2022 Connecticut Deer Program Summary

Bureau of Natural Resources – Wildlife Division
Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
860-424-3011 **https://portal.ct.gov/DEEPHunting**

Department of Energy and Environmental Protection
Katie Dykes, *Commissioner*
Mason Trumble*, Deputy Commissioner*

Bureau of Natural Resources
Andrew Fisk, *Bureau Chief*
Wildlife Division
Jenny Dickson, *Director*

Prepared by
Andrew M. LaBonte, *Deer Program Biologist*
Howard. J. Kilpatrick, *Program Supervisor*

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Introduction

This booklet is the 43rd 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 2022, including changes in deer management regulations, harvest statistics, research activities, and population dynamics of Connecticut's deer population. Connecticut's Deer Management Program goals are to: 1) maintain the population at levels compatible with available habitat and land uses and 2) allow for a sustained yield of deer for use by Connecticut hunters. The program has mainly 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, while increasing populations in a few areas. 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 deer populations.

Deer Management Zones (DMZs) were established (Figure 1A) and evolved (Figure 1B) because deer populations vary across the state. Management strategies in each zone vary depending on population status. Data from hunter surveys, regulated deer harvests, and total deer mortality have been recorded and evaluated by DMZs in an effort to better manage the statewide deer population. Pursuant to the goal of maintaining populations at levels compatible with available habitat and land uses, aggressive management strategies have been implemented in areas with high deer densities. The replacement antlerless tag program was initiated, allowing hunters in DMZs 11 to harvest additional antlerless deer, with the goal of increasing the doe harvest during the firearms season in 1995 and during the archery season in DMZs 11 and 12 in 1998. 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 increases hunter opportunity and success. Starting in 2005, hunters could earn a free either-sex tag (Earn-a-Buck; EAB) 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 DMZs 11 and 12 with their shotgun/rifle and muzzleloader permits. In 2010, hunters were allowed to use crossbows in January in DMZs 11 and 12. In 2013, crossbows were expanded for use during the entire archery season on state and private land in all DMZs. In October 2015, archery hunters were allowed to hunt on Sundays on private land in DMZs where deer were considered overpopulated, which included all DMZs except 2, 3, and 4A. In 2018, archers were allowed to hunt on Sundays on 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.

Pursuant to the goal of allowing for a sustained yield of deer by Connecticut hunters, in other areas of the state where long-term declines in the population appeared to be occurring, a restriction on the use of antlerless tags during the firearms seasons was needed. In 2002, deer populations appeared to be stable in the southern portion, but not in the northern portion of DMZ 4. Following the 2002 season, DMZ 4 was split into two zones (4A and 4B) (Figure 1B), 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). A similar low population density was observed in a couple of towns in DMZ 1, which were then shifted into DMZ 2 (2002) – this has also forced a restriction on the use of the antlerless tag during the firearms season (2016). Until a clear increasing trend begins to occur in those zones, the restriction remains in place.

Figure 1. Connecticut's Deer Management Zones, (A) 1996, (B) 2022.

