2012 Connecticut Deer Program Summary



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Introduction

This booklet is the 31st in a series since the passage of the White-tailed Deer Management Act of 1974 reporting on the status of the white-tailed deer resource in Connecticut. It summarizes white-tailed deer information for 2012, including changes in deer management regulations and reporting requirements, harvest statistics, research activities, and population dynamics of Connecticut's deer population. Connecticut's Deer Management Program goals are: 1) to maintain the population at levels compatible with available habitat and land uses, and 2) to allow for a sustained yield of deer for use by Connecticut hunters. The program has focused on stabilizing or reducing deer population growth for the best long-term interest of the deer resource, native plant and animal communities, and the public. Regulated deer hunting has proven to be an ecologically sound, socially beneficial, and fiscally responsible method of managing deer populations. Deer Program efforts have focused on increasing harvest of antlerless deer, coordinating controlled hunts for overabundant deer herds, assisting communities and large landowners with deer management issues, and research and management of urban deer populations.

Pursuant to the goal of reducing overabundant deer populations, aggressive management strategies have been implemented in areas with high deer densities. Strategies include the issuance of free replacement antlerless tags (1995), changes in state law to allow hunting over bait (2003), extending the archery season to include the month of January (2003), implementation of sharp-shooting programs (2003), development of an earn-a-buck program (2005), increased bag limits in specific deer management zones (2009), and allowing the use of crossbows during January (2010).

The replacement antlerless tag program, which was initiated in 1995, allows hunters in deer management zones (DMZs) 11 and 12 to harvest additional antlerless deer, with the goal of increasing the harvest of does. In 2003, hunting over bait was permitted in DMZs 11 and 12 during all seasons on private land. Use of bait in areas where hunter access to private land is limited will increase hunter opportunity and success. Starting in 2005, hunters could earn a free either-sex tag for harvesting a buck after harvesting 3 antlerless deer during the same season. In 2009, hunters were issued 1 additional antlerless tag in DMZ 7 and 2 additional antlerless tags in DMZs 11 and 12 with their shotgun/rifle and muzzleloader permits. In 2010, hunters were allowed to use crossbows in January. In developed areas where firearms hunting is not feasible, the DEEP encourages the use of bowhunting as a management tool. Communities experiencing deer overpopulation problems may choose to initiate controlled hunts or, under special conditions, may be eligible to implement sharp-shooting programs.

In recent years, town governments have been taking a more active role in initiating local deer management programs. In 2004, representatives of 10 towns in Fairfield County formed a Regional Deer Management Working Group called the Fairfield County Municipal Deer Management Alliance (www.deeralliance.com). Currently, 19 of 23 Fairfield County towns have joined the Alliance. The Alliance assists towns in establishing deer committees, shares knowledge and experience about managing urban deer with other towns, provides input on urban deer problems so as to influence wildlife policy decision makers, increases public awareness, and provides input for developing long-term solutions to control deer overabundance in southwestern Connecticut.

Residents of the town of Redding developed a website (http://BeSafeRedding.org) to facilitate a process whereby willing landowners are matched up with hunters that are committed to removing deer from private land at no cost to the landowner. The mission is to get Redding residents to work together for the purpose of reducing tick-related diseases and deer-vehicle accidents that result from deer overabundance and reducing deer impacts to the forest understory to facilitate the return of native bird and wildlife species. At the request of the town, Redding and the Wildlife Division initiated a special research project in March 2011 to develop a town-wide management plan. The final report is expected to be completed in 2013. The town of Newtown is working on a similar mission.

An ongoing multi-year deer research project assessing fawn production, adult and juvenile survival rates, causes of mortality, and habitat use in Connecticut DMZ 1 entered its second year during winter and spring of 2013. The Wildlife Division's Deer Program, along with Wildlife Management Institute staff, has been monitoring approximately 50 does and 41 fawns, with radio telemetry equipment, in the towns of Canaan, Cornwall, Salisbury, and Sharon. Average birth rate over a 2-year period was 1.5 fawns per doe; however, to date, survival rate is only about 40%, with predation being the primary cause of mortality. Additional deer will be captured, fitted with radio collars, and monitored for another two years. The Division also will be collecting teeth from harvested deer to provide more information on the age structure of the deer population in DMZ 1. Anyone interested in donating deer teeth from harvested deer should contact William Embacher (William.embacher@ct.gov) or Andrew LaBonte (Andrew.labonte@ct.gov) for more information.

Hunter Notes

New regulations approved in 2013 now allow hunters to use: crossbows during the archery season on private and state land; muzzleloaders during the shotgun/rifle season on private and state land; and unplugged shotguns on private land during the shotgun/rifle season.

As of June 2013, individuals and groups are now able to participate in a new on-line deer lottery process. Paper applications are no longer being accepted for entry into the deer lottery. The deer lottery program can be accessed on-line or at select DEEP locations.

The on-line application allows hunters to apply individually or as a group (4 hunter maximum). Applicants may apply for up to 6 different hunt areas. The new lottery process streamlines the distribution of deer permits and allows state land and controlled hunt lottery hunters to know immediately whether they were selected for their lottery area of choice. More specific details are on the DEEP website at www.ct.gov/deep/hunting.

During the 2012 deer hunting season, hunters were no longer required to register their deer at a check station during the first 4 days of the shotgun-rifle deer hunting season (Nov 14-17). Hunters were able to register their deer during the entire deer hunting season using the on-line and telephone reporting systems and were not required to bring deer to a check station. Check stations remained open for obtaining replacement tags for DMZs 11 and 12, and during the first 4 days of the shotgun-rifle season, to accommodate those hunters who were not informed of the new changes. Only replacement tag check stations will remain open in 2013.

Information on dates and locations of hunter education courses can be obtained by calling the DEEP Wildlife Division's Franklin office (860-642-7239) or Sessions Woods office (860-675-8130), or on the DEEP Website (www.ct.gov/deep/hunting). Licenses and permits to fish, hunt, and trap in Connecticut can be purchased on-line by going to Connecticut's Online Sportsmen Licensing System at www.ct.gov/deep/sportsmenlicensing.

Regulations still remain in place prohibiting hunters from transporting into Connecticut any deer or elk carcasses or part thereof from any state where chronic wasting disease (CWD) has been documented, unless de-boned. Specific wording of the regulation (www.ct.gov/deep/lib/deep/regulations/26/26-55-4.pdf) and an updated list of states where CWD has been documented can be found on the DEEP Website at www.ct.gov/deep/hunting.

Regulated Deer Harvest

Regulated hunting is an effective and cost-efficient method for maintaining deer populations at acceptable densities. With the implementation of a new system for reporting harvested deer in 2009, caution should be exercised when comparing any harvest data from 2009 onward to earlier years (2008 or earlier). During the 2012 hunting season, 13,421 deer were legally harvested and reported (Table 1), which is the third highest harvest reported since 1975 (Figure 1). This represents a 4.1% increase from the 2011 harvest. State land shotgun rifle A season and state land archery hunters showed the greatest increase in harvest (21.8% and 11.7%) compared to 2011. Harvest by crossbow hunters comprised 38% and 43% of the January harvest in 2011 and 2012.

In 2012, 2,534 deer were harvested during the first 4 days of the shotgun/rifle season, a 30% increase from 2011 (1,943). A higher harvest was expected in 2012 due to a lack of acorns and the presence of good weather during those first 4 days. With the use of deer check stations, and the telephone and on-line reporting systems, the reported shotgun/rifle harvest was 5,783 deer in 2012, a 7.8% increase from 2011 (5,367). Hunter success during the 2012 shotgun/rifle season was likely influenced by good weather conditions and the lack of acorns (increasing success) (Figure 6). In 2012, the landowner harvest was 1,267, slightly higher than in 2011 (1,196). Unlike the 3-week shotgun/rifle season, the landowner season runs from November to December and is less affected by periods of inclement weather and snowfall.

The antlerless and either-sex replacement tag harvest was lower in 2012 (482) than in 2011 (556). Deer harvested under the replacement antlerless and either-sex tag program (482) contributed to 14.6% of the total deer harvest on private land in DMZs 11 and 12. Shotgun/rifle and archery hunters accounted for 43.0% and 40.3% of all deer taken in 2012. Landowners and muzzleloader hunters accounted for 9.4% and 7.1% of all deer taken in 2012. Harvest varied considerably by season and town (Appendix 1). A Junior Deer Hunter Training Day was established in 2003 for youth hunters and was increased to two days in 2009. Youth hunters continue to take advantage of these special days, which occur on the two Saturdays prior to opening day. The 3-year average harvest for the Junior Deer Hunter Training Days is 84 deer.

Permit Allocation

To reduce Connecticut's deer population growth rate, the Wildlife Division provides opportunities for hunters to purchase multiple deer permits. Permit issuance increased consistently from 1975 to 1992, and remained relatively stable from 1992-2009 (Figure 1). Since the implementation of the on-line license system and an increase in fees, permit issuance declined (2009-2011) 9% from the previous (2006-2008) 3-year average (61,859) (Table 2). Deer permit issuance in 2012 was similar to 2011. Issuance for state land muzzleloader permits had the greatest 1-year decline (10.3%), followed by shotgun/rifle state land B permits (6.0%). Overall, shotgun/rifle hunters purchased the largest percentage of permits (41.9%), followed by archery hunters (26.4%), muzzleloader hunters (21.8%), and landowners (8.1%). Sixty-eight percent of firearms deer permits were issued for use on private land and the remaining 32% were issued for state-managed lands. During the third year of authorizing the use of revolvers for deer hunting, 945 hunters took advantage of this new opportunity, a 71.8% increase in issuance over the first year (550).

Table 1. Deer harvested during Connecticut's regulated hunting seasons, 2011-2012.

