHITTENDEN	17	7	33	8	65
	CLARENDON	39	16	44	45	144
	DANBY	16	11	44	37	108
	FAIR HAVEN	6	10	14	7	37
	HUBBARDTON	9	8	40	26	83
	IRA	6	2	16	18	42
	KILLINGTON	0	0	8	1	9
	MENDON	5	0	10	2	17
	MIDDLETOWN SPRINGS	10	6	34	21	71
	MT HOLLY	8	8	37	4	57
	MT TABOR	1	0	15	7	23
	PAWLET	34	25	95	75	229
	PITTSFIELD	1	1	7	4	13
	PITTSFORD	24	6	56	42	128
	POULTNEY	30	13	44	41	128
	PROCTOR	6	1	18	32	57
	RUTLAND	2	1	1	0	4
	RUTLAND TOWN	19	7	21	14	61
	SHREWSBURY	20	11	46	11	88
	SUDBURY	4	3	12	23	42
	TINMOUTH	17	6	41	29	93
	WALLINGFORD	23	11	50	28	112
	WELLS	28	7	45	33	113
	WEST HAVEN	18	16	39	31	104
	WEST RUTLAND	11	9	37	29	86
	TOTAL	403	226	968	667	2,264
	WASHINGTON	BARRE	1	2	1	0
BARRE TOWN		45	11	27	21	104
BERLIN		21	11	36	11	79
CABOT		10	5	13	17	45

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest	
WASHINGTON (CONT.)	CALAIS	15	3	27	15	60	
	DUXBURY	4	1	11	5	21	
	EAST MONTPELIER	28	14	34	20	96	
	FAYSTON	12	1	11	8	32	
	MARSHFIELD	12	5	33	17	67	
	MIDDLESEX	8	2	32	10	52	
	MONTPELIER	8	2	3	1	14	
	MORETOWN	6	4	19	11	40	
	NORTHFIELD	10	1	25	8	44	
	PLAINFIELD	14	8	24	17	63	
	ROXBURY	3	0	12	1	16	
	WAITSFIELD	5	1	13	7	26	
	WARREN	7	2	18	8	35	
	WATERBURY	17	5	37	13	72	
	WATERBURY CENTER	0	3	1	0	4	
	WOODBURY	1	2	24	11	38	
	WORCESTER	2	0	16	6	24	
	TOTAL		229	83	417	207	936
	WINDHAM	ATHENS	1	0	7	1	9
		BRATTLEBORO	17	5	19	6	47
BROOKLINE		4	0	8	5	17	
DOVER		3	1	9	1	14	
DUMMERSTON		8	2	25	14	49	
GRAFTON		1	0	14	3	18	
GUILFORD		22	3	24	19	68	
HALIFAX		1	0	12	5	18	
JAMAICA		0	1	17	1	19	
LONDONDERRY		7	1	12	0	20	
MARLBORO		4	1	16	6	27	
NEWFANE		3	3	26	11	43	
PUTNEY		10	5	21	13	49	
ROCKINGHAM		12	8	30	11	61	
SOMERSET		0	0	1	0	1	
STRATTON		1	0	3	1	5	
TOWNSHEND		3	0	18	4	25	
VERNON		9	7	11	3	30	
WARDSBORO		1	1	8	2	12	
WESTMINSTER		4	0	22	4	30	
WHITINGHAM		17	6	11	1	35	
WILMINGTON		7	8	11	7	33	
WINDHAM		0	1	4	0	5	
TOTAL			135	53	329	118	635

TABLE 6. 2010 LEGAL DEER HARVEST BY COUNTY, TOWN AND SEASON

COUNTY	Town of Kill	Archery	Youth	Rifle	Muzzleloader	Total Deer Harvest
WINDSOR	ANDOVER	2	0	9	0	11
	BALTIMORE	2	1	4	1	8
	BARNARD	1	1	25	9	36
	BETHEL	15	1	27	5	48
	BRIDGEWATER	5	1	22	7	35
	CAVENDISH	10	3	34	14	61
	CHESTER	13	3	47	8	71
	HARTFORD	16	11	33	21	81
	HARTLAND	29	12	45	42	128
	LUDLOW	11	5	20	3	39
	NORWICH	28	12	47	15	102
	PLYMOUTH	1	1	21	3	26
	POMFRET	9	8	35	23	75
	QUECHEE	3	2	11	10	26
	READING	4	3	24	12	43
	ROCHESTER	0	0	10	4	14
	ROYALTON	10	7	30	6	53
	SHARON	8	3	25	17	53
	SOUTH ROYALTON	0	0	0	5	5
	SPRINGFIELD	44	13	59	38	154
	STOCKBRIDGE	0	1	17	5	23
	WEATHERSFIELD	12	15	53	25	105
	WEST WINDSOR	15	4	21	25	65
	WESTON	1	0	9	1	11
	WINDSOR	11	1	18	15	45
	WOODSTOCK	27	16	45	22	110
		TOTAL	277	124	691	336
UNKNOWN		6	4	3	8	21
	STATE TOTAL	2,914	1,712	6,665	4,232	15,523