A. 1996

B. 2022
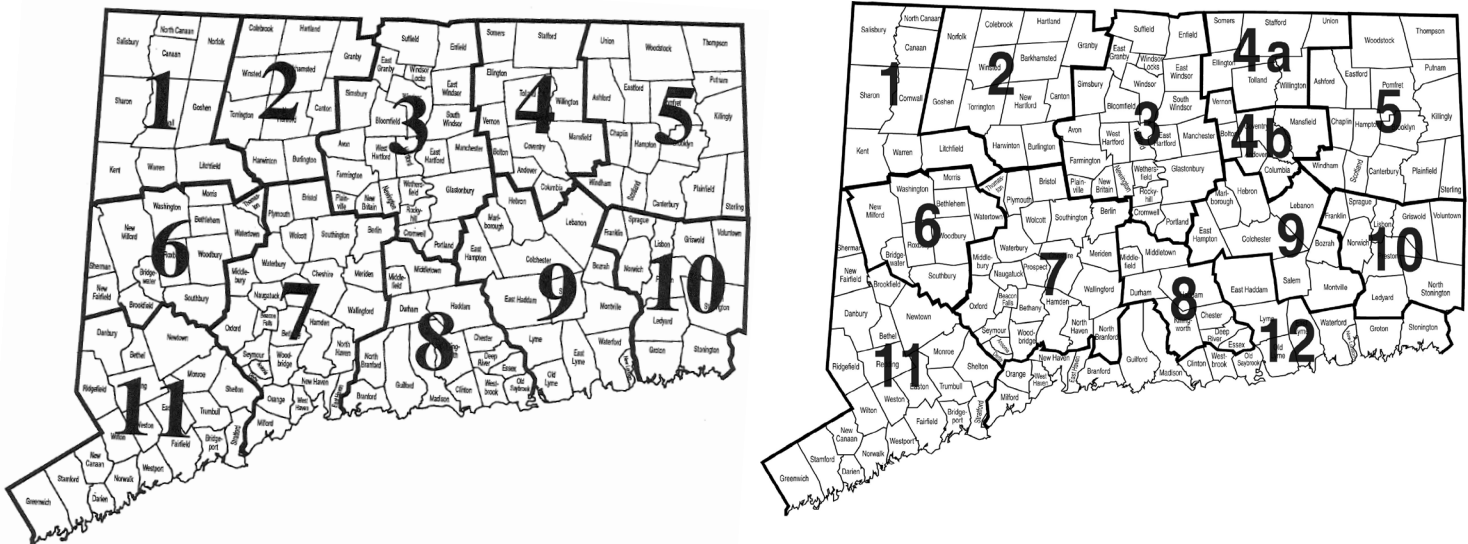
Hunter Notes

Information on dates and locations of hunter education courses can be obtained by calling the Connecticut Department of Energy and Environmental Protection (DEEP), Wildlife Division at 860-424-3011 or on the DEEP website (https://portal.ct.gov/DEEP/Hunting/CEFS/Conservation-Education-Firearms-Safety-Program). Licenses and permits to fish, hunt, and trap in Connecticut can be purchased at licensing vendors or online by going to Connecticut's Online Outdoor Licensing System at https://portal.ct.gov/CTOutdoorLicenses.

In 2017, a concerned hunter reported finding several dead deer along a small body of water adjacent to the Connecticut River in Portland. Three fresh carcasses were submitted to the lab and tested positive for Hemorrhagic Disease (HD) in DMZ 3. Based on reports along the river from Cromwell to Old Lyme, it is believed over 70 deer may have died due to infections that year. No infected animals were reported in 2018 or 2019. In 2020, one fresh carcass was collected and tested positive for HD in Ridgefield, with approximately 20 or more found in the surrounding areas near water bodies, indicating they may have died from HD. Hunters were asked on the 2020 deer hunter survey "if they had observed any dead deer that appeared to die of unknown causes or observed dead deer in or around a water body." Based on those responses, an additional 20 deer many have died from HD, so the total number of deer that died was probably closer to 80 deer in 2020. In summer 2021, two separate deer that appeared unhealthy were euthanized, necropsied, and tested for HD, but HD was not detected in either animal. Although no additional public reports indicating a HD outbreak had occurred, hunters were asked on the 2021 deer hunter survey "if they had observed any dead deer that appeared to die of unknown causes or observed dead deer in or around a water body." Hunters reported a few observations of deer in DMZs 6, 7, and 11 where, if HD did occur, Connecticut was fortunate it was not a major outbreak.

In 2022, severe drought conditions prompted HD reports early, with many being along the Housatonic River. By the end of the summer, more than 80 reports had been made and it was confirmed in 4 different zones (DMZ 1, 2, 10, and 12) because fresh carcasses were available. Hunters were asked on the 2022 deer hunter survey "if they had observed any dead deer that appeared to die of unknown causes or observed dead deer in or around a water body." Hunters reported approximately 200 dead deer on the survey matching symptoms of HD. Hemorrhagic disease is one of the most important infectious diseases affecting white-tailed deer and spreads by a bite from an infected midge. Additional information about HD can be found on the DEEP website at https://portal.ct.gov/DEEP/Wildlife/Wildlife-Diseases#HD.

