# 2014 Connecticut Deer Program Summary



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This publication is 75 percent funded by Federal Aid in Wildlife Restoration, the Pittman-Robertson (P-R) Program, which provides funding through an excise tax on the sale of sporting firearms, ammunition and archery equipment. The Connecticut DEEP Wildlife Division matches the remaining 25 percent of the funding.

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### Introduction

This booklet is the 33<sup>rd</sup> 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 2014, 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), allowing the use of crossbows during January (2010), and allowing the use of crossbows statewide (2013).

In 1995, the replacement antlerless tag program was initiated, allowing hunters in deer management zones (DMZs) 11 and 12 to harvest additional antlerless deer, with the goal of increasing the doe harvest. In 2003, hunting over bait was permitted in DMZs 11 and 12 during all seasons on private land. The 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 an additional 2 antlerless tags in DMZ 11 and DMZ 12 with their shotgun/rifle and muzzleloader permits. In 2010, hunters were allowed to use crossbows in January. In 2013, use of crossbows was expanded to include use during the entire archery season on state and private land in all DMZs. In developed areas where firearms hunting is not feasible, 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 (<u>www.deeralliance.com</u>). 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 towns of Redding and Newtown developed websites for each town (<u>http://BeSafeRedding.org</u> and <u>http://BeSafeNewtown.org</u>) to facilitate a process where 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 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.

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 fourth year during winter and spring of 2015. The Wildlife Division's Deer Program, along with Wildlife Management Institute staff, has captured and equipped approximately 100 does and 90 fawns with radio collars in the towns of Canaan, Cornwall, Salisbury, and Sharon over the past 4 years. Average birth rate has been 1.40 fawns per doe and survival rate during the first couple years has been about 31%, with predation from bears and bobcats being the primary cause of mortality. Fawn to doe ratios through the first 90 days after birth were 0.40F:1D in 2012, 0.40F:1D in 2013, and 0.6F:1D in 2014.

The Division will be collecting deer heads to test for chronic wasting disease (CWD) during the 2015 hunting season. Anyone interested in donating deer heads from harvested deer should contact William Embacher (<u>william.embacher@ct.gov</u>) or Andrew LaBonte (<u>andrew.labonte@ct.gov</u>) at 860-418-5921 for more information.

## **Hunter Notes**

In 2015, the Connecticut General Assembly approved Public Act 15-204, An Act Authorizing Bow and Arrow Hunting on Certain Private Property on Sundays. This new law authorizes DEEP to establish a season for Sunday bow hunting on private properties during the fall archery season in areas of the state with an overpopulation of deer. The law also requires that all such hunting must take place at least 40 yards away from blazed hiking trails. As with all deer or turkey hunting on private lands, hunters must have written

permission from the land owner. Sunday hunting will go into effect starting October 1, 2015. Check the DEEP website (<u>www.ct.gov/deep/hunting</u>) for additional information.

The crop damage permit application and harvest reporting process was streamlined in 2015 and placed online to follow the current licensing and harvest reporting requirements used during the regulated deer hunting season.

In 2014, junior hunter training days for deer were expanded from the two Saturdays before the season opens to a full week of hunter training days (excluding Sunday).

As of June 2013, individuals and groups are now able to participate in an 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, allowing 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.

Information on dates and locations of hunter education courses can be obtained by calling the DEEP Wildlife Division at 860-424-3011, or on the DEEP website (<u>www.ct.gov/deep/hunting</u>). 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 <u>www.ct.gov/deep/sportsmenlicensing</u>.

Regulations 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 (<u>www.ct.gov/deep/lib/deep/regulations/26/26-55-4.pdf</u>) and an updated list of states where CWD has been documented can be found on the DEEP website at <u>www.ct.gov/deep/hunting</u>.

#### **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 harvest data collected before 2009 to harvest data collected in 2009 and thereafter. During the 2014 hunting season, 11,394 deer were legally harvested and reported (Table 1; Figure 1). This represents a 9.2% decrease from the 2013 harvest. Harvest by crossbow hunters comprised 43%, 47%, and 62% of the January harvest in 2012, 2013, and 2014. Although the statewide harvest fluctuates annually, harvest levels have been relatively consistent over the past 15 years.

In 2014, 2,129 deer were harvested during the first 4 days of the shotgun/rifle season, a 5.5% increase from 2013 (2,018). Using the telephone and on-line reporting systems, the reported shotgun/rifle harvest was 4,104 deer in 2014, a 5.4% decrease from 2013 (4,340). The reason for the decline in the shotgun/rifle harvest is unclear; however, it is likely related to the decrease in permit issuance (11.9%). In 2014, the landowner harvest was 1,087, slightly lower than in 2013 (1,216). 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 decline in landowner harvest is also likely due to a decrease in permit sales (7.8%).

The antlerless and either-sex replacement tag harvest was lower in 2014 (455) than in 2013 (534). Deer harvested under the replacement antlerless and either-sex tag program (455) contributed to 18.0% of the total deer harvest on private land in DMZs 11 and 12. Archery and shotgun/rifle seasons accounted for 47.7% and 36% of all deer taken in 2014, which is the second consecutive year the archery harvest has exceeded the shotgun/rifle harvest. Landowners and muzzleloader hunters accounted for 9.5% and 6.8% of all deer taken in 2014. 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 were extended over an entire week starting in 2014 (excluding Sunday). The 3-year average harvest for the Junior Deer Hunter Training Days is 98 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 online license system and an increase in fees, permit issuance declined (2009-2011) 9% from the previous (2006-2008) 3-year average (61,859). Deer permit issuance in 2014 declined nearly 5,000 permits from 2013 (Table 2). Issuance for private land shotgun/rifle permits had the greatest 1-year decline (13.9%), followed by revolver permits (13.1%). Overall, shotgun/rifle hunters purchased the largest percentage of permits (40.2%), followed by archery hunters (30.7%), muzzleloader hunters (21.0%), and landowners (8.2%). Sixty-six percent of firearms deer permits were issued for use on private land and the remaining 34%

were issued for state-managed lands. During the fifth year of authorizing the use of revolvers for deer hunting, 774 hunters took advantage of this opportunity, a 13.1% decrease in issuance from 2013 (891).

Season	Harvest 2013	Harvest 2014	3-year Average Harvest (2011-2013)	% of Total 2014	% Change from 2013 to 2014	% Change 3-year Average to 2014
Archery	2013	2014	(2011-2013)	2014	10 2014	10 2014
State Land	722	626	646	5.5%	-13.3%	-3.1%
Private Land	5,051	4,547	4,819	39.9%	-10.0%	-5.7%
Replacement Antlerless <sup>A, B</sup>	267	233	266	2.0%	-12.7%	-12.3%
Either-sex Tag <sup>A, B</sup>	117	106	111	0.9%	-9.4%	-4.5%
Crossbow <sup>A, B</sup>	1,596	1,978			23.9%	
January <sup>B</sup>	273	260	284	2.3%	-4.8%	-8.6%
Replacement Antlerless <sup>A, B</sup>	30	26	28	0.2%	-13.3%	-8.2%
Either-sex Tag <sup>A, B</sup>	4	1	2	0.0%	-75.0%	-50.0%
Crossbow <sup>B</sup>	127	160	120	1.4%	26.0%	33.0%
Subtotal	6,046	5,433	5,557	47.7%	-10.1%	-2.2%
Muzzleloader	,	,	,			
State Land	125	103	135	0.9%	-17.6%	-23.5%
Private Land	822	667	875	5.9%	-18.9%	-23.7%
Replacement Antlerless <sup>A, C</sup>	16	19	9	0.2%	18.8%	103.6%
Either-sex Tag <sup>A, C</sup>	6	4	10	0.0%	-33.3%	-58.6%
Subtotal	947	770	1,009	6.8%	-18.7%	-23.7%
Shotgun/Rifle						
State Land A	625	567	681	5.0%	-9.3%	-16.7%
State Land B	71	76	104	0.7%	7.0%	-27.2%
Private Land	3,644	3,461	4,378	30.4%	-5.0%	-21.0%
Replacement Antlerless <sup>A, D</sup>	24	19	32	0.2%	-20.8%	-40.0%
Either-sex Tag <sup>A, D</sup>	70	47	66	0.4%	-32.9%	-29.1%
Revolver <sup>D</sup>	10	1	14	0.0%	-90.0%	81.4%
Muzzleloader <sup>D</sup>	22	26		0.2%	18.2%	
Subtotal	4,340	4,104	5163	36.0%	-5.4%	-20.5%
Youth Hunting Days <sup>D</sup>	111	53	98	0.5%	-52.3%	-45.7%
Landowner	1,216	1,087	1,226	9.5%	-10.6%	-11.4%
Total	12,549	11,394	12,956	100.0%	-9.2%	-12.1%