			3-year			% Change
			Average	% of	% Change	3-year
Season	Harvest	Harvest	Harvest	Total	from 2011	Average
	2011	2012	(2009-2011)	2012	to 2012	to 2012
Archery						
State Land	575	642	663	4.8%	11.7%	-3.3%
Private Land	4,636	4,771	4,203	35.6%	2.9%	11.9%
Replacement Antlerless ^{A, B}	305	225	278	1.7%	-26.2%	-23.6%
Either-sex Tag ^{A, B}	122	94	103	0.7%	-23.0%	-9.6%
January ^B	291	289	216	2.2%	-0.7%	25.4%
Replacement Antlerless ^{A, B}	24	31	21	0.2%	29.2%	32.3%
Either-sex Tag ^{A, B}	1	1	1	0.0%	0.0%	33.3%
Crossbow ^B	111	123	82	0.9%	10.8%	33.7%
Subtotal	5,211	5,413	4,866	40.3%	3.9%	10.1%
Muzzleloader						
State Land	164	115	162	0.9%	-29.9%	-40.6%
Private Land	959	843	859	6.3%	-12.1%	-1.9%
Replacement Antlerless ^{A,C}	4	8	5	0.1%	100.0%	41.7%
Either-sex Tag ^{A,C}	7	16	7	0.1%	128.6%	58.3%
Subtotal	1,123	958	1,021	7.1%	-14.7%	-6.6%
Shotgun/Rifle						
State Land A ^C	639	778	629	5.8%	21.8%	19.2%
State Land B ^C	129	113	135	0.8%	-12.4%	-19.5%
Private Land	4,599	4,892	4,473	36.5%	6.4%	8.6%
Replacement Antlerless ^{A,D}	31	40	35	0.3%	29.0%	13.3%
Either-sex Tag ^{A,D}	62	67	36	0.5%	8.1%	45.8%
Revolver D	22	11	17	0.1%	-50.0%	-50.0%
Subtotal	5,367	5,783	5,236	43.1%	7.8%	9.5%
Youth Hunting Day ^D	86	96	84	0.7%	11.6%	12.2%
Landowner	1,196	1,267	1,161	9.4%	5.9%	8.4%
Total	12,897	13,421	12,285	100.0%	4.1%	8.5%

A Replacement antlerless and either-sex tags were available in zones 11 and 12 only.

B Included as part of private land archery total.

C Included as part of private land muzzleloader total.

D Included as part of private land shotgun/rifle total.

Figure 1. Total deer permit issuance and total deer harvest in Connecticut, 1975-2012.

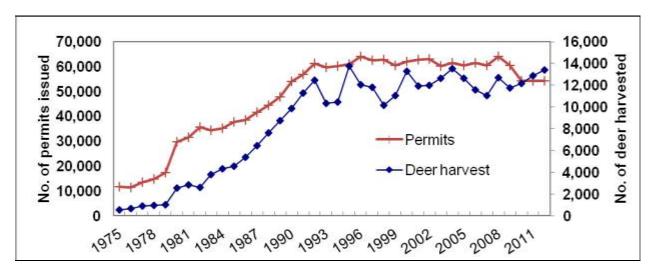


Table 2. Deer hunting permits issued in Connecticut for all regulated hunting seasons, 2010-2012.

				3-year Average	% of	% Change	% Change
	Permits	Permits	Permits	Permits	Total	2011 to	3-year Avg.
Season	2010	2011	2012	2009-2011	2012	2012	to 2012
Archery	13,276	13,725	14,341	13,682	26.4%	4.5%	4.8%
Muzzleloader							
State Land	4,325	4,141	3,713	4,520	6.8%	-10.3%	-17.9%
Private Land	7,531	8,152	8,126	7,956	15.0%	-0.3%	2.1%
Subtotal	11,856	12,293	11,839	12,476	21.8%	-3.7%	-5.1%
Shotgun/Rifle							
State Land A*	5,556	5,237	5,053	5,474	9.3%	-3.5%	-7.7%
State Land B*	2,650	2,577	2,423	3,185	4.5%	-6.0%	-23.9%
Private Land	16,151	15,937	15,284	16,473	28.2%	-4.1%	-7.2%
Subtotal	24,357	23,751	22,760	25,133	41.9%	-4.2%	-9.4%
Revolver A	550	795	945	NA	1.7%	18.9%	NA
Landowner	4,755	4,598	4,387	5,041	8.1%	-4.6%	-13.0%
Total	54,244	54,367	54,272	56,333	100.0%	-0.2%	-3.7%

^{*}Includes controlled hunt permits.

NA = Not available

Hunter Success

Hunter success rate was estimated by dividing total deer harvest by total permit issuance and multiplying by 100 (Table 3). Success rates may fluctuate annually, depending on weather conditions, timing of rain and snow storms, fall acorn crops, and deer herd size. Bowhunter success rates fluctuated between 24.3% and 27.6% from 2004 to 2008. Hunter success in 2009 (33.6%), 2010 (35.2%), 2011 (38.0%), and 2012 (37.7) exceeded the previous record high set in 2003 (27.8%). It is assumed that this success rate is more reflective of actual success rates, due to a more convenient method of reporting harvested deer and an increase in use of trail cameras, bait, and crossbows. Success rates for the remaining seasons varied slightly from 2011 to 2012. Compared to the 3-year average, success rates in 2012 increased slightly for all hunting seasons (except muzzleloader). In 2012, archery hunters had the highest annual success rate (37.7%), followed by private land shotgun/rifle hunters (32.0%) and landowners (28.9%). Success rate for the combined muzzleloader seasons was 8.1%. Lower success rates are expected because the muzzleloader season occurs after the shotgun/rifle deer hunting seasons.

A Not included in total permits

Table 3. Deer hunter success rates (%) in Connecticut, 2011-2012.

Season	2011	2012	3-year Avg. Success Rate (2009-2011)	Difference from 2011	Difference from 3-year Avg.
Archery					
Combined ^A	38.0%	37.7%	35.6%	-0.2	2.2
Muzzleloader					
State Land	4.0%	3.1%	3.6%	-0.9	-0.5
Private Land	11.8%	10.4%	10.8%	-1.4	-0.4
Combined	9.1%	8.1%	8.2%	-1.0	-0.1
Shotgun/Rifle					
State Land A	12.2%	15.4%	11.5%	3.2	3.9
State Land B	5.0%	4.7%	4.4%	-0.3	0.2
Private Land	28.9%	32.0%	27.1%	3.1	4.9
Combined	22.6%	25.4%	20.9%	2.8	4.5
Landowner	26.0%	28.9%	23.4%	2.9	5.5
Average ^B	23.7%	24.7%	21.9%	1.0	2.8

A Data available only for state and private land combined.

Archery Statistics

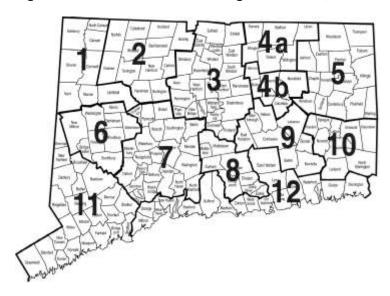
Excluding the landowner season, just under half (45%) of the deer taken during the hunting seasons was harvested by a bowhunter. A record bow harvest was recorded in 2011 (5,211) and again in 2012 (5,413). In addition, the 2012 bow harvest nearly equaled the gun harvest (5,783). Sixty-seven percent (3,640 – 3,121 private, 519 state) of the total archery harvest was taken during the early archery season (September 15 to November 13); 18% (970 – 892 private, 78 state) was taken during the 3-week shotgun/rifle season (open in all zones on private land and state land bowhunting-only areas); 10% (514 – 468 private, 46 state) was taken during the muzzleloader season (December 5 to December 31); and 5% (289) was taken during the January season open in DMZs 11 and 12 on private land only (January 1-31, 2013). To obtain additional information beneficial to zonal deer management, archery hunters were asked how many hours they hunted and how many fawns, does, and bucks they observed on the day they killed their deer. On the day in which hunters harvested their deer, the number of deer observed per hour in 2012 (1.2) was greater than in 2011 (1.08), and the average number of deer seen on the day of harvest in 2012 (3.9) was greater than in 2011 (3.2). Number of fawns per doe was similar from 2012 (0.52) to 2011 (0.53), while number of bucks per doe was slightly higher in 2012 (0.51) than in 2011 (0.45).

Connecticut Deer Management Zones

To better manage the statewide deer population, data from hunter surveys, regulated deer harvests, and total deer mortality have been recorded and evaluated by deer management zones (Figure 2). Current population status and long-term trends are analyzed for each deer management zone. This approach facilitates the assessment and management of regional deer populations.

^B Average is based on total number of deer harvested/total number of permits issued.

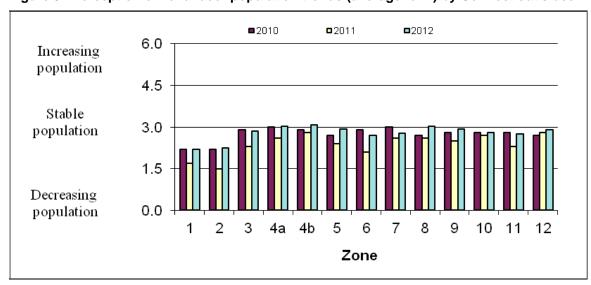
Figure 2. Connecticut's deer management zones, 2012.



Hunter Perceptions of Population Trends

In 2012, 9,835 deer hunters were sent an e-mail and asked to complete an on-line hunter survey. At total of 3,870 hunters responded for a 39% response rate, similar to last year (43%). Similar to hunter surveys from previous years, the survey included the question, "How would you describe the status of the deer population from last year to this year?" Hunter perceptions of deer population trends were ranked on a scale of 0 (decreasing population) to 6 (increasing population). Thirty-one percent of the hunters who responded to the survey believed that the population was declining, 47% believed it was stable, and 22% believed it was increasing. Deer management zones 4A and 4B had the highest average rank (3.04 and 3.09) (Figure 3). In general, hunters perceived that populations are relatively stable or have been decreasing slightly in most zones over the past 3 years. Based on the survey, hunters reported 526 bear sightings in 75 towns, at a rate of one bear sighting per 100 days spent afield. Hunters reported 1,105 bobcat sightings in 130 towns, at a rate of one bobcat sighting per 47 days spent afield. Hunters reported 7,526 coyote sightings in 163 towns, at a rate of one coyote per 6.8 days spent afield.