In 2022, the DEEP collected 411 chronic wasting disease (CWD) samples throughout the state in which no CWD was detected. Since the beginning of CWD collection efforts in 2003, over 9,000 samples have been collected with no detections. Regulations remain in place prohibiting hunters from transporting into Connecticut any deer or elk carcasses or part thereof from any state where CWD has been documented, unless de-boned. Beginning in 2020, the use of natural deer urine products was prohibited, particularly for the purposes of taking or attempting to take or attract deer, or for the surveillance or scouting of deer. Chronic wasting disease can spread through exposure to infected deer urine. These types of regulations safeguard Connecticut's native deer population against unnecessary risk of CWD entering our state and the negative long-term impact it would have Although HD is a concern, CWD is even more of a concern and hunters can do their part to minimize the spread. Specific wording of the regulation and an updated list of states where CWD has been documented can be found on the DEEP website at https://portal.ct.gov/DEEP/Wildlife/Wildlife-Diseases#CWD.

During 2022/2023, the United States Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS), along with some assistance from the DEEP Wildlife Division, sampled and tested 121 deer for SARS-CoV-2 (COVID) as part of a larger nationwide surveillance effort. The virus was not detected in any deer. Although deer have tested positive in numerous other states, there continues to be no evidence that deer or other wildlife play a significant role in the spread of the virus among people. Additional information and precautions when handling game can be found on the DEEP Wildlife Diseases webpage listed above or at https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/food-and-COVID-19.html#wildanimals.

The Wildlife Division expects to be collecting deer heads to test for CWD, HD, and possibly samples to test for SARS-CoV-2 during the 2023 hunting season. Anyone interested in donating deer heads from harvested deer should contact Wildlife Division staff Andrew LaBonte (Andrew.Labonte@ct.gov) or Nathan Sajkowicz (Nathan.Sajkowicz@ct.gov) for more information.

Permit Allocation

To successfully manage Connecticut's deer population growth rate, the Wildlife Division provides opportunities for hunters to purchase multiple deer permits with varying numbers of tags. Permit issuance increased consistently from 1975 to 1992 and remained relatively stable from 1992 to 2009 but has been declining over the past 13 years (Figure 2). Since implementation of the online license system and an increase in fees, permit issuance declined 9% (2009-2011) from the previous 3-year average of 61,859 (2006-2008). Deer permit issuance in 2014 declined nearly 1,000 permits from 2013 and declined another 2,327 permits in 2015. Permit issuance in 2016 was similar to permit issuance levels in 1989. Issuance has declined every year except in 2020 where we saw a slight increase, likely attributed to the COVID-19 pandemic and the presence of snow during the muzzleloader season. Permit issuance declined in 2021 and 2022 (Figure 2). Archery permit issuance increased to a record high of 17,029 in 2017, but declined slightly in

2018 and 2019, increased again in 2020, likely a result of the pandemic, and decreased again in 2021 and 2022 (Table 1). In 2022, issuance for archery (-3.7%) and state land shotgun (-3.3%) permits had the greatest one-year decline (Table 1).

Overall, in 2022 shotgun/rifle hunters purchased the largest percentage of permits (37.4%), followed by archery hunters (36.4%), muzzleloader hunters (18.1%), and landowners (8.1%). Sixty-eight percent of firearms deer permits were issued for use on private land and the remaining 34% were issued for state-managed lands (Table 1). During the thirteenth year of authorizing the use of revolvers for deer hunting, 906 hunters took advantage of this opportunity, more than the previous year (2021; 897).