Table 1. Deer harvested during Connecticut's regulated hunting seasons, 2013-2014.

Total12,54911,39412,956^ A Replacement antlerless and either-sex tags were available in zones 11 and 12 only.<sup>B</sup> Included as part of private land archery total.<sup>C</sup> Included as part of private land muzzleloader total.<sup>D</sup> Included as part of private land shotgun/rifle total.

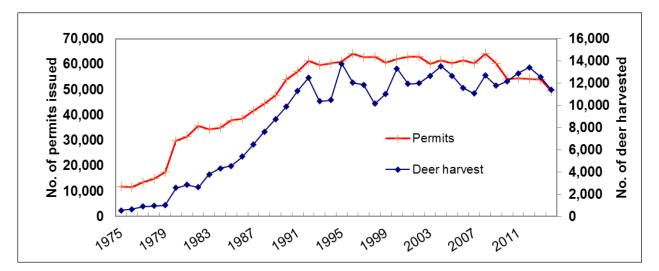




Table 2. Deer hunting permits issued in Connecticut for all regulated hunting seasons, 2012-2014.

				3-year Average	% of	% Change	% Change
	Permits	Permits	Permits	Permits	Total	2013 to	3-year Avg.
Season	2012	2013	2014	2011-2013	2014	2014	to 2014
Archery	14,341	15,800	15,200	14,622	30.7%	-3.8%	4.0%
Muzzleloader							
State Land	3,713	3,408	3,237	3,754	6.5%	-5.0%	-13.8%
Private Land	8,126	7,843	7,149	8,040	14.4%	-8.8%	-11.1%
Subtotal	11,839	11,251	10,386	11,794	21.0%	-7.7%	-11.9%
Shotgun/Rifle							
State Land A*	5,053	5,541	5,106	5,277	10.3%	-7.9%	-3.2%
State Land B*	2,423	1,868	1,730	2,289	3.5%	-7.4%	-24.4%
Private Land	15,284	15,159	13,049	15,460	26.3%	-13.9%	-15.6%
Subtotal	22,760	22,568	19,885	23,026	40.2%	-11.9%	-13.6%
Revolver <sup>A</sup>	945	891	774	877	1.6%	-13.1%	-11.7%
Landowner	4,387	4,394	4,052	4,460	8.2%	-7.8%	-9.1%
Total	54,272	54,013	49,523	54,217	100.0%	-8.3%	-8.7%

\*Includes controlled hunt permits.

<sup>A</sup> Not included in total permits.

#### **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. Bowhunter success has exceeded 35% since 2010 – the success rate was 35.2% in 2010; 38.0% in 2011; 37.7% in 2012; 38.3% in 2013; and 35.7% in 2014. Success rates for the remaining seasons varied slightly from 2013 to 2014. Success rates in 2014 decreased slightly for the shotgun/rifle hunting season compared to the 3-year average. In 2014, archery hunters had the highest annual success rate (35.7%), followed by landowners (26.8%), and private land shotgun/rifle hunters (26.5%). Success rate for the combined muzzleloader seasons was 7.4%. Lower success rates are expected because the muzzleloader season occurs after the shotgun/rifle deer hunting seasons.

Table 3.	Deer hunter success rates	(%) ir	n Connecticut,	2013-2014.
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			3-year Avg. Success Rate	Difference from	Difference from 3-year
Season	2013	2014	(2011-2013)	2013	Avg.
Archery					
Combined <sup>A</sup>	38.3%	35.7%	38.0%	-2.6%	0.9%
Muzzleloader					
State Land	3.7%	3.2%	3.6%	-0.5%	-0.4%
Private Land	10.5%	9.3%	10.9%	-1.2%	-2.0%
Combined	8.4%	7.4%	8.5%	-1.0%	-1.2%
Shotgun/Rifle					
State Land A	11.3%	11.1%	13.0%	-0.2%	-1.8%
State Land B	3.8%	4.4%	4.5%	0.6%	-0.9%
Private Land	24.0%	26.5%	28.3%	2.5%	-2.6%
Combined	19.2%	20.6%	22.4%	1.4%	-2.3%
Landowner	27.7%	26.8%	27.5%	-0.9%	0.1%
Average <sup>B</sup>	23.2%	23.0%	23.9%	-23.2%	-23.3%

<sup>A</sup> Data available only for state and private land combined.

<sup>B</sup> Average is based on total number of deer harvested/total number of permits issued.

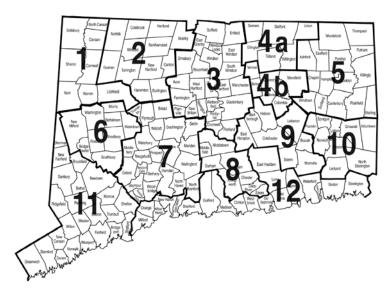
#### **Archery Statistics**

Excluding the landowner season, just over half (53%) of the deer taken during the hunting seasons were harvested by bowhunters. For the past four years (2011, 2012, 2013, and 2014), record bow harvests have been recorded (5,211; 5,413; 6,046; and 5,433 respectively). For the second consecutive year, the bow harvest (5,433) exceeded the shotgun/rifle harvest (4,104). Sixty-nine percent (3,743 – 3,198 private, 545 state) of the total archery harvest was taken during the early archery season (September 15 to November 18); 15% (844 – 791 private, 53 state) was taken during the 3-week shotgun/rifle season (open in all zones on private land and state land bowhunting-only areas); 11% (586 – 490 private, 37 state) was taken during the muzzleloader season (December 10 to December 31); and 5% (260) was taken during the January season open in DMZs 11 and 12 on private land only (January 1-31, 2015). 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 harvested their deer. According to information reported by hunters in response to the questions, the number of deer observed per hour (Sept.-Dec.) in 2014 was 1.1, which was similar to 2013 (1.1). Number of fawns per doe in 2014 (0.49) was slightly higher than in 2013 (0.46), while number of bucks per doe in 2014 (0.36) was slightly lower compared to 2013 (0.47).

#### **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.

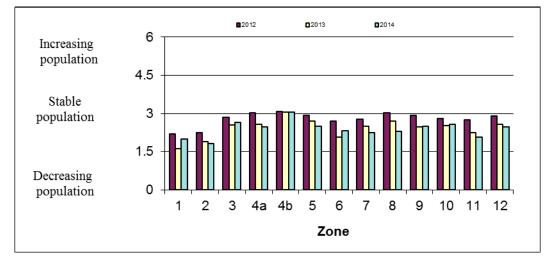
#### Figure 2. Connecticut's Deer Management Zones, 2014.