Figure 3. Perception of zonal deer population trends (average rank) by Connecticut's deer hunters, 2010-2012.



Zonal Deer Management

Because deer populations vary across the state, Connecticut developed different deer management zones. Management strategies in each zone may vary depending on population growth. In DMZ 4, a 4-year decreasing trend, beginning in 1996, prompted harvest restrictions on female deer in this zone in 1999. During shotgun/rifle and muzzleloader seasons, the antlerless-only tag on 2-tag

permits was not valid in DMZ 4. This restriction resulted in a decrease in the number of does harvested, allowing the population to stabilize. In 2002, deer populations appeared to be stable in the southern portion, but not in the northern portion of DMZ 4. In 2003, DMZ 4 was split into two zones (4A and 4B), allowing each zone to maintain different management objectives. In zone 4A (northern portion), the restriction on the use of antlerless tags was retained, while the use of antlerless tags was again allowed in zone 4B (southern portion) (Figure 4).

Free replacement antlerless tags and either-sex tags (bonus buck tags) were available in DMZs 11 and 12 during the private land archery, shotgun/rifle, and muzzleloader seasons in 2012. Replacement tags were available in these zones because these regions of the state were experiencing more human-deer conflicts and, therefore, had different management objectives than other regions. These programs have resulted in a substantial increase in the harvest of antlerless deer (Figure 9).

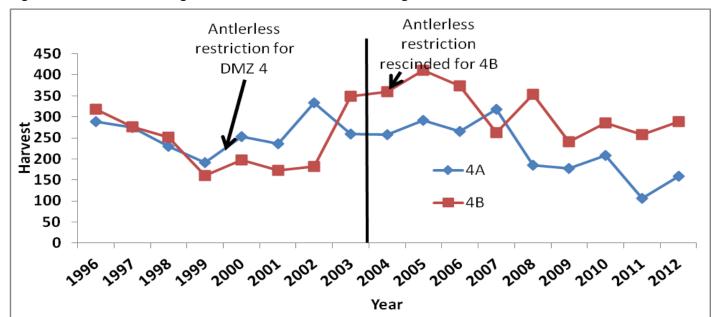


Figure 4. Private land shotgun/rifle deer harvest in deer management zones 4A and 4B, 1996-2012.

Insight into Deer Hunter Success Rates by Zone

Shotgun/Rifle Season Success

Annual deer harvest is one of many variables monitored by the Wildlife Division to assess changes in Connecticut's deer population over time for each deer management zone. However, without information on hunter distribution and effort by zones, the potential usefulness of this data is limited. To gain insight into hunter distribution and success rates by zone, deer hunters were asked on the hunter survey, "In what zone do you do most of your shotgun/rifle hunting?" The percent of hunters in each deer management zone was multiplied by total number of deer permits issued in 2012 to estimate total number of hunters by zone. Total number of hunters and total private land shotgun/rifle deer harvest for each zone were used to estimate deer hunter success rates for each zone (Table 4). In general, higher hunter success rates suggest higher deer density. Of the 13 management zones, most firearms hunting (42%) occurred in four zones (5, 9, 11, and 12). Highest private land deer harvests were reported for DMZs 5, 9, 10, and 12. Zone 4B had the highest deer harvest per square mile (2.4) and DMZs 4B and 9 had the greatest density of hunters (5.5 and 5.2 per square mile). Hunter success rate was highest in zone 4B (43%), likely due to several years of an antlerless tag restriction, while success in zones 2 and 4A were the lowest (24% and 21%). The 3-year trend in hunter success rates declined for 5 of 13 zones (Table 5). Four deer management zones (1, 4B, 5, and 12) have continued to produce relatively high hunter success rates over the past 3 years (Table 5).

Archery Season Success

Based on the number of deer harvested and reported by bowhunters, 1 of 3 (36%) hunters harvested 2 or more deer during the regular archery season. Bowhunter success rates were highest in zones 4B, 8, 11, and 12. In zone 4A, the restriction on the use of antlerless tags during the firearms seasons allowed for the population to increase between 1999 and 2003. In 2003, the zone was split into 4A and 4B, and the antlerless restriction was rescinded in 4B, likely resulting in higher success rates. In zones 11 and 12, firearms hunting is more limited and the archery season framework is liberal (use of bait, unlimited tags, longer seasons) (Table 6). The archery deer harvest in zone 11 was at least 3 times higher than all other zones.

Table 4. Zonal hunter numbers, harvest, and success rates for private land during the 2012 shotgun/rifle hunting season.

	Zone Hunted	% of Hunters	Estimated # of Private			Deer		
	Private Land ^A	Answered	Land Shotgun/		Area	Harvest/	Hunters/	Success
Zone	Shotgun/Rifle	Question ^A	Rifle Hunters	Harvest	(sq. miles)	Sq. Mile	Sq. Mile	Rate
1	159	8.26	1,262	397	344.59	1.2	3.7	31%
2	133	6.91	1,056	251	410.69	0.6	2.6	24%
3	117	6.08	929	251	273.33	0.9	3.4	27%
4A	94	4.88	746	159	213.5	0.7	3.5	21%
4B	84	4.36	666	288	120.66	2.4	5.5	43%
5	279	14.49	2,215	856	445.94	1.9	5.0	39%
6	165	8.57	1,310	343	260.03	1.3	5.0	26%
7	127	6.60	1,009	297	373.08	0.8	2.7	29%
8	86	4.47	683	274	169.11	1.6	4.0	40%
9	183	9.51	1,454	437	279.39	1.6	5.2	30%
10	154	8.00	1,223	427	244.36	1.7	5.0	35%
11	167	8.68	1,327	348	291.53	1.2	4.6	26%
12	177	9.19	1,405	564	358.39	1.6	3.9	40%
Total	1,925	100%	15,284	4,892	3,785	1.3	4.0	32%

^A Based on hunter survey question asking hunters which zone they primarily hunt in.

Table 5. Zonal comparisons in private land shotgun/rifle harvest, hunter distributions, and success rates, 2010-2012.

	Area	Deer 1	Harvest/Sq	. Mile	Hun	ters/Sq.	Mile	Hunte	r Success Ra	ate (%)
Zone	(sq. miles)	2010	2011	2012	2010	2011	2012	2010	2011	2012
1	344.59	1.2	1.0	1.2	3.6	3.7	3.7	33	32	31
2	410.69	0.5	1.3	0.6	2.6	3.1	2.6	17	18	24
3	273.33	0.9	1.1	0.9	2.7	3.9	3.4	32	22	27
4A	213.50	0.6	0.8	0.7	3.5	4.1	3.5	17	12	21
4B	120.66	2.2	0.9	2.4	5.2	4.7	5.5	43	45	43
5	445.94	1.7	0.9	1.9	5.6	4.4	5.0	31	42	39
6	260.03	1.2	1.0	1.3	4.3	4.1	5.0	29	26	26
7	373.08	0.7	0.8	0.8	2.6	2.7	2.7	27	25	29
8	169.11	1.3	0.9	1.6	5.6	4.8	4.0	23	31	40
9	279.39	1.4	1.0	1.6	5.0	4.9	5.2	28	34	30
10	244.36	1.5	0.9	1.7	5.0	4.4	5.0	30	38	35
11	291.53	1.4	1.4	1.2	7.1	7.6	4.6	20	16	26
12	358.39	1.3	0.8	1.6	4.2	3.8	3.9	31	38	40
Total	3,785	1.2	1.0	1.3	4.3	4.2	4.0	27	29	32

Table 6. Zonal comparisons of archery season success rates, 2012.

	Zone Hunted Archery ^A	% of Hunters Answered	Estimated # of Archery		Hunter Success
Zones		Question ^A	Hunters	Harvest	Rate %
1	98	5.1	725	290	40.0
2	119	6.1	881	157	17.8
3	112	5.8	829	269	32.5
4A	89	4.6	659	221	33.6
4B	72	3.7	533	238	44.7
5	176	9.1	1,302	478	36.7
6	110	5.7	814	209	25.7
7	187	9.6	1,384	452	32.7
8	94	4.9	696	288	41.4
9	138	7.1	1,021	265	26.0
10	88	4.5	651	234	35.9
11	423	21.8	3,130	1557	49.7
12	232	12.0	1,717	752	43.8
Total	1,938	100	14,341	5,410	37.7

^A Based on hunter survey question asking hunters which zone they primarily archery hunt in.

Fall Acorn Crop

Acorns are a preferred food for white-tailed deer during fall and winter. Acorn availability influences deer movement patterns and herd health. To interpret changes in harvest rates, herd health, and herd productivity, the Deer Program has been collecting data since 1993from hunter surveys on abundance of the fall acorn crop. Hunter perceptions of the fall acorn crop were ranked on a scale from 0 (scarce) to 6 (abundant acorns). In 2012, 52.6% of the hunters who responded to the survey ranked the fall acorn crop as scarce, 40.3% as moderate, and 7.1% as abundant. DMZ 5 had the highest average rank (2.3), while DMZs 1 and 2 had the lowest average ranks (1.04; Figure 5). On a scale of 0-6, the average rank statewide was 1.63.

The past 20 years of data on acorn abundance and deer harvest rates suggest that a correlation exists between hunter success and acorn abundance (Figure 6). In 1993, when acorns were most abundant, hunter success was one of the lowest success rates recorded, and in 2004, when acorns were least abundant, the hunter success rate was the highest. During years with low acorn productivity, deer travel more to access other food sources, such as green fields, increasing their vulnerability to hunters. In 2012, the acorn/success pattern was more inconsistent and may have been influenced by the warm weather. On average, the acorn crop statewide has been moderate most years, scarce about every 5-6 years, and abundant every 2 years.

Figure 5. Perception of acorn crops (average rank) by Connecticut's deer hunters, 2009-2012.