Figure 2. Total deer permit issuance and total deer harvest in Connecticut, 1975-2022.
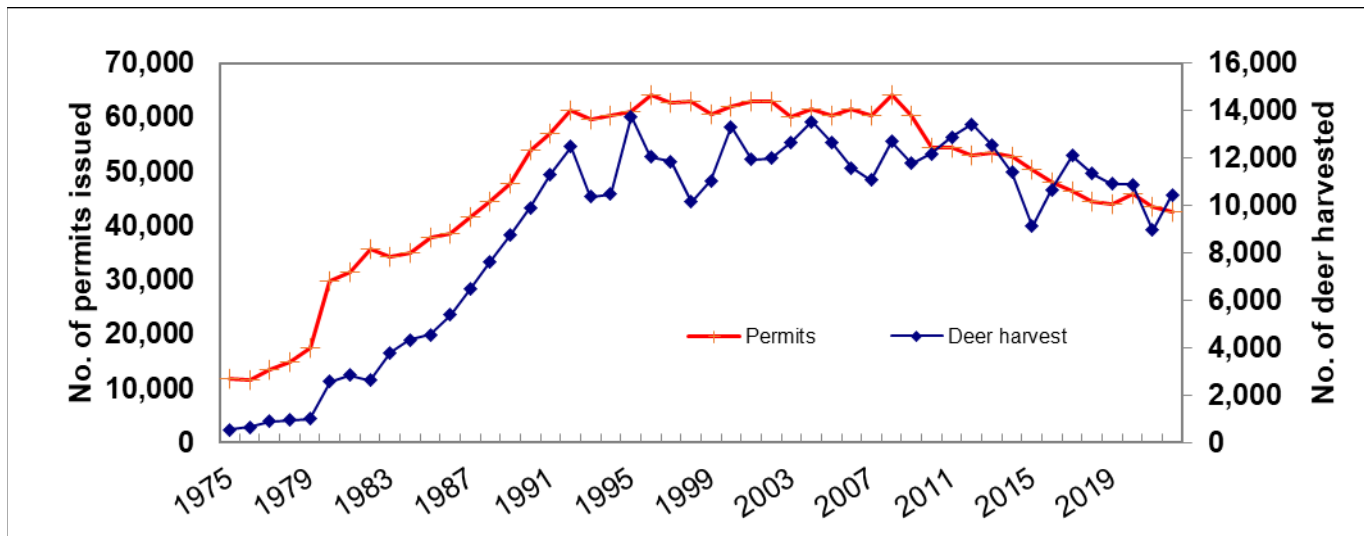
Table 1. Deer hunting permits issued in Connecticut for all regulated hunting seasons, 2019-2022.

Season	Permits 2019	Permits 2020	Permits 2021	Permits 2022	3-year Average Permits 2019-2021	% of Total 2022	% Change 2021 to 2022	% Change 3-year Avg. to 2022
Archery	16,428	16,997	16,094	15,493	16,506	36.4%	-3.7%	-6.1%
Muzzleloader								
State Land	2,566	3,004	2,865	2,887	2,812	6.8%	0.6%	2.5%
Private Land	4,964	5,249	4,940	4,794	5,051	11.3%	-3.0%	-5.1%
Subtotal	7,530	8,253	7,805	7,681	7,863	18.1%	-1.6%	-2.3%
Shotgun/Rifle								
State Land*	7,016	6,326	5,893	5,698	5,917	13.4%	-3.3%	-3.7%
Private Land	10,946	10,897	10,408	10,199	10,750	24.0%	-2.0%	-5.1%
Subtotal	16,477	17,223	16,301	15,897	16,667	37.4%	-2.5%	-4.6%
Revolver[A]	858	931	897	906	895	2.1%	1.0%	1.2%
Landowner	3,580	3,439	3,337	3,445	3,452	8.1%	3.2%	-0.2%
Total	**44,015**	**45,912**	**43,537**	**42,516**	**44,488**	**100.0%**	**-2.3%**	**-4.4%**

* *A and B season combined and includes controlled hunt permits.*
[A] *Not included in total permits.*

State Land Lottery and Controlled Hunt Permits

Over the years, permit issuance was less than the permit quota established for given areas and many were re-designated as No-Lottery Areas. Areas of special distinction and those still in high demand continue to remain in the lottery. Lottery permits were allocated at a maximum rate of 1 shotgun permit per 20 acres. In 2022, the total number of lottery hunt areas was 12 and all but three Deer Hunting Lottery Areas (51, 52, and 66) reached 100% permit issuance (Table 2). In 2022, 629 hunters were selected to hunt during the State Land Lottery and Controlled Hunt Seasons through the state-administered Deer Lottery Program. Hunters not getting into the lottery and still wishing to hunt that do not have access to private land still have many opportunities to hunt No-Lottery Areas. Hunters

should look at the different weapon types available for use on state properties, the size, and harvest levels in the different state land areas when selecting an area to hunt (Appendix 2).

Table 2. Deer lottery selection results by Deer Hunting Lottery Area, including over-the-counter sales, 2022.