#### **Hunter Perceptions of Population Trends**

In 2014, 9,186 deer hunters were sent an email and asked to complete an online hunter survey. A total of 3,632 hunters responded for a 40% response rate. 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). Forty-four percent of the hunters who responded to the survey believed that the population was declining, 42% believed it was stable, and 14% believed it was increasing. DMZs 3 and 4B had the highest average rank (2.64 and 3.06) (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, observations and distribution of predators all increased in 2014 compared to 2013. Hunters reported 897 bear sightings in 95 towns in 2014 (550 bear sightings in 85 towns in 2013), at a rate of one bear sighting per 63 days spent afield. Hunters reported 1,794 bobcat sightings in 158 towns in 2014 (971 bobcat sightings in 143 towns in 2013), at a rate of one bobcat sighting per 31 days spent afield. Hunters reported 8,713 coyote sightings in 167 towns in 2014 (5,988 coyote sightings in 166 towns in 2013), at a rate of one coyote per 6.5 days spent afield.



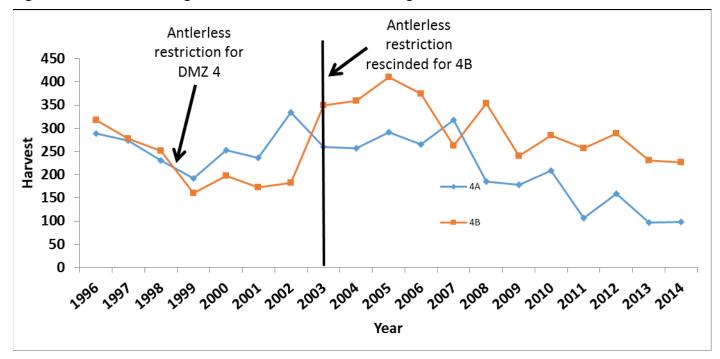
#### Figure 3. Perception of zonal deer population trends (average rank) by Connecticut's deer hunters, 2012-2014.

#### **Zonal Deer Management**

Because deer populations vary across the state, deer management zones were established. Management strategies in each zone may vary depending on population status. 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 DMZ 4A (northern portion), the restriction on the use of antlerless tags was retained, while the use of antlerless tags was again allowed in DMZ 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 2014. 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.





#### 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 2014 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 (1.9) and DMZs 4B and 8 had the greatest density of hunters (4.8 and 4.6 per square mile). Hunter success rate was highest in zone 4B (39%), likely due to several years of an antlerless tag restriction, while success in zones 2 and 4A were the lowest (15%). The 3-year trend in hunter success rates by zone have fluctuated over the past 3 years (Table 5). Four deer management zones (4B, 5, 9, and 10) 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 (32%) hunters harvested 2 or more deer during the regular archery season. Bowhunter success rates were highest in zones 1, 4B, 5, 6, 10, and 11. 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 nearly 2 times higher than all other zones.

	Zone	% of	Estimated					
	Hunted	Hunters	# of Private			Deer		%
	Private Land <sup>A</sup>	Answered	Land Shotgun/		Area	Harvest/	Hunters/	Success
Zone	Shotgun/Rifle	Question <sup>A</sup>	<b>Rifle Hunters</b>	Harvest	(sq. miles)	Sq. Mile	Sq. Mile	Rate
1	106	6.97%	909	252	344.59	0.7	2.6	28%
2	117	7.69%	1,004	155	410.69	0.4	2.4	15%
3	101	6.64%	867	227	273.33	0.8	3.2	26%
<b>4</b> A	78	5.13%	669	98	213.5	0.5	3.1	15%
<b>4B</b>	67	4.40%	575	226	120.66	1.9	4.8	39%
5	225	14.79%	1,930	649	445.94	1.5	4.3	34%
6	110	7.23%	944	230	260.03	0.9	3.6	24%
7	115	7.56%	987	206	373.08	0.6	2.6	21%
8	91	5.98%	781	174	169.11	1.0	4.6	22%
9	129	8.48%	1,107	347	279.39	1.2	4.0	31%
10	104	6.84%	892	318	244.36	1.3	3.7	36%
11	141	9.27%	1,210	236	291.53	0.8	4.1	20%
12	137	9.01%	1,175	343	358.39	1.0	3.3	29%
Total	1,521	100%	13,049	3,461	3,785	0.9	3.4	27%

 Table 4. Zonal hunter numbers, harvest, and success rates for private land during the 2014 shotgun/rifle hunting season.

<sup>A</sup> 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, 2012-<br/>2014.

	Area	Deer	Harvest/Sq	. Mile	Hun	ters/Sq.	Mile	Hunte	r Success Ra	nte (%)
Zone	(sq. miles)	2012	2013	2014	2012	2013	2014	2012	2013	2014
1	344.6	1.2	0.8	0.7	3.7	4.2	2.6	31	19	28
2	410.7	0.6	0.4	0.4	2.6	3.3	2.4	24	13	15
3	273.3	0.9	0.7	0.8	3.4	2.9	3.2	27	23	26
<b>4</b> A	213.5	0.7	0.4	0.5	3.5	4.5	3.1	21	10	15
<b>4B</b>	120.7	2.4	1.9	1.9	5.5	4.7	4.8	43	41	39
5	445.9	1.9	1.6	1.5	5.0	4.4	4.3	39	37	34
6	260.0	1.3	0.9	0.9	5.0	3.4	3.6	26	28	24
7	373.1	0.8	0.5	0.6	2.7	2.6	2.6	29	21	21
8	169.1	1.6	1.1	1.0	4.0	5.6	4.6	40	20	22
9	279.4	1.6	1.3	1.2	5.2	5.0	4.0	30	26	31
10	244.4	1.7	1.2	1.3	5.0	4.2	3.7	35	29	36
11	291.5	1.2	1.0	0.8	4.6	5.6	4.1	26	18	20
12	358.4	1.6	1.0	1.0	3.9	3.6	3.3	40	28	29
Total	3,785.0	1.3	1.0	0.9	4.0	4.0	3.4	32	24	27

	Zone Hunted	% of Hunters Answered	Estimated # of Archery		Hunter Success
Zones	Archery <sup>A</sup>	Question <sup>A</sup>	Hunters	Harvest	Rate %
1	83	3.9%	597	235	39.3
2	128	6.1%	921	160	17.4
3	128	6.1%	921	298	32.3
<b>4</b> A	98	4.6%	705	208	29.5
<b>4B</b>	88	4.2%	633	259	40.9
5	210	9.9%	1,511	505	33.4
6	120	5.7%	864	231	26.7
7	246	11.6%	1,770	517	29.2
8	112	5.3%	806	268	33.2
9	148	7.0%	1,065	350	32.9
10	81	3.8%	583	227	38.9
11	426	20.2%	3,066	1,257	41.0
12	244	11.6%	1,756	658	37.5
Total	2,112	100.0%	15,200	5,173	34.0

Table 6. Zonal comparisons of archery season success rates, 2014.

<sup>A</sup> 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 1993 from 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 2014, 39% of the hunters who responded to the survey ranked the fall acorn crop as scarce, 49% as moderate, and 12% as abundant. DMZs 4A and 4B had the highest average rank (2.4), while DMZs 8 and 10 had the lowest average ranks (1.8 and 1.5) (Figure 5). On a scale of 0-6, the average rank statewide was 2.1.

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 2013 and 2014, the acorn-success pattern was 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.