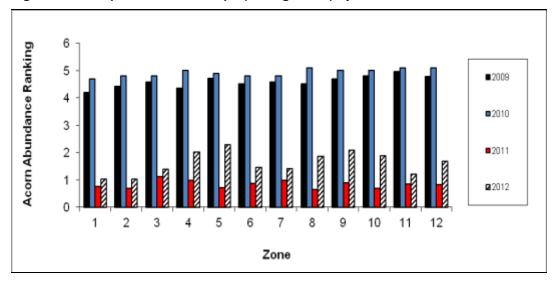
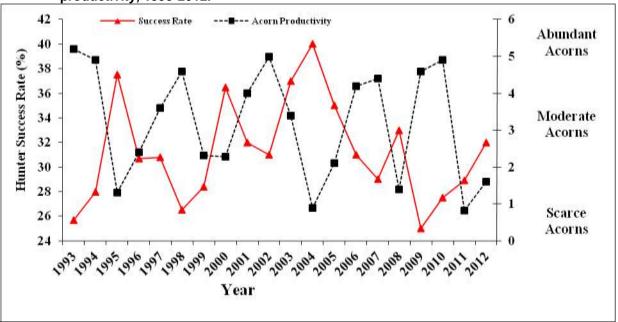


Figure 6. Relationship between private land shotgun/rifle hunter success rates and fall acorn productivity, 1993-2012.



Private Land Deer Harvest

The 2012 private land deer harvest was highest for DMZs 5, 11, and 12 (Table 7). Zonal harvest levels have fluctuated in most zones over the past 12 years and likely reflect differences in weather conditions, snow cover, acorn abundance, and deer densities (Table 7). Highest total deer harvest over the last 9 years has been observed in zone 11, likely a result of the availability of replacement deer tags and increased access to land for hunting. Total private land deer harvest increased 3% from 2011 to 2012.

Table 7. Private land deer harvest for all seasons (excluding landowner) in each of Connecticut's deer management zones, 2001-2012.

	nanayem	ent zone	5, 2001-2	.012.								
						Year						
Zone	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	936	937	796°	828	811	639	680	710	719	703	721	728
2	351	259	373 ^b	383	369	357	323	385	394	320	374	395
3	442	478	457	434	413	362	338	397	442	481	487	529
4 ^a	662	471										
4A			237 ^b	207	273	218	259	293	267	293	276	348
4B			397	445	476	467	329	471	434	445	470	547
5	1,651	1,293	$1,250^{c}$	1,510	1,607	1,348	1,165	1,488	1,218	1,232	1,400	1,375
6	854	746	550°	596	544	511	458	489	524	556	500	584
7	524	489	564 ^b	618	473	454	438	584	685	772	797	771
8	433	378	463	514	467	398	330	360	343	374	473	549
9	1,408	1,197	873°	882	817	757	628	693	612	624	718	721
10	713	519	521	664	567	504	504	640	486	576	632	662
11	1,562	1,839	$2,084^{b}$	2,128	1,799	1,898	1,846	2,179	2,088	1,997	2,022	1,923
12	646	636	1,272 ^b	1,330	1,080	976	1,030	1,040	872	954	1,324	1,370
Total	10,182	9,242	9,793	10,485	9,613	8,832	8,328	9,955	9,084	9,327	10,194	10,502
% Change	-10.7%	-9.2%	6.0%	7.1%	-8.3%	-8.1%	-5.7%	19.5%	-8.7%	2.7%	9.2%	3.0%

^a Zone 4 separated into Zones 4A and 4B in 2003.

^b In 2003 town/towns added to zone.

^c In 2003 town/towns removed from zone.

Observations and Fawn Recruitment

Hunter observations provide good trend indices into zonal population changes. Observation rates were measured based on number of deer observed per hour. Fawn recruitment (number of fawns added to fall population) also is an important variable used to understand changes in population growth and important in modeling populations. Fawn recruitment was measured as number of fawns observed per doe. The most representative samples of fawn to doe ratios are those collected at the start of the hunting season, when fawns are easily identifiable and hunter harvest would have the least impact on observations. In 2012, hunter observation rates and fawn to doe ratios were assessed when successful hunters reported their harvest. Observation rates for fawns, does, and bucks were similar throughout the season and between years (Table 8). Harvest rates during 2012 were similar for fawns throughout the season. However, harvest rates for does decreased while harvest rates for bucks increased as the season progressed (Table 8). Number of deer observed per hour and fawn to doe ratios were highest in DMZ 12 during the first month of archery season and from the beginning of the archery season to the beginning of shotgun/rifle season, but were highly variable among DMZs and seasons (Table 9). The first month of the archery season should be the most accurate indicator of changes to the population because fawns are easiest to identify and hunting has had the least amount of impact on the structure of the deer population at that time.

Table 8. Hunter observations and harvest ratios reported during the archery and shotgun/rifle seasons in Connecticut, 2012.

	Sept 15	5- Oct 15 (4-week A	rchery)	Sept 1	5 – Nov 13	(Early A	rchery)	Nov 14 – Dec 4 (shotgun/rifle)				
	Observ	ation %	Harv	est %	Observ	ation %	% Harvest %		Observ	ation %	Harvest %		
	2011	2012	2011	2012	2011 2012		2011	2012	2011	2012	2011	2012	
Bucks	23%	23%	38%	37%	24%	26%	42%	43%	26%	22%	53%	53%	
Does	51%	49%	47%	48%	49%	49%	42%	42%	51%	52%	32%	33%	
Fawns	26%	27%	15%	14%	27%	25%	16%	15%	22%	26%	16%	15%	

Table 9. Observations of deer seen per hour collected at the time of reported harvest during the archery and shotgun/rifle seasons by Deer Management Zone (DMZ) in Connecticut. 2011-2012.

		Shot	gun/ri	ne se	asons	ру ре	er Mar	iageme				Com	iectic	ut, 20	11-20	12.				
										eer See										
									Report	ed on Da	y of Ha	rvest								
DMZ			Fi	rst Mon	th of Ar	chery				Ear	ly Arch	ery Seas	son ¹			Sh	otgun/R	ifle Seas	on ²	
		2011			2012		Δ^3	Δ^4		2011			2012			2011			2012	
	n	D/hr	F:D	n	D/hr	F:D	D/hr	F:D	n	D/hr	F:D	n	D/hr	F:D	n	D/hr	F:D	n	D/hr	F:D
1	98	1.17	0.43	107	1.21	0.50	0.07	0.04	206	1.07	0.53	222	1.12	0.52	374	0.81	0.40	362	1.29	0.56
2	67	0.85	0.35	58	0.85	0.43	0.08	0.00	131	0.85	0.31	124	0.88	0.41	244	0.51	0.33	294	2.20	0.65
3	91	0.93	0.46	86	1.18	0.59	0.13	0.30	171	1.02	0.57	183	1.10	0.61	256	0.83	0.45	270	1.48	0.51
4A	90	0.85	0.59	79	0.85	0.46	-0.13	-0.01	196	0.80	0.61	169	0.86	0.46	190	0.67	0.53	234	3.27	0.73
4B	63	1.18	0.67	83	1.38	0.53	-0.13	0.14	143	1.03	0.65	194	1.57	0.47	264	0.86	0.51	284	0.56	0.53
5	177	1.03	0.57	169	0.99	0.61	0.04	-0.03	375	1.04	0.63	393	0.97	0.56	944	0.80	0.45	861	0.79	0.57
6	63	1.06	0.48	79	1.18	0.51	0.03	0.12	129	1.07	0.45	151	1.35	0.58	271	0.80	0.44	340	0.46	0.42
7	144	1.07	0.45	160	1.07	0.51	0.06	0.00	267	1.07	0.45	306	1.08	0.45	286	0.87	0.39	324	1.20	0.43
8	68	1.15	0.51	92	1.27	0.50	-0.01	0.15	177	0.98	0.50	201	1.16	0.42	305	0.98	0.45	360	2.42	0.55
9	73	0.81	0.52	105	0.98	0.50	-0.03	0.17	185	0.88	0.59	210	0.98	0.48	527	0.85	0.37	454	1.28	0.51
10	70	0.98	0.49	85	1.20	0.55	0.07	0.23	156	0.96	0.59	170	1.10	0.54	461	0.83	0.37	447	1.04	0.53
11	494	1.21	0.56	478	1.23	0.58	0.01	0.02	952	1.17	0.57	832	1.28	0.55	397	1.02	0.48	437	1.20	0.67
12	236	1.18	0.41	268	1.49	0.61	0.21	0.31	474	1.18	0.53	451	1.37	0.63	503	1.05	0.51	574	0.83	0.45

¹Dates vary slightly by year during early archery season

Deer Harvest Sex Ratios

Removal of female deer is the most efficient means of stabilizing deer population growth. To facilitate stabilization, the Wildlife Division developed permits that encourage the harvest of female deer. All 2-tag permits come with 1 antlerless-only and 1 either-sex deer tag. In 2009, this was increased to 1 either-sex and 2 antlerless deer for hunters in DMZ 7 and 1 either-sex and 3 antlerless deer for hunters in DMZs 11 and 12. In zone 4A, the antlerless-only tag was NOT valid, reducing the bag limit to 1 deer per hunter during the private land firearms season. Although button bucks are included in the antlerless harvest, this system promotes the removal of female deer (Table 10). Overall, deer harvest sex ratios have been similar over the past 3 years (1.2 males per female) (Table 11).

²Dates vary slightly by year during shotgun/rifle season

³Change in deer observations per hour from 2011 to 2012

⁴Change in fawn to doe ratios from 2011 to 2012

Based on observations reported on-line at the time of harvest, a bias (proportion observed vs. proportion harvested) towards harvest of bucks occurs as the season progresses (Table 8). Selectivity towards fawns remains the same (Table 8). In 2012, 52% (6,914) of the total regulated deer harvest (excluding crop damage harvest) was comprised of antlerless deer. A significant proportion of the harvest included adult females, which contributes to population control efforts (Appendix 2).