Deer Hunting Lottery Area	% Hunting Slots Filled
26 (Trout Brook Valley SP)	100
28 (Naugatuck SF -Quillinan Reservoir)	100
51 (Yale)[A]	61[A]
52 (Bristol Water Company)	99
56 (Centennial Watershed State Forest)	99
58 (MDC[B] Nepaug - Valentine)	100
60 (Tankerhoosen)	100
62 (Aldo Leopold)	100
63 (Mohawk-Ziegler)	100
64 (MDC[B] Barkhamsted East Block)	100
66 (MDC[B] Nepaug Sweetheart Mt. Block)	100
67 (MDC[B] Barkhamsted West Block)	100

[A] A season only.
[B] Metropolitan District Commission

Regulated Deer Harvest

Regulated hunting is an effective and cost-efficient method for maintaining deer populations at acceptable densities. During the 2022 hunting season, 10,443 deer were legally harvested and reported (Table 3; Figure 2). This represents a 16.4% increase from the 2021 harvest. Harvest varied considerably by season and town (Appendix 1). Excluding the landowner season, over half (52%) of the deer taken during the 2022 hunting season were harvested by bowhunters. Since crossbows became legal during the January Archery season (2009/2010), record bow harvests have been recorded and, although the archery harvest declined in 2021 (4,528) and 2022 (4,889, Table 3), the archery harvest has exceeded the shotgun/rifle harvest for 10 years (Figure 3).

Figure 3. Total deer harvest during the firearms and archery seasons in Connecticut, 1990-2022.
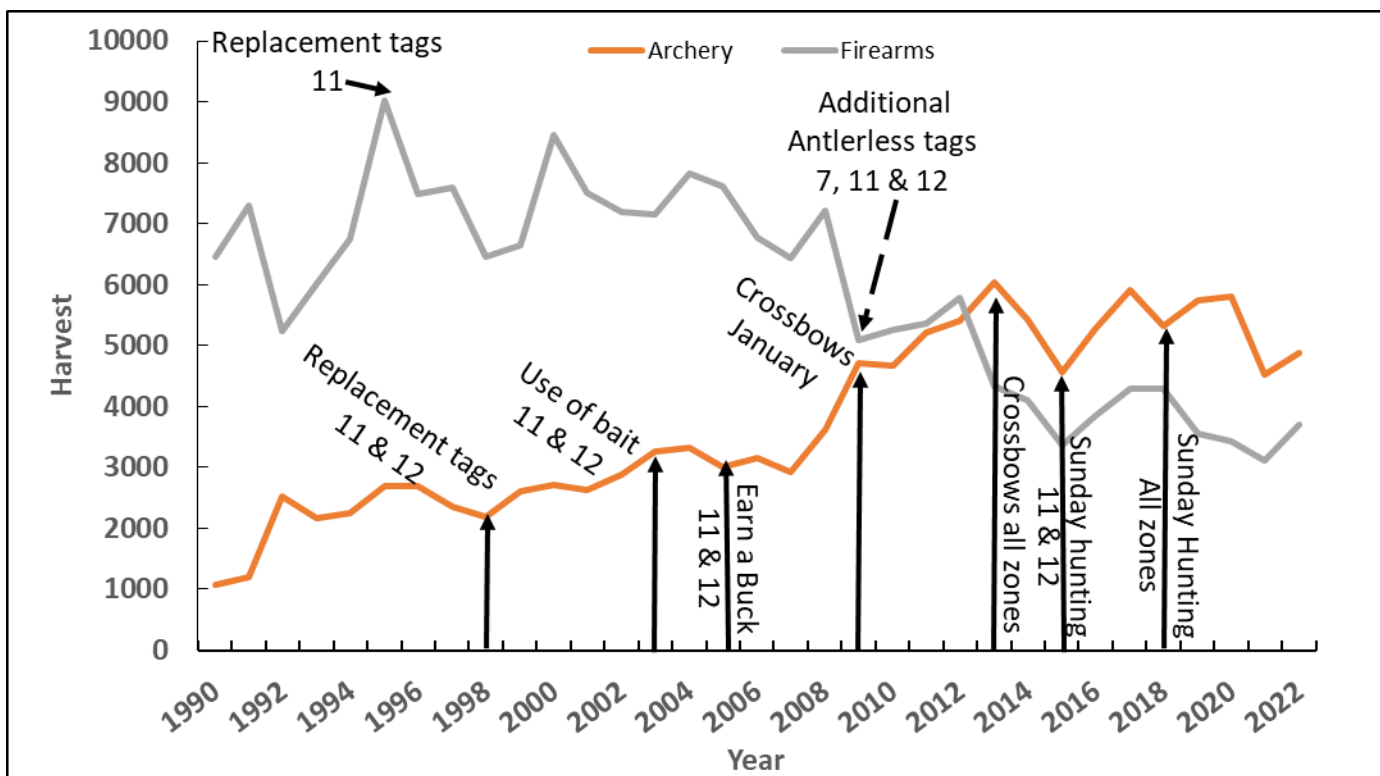
During the 2022 season, 62% (3,017 total – 2,572 private, 445 state) of the total archery harvest was taken during the early archery season (September 15 to November 15); 22% (1,052 total – 991 private, 61 state) was taken during the 3-week shotgun/rifle season