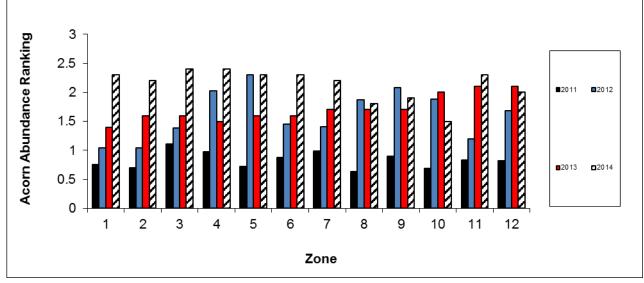
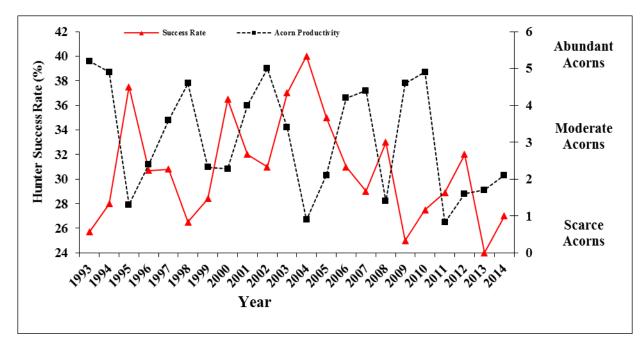


Figure 5. Perception of acorn crops (average rank) by Connecticut's deer hunters, 2011-2014.

## Figure 6. Relationship between private land shotgun/rifle hunter success rates and fall acorn productivity, 1993-2014.



#### **Private Land Deer Harvest**

The 2014 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 11 years and likely reflect differences in weather conditions, snow cover, acorn abundance, and deer densities (Table 7). Highest total deer harvest over the last 11 years has been observed in zone 11, likely a result of deer abundance, availability of replacement deer tags, use of bait, and increased access to land for hunting. Total private land deer harvest decreased 19.3% from 2013 to 2014.

						Yea	r				
Zone	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1	828	811	639	680	710	719	703	721	728	558	521
2	383	369	357	323	385	394	320	374	395	356	296
3	434	413	362	338	397	442	481	487	529	491	536
<b>4</b> A	207	273	218	259	293	267	293	276	348	320	275
<b>4B</b>	445	476	467	329	471	434	445	470	547	486	496
5	1,510	1,607	1,348	1,165	1,488	1,218	1,232	1,400	1,375	1,345	1,163
6	596	544	511	458	489	524	556	500	584	557	490
7	618	473	454	438	584	685	772	797	771	765	747
8	514	467	398	330	360	343	374	473	549	489	398
9	882	817	757	628	693	612	624	718	721	721	685
10	664	567	504	504	640	486	576	632	662	533	546
11	2,128	1,799	1,898	1,846	2,179	2,088	1,997	2,022	1,923	1,921	1,505
12	1,330	1,080	976	1,030	1,040	872	954	1,324	1,370	1,251	1,017
Total	10,485	9,613	8,832	8,328	9,955	9,084	9,327	10,194	10,502	10,748	8,675
% Change	7.1%	-8.3%	-8.1%	-5.7%	19.5%	-8.7%	2.7%	9.2%	3.0%	2.3%	-19.3%

 Table 7. Private land deer harvest for all seasons (excluding landowner) in each of Connecticut's Deer Management Zones, 2004-2014.

### Harvest Effort, 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 of hunting. Fawn recruitment (number of fawns added to fall population) also is an important variable used to understand changes in population growth and deer herd dynamics. 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. Another means of assessing zonal population changes is looking at the number of deer harvested per hour hunted. Observation rates of bucks, does, and fawns were similar between years, as was the percent of each class harvested between years (Table 8). Fawns were harvested at a lower rate than they were observed, compared to bucks which were harvested at a greater rate than they were observed (Table 8). Number of deer observed per hour, number of fawns observed per doe, and number of deer harvested per hour varied across years and by zone (Table 9).

#### Table 8. Hunter observations and harvest ratios reported during the first month of the archery season in Connecticut, 2011-2014.

		First Month of Archery											
		Observa	tion %		Harvest %								
	2011	2012	2012	2013	2014								
Bucks	23%	23%	25%	27%	38%	37%	37%	32%					
Does	51%	49%	55%	54%	47%	48%	50%	54%					
Fawns	26%	27%	25%	19%	15%	14%	13%	14%					

Table 9.Number of deer observed per hour, number of fawns per doe, and number of deer harvested per hour<br/>collected at the time of harvest reporting during the first month of the archery season by Deer<br/>Management Zone (DMZ) in Connecticut, 2012-2014.

		Deer Harvested and Observed/Hour													
		Reported on Day of Harvest													
DMZ		First Month of Archery													
		2	012			20	013			20	14		$\Delta^4$	$\Delta^4$	$\Delta^4$
	п	D/hr <sup>1</sup>	F:D <sup>2</sup>	H/hr <sup>3</sup>	n	D/hr <sup>1</sup>	F:D <sup>2</sup>	H/hr <sup>3</sup>	n	D/hr <sup>1</sup>	F:D <sup>2</sup>	H/hr <sup>3</sup>	D/hr <sup>1</sup>	F:D <sup>2</sup>	H/hr <sup>3</sup>
1	107	1.21	0.50	0.32	88	1.01	0.43	0.34	61	1.34	0.60	0.34	0.33	0.17	0.00
2	58	0.85	0.43	0.29	54	0.95	0.23	0.35	42	0.81	0.37	0.39	-0.14	0.14	0.04
3	86	1.18	0.59	0.34	116	1.06	0.42	0.35	85	0.96	0.60	0.34	-0.10	0.18	-0.01
4A	79	0.85	0.46	0.28	99	0.90	0.55	0.35	85	1.01	0.40	0.36	0.11	-0.15	0.01
<b>4B</b>	83	1.38	0.53	0.33	96	1.16	0.69	0.34	82	1.16	0.52	0.32	0.00	-0.17	-0.02
5	169	0.99	0.61	0.28	235	1.07	0.57	0.31	201	1.03	0.55	0.34	-0.04	-0.02	0.03
6	79	1.18	0.51	0.30	80	1.07	0.36	0.30	76	1.11	0.47	0.35	0.04	0.11	0.05
7	160	1.07	0.51	0.31	197	1.08	0.41	0.33	131	0.97	0.42	0.36	-0.11	0.01	0.03
8	92	1.27	0.50	0.31	87	1.12	0.42	0.32	90	1.10	0.56	0.32	-0.02	0.14	0.00
9	105	0.98	0.50	0.29	126	1.09	0.48	0.31	117	1.09	0.39	0.31	0.00	-0.09	0.00
10	85	1.20	0.55	0.31	89	1.22	0.48	0.33	84	1.09	0.40	0.35	-0.13	-0.08	0.02
11	478	1.23	0.58	0.30	533	1.23	0.51	0.31	369	1.47	0.54	0.35	0.24	0.03	0.04
12	268	1.49	0.61	0.35	227	1.33	0.41	0.34	227	1.30	0.56	0.35	-0.03	0.15	0.01

<sup>1</sup>Deer observed per hour hunted based on successful hunters.

<sup>2</sup>Fawns observed per doe based on successful hunters.

<sup>3</sup>Deer harvested per hour hunted based on successful hunters.

<sup>4</sup>*Change from 2013 to 2014.* 

#### **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. Although button bucks are included in the antlerless harvest, this system promotes the removal of female deer (Table 10). 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. Overall, deer harvest sex ratios have been similar over the past 3 years (1.2 males per female) (Table 11).

Based on observations reported online 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 2014, 52% (6,168) 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).

	Muzzleloader	Shotgun/Rifle	Archery	Landowner	Crop Damage	Total
Male:Female	0.61:1	1.30:1	0.98:1	1.51:1	0.69:1	1.06:1
Antlered:Antlerless	0.40:1	0.93:1	0.71:1	1.09:1	0.44:1	0.76:1

Table 10. Sex ratios (male:female) and antlered to antlerless ratios of deer harvested in 2014.