Table 10. Sex ratios (male:female) and antlered to antlerless ratios of deer harvested in 2012.

	Muzzleloader	Shotgun/Rifle	Archery	Landowner	Crop Damage	Total
Male:Female	0.76:1	1.57:1	1.09:1	1.66:1	0.80:1	1.25:1
Antlered:Antlerless	0.53:1	1.11:1	0.80:1	1.18:1	0.52:1	0.90:1

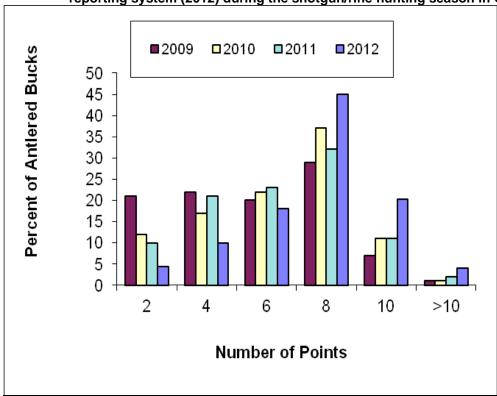
Table 11. Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2010-2012.

2	2011	2	2012	Mal	es per Fen	3-year Average	
Males	Females	Males	Females	2010	2011	2012	(2010-2012)
6,848	5,676	7,913	6,298	1.2:1	1.2:1	1.3:1	1.2:1

Antler Points and Yearling Fraction

Deer age, nutritional status, and genetics affect the number of antler points on bucks, while the yearling fraction of the antlered buck harvest is a common measure of hunting pressure. Intensively hunted herds have yearling fractions of about 70%, while lightly hunted herds have fractions of about 30%. Few yearlings (<6%) have $\ge 7-8$ points and few adults (<12%) have ≤ 4 points, based on the known aged samples in Connecticut. Using antlered bucks with ≤ 4 points (yearling) and those with $\ge 7-8$ points (adults) is one way of estimating the yearling fraction of the antlered buck harvest. The statewide yearling/male fraction based on antler points during the entire shotgun/rifle season was 43% in 2010, 45% in 2011, and 40% in 2012. Of all antlered bucks harvested, 8-pointers were the most frequent point category (Figure 7). The number of points on antlered bucks has remained relatively consistent over the past 4 years (Figure 7).

Figure 7. Number of antler points of bucks collected at check stations (2009-2011), or the telecheck/online reporting system (2012) during the shotgun/rifle hunting season in Connecticut, 2009-2012.



Replacement Tags

The replacement tag system was developed to increase the harvest of female deer. This system is currently in place in DMZs 11 and 12. Since 1998, when archery hunters first had access to replacement tags in DMZ 11, the buck harvest has remained relatively stable, while the antlerless harvest in that zone has increased nearly 5 times (from 200 to almost 1,000 deer annually). The number of roadkills in DMZ 11 has shown a steady decline since 1998 (Figure 8). The ratio of female deer harvested in DMZ 11 increased from 0.9 females per male (1994-1997) to 1.3 females per male (2001-2009) (Figure 9).

Figure 8. Comparison of trends in roadkills and the antlered and antlerless deer harvests during the archery deer season in deer management zone 11, 1995-2012.

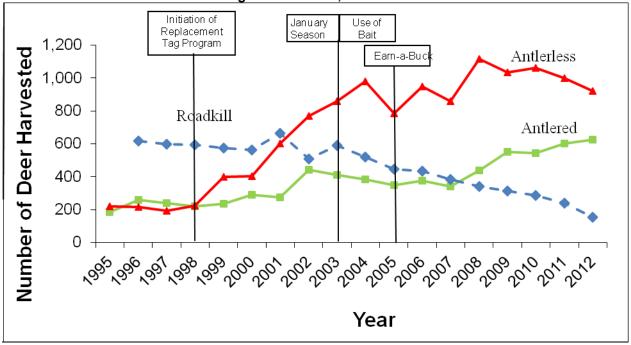
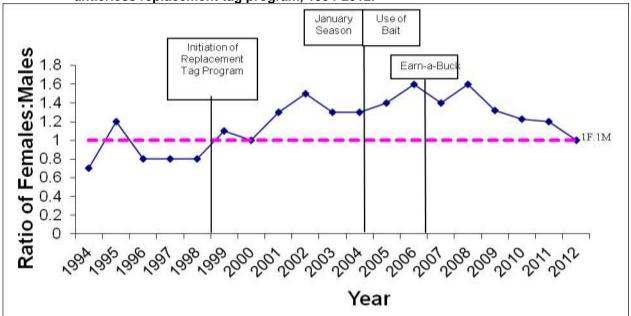


Figure 9. Sex ratios of harvested deer from deer management zone 11 after implementation of the archery antlerless replacement tag program, 1994-2012.



Deer Hunter Expenditures, Effort, and Venison Calculations

Deer hunting-related expenditures contribute significantly to Connecticut's economy. Deer permit sales generated \$1,522,180 in 2011 and \$1,626,606 in 2012 to the Connecticut General Fund. In addition, data collected from the annual deer hunter surveys indicated that Connecticut deer hunters spent an estimated \$11,896,422 on deer hunting-related goods and services in 2012.

In 2012, deer hunters reported that their time and effort was spent primarily in elevated tree stands (59.9%) or from stationary ground positions (30.9%). Few hunters spent time and effort stalking deer (8.4%) or conducting deer drives (<1%). In 2012, deer hunters spent a cumulative total of 390,758 days afield. Private and state land shotgun/rifle hunters used the greatest percentage of available hunting days during those seasons (32.8% and 38.9%). Although bowhunters used a smaller percentage of available hunting days (21.6%), the archery season is much longer than the firearms season. Connecticut deer hunters collectively spent slightly less time (29 days per deer taken) but slightly more money (\$886 per deer taken) in 2012 compared to 2011 (30 days at \$727 per deer taken). In 2012, hunters harvested an estimated 671,050 pounds (average 50 lbs. of meat/hunter; 299 tons total) of venison at an estimated value of \$4,529,587 (\$6.75/lb).

Subscription Rates for State Land Lottery Permits

In 2012, 1,240 hunters were selected to hunt during the shotgun and controlled hunt seasons through the state-administered deer lottery program. Lottery permits were allocated at a maximum rate of 1 shotgun permit per 20 acres. In many areas, permit issuance was less than the permit quota established for a given area and many areas were re-designated as no-lottery areas. In 2012, the total number of lottery hunt areas was 16 during the "A" season and 7 during the "B" season. Seventy-four percent of all potential lottery permits were issued. Permit issuance reached 100% for 4 of 7 controlled hunt areas (Table 12).

The following example explains how to interpret Table 12. In Deer Lottery Hunting Area (DLHA) 11, 70% of permits were issued. Consequently, DLHA 11 was under-subscribed compared to DLHA 26. The odds of receiving an "A" season permit are greater in areas with low hunter subscription rates. Hunters also should look at harvest levels in the different state land areas when selecting an area to hunt (Appendices 6 and 7).

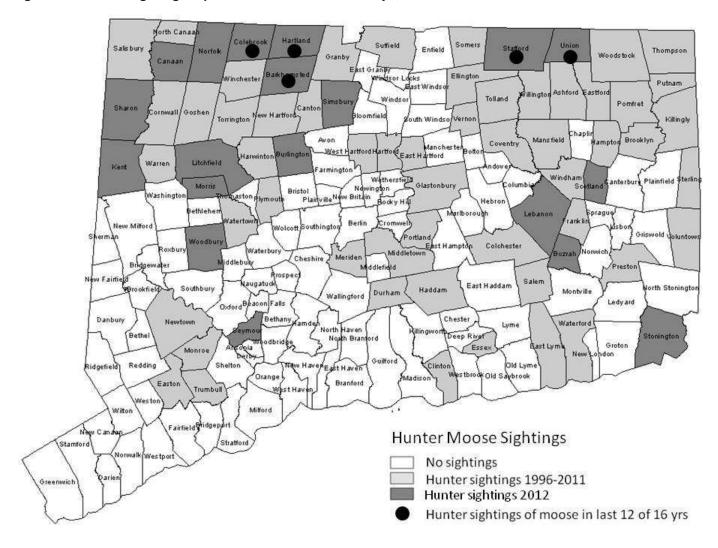
Moose Sightings

An increasing moose population in Massachusetts has led to an increased number of moose wandering or dispersing into Connecticut. In an effort to monitor trends in moose sightings in Connecticut, a question was added to the deer hunter survey in 1996 regarding hunter observations of moose during the fall hunting season. Deer hunters reported 51 moose sightings in 19 towns in 2012 and 581 sightings over the past 17 years (Figure 10). During the 17-year period, moose sightings were reported in 70 different towns. Sightings were reported from 9 to 22 different towns each year. Moose sighting reports from 6 towns were reported in 10 of the last 17 years. Moose were observed in Barkhamsted, Colebrook, Hartland, Stafford, and Union for 12 of the last 17 years. Most towns where hunters report moose sightings occur along the Connecticut-Massachusetts border. In 2012, an average of 1 moose was observed by hunters for every 1,027 hunter-days spent in the field, similar to 2011, when 1 moose was observed for every 1,073 hunter-days in the field. Currently, Connecticut has no open hunting season for moose.

Table 12. Deer lottery selection results by Deer Hunting Lottery Area (DHLA), 2008-2012.