(open in all zones on private land and state land bowhunting-only areas); 13% (632 – 586 private, 46 state) was taken during the muzzleloader season (December 7 to December 31); and 4% (188) was taken during the January season open in DMZs 11 and 12 on private land only (January 1-31, 2023).

Harvest by crossbow hunters during the January season (2023, 68%) has increased greatly since it was first legalized in 2010 (33%), and crossbow harvest has increased similarly during the regular season (2022, 60%) since legalized statewide in 2013 (28%). Based on the number of deer harvested and reported by bowhunters, approximately 1 of 3 (31%) hunters harvested 2 or more deer during the regular archery season. In addition to private lands, state lands open to archery hunting are also a valuable resource to Connecticut deer hunters (Appendix 2).

In 2022, 1,711 deer were harvested during the first 4 days of the shotgun/rifle season (includes junior hunting days), a 6% increase from 2021 (1,618). The reported shotgun/rifle harvest was 3,710 deer in 2022, a 18.9% increase from 2021 (3,119). In 2022, the landowner harvest was 1,096, a 30.5% increase from 2021 (840). 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 decrease in shotgun rifle harvest in 2021 was likely due to poor weather conditions on typical peak harvest days and the decline in the landowner season was likely due to the decline in permit issuance.

Archery and shotgun/rifle seasons accounted for 47.6% and 36.2% of all deer taken in 2022, while landowners and muzzleloader hunters accounted for 10.7% and 7.3% of all deer taken (Table 3). The increase in the 2022 deer harvest was primarily attributed to better weather conditions during the latter part of the archery and firearms seasons.

A Junior Deer Hunter Training Day was established in 2003 for youth hunters. The training period increased to two days in 2009, and then expanded to a full week in 2014. Youth hunters continue to take advantage of these special training days. The recent 3-year average harvest for Junior Deer Hunter Training Days is 44 deer (Table 3).

Table 3. Deer harvested during Connecticut's regulated hunting seasons, 2021-2022.

Season		Harvest 2021	Harvest 2022	3-year Average Harvest (2019-2021)	% of Total 2022	% Change from 2021 to 2022	% Change 3-year Average to 2022
Archery							
State Land		577	552	616	5.4%	-4.3%	-10.4%
Private Land		3,779	4,149	4,556	40.4%	9.8%	-8.9%
Crossbow[A]		2,554	2,828	2,989	27.6%	10.7%	-5.4%
January[B]		172	188	184	1.8%	9.3%	2.2%
Crossbow		114	128	118	1.2%	12.3%	8.5%
	Subtotal	4,528	4,889	5,356	47.6%	8.0%	-8.7%
Muzzleloader							
State Land		65	123	94	1.2%	89.2%	31.3%
Private Land		419	625	509	6.1%	49.2%	22.8%
	Subtotal	484	748	603	7.3%	54.5%	24.1%
Shotgun/Rifle							
State Land		587	609	655	5.9%	3.7%	-7.0%
Private Land		2,532	3,101	2,748	30.2%	22.5%	12.9%
Revolver[C]		4	11	7	0.1%	37.5%	57.1%
Muzzleloader[C]		25	28	23	0.3%	33.3%	20.0%
Youth Hunting Days[C]		37	25	44	0.4%	8.1%	-9.8%
	Subtotal	3,119	3,710	3,402	36.2%	18.9%	9.0%
Landowner		840	1,096	928	10.7%	30.5%	18.1%
	Total	**8,971**	**10,443**	**10,253**	**100.0%**	**16.4%**	**1.8%**

[A] *Included as part of private land archery total.*
[B] *Refers to the January following harvest year listed.*
[C] *Included as part of private land shotgun/rifle total.*