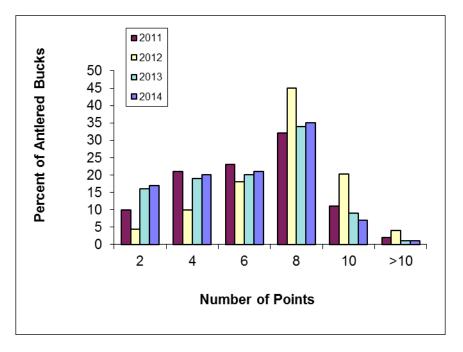
Table 11. Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2012-2014.
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2	2013		2014	Mal	les per Fen	nale	3-year Average
Males	Females	Males	Females	2012	2013	2014	(2012-2014)
6,518	5,681	5,879	5,429	1.3:1	1.2:1	1.1:1	1.2:1

## **Antler Points and Yearling Fraction**

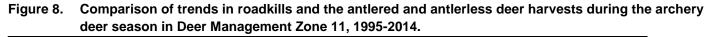
Deer age, nutritional status, and genetics affect the number of antler points on bucks. The yearling fraction of the antlered buck harvest is a common measure of hunting pressure. Intensively hunted herds have yearling fractions of about 70%, while lightly hunted herds have fractions of about 30%. Few yearlings (less than 6%) have 7 or more points and few adults (less than 12%) have less than 5 points, based on the known aged samples in Connecticut. Using antlered bucks with less than 5 points (yearling) and those with more than 7 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 45% in 2011, 40% in 2012, 44% in 2013, and 45% in 2014. 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 (2011), or the telecheck/online reporting system (2012- 2014) during the shotgun/rifle hunting season in Connecticut, 2011-2014.



## **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 remained relatively stable, while the antlerless harvest in that zone has increased nearly 5 times (from 200 to almost 1,000 deer annually). Buck harvest has increased in recent years with the addition of earn-a-buck in 2005. 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), and now is close to 1:1 (Figure 9).



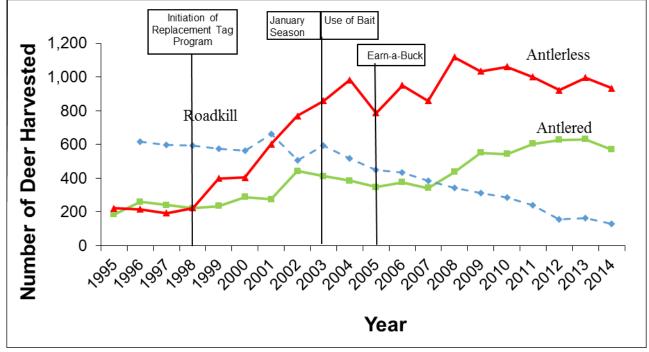
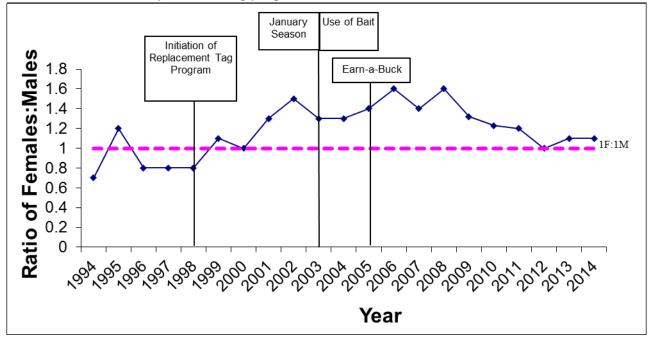


Figure 9. Sex ratios of harvested deer from Deer Management Zone 11 after implementation of the archery antlerless replacement tag program, 1994-2014.



## Deer Hunter Expenditures, Effort, Venison Calculations, and Opinions

Deer hunting-related expenditures contribute significantly to Connecticut's economy. Deer permit sales generated \$1,626,606 in 2012, \$1.601.187 in 2013, and \$1.704.083 in 2014 to the Connecticut General Fund. In addition, data collected from the annual deer hunter surveys indicated that Connecticut deer hunters spent an estimated \$7,683,988 on deer hunting-related goods and services, down from the \$13,452,477 spent in 2013. Changes were made to the way the question was worded for ease of electronic responses (monetary increment choices compared to write-in) and caution should be used when comparing expenditures between the two years.

In 2014, deer hunters spent a cumulative total of 406,088 days afield. Private and state land shotgun/rifle hunters used the greatest percentage of available hunting days during those seasons (33.3% and 34.0% respectively). Although bowhunters used a smaller percentage of available hunting days (23.7%), the archery season is much longer than the firearms season. Connecticut deer hunters collectively spent slightly more time (35 days per deer taken) but less money (\$655 per deer taken) in 2014 compared to 2013 (28 days at \$1,072 per deer taken). In 2014, hunters harvested an estimated 569,700 pounds (average 50 lbs. of meat/hunter; 254 tons total) of venison at an estimated value of \$3,845,475 (\$6.75/lb).

In 2014, a question was added to the hunter survey to assess lead use by hunters. Nearly half (45.2%) of shotgun hunters used 100% lead bullets, while 68.9% of rifle and 51.8% of muzzleloader hunters indicated they used lead bullets encased in copper. Most hunters (79%) indicated they were not concerned about ingesting lead fragments from harvested deer, 7.5% were, and 13.5% had no opinion. Most hunters (76.7%) do not believe lead ammunition should be restricted for deer hunting, 7.2% believed it should, and 16.1% had no opinion. The most common method hunters used to report their deer was the online system (75%; 26% specifically used a mobile device), 21.7% used the telephone system, and 3% used an alternative method (methods previously available prior to online and telephone reporting). Most hunters were satisfied with the telephone (68%) and online (87%) reporting systems. Hunters were moderately to extremely-satisfied with their deer hunting experiences in Connecticut (78%) and with the Connecticut DEEP Deer Program (84%). A more complete analysis of all the questions from the 2014 deer hunter survey will be available in the future.

### Subscription Rates for State Land Lottery Permits

In 2014, 1,601 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 2014, the total number of lottery hunt areas was 17. Sixty-four percent of all potential lottery permits were issued. Permit issuance reached 100% for 1 of 7 controlled hunt areas (Table 12).

Deer Hunting	% of Hunting Slots Filled
Lottery Area	2014
7	62 <sup>e</sup>
8	86 <sup>e</sup>
9	66 <sup>e</sup>
11	50 <sup>e</sup>
12	46 <sup>e</sup>
15	50 <sup>e</sup>
26	94
27	68 <sup>e</sup>
28	87
51 (Yale)	74 <sup>e</sup>
52 (Bristol Water Co)	100
53 (Maromas)	90 <sup>e</sup>
54 (Skiff Mt.)	54 <sup>e</sup>
56 (BHC-CWSF) <sup>a</sup>	78
58 ° (MDC <sup>b</sup> Nepaug)	44
59 <sup>d</sup> (MDC <sup>b</sup> Nepaug)	57
60 (Tankerhoosen)	63
<sup>a</sup> CWSF = Centennial Waters	hed State Forest