Lottery Area	2008	2009	2010	2011	2012
1 ^{a,d}	64	54	NL	NL	NL
2^{a}	77	74	43	38	NL
$3^{\mathrm{a,d}}$	54	32	NL	NL	NL
$4^{ m a,d}$	37	30	NL	NL	NL
$5^{\mathrm{a,d}}$	74	63	NL	NL	NL
6^{a}	100	82	36	39	NL
7 a	100	85	47	44	91
8 a	100	89	50	48	94
9 a	100	87	50	58	99
10 ^a	100	100	60	55	NL
11 ^d	66	57	78	72	70
12 ^d	60	53	80	69	63
13 ^a	98	81	52	54	NL
$14^{a,d}$	52	50	42	45	NL
$15^{a,d}$	75	77	100	84	72
16 ^d	77	63	NL	NL	NL
$17^{a,d}$	32	31	NL	NL	NL
18	76	72	46	43	NL
$19^{a,d}$	22	25	NL	NL	NL
$20^{\mathrm{a,d}}$	58	61	NL	NL	NL
$21^{a,d}$	28	30	NL	NL	NL
22 ^a	72	74	32	26	NL
$23^{\mathrm{a,d}}$	40	42	NL	NL	NL
24^{a}	80	69	45	26	NL
$25^{\mathrm{a,d}}$	40	29	NL	NL	NL
26	100	100	100	100	100
27 ^a	100	77	41	52	100
28	NA	NA	100	100	100
51 (Yale)	68	60	48	44	44
(Bristol Water Co.)	100	100	100	100	100
53 ^a (Maromas)	100	100	52	53	100
54 a (Skiff Mt.)	50	76	41	50	100
56 (BHC-CWSF)	100	100	100	100	100
d,e (MDC Colebrook)	23	34	NL	NL	NL
^b (MDC Valentine)	NA	100	93	64	60
9° (MDC Pine Hill)	NA	100	69	47	24
sed on "A" season only. "B" entine Area e Hill Area sed on "A" season only throw			// / / / / / / / / / / / / / / / / / /		

Figure 10. Moose sightings reported on deer hunter surveys, 1996-2012.



Controlled Deer Hunts

Yale Forest (Area 51): Yale Forest is a 7,700-acre forest located in Eastford and Ashford. The forest is owned and managed by Yale University for research, education, and forest products. Controlled hunts have been implemented on the property since 1984 in an effort to reduce deer impacts on forest regeneration. During the 2012 controlled hunt, 51 deer were harvested.

Bristol Water Company (BWC; Area 52): In 1994, BWC contacted the Wildlife Division and expressed interest in opening 4,500 acres for deer management. In 1995, the Wildlife Division conducted a winter aerial deer survey on BWC lands. After survey results were summarized, BWC requested to participate in the controlled hunt program for the 1996, 1997, and 1998 deer seasons to reduce the local deer population. After 3 years of successfully implementing a deer management program on BWC land, BWC requested to continue participating in the program. During the 2012 controlled hunt, 18 deer were harvested.

Maromas Cooperative Management Area (Area 53): Since 1996, Maromas, a 1,400-acre parcel in Middletown owned by Northeast Utilities, has been open to shotgun and muzzleloader hunting to maintain deer densities at levels compatible with available habitat. During the 2012 controlled hunt, 18 deer were harvested.

Skiff Mountain (Area 54): Skiff Mountain is a 710-acre property in Sharon owned by Northeast Utilities. It is open to shotgun and muzzleloader hunting. During the 2012 controlled hunt, 7 deer were harvested.

Centennial Watershed State Forest (formerly known as Bridgeport Hydraulic Company) (Area 56): The Hemlock Tract has been open to hunting since 1996. In 2005, an additional 1,765 acres were opened to hunting (3,474 total acres). During the 2012

controlled hunt, 34 deer were harvested during the archery season and an additional 59 deer were harvested during the firearms season.

MDC Colebrook Reservoir/Hogback Dam (Area 57): This 4,159-acre parcel in Colebrook was opened to hunting in 1999. During the 2012 controlled hunt, 3 deer was harvested.

MDC Nepaug Reservoir (Area 58 and 59): In 2007, MDC contacted the Wildlife Division and expressed concern about the impacts of deer on forest regeneration at their Valentine (Area 58, 1,075 acres) and Pine Hill (Area 59, 325 acres) forest blocks. A browse survey indicated that over 95% of forest regeneration was browsed by deer. In 2008, MDC worked with the Wildlife Division to develop a deer management plan for the two forest blocks. In 2009, both Valentine and Pine Hill were opened to hunting for the early archery and shotgun/rifle seasons. During the 2012 controlled hunt, 16 deer were harvested.

Devil's Den: The Nature Conservancy owns this 1,660-acre property in Weston and Redding. In 2012, 24 deer were removed.

Bluff Point: Controlled hunts and DEEP deer removals at Bluff Point Coastal Reserve in Groton have been implemented over the past 17 years to reduce and maintain the deer population at about 25 animals. Since the program started in 1996, 575 deer have been removed from Bluff Point, resulting in improved deer herd health and ecosystem stability. In December 2012, the deer population was estimated to be 44 deer. In March 2013, 18 deer were removed by DEEP personnel. After the March 2013 removal, the population was estimated at 26 deer.

Greenwich: Greenwich Audubon initiated a deer management program to reduce the deer population and restore the biological health of this 285-acre sanctuary located in northern Greenwich. In 2012, hunters from Greenwich Sportsmen's and Landowners Association harvested 9 deer.

Crop Damage Permits

Deer damage is an important economic concern to some commercial agricultural operations. The Wildlife Division's crop damage program regulates the removal of deer on agricultural properties that meet specific criteria and are experiencing deer damage to specific plant commodities. The Division also encourages agriculturists to take advantage of the regulated deer hunting season to aid in the removal of problem deer and to use other methods, such as fencing, to reduce deer damage. During the 2012 calendar year, 864 deer were taken with crop damage permits (Appendix 3). From 1993-2012, annual deer harvest with crop damage permits has fluctuated between 543 and 946 deer. Harvest in DMZ 7 accounted for 14.6% of deer removed with crop damage permits in 2012. Crop damage harvest increased steadily from May to October, with 64% of the annual harvest occurring in September and October (Figure 11). Crop damage permits are not valid in November and December; however, 2 deer were harvested with special jacklight permits in December.

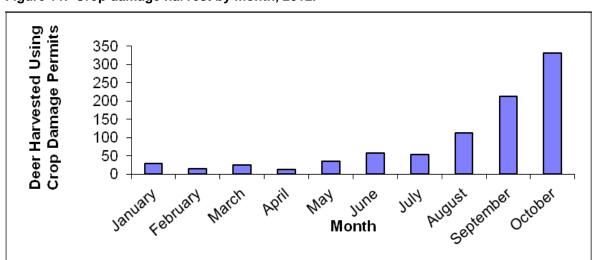


Figure 11. Crop damage harvest by month, 2012.

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Non-hunting Deer Mortality

Non-hunting deer mortality, particularly roadkills, represents a significant percentage of annual deer losses in Connecticut. Roadkill data provide important information relative to cultural carrying capacity, population modeling, and, to a lesser extent, deer density and herd sex ratios. In an urban-suburban state like Connecticut, measures of land-use conflicts, such as roadkills, are an important source of data for the formulation of management policies and recommendations.

In 2012, 1,243 non-hunting deer mortalities were reported (Appendix 4). Of those, 1,177 were killed in deer-vehicle collisions. This equates to an average of 3.2 deer being killed per day on Connecticut roads and highways. Deer-vehicle collisions accounted for 95% of all reported non-hunting mortality (excluding crop damage) in 2012. Based on a 2-year study (2000-2001), for every 1 deer killed by a vehicle and reported to the Wildlife Division, 5 additional deer are killed by vehicles and not reported. Based on this correction factor, it is estimated that the actual number of roadkills in 2012 was 7,062. Nearly 13% (155) of all reported roadkilled deer in Connecticut occurred in DMZ 11 (Fairfield County, Figure 2) in 2012, much lower than in past years (Appendix 5). The number of roadkills in DMZ 11 has shown a steady decline since the implementation of the replacement tag program, extension of the archery season, and the legalization of baiting (Figure 8). Non-hunting mortality comprised 8.4% of the total reported deer mortality in Connecticut, including crop damage harvest (Appendix 4).

Conclusion

Over the past 32 years, deer population size, human land-use practices, and public attitudes toward wildlife have changed considerably. Today, hunters may legally take up to 14 deer per year if they participate in all hunting seasons, and additional deer may be taken in 2 of the 13 deer management zones. Historically, permit issuance has increased consistently from 11,710 in 1975 to 61,333 in 1992. Since 1992, permit issuance has remained relatively stable, fluctuating between 60,316 and 64,032. In 2008, permit issuance increased to its highest point in history. The cause for this increase is unknown, but may be attributed to the poor economy, where harvesting one's own food may be a desirable means of obtaining quality protein. In 2009, permit issuance declined slightly, likely due to the increased cost of permits. From 2010 through 2012, permit issuance remained stable at levels similar to those 20 years ago. This may be due to increased costs and the ability to purchase permits at any time. Over the last 10 years, harvest in most deer management zones has remained relatively stable. However, with increased opportunities and incentives to harvest deer in urban deer management zones 11 and 12, the harvest has more than doubled, while roadkills have been exhibiting a steady downward trend. Increased harvest efforts appear to have stabilized deer populations in many areas of the state.

The Wildlife Division continues to conduct research and evaluate the effectiveness of methods to control deer populations, particularly in urban-suburban landscapes. The Division initiated several long-term urban deer studies in residential communities in past years. Reports summarizing findings from these studies are available to communities interested in managing deer in more developed areas of the state, such as Fairfield County. Copies of these reports can be obtained from the DEEP website at www.ct.gov/deep/wildlife, by contacting the Wildlife Division's Deer Program via e-mail at deep.franklinwildlife@ct.gov, or calling the Franklin Wildlife office at 860-642-7239. The Wildlife Division will continue to provide technical assistance on deer control options to interested communities. Future management efforts will continue to focus on deer population stabilization. In areas with overabundant deer populations, landowners will be encouraged to use hunting, where possible, as a management tool. A booklet on <a href="management under un

Appendix 1. Total reported deer harvest and roadkills by town, 2012.