<sup>b</sup> MDC = Metropolitan District Commission

<sup>c</sup> Valentine area

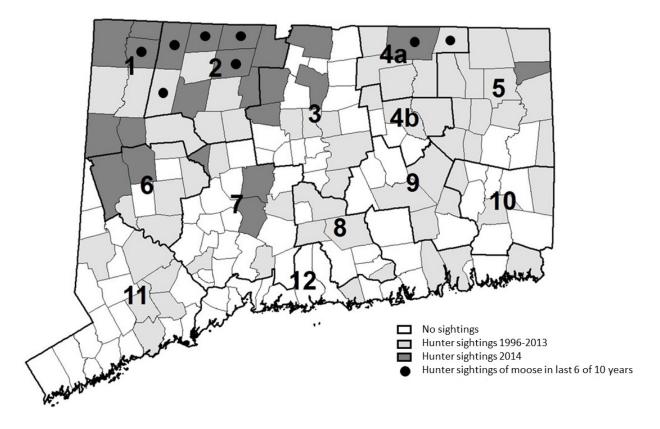
<sup>d</sup> Pine Hill area

<sup>e</sup> Lottery for A season only

## **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 49 moose sightings (67 individuals) in 23 towns in 2014 and 702 sightings over the past 19 years (Figure 10). During the 19-year period, moose sightings were reported in 85 different towns. Sightings were reported from 9 to 23 different towns each year. Moose were observed in Barkhamsted, Canaan, Colebrook, Goshen, Hartland, Norfolk, Stafford, and Union for 6 of the last 10 years. Most of the towns where hunters report moose sightings occur along the Connecticut-Massachusetts border. In 2014, an average of 1 moose was observed by hunters for every 841 hunter-days spent in the field, more days than in 2013 when 1 moose was observed for every 718 hunter-days in the field. Currently, Connecticut has no open hunting season for moose.

#### Figure 10. Moose sightings reported on deer hunter surveys, 1996-2014.



### **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 2014 controlled hunt, 24 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 2014 controlled hunt, 17 deer were harvested.

**Maromas Cooperative Management Area (Area 53):** Since 1996, Maromas, a 1,400-acre parcel in Middletown owned by Northeast Utilities (now known as Eversource), has been open to shotgun and muzzleloader hunting to maintain deer densities at levels compatible with available habitat. During the 2014 controlled hunt, 21 deer were harvested.

**Skiff Mountain (Area 54):** Skiff Mountain is a 710-acre property in Sharon owned by Northeast Utilities (now known as Eversource). It is open to shotgun and muzzleloader hunting. During the 2014 controlled hunt, 4 deer were harvested.

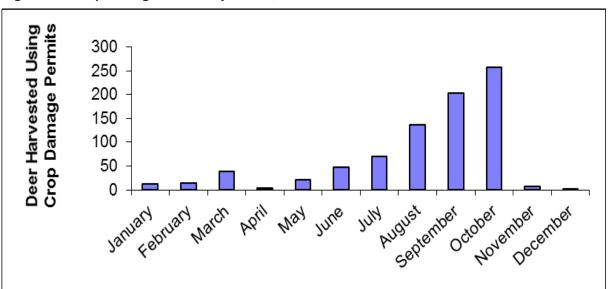
**Centennial Watershed State Forest (formerly known as Bridgeport Hydraulic Company) (Area 56):** The Hemlock Tract has been open to hunting since 1996. In 2005, an additional 1,765 acres were opened to hunting (3,474 total acres). During the 2014 controlled hunt, 87 deer were harvested.

**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 2014 controlled hunt, 11 deer were harvested.

**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, 572 deer have been removed from Bluff Point, resulting in improved deer herd health and ecosystem stability. In December 2014, the deer population was estimated to be 44 deer. In March 2015, 18 deer were removed by DEEP personnel. After the March 2015 removal, the population was estimated at 26 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 2014 calendar year, 812 deer were taken with crop damage permits (Appendix 3). From 1993-2013, annual deer harvest with crop damage permits has fluctuated between 543 and 946 deer. Harvest in DMZ 7 accounted for 13.6% of deer removed with crop damage permits in 2014. Crop damage harvest increased steadily from May to October, with 57% of the annual harvest occurring in September and October (Figure 11). Crop damage permits are not valid in November and December; however, 9 deer were harvested with special jacklight permits in November and December.



#### Figure 11. Crop damage harvest by month, 2014.

## 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 2014, 1,148 non-hunting deer mortalities were reported (Appendix 4). Of those, 1,081 were killed in deer-vehicle collisions. This equates to an average of 2.9 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 2014. 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 2014 was 6,486. Nearly 14% (150) of all roadkilled deer reported in Connecticut in 2014 occurred in DMZ 11 (Fairfield County, Figure 2), 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 14.5% of the total reported deer mortality in Connecticut, including crop damage harvest (Appendix 4).

### Conclusion

Over the past 34 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 unlimited deer may be taken in 2 of the 13 deer management zones. Historically, deer permit issuance 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 2014, 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 rather than in advance of the hunting season. 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 email at andrew.labonte@ct.gov or calling the Wildlife Division's Franklin office at 860-418-5921. 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 Managing Urban Deer in Connecticut is available from Wildlife Division offices or online

(www.ct.gov/dep/lib/deep/wildlife/pdf\_files/game/urbandeer07.pdf) to assist communities in developing effective deer management programs. Another publication, An Evaluation of Deer Management Options, was made available in 2009 by the Northeast Deer Technical Committee and can be found on the DEEP website as well

(www.ct.gov/dep/lib/deep/wildlife/pdf files/game/deeroptions.pdf).

#### Archery Shotgun/Rifle Landowner Muzzleloader Cropkill Roadkill Other Total Town Andover Ansonia Ashford Avon Barkhamsted Beacon Falls Berlin Bethany Bethel Bethlehem Bloomfield Bolton Bozrah Branford Bridgeport Bridgewater Bristol Brookfield Brooklyn Burlington Canaan Canterbury Canton Chaplin Cheshire Chester Clinton Colchester Colebrook Columbia Cornwall Coventry Cromwell Danbury Darien Deep River Derby Durham East Granby East Haddam East Hampton East Hartford East Haven East Lyme East Windsor Eastford Easton Ellington

#### Appendix 1. Total reported deer harvest and roadkills by town, 2014.

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Enfield	33	16	7	5	0	5	0	66
Essex	5	0	1	2	0	0	0	8
Fairfield	84	10	0	1	1	13	2	111
Farmington	7	9	1	0	6	14	0	37
Franklin	19	33	10	10	0	4	0	76
Glastonbury	44	35	5	5	39	28	2	158
Goshen	11	17	10	1	0	2	0	41
Granby	9	8	5	4	0	8	1	35
Greenwich	97	2	0	1	0	0	0	100
Griswold	19	77	21	11	27	9	0	164
Groton	46	12	2	0	4	9	1	74
Guilford	76	36	8	6	3	8	1	138
Haddam	75	66	20	13	1	2	0	177
Hamden	24	13	1	7	32	3	0	80
Hampton	24	49	26	5	7	6	0	117
Hartford	2	1	1	0	0	0	0	4
Hartland	12	14	3	4	0	1	0	34
Harwinton	17	32	11	6	12	6	0	84
Hebron	47	47	15	3	7	4	1	124
Kent	25	35	10	6	7	7	0	90
Killingly	31	39	23	10	13	13	0	129
Killingworth	39	31	8	8	0	0	0	86
Lebanon	67	114	48	15	27	6	0	277
Ledyard	34	42	10	7	0	27	0	120
Lisbon	13	22	25	6	0	4	0	70
Litchfield	36	37	13	10	2	10	0	108
Lyme	43	56	12	5	16	0	0	132
Madison	39	14	3	1	0	20	1	78
Manchester	15	11	1	6	0	5	0	38
Mansfield	58	47	10	10	15	19	1	160
Marlborough	22	36	14	5	0	4	0	81
Meriden	16	3	0	2	0	4	0	25
Middlebury	21	11	3	0	0	5	0	40
Middlefield	26	20	3	1	29	0	0	79
Middletown	68	50	10	10	3	3	0	144
Milford	26	1	0	1	0	5	0	33
Monroe	44	8	0	1	0	0	0	53
Montville	46	24	12	13	6	45	0	146
Morris	20	19	3	1	2	2	0	47
Naugatuck	29	14	2	2	0	2	0	49
New Britain	1	0	0	0	0	1	0	2
New Canaan	78	2	0	0	0	24	6	110
New Fairfield	51	16	0	2	0	3	0	72
New Hartford	27	26	6	2	4	6	1	72
New Haven	3	0	0	0	0	6	0	9
New London	2	0	0	0	0	0	0	2
New Milford	70	53	15	10	7	4	0	159
Newington	3	0	0	12	0	1	0	16
Newtown	171	61	4	0	18	1	0	255

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Norfolk	13	21	5	3	0	3	0	45
North Branford	43	8	1	2	1	27	0	82
North Canaan	7	7	1	3	0	7	1	26
North Haven	12	3	0	0	0	0	0	15
North Stonington	39	58	16	7	5	12	1	138
Norwalk	31	0	0	0	0	3	0	34
Norwich	22	38	1	8	0	13	3	85
Old Lyme	52	26	0	6	0	1	0	85
Old Saybrook	10	4	2	1	0	6	2	25
Orange	44	4	0	0	0	4	1	53
Oxford	23	23	6	0	11	7	0	70
Plainfield	42	61	19	6	5	5	0	138
Plainville	2	6	0	0	0	3	0	11
Plymouth	8	16	6	0	0	4	2	36
Pomfret	40	79	13	10	11	5	0	158
Portland	22	43	3	2	7	22	1	100
Preston	30	28	14	7	44	5	0	128
Prospect	26	9	1	3	0	11	1	51
Putnam	20	20	4	5	0	5	0	54
Redding	116	37	0	3	7	3	1	167
Ridgefield	146	31	0	28	0	24	5	234
Rocky Hill	10	8	0	20	6	4	0	30
Roxbury	16	23	2	11	13	7	1	73
Salem	41	38	12	5	5	5	0	106
Salisbury	64	64	8	21	8	18	0	183
Scotland	20	40	18	12	2	2	0	94
Seymour	35	3	0	4	0	9	1	52
Sharon	56	72	11	16	8	21	0	184
Shelton	53	9	0	0	37	4	0	101
Sherman	22	25	4	6	0	3	0	60
Simsbury	28	6	0	2	5	10	2	53
Somers	25	18	2	2	2	5	0	54
South Windsor	13	14	6	1	10	8	1	53
Southbury	32	21	5	1	1	13	0	73
Southington	32	11	2	1	3	14	0	63
Sprague	17	21	12	1	4	2	0	57
Stafford	69	51	25	7	3	6	0	161
Stamford	43	1	0	0	0	0	0	44
Sterling	37	31	20	4	4	1	0	97
Stonington	53	44	3	10	11	13	0	134
Stratford	14	1	1	1	0	0	0	17
Suffield	25	29	7	12	0	4	0	77
Thomaston	16	6	2	2	4	0	0	30
Thompson	55	72	25	9	16	8	0	185
Tolland	55	32	18	7	3	13	0	128
Torrington	17	17	1	1	0	10	0	46
Trumbull	38	0	0	0	0	4	0	40
Union	15	30	16	4	0	5	0	70
Vernon	15	9	10	3	0	2	0	30

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Voluntown	34	61	8	10	10	2	0	125
Wallingford	38	30	4	9	19	9	1	110
Warren	5	23	7	2	9	1	0	47
Washington	19	42	9	13	53	5	1	142
Waterbury	11	7	0	0	0	4	0	22
Waterford	93	23	5	7	0	26	2	156
Watertown	16	22	3	1	0	1	0	43
West Hartford	1	0	0	1	0	1	0	3
West Haven	11	1	0	0	1	0	0	13
Westbrook	12	10	2	4	0	0	0	28
Weston	40	17	0	1	0	0	0	58
Westport	13	0	0	0	0	0	0	13
Wethersfield	2	3	0	1	4	0	0	10
Willington	27	20	18	1	0	9	0	75
Wilton	133	13	0	6	0	11	0	163
Winchester	7	9	9	0	0	1	1	27
Windham	28	39	6	5	0	7	1	86
Windsor	15	6	4	1	5	6	1	38
Windsor Locks	4	2	0	0	0	0	0	6
Wolcott	3	3	0	7	0	7	1	21
Woodbridge	29	5	1	3	0	13	0	51
Woodbury	20	20	4	1	5	16	0	66
Woodstock	57	75	24	14	0	6	0	176
Totals	5,427	4,104	1,087	770	812	1,081	67	13,348

Appendix 2.	Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2012-
	2014.

							3-year	Average			
	20	)12	2	013	2	014	(201	2-2014)	Male	es per Fe	male
Season	Males	Females	Males	Females	Males	Females	Males	Females	2012	2013	2014
Archery											
State Land	360	280	369	347	332	283	354	303	1.29	1.06	1.17
Private Land	2,451	2,285	2,546	2,474	2,278	2,469	2,425	2,409	1.07	1.03	0.92
Subtotal	2,811	2,565	2,915	2,821	2,610	2,752	2,779	2,713	1.10	1.03	0.95
Muzzleloader							0				
State Land	52	61	41	80	40	52	44	64	0.85	0.51	0.77
Private Land	359	480	317	499	239	423	305	467	0.75	0.64	0.57
Subtotal	411	541	358	579	279	475	349	532	0.76	0.62	0.59
Shotgun/Rifle											
State Land	605	279	420	269	415	219	480	256	2.17	1.56	1.89
Private Land	2,914	1,960	2,077	1,550	1,895	1,554	2,295	1,688	1.49	1.34	1.22
Subtotal	3,519	2,239	2,497	1,819	2,310	1,773	2,775	1,944	1.57	1.37	1.30
Landowner	788	474	748	462	648	429	728	455	1.66	1.62	1.51
Total	6,741	5,345	6518	5681	5,847	5,429	6,369	5,485	1.26	1.15	1.08

Appendix 3. Deer harvested using crop damage permits in Connecticut's deer management zones, 2002-2014.

							Year						
Zone	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1	103	106	98	82	64	58	59	55	45	37	67	44	39
2	10	16	24	18	18	17	17	12	19	17	25	15	16
3	44	61	109	105	71	49	76	101	70	99	70	97	99
4	40												
<b>4</b> A		17	9	25	14	21	21	6	4	10	15	16	8
<b>4B</b>		35	46	38	32	33	51	33	39	28	41	56	55
5	46	71	124	129	95	68	119	95	57	93	87	88	77
6	73	77	56	82	77	54	90	58	78	56	74	62	89
7	60	78	90	62	69	89	114	93	88	123	127	118	110
8	47	42	53	37	47	33	42	33	32	28	36	40	41
9	27	42	43	53	48	30	69	79	55	56	56	77	65
10	51	45	36	50	66	51	82	76	75	104	90	83	90
11	104	164	159	114	109	116	111	106	118	93	113	91	79
12	28	72	99	47	45	48	32	33	35	60	63	44	43
Total	633	826	946	842	755	667	883	780	715	804	864	831	812

#### Appendix 4. Non-hunting deer mortality reported in Connecticut, 2001-2014.

Cause of														
Death	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Road	3,038	2,434	2,778	2,620	2,667	2,029	1,967	2,190	1,902	1,456	1,683	1,177	1,211	1,081
Dog	12	6	11	2	3	3	4	3	1	1	0	2	0	5
Unknown	190	140	217	183	183	117	162	72	92	49	82	58	89	59
Illegal	21	13	5	6	2	3	1	9	3	10	4	6	4	2
Crop Damage	689	633	831	946	842	755	667	883	780	715	804	864	831	812
Total	3,950	3,226	3,842	3,757	3,697	2,907	2,801	3,157	2,778	2,231	2,573	2,108	2,135	1,959
Non-hunting:	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	1:6.7	1:5.9	1:6.8
Harvest														
% Mortality*	25.7	19.6	23.3	21.7	22.6	19.3	20.2	20.0	19.1	11.1	11.6	13.5	14.5	14.6
% of Harvest	33.1	26.9	30.3	27.7	29.2	29.2	25.3	24.9	23.6	12.4	14.0	14.7	17.0	16.1

\* Crop damage harvest is included under non-hunting mortality.