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Andover	36	35	11	7	0	2	0	91
Ansonia	7	4	0	1	0	0	0	12
Ashford	43	134	34	15	4	8	0	238
Avon	11	12	0	3	0	9	3	38
Barkhamsted	14	29	7	7	0	6	1	64
Beacon Falls	14	18	1	9	2	2	0	46
Berlin	25	32	5	4	3	4	2	75
Bethany	29	27	5	8	11	1	0	81
Bethel	55	15	1	1	0	5	0	77
Bethlehem	5	24	4	2	2	5	0	42
Bloomfield	28	11	0	2	0	8	0	49
Bolton	28	23	1	4	10	5	0	71
Bozrah	9	38	20	3	7	5	0	82
Branford	23	16	1	4	12	2	0	58
Bridgeport	0	0	0	0	0	1	0	1
Bridgewater Bridgewater	28	48	6	2	4	0	0	88
Bristol	8	6	0	0	0	8	1	23
Brookfield	48	19	0	2	0	5	0	74
Brooklyn	24	47	16	11	6	13	1	118
Burlington	20	27	1	4	0	10	0	62
Canaan	26	45	8	5	3	2	0	89
Canterbury	31	60	33	6	3	9	0	142
Canton	15	20	7	6	1	8	0	57
	18	58	12	13	6	6	0	113
Chaplin				8	†			
Cheshire	43 17	29 27	5	2	55	15 0	0	152 51
Chester		•	2	2				
Clinton	26	8			0	0	0	38
Colchester	50	80	30	20	6	44	2	232
Colebrook	3	11	6	1	0	0	1	22
Columbia	21	54	14	6	20	10	0	125
Cornwall	19	41	10	3	4	1	0	78
Coventry	70	103	15	23	4	14	0	229
Cromwell	5	2	3	0	7	5	0	22
Danbury	68	10	0	3	0	6	1	88
Darien	42	0	0	0	0	12	3	57
Deep River	10	12	5	5	7	0	1	40
Derby	6	2	0	1	0	0	0	9
Durham	32	52	5	11	0	4	0	104
East Granby	5	11	0	2	0	1	0	19
East Haddam	106	166	40	18	0	22	0	352
East Hampton	34	86	11	10	8	15	2	166
East Hartford	5	4	0	0	3	3	2	17
East Haven	23	1	0	1	0	0	0	25
East Lyme	42	66	8	10	0	20	0	146
East Windsor	12	19	5	4	1	1	0	42
Eastford	8	61	16	5	0	1	1	92
Easton	88	50	1	5	13	14	1	172
Ellington	18	13	9	4	3	6	2	55

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Enfield	29	26	8	9	1	15	0	88
Essex	5	7	0	3	0	0	0	15
Fairfield	82	10	0	5	0	14	4	115
Farmington	5	13	0	2	3	15	3	41
Franklin	18	65	14	4	0	1	1	103
Glastonbury	31	57	8	9	27	29	2	163
Goshen	16	26	14	4	0	1	0	61
Granby	12	26	9	3	0	13	1	64
Greenwich	80	6	0	0	0	0	0	86
Griswold	34	75	20	12	28	0	0	169
Groton	36	25	4	1	4	8	1	79
Guilford	79	60	6	14	8	14	0	181
Haddam	61	97	19	22	0	2	0	201
Hamden	18	21	1	4	20	1	0	65
Hampton	25	59	28	9	10	4	0	135
Hartford	0	0	0	0	0	0	0	0
Hartland	4	27	7	2	0	2	0	42
Harwinton	29	47	10	2	11	5	0	104
Hebron	28	77	19	7	8	13	0	152
Kent	27	53	8	10	7	10	1	116
Killingly	34	56	21	11	5	22	0	149
Killingworth	41	67	6	7	0	1	0	122
Lebanon	47	118	34	18	21	8	0	246
Ledyard	34	71	14	10	4	31	0	164
Lisbon	18	36	24	5	4	2	0	89
Litchfield	48	70	20	6	0	19	0	163
Lyme	36	84	15	12	14	0	0	161
Madison	44	20	4	2	0	36	3	109
Manchester	21	7	1	1	0	11	0	41
Mansfield	69	85	14	20	7	40	1	236
Marlborough	38	38	13	7	0	13	0	109
Meriden	10	11	0	1	0	6	1	29
Middlebury	16	19	1	1	0	5	1	43
Middlefield	25	31	5	2	26	1	0	90
Middletown	45	76	16	20	3	3	1	164
Milford	23	3	0	2	2	3	0	33
Monroe	65	13	2	2	1	0	0	83
Montville	34	37	9	17	6	6	0	109
Morris	12	28	3	8	0	4	0	55
Naugatuck	30	21	0	5	0	3	1	60
New Britain	0	2	0	0	0	3	0	5
New Canaan	101	1	0	0	0	20	0	122
New Fairfield	37	25	3	8	0	5	1	79
New Hartford	21	49	5	3	10	4	0	92
New Haven	3	0	0	0	0	1	0	4
New London	3	0	0	0	0	0	0	3
New Milford	49	89	12	16	9	3	1	179
Newington Newington	2	0	0	0	0	0	0	2
Newtown	171	67	5	7	20	6	0	276
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Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Norfolk	2	24	11	3	0	2	0	42
North Branford	52	15	2	2	1	6	0	78
North Canaan	10	19	5	2	0	6	0	42
North Haven	31	7	0	2	0	3	0	43
North Stonington	33	80	19	13	9	3	1	158
Norwalk	26	1	0	0	0	1	0	28
Norwich	32	45	4	9	0	6	1	97
Old Lyme	63	35	3	7	0	5	0	113
Old Saybrook	10	12	0	0	0	5	0	27
Orange	56	5	0	3	5	2	0	71
Oxford	37	46	4	5	6	12	0	110
Plainfield	59	80	22	7	5	10	0	183
Plainville	7	7	0	0	0	0	0	14
Plymouth	10	15	5	1	1	3	1	36
Pomfret	39	91	19	13	14	8	0	184
Portland	17	44	6	4	5	14	0	90
Preston	24	42	20	12	25	1	1	125
Prospect	17	19	2	3	0	11	0	52
Putnam	17	22	10	2	0	5	0	56
Redding	132	82	1	6	16	4	0	241
Ridgefield	143	20	0	31	0	28	1	223
Rocky Hill	5	7	0	1	7	1	1	21
Roxbury	10	35	6	1	11	12	0	75
Salem	25	35	9	3	0	10	0	82
Salisbury	86	93	16	22	26	10	0	253
Scotland	18	42	24	3	7	8	0	102
Seymour	31	15	2	5	0	1	0	54
Sharon	67	103	11	26	11	10	0	228
Shelton	55	12	1	3	47	6	0	124
Sherman	35	30	9	10	14	0	0	98
Simsbury	31	7	1	1	0	5	0	45
Somers	25	24	2	5	10	5	0	71
South Windsor	21	19	6	3	7	4	1	61
Southbury	35	19	4	3	4	28	0	93
Southington	35	16	2	9	11	14	1	88
Sprague	15	17	7	2	4	1	0	46
Stafford	52	77	42	16	1	7	0	195
Stamford	61	3	1	0	0	3	0	68
Sterling	24	37	24	7	4	0	0	96
Stonington	62	41	11	13	15	8	0	150
Stratford	15	2	0	1	0	2	0	20
Suffield	17	26	4	3	1	2	0	53
Thomaston	13	10	3	2	7	4	0	39
Thompson	64	95	22	18	21	5	0	225
Tolland	60	41	15	5	1	28	0	150
Torrington	16	22	3	4	3	6	0	54
Trumbull	54	1	0	0	0	14	2	71
Union	34	65	12	12	0	4	0	127
Vernon	16	4	1	0	0	6	0	27
7 CI II O II	10		1	U	U	U	U	<i>4 1</i>

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Voluntown	27	79	11	4	20	0	0	141
Wallingford	37	30	3	8	9	14	1	102
Warren	7	24	5	2	12	2	0	52
Washington	33	46	6	7	33	6	0	131
Waterbury	6	4	0	0	0	6	0	16
Waterford	92	62	17	10	0	0	0	181
Watertown	19	25	4	1	1	4	0	54
West Hartford	1	1	0	0	0	7	2	11
West Haven	11	1	0	1	3	1	0	17
Westbrook	14	16	3	1	0	1	0	35
Weston	48	26	0	2	0	2	0	78
Westport	1	0	0	0	2	0	0	3
Wethersfield	1	3	1	0	3	0	0	8
Willington	32	37	18	4	0	9	0	100
Wilton	121	35	0	4	0	7	1	168
Winchester	5	20	11	0	0	1	0	37
Windham	24	49	6	7	4	8	0	98
Windsor	15	9	4	1	4	7	0	40
Windsor Locks	0	0	1	0	0	1	0	2
Wolcott	15	3	0	1	0	5	2	26
Woodbridge	43	14	1	2	0	10	2	72
Woodbury	18	41	6	3	7	13	0	88
Woodstock	50	92	37	21	1	13	0	214
Totals	5,413	5,783	1,267	958	862	1,177	65	15,524

Appendix 2. Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2010-2012.

							3-year	Average			
	20	2010		011	2	012	(200	9-2011)	Male	es per Fo	emale
Season	Males	Females	Males	Females	Males	Females	Males	Females	2010	2011	2012
Archery											
State Land	386	267	311	259	360	280	376	286	1.5:1	1.2:1	1.3:1
Private Land	2,032	1,985	2,277	2,337	2,451	2,285	2,091	2,105	1.0:1	0.9:1	1.1:1
Subtotal	2,418	2,252	2,588	2,596	2,811	2,565	2,467	2,390	1.1:1	1.0:1	1.10:1
Muzzleloader											
State Land	82	72	86	77	52	61	81	78	1.1:1	1.1:1	0.9:1
Private Land	332	535	398	558	359	480	332	525	0.6:1	0.7:1	0.8:1
Subtotal	414	607	484	635	411	541	413	603	0.7:1	0.7:1	0.8:1
Shotgun/Rifle											
State Land A	446	244	417	188	535	236	420	197	2.5:1	2.2:1	2.3:1
State Land B	66	63	65	53	70	43	66	66	1.8:1	1.2:1	1.6:1
Private Land	2,632	1,799	2,594	1,715	2,914	1,960	2,573	1,800	1.1:1	1.5:1	1.5:1
Subtotal	3,144	2,106	3,076	1,956	3,519	2,239	3,059	2,063	1.4:1	1.6:1	1.6:1
Landowner	751	471	700	489	788	474	619	539	0.6:1	1.4:1	1.7:1
Total	6,727	5,436	6,848	5,676	6,741	5,345	6,558	5,596	1.1:1	1.2:1	1.3:1

Appendix 3. Deer harvested using crop damage permits in Connecticut's deer management zones, 2000-2012.