## Appendix 5. Frequency of deer roadkills in each of Connecticut's Deer Management Zones, a 5-year comparison, 2010-2014.

						Five-	year	Habitat		Roadkills/S	Sq. Mile
Zone	2010	2011	2012	2013	2014	Total	Zonal %	(sq. miles)	2012	2013	2014
1	69	82	60	71	70	352	5.3	344.1	0.17	0.21	0.20
2	68	66	58	74	55	321	4.9	409.85	0.14	0.18	0.13
3	136	162	141	166	125	730	11.0	272.1	0.52	0.61	0.46
<b>4</b> A	64	81	59	67	42	313	4.7	213.1	0.28	0.31	0.20
<b>4B</b>	100	115	77	87	41	420	6.4	120.0	0.64	0.73	0.34
5	170	190	120	60	84	624	9.4	444.9	0.27	0.13	0.19
6	65	71	75	68	52	331	5.0	259.1	0.29	0.26	0.20
7	156	214	130	116	99	715	10.8	370.9	0.35	0.31	0.27
8	10	15	11	44	9	89	1.3	167.6	0.07	0.26	0.05
9	154	199	114	99	83	649	9.8	277.8	0.41	0.36	0.30
10	58	79	45	53	70	305	4.6	243.6	0.18	0.22	0.29
11	285	238	155	163	150	991	15.0	290.76	0.53	0.56	0.52
12	121	171	131	143	99	665	10.1	356.4	0.37	0.40	0.28
Total	1,456	1,683	1,176	1,211	1,081	6,607	100.0	3,770.2	0.31*	0.32*	0.29*

\* These numbers are averages, not totals.

DLHA	Shotgun	Muzzleloader	Archery	Total
7	3	0	2	5
8	8	1	9	18
9	13	4	17	34
11	34	6	25	65
12	29	4	33	66
15	10	2	18	30
26	2	0	4	6
27	0	1	6	7
28	3	1	10	14
51	24	1	0	25
52	17	0	0	17
53	6	2	13	21
54	2	1	1	4
56	45	1	35	81
58	7	0	2	9
59	2	0	0	2
60	1	1	2	4
Total	206	25	177	408

Appendix 6. Deer harvest on state Deer Lottery Hunting Areas (DLHA), 2014.

N	T <sub>6</sub> 4-1 P	T	1.1
Name Of Area	Total Deer	F	<u>M</u>
Aldo Leopold WMA	1	1	0
Algonquin State Forest	1	0	1
American Legion State Forest	2	1	1
Assekonk Swamp WMA	2	1	1
Babcock Pond WMA	1	1	0
Barber Pond WMA	2	0	2
Barn Island WMA	8	5	3
Bartlett Brook WMA	4	3	1
Bear Hill WMA	5	2	3
Beaver Brook State Park	3	2	1
Bennett's Pond State Park	7	2	5
Bishops Swamp WMA	5	3	2
Black Rock Lake	1	1	0
Bloomfield Flood Control Area (Site 1)	1	1	0
Camp Columbia	6	3	3
Cedar Swamp WMA	1	0	1
Centennial Watershed SF	35	15	20
Centennial Watershed SF (Canaan Block)	1	0	1
Centennial Watershed State Forest (BHC)	4	1	3
CL&P (borders Newgate WMA)	1	1	0
Cockaponset State Forest	49	22	27
Collis P. Huntington State Park	1	1	0
Cromwell Meadows WMA	7	3	4
Durham Meadows WMA	4	2	2
East Twin Lakes Water Access Area	5	4	1
Eight Mile River WMA	1	0	1
Ellithorpe Flood Control Area	2	0	2
Franklin Swamp WMA	4	0	4
Great Swamp Flood Control Area	2	0	2
Harkness/Verkades	16	7	9
Higganum Meadows WMA	8	1	7
Housatonic River WMA	8	2	6
Housatonic State Forest	5	3	2
Jim Spignesi WMA	2	1	1
Kollar WMA	8	3	5
Larson Lot WMA	4	3	1
Lebanon Coop Mgmt Area	1	0	1
Little River Fish and Wildlife Area	0	0	0
Mansfield Hollow Lake	12	4	8
Mansfield State-Leased Field Trial Area	3	0	3

Appendix 7. Archery harvest on state areas (archery only areas), 2014.

Name Of Area	Total Deer	F	Μ
Mattatuck State Forest	6	4	2
MDC-Colebrook Reservoir/Hogback Dam	6	3	3
MDC - Valentine Block	2	2	0
MDC Greenwoods	3	1	2
Meshomasic State Forest	24	8	16
Messerschmidt WMA	2	1	1
Millers Pond	1	1	0
Mohegan State Forest (including Waldo Tract)	1	1	0
Mono Pond	3	1	2
Mount Riga State Park	1	0	1
Nassahegon State Forest	3	1	2
Natchaug State Forest	29	17	12
Nathan Hale State Forest MGMT Area	4	3	1
Naugatuck State Forest	18	10	8
Naugatuck State Forest (Great Hill Block) Naugatuck State Forest (Quillinan Reservoir	3	2	1
Block)	10	4	6
Nehantic State Forest	9	5	4
Nepaug State Forest	2	0	2
Newgate WMA	1	0	1
Nipmuck State Forest	9	1	8
Northfield Brook Lake	2	0	2
Nott Island	1	1	0
NU-Maromas Coop WMA	13	4	9
NU-Skiff Mtn. Coop WMA	1	0	1
Nye Holman State Forest	5	3	2
Pachaug State Forest	58	28	30
Paugnut State Forest	2	2	0
Paugussett State Forest	9	4	5
Pomeroy State Park	9	5	4
Pootatuck State Forest	2	2	0
Quaddick State Forest	2	0	2
Quinebaug River WMA	3	2	1
Quinnipiac River Marsh	2	0	2
Quinnipiac River State Park	3	0	3
Red Cedar Lake	1	1	0
Robbins Swamp WMA	8	5	3
Roraback WMA	9	7	2
Rose Hill WMA	3	2	1
Ross Marsh WMA	1	0	1
Ross Pond State Park	2	1	1
Salmon River Cove & Haddam Neck	2	1	1

Name Of Area	<b>Total Deer</b>	F	Μ
Salmon River State Forest	26	12	14
Scantic River State Park	3	1	2
Selden Island State Park	1	1	0
Sessions Woods WMA	2	1	1
Shenipsit State Forest	17	7	10
Silvio O. Conte NWR	2	1	1
Simsbury WMA	7	3	4
Suckerbrook Flood Control	1	0	1
Sunnybrook State Park	1	0	1
Suffield WMA	1	1	0
Talbot WMA	4	4	0
Tankerhoosen WMA	2	0	2
Thomaston Dam	1	1	0
Trout Brook Valley State Park	4	3	1
Tunxis State Forest	12	3	9
Wangunk Meadows	1	1	0
West Thompson Dam	9	8	1
Wopowog WMA	1	0	1
Wyantenock State Forest	6	2	4
Zemko Pond WMA	2	1	1