							Year						
Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	159	121	103	106	98	82	64	58	59	55	45	37	67
2	16	7	10	16	24	18	18	17	17	12	19	17	25
3	60	59	44	61	109	105	71	49	76	101	70	99	70
4	43	41	40										
4A				17	9	25	14	21	21	6	4	10	15
4B				35	46	38	32	33	51	33	39	28	41
5	87	75	46	71	124	129	95	68	119	95	57	93	87
6	112	71	73	77	56	82	77	54	90	58	78	56	74
7	44	49	60	78	90	62	69	89	114	93	88	123	127
8	60	39	47	42	53	37	47	33	42	33	32	28	36
9	59	38	27	42	43	53	48	30	69	79	55	56	56
10	54	48	51	45	36	50	66	51	82	76	75	104	90
11	122	110	104	164	159	114	109	116	111	106	118	93	113
12	52	31	28	72	99	47	45	48	32	33	35	60	63
Total	868	689	633	826	946	842	755	667	883	780	715	804	864

Appendix 4. Non-hunting deer mortality reported in Connecticut, 2000-2012.

Cause of													
Death	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Road	3,101	3,038	2,434	2,778	2,620	2,667	2,029	1,967	2,190	1,902	1,456	1,683	1,177
Dog	9	12	6	11	2	3	3	4	3	1	1	0	2
Unknown	175	190	140	217	183	183	117	162	72	92	49	82	58
Illegal	14	21	13	5	6	2	3	1	9	3	10	4	6
Crop Damage	868	689	633	831	946	842	755	667	883	780	715	804	864
Total	4,167	3,950	3,226	3,842	3,757	3,697	2,907	2,801	3,157	2,778	2,231	2,573	1,243
Non-hunting:	1:3.2	1:3.0	1:3.7	1:3.0	1:3.6	1:3.4	1:3.4	1:3.9	1:4.0	1:4.2	1:5.5	1:5.0	1:10.8
Harvest													
% Mortality*	24.4	25.7	19.6	23.3	21.7	22.6	19.3	20.2	20.0	19.1	11.1	11.6	8.4
% of Harvest	31.3	33.1	26.9	30.3	27.7	29.2	29.2	25.3	24.9	23.6	12.4	14.0	9.3

^{*} Crop damage harvest is included under non-hunting mortality.

Appendix 5. Frequency of deer road kills in each of Connecticut's deer management zones, a 5-year comparison, 2008-2012.

						Five	-year	Habitat	Roa	dkills/Sq.	Mile
Zone	2008	2009	2010	2011	2012	Total	Zonal %	(sq. miles)	2010	2011	2012
1	92	82	69	82	60	385	4.6	344.1	0.20	0.24	0.17
2	80	82	68	66	58	354	4.2	409.85	0.17	0.16	0.14
3	216	204	136	162	141	859	10.2	272.1	0.50	0.60	0.52
4A	113	85	64	81	59	402	4.8	213.1	0.30	0.38	0.28
4B	166	125	100	115	77	583	6.9	120.0	0.83	0.96	0.64
5	245	207	170	190	120	932	11.1	444.9	0.38	0.43	0.27
6	119	88	65	71	75	418	5.0	259.1	0.25	0.27	0.29
7	269	192	156	214	130	961	11.4	370.9	0.42	0.58	0.35
8	26	40	10	15	11	102	1.2	167.6	0.06	0.09	0.07
9	199	190	154	199	114	856	10.2	277.8	0.55	0.72	0.41
10	89	80	58	79	45	351	4.2	243.6	0.24	0.32	0.18
11	341	313	285	238	155	1,332	15.8	290.76	0.98	0.82	0.53
12	235	214	121	171	131	872	10.4	356.4	0.34	0.48	0.37
Total	2,190	1,902	1,456	1,683	1,176	8,407	100	3,770.2	0.39*	0.45*	0.31*

^{*} These numbers are averages, not totals.

Appendix 6. Deer harvest on state Deer Lottery Hunting Areas (DLHA), 2012.

DLHA	Shotgun	Muzzleloader	Archery	Total
7	7	1	1	9
8	10	2	7	19
9	25	8	19	52
11	40	5	26	71
12	40	4	25	69
15	16	6	32	54
26	0	1	1	2
27	4	2	0	6
28	4	0	8	12
51	51	0	1	52
52	17	0	0	17
53	10	0	7	17
54	5	0	2	7
56	59	0	34	93
58	14	0	1	15
59	1	0	0	1
Total	303	29	164	496

Appendix 7. Archery harvest on state areas, 2012.

Name of Area	Total Deer	Female	Male	Unknown
Aldo Leopold WMA	7	3	4	0
Algonquin State Forest	17	10	7	0
American Legion State Forest	5	2	3	0
Assekonk Swamp WMA	1	1	0	0
Babcock Pond WMA	5	1	3	1
Barber Pond WMA	1	1	0	0
Barn Island WMA	9	3	6	0
Bartlett Brook WMA	2	2	0	0
Bear Hill WMA	1	1	0	0
Beaver Brook State Park	8	6	2	0
Bennett's Pond State Park	2	1	2	0
Bigelow Hollow State Park	2	0	2	0
Bishops Swamp WMA	9	6	3	0
Black Rock Lake	6	2	4	0
Bloomfield Flood Control Area (Site 1)	2	1	1	0
Cedar Swamp WMA	_ 1	0	1	0
Centennial Watershed SF	31	17	14	0
Centennial Watershed SF (Canaan Block)	1	0	1	0
Centennial Watershed State Forest (BHC)	3	1	2	0
` ,	50	24	26	0
Cockaponset State Forest		1	3	
Collis P. Huntington State Park	4	•		0
Cromwell Meadows WMA	3	2	1	0
East Swamp	3	2	1	0
East Twin Lakes Water Access Area	3	2	1	0
Eight Mile River WMA	1	1	0	0
Franklin Swamp WMA	7	3	4	0
George C. Waldo State Park	1	1	0	0
Great Swamp Flood Control Area	3	1	2	0
Harkness/Verkades	6	2	4	0
Higganum Meadows WMA	10	7	3	0
Higganum Reservoir	4	0	4	0
Housatonic River WMA	9	2	7	0
Housatonic State Forest	3	2	1	0
John Minetto State Park	3	2	1	0
Kollar WMA	14	4	10	0
Lebanon Coop Mgmt Area	2	0	2	0
Little River Fish and Wildlife Area	1	0	1	0
Mansfield Hollow Lake	8	0	8	0
Mansfield State-Leased Field Trial Area	4	2	2	0
Mattatuck State Forest	5	2	3	0
MDC – Greenwoods Pond	1	1	0	0
MDC - Valentine Block	2	0	2	0
Meshomasic State Forest	24	12	12	0
Messerschmidt WMA	2	1	1	0
Millers Pond	2	1	1	0
Mohegan State Forest (including Waldo Tract)	1	1	0	0
Mount Riga State Park	4	1	3	0
Nassahegon State Forest	2	1	1	0
Natchaug State Forest	28	9	19	0
Nathaug State Forest Mgmt. Area	11	6	5	0
	11	2	9	0
Naugatuck State Forest Naugatuck State Forest (Great Hill Block)	8	2	6	0

Name Of Area	Total Deer	Female	Male	Unknown
Naugatuck State Forest (Quillinan Reservoir Block)	8	5	3	0
Nehantic State Forest	9	5	4	0
Nepaug State Forest	2	0	2	0
Newgate WMA	2	2	0	0
Nipmuck State Forest	29	13	16	0
Northfield Brook Lake	1	1	0	0
NU-Maromas Coop WMA	7	5	2	0
NU-Skiff Mtn. Coop WMA	2	0	2	0
Nye Holman State Forest	7	6	1	0
Pachaug State Forest	54	25	29	0
Paugnut State Forest	1	0	1	0
Paugussett State Forest	7	4	2	1
Pease Brook WMA	1	1	0	0
Peoples State Forest	2	1	1	0
Pomeroy State Park	1	1	0	0
Pootatuck State Forest	1	0	1	0
Quaddick State Forest	10	4	6	0
Quinebaug River WMA	2	1	1	0
Quinnipiac River Marsh	1	0	1	0
Quinnipiac River State Park	15	5	9	1
Red Cedar Lake	1	1	0	0
Robbins Swamp WMA	6	2	4	0
Roraback WMA	13	5	8	0
Rose Hill WMA	5	4	1	0
Ross Marsh WMA	1	0	1	0
Ross Pond State Park	2	2	0	0
Salmon River Cove & Haddam Neck	5	2	3	0
Salmon River State Forest	21	5	16	0
Scantic River State Park	3	2	1	0
Shenipsit State Forest	10	6	4	0
Simsbury WMA	5	2	3	0
Spignesi WMA (formerly Pudding Hill WMA)	3	2	1	0
Sugarbrook Field Trial Area	2	1	1	0
Sunnybrook State Park	2	0	2	0
Talbot WMA	6	2	4	0
Thomaston Dam	3	0	3	0
Topsmead State Forest	1	0	1	0
Trout Brook Valley State Park	1	0	1	0
Tunxis State Forest	2	0	2	0
Wangunk Meadows	2	0	2	0
West Thompson Dam	2	0	2	0
Whiting River Flood Control Area	1	0	1	0
Wooster Mountain State Park	4	2	2	0
Wopowog WMA	4	3	1	0
	3	3 1	2	0
Wyantenock State Forest Yale Forest	3 1	0	1	0
Zemko Pond WMA	3	0	3	0
Total	628	276	349	3