Hunter Success

Hunter success rate was estimated by dividing total deer harvest by total permit issuance and multiplying by 100 (Table 4). Success rates may fluctuate annually, depending on weather conditions, timing of rain and snowstorms, fall acorn crops, and deer herd size. Archery season success rates fluctuated between 24.3% and 27.6% from 2004 to 2008. Archery success exceeded 35% from 2010 through 2014 (35.2% in 2010; 38.0% in 2011; 37.7% in 2012; 38.3% in 2013; and 35.7% in 2014) but declined during the 2015 (26.9%) and 2016 (31.3%) hunting seasons. In 2017, archery success reached nearly 35% (34.7%), declined slightly in 2018 (31.3%), and increased again in 2019 (34.9%) and 2020 (34.1%). However, success rates in 2021 decreased for all hunting seasons, including archery, compared to 2020, with the exception of the state land shotgun season. In 2022, success increased for all seasons with landowners having the highest annual success rate (31.8%), followed by archery hunters (31.6%), and private land shotgun/rifle hunters (30.4%) (Table 4). Success rate for the combined muzzleloader seasons was 9.7%. Lower success rates are expected because the muzzleloader season occurs after the shotgun/rifle deer hunting seasons. Hunter success in 2022 was higher than 2021 and the 3-year average for almost all seasons (Table 4).

Table 4. Deer hunter success rates (%) in Connecticut, 2019-2022.

Season	2019	2020	2021	2022	3-year Avg. Success Rate (2019-2021)	Difference from 2021	Difference from 3-year Avg.
Archery							
Combined[1]	34.9%	34.1%	28.1%	31.6%	32.4%	12.5%	-2.5%
Muzzleloader							
State Land	3.5%	4.2%	2.3%	4.3%	3.3%	87.0%	30.3%
Private Land	10.3%	11.4%	8.5%	13.0%	10.1%	52.9%	28.7%
Combined	8.0%	8.7%	6.2%	9.7%	7.6%	56.5%	27.6%
Shotgun/Rifle							
State Land[2]	10.9%	9.7 %	10.0 %	10.7 %	10.2%	7.0%	4.9%
Private Land	26.4%	25.8%	24.3%	30.4%	25.5%	25.1%	19.2%
Combined	21.5%	19.9%	19.1%	23.3%	20.2%	22.0%	15.3%
Landowner	28.4%	27.0%	25.2%	31.8%	26.9%	26.2%	18.2%
Average [3]	**24.8%**	**23.7%**	**20.6%**	**24.6%**	**23.0%**	**19.4%**	**7.0%**

[1] Data available only for state and private land combined.

[2] State Land A and B were combined in 2020, and recalculated for previous years.

[3] Average is based on total number of deer harvested/total number of permits issued.

Harvest on State Land Lottery/Controlled Hunt Areas varied considerably by area, with 23 areas exceeding 10 deer harvested/mi^2 in 2022 compared to 25 areas in 2021 (Appendix 2). Controlled hunts, which occur on large pieces of privately-owned land, play an important role in deer management with the harvest opportunities they provide. A few examples of harvest and success rates are provided below.

Yale-Myers Forest (Controlled Hunt Area 51): Yale-Myers 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 2022 controlled hunt, 22 deer were harvested for a 21% success rate (based on pre-hunt attendees).

Bristol Water Company (BWC; Controlled Hunt 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 asked to continue participating in the program. During the 2022 controlled hunt, 12 deer were harvested for a 16% success rate.

Centennial Watershed State Forest (formerly known as Bridgeport Hydraulic Company; Controlled Hunt 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 2022 controlled hunt, 31 deer were harvested for a 18% success rate.

MDC Nepaug Reservoir (Controlled Hunt Areas 58 and 59): In 2007, MDC (Metropolitan District Commission) 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 2022, Area 58 was open to shotgun hunting only, where 20 deer were harvested for a 50% success rate.

MDC Barkhamsted Reservoir (Controlled Hunt Areas 64A and 67A): In 2014, MDC contacted the Wildlife Division and expressed concern about impacts of deer on forest regeneration at Barkhamsted Reservoir. This resulted in the establishment of two controlled deer hunts, one in 2016 on the east side (Area 64A – 4,282 acres) and a second in 2017 on the west side (Area 67A – 3,700 acres). To document the impacts of deer on forest regeneration and health, deer exclosures were constructed at four different sites. The vegetation has been monitored annually since 2016. During the past four years, research has shown that oak seedlings within the fence are healthier and twice the height of the unfenced oaks, primarily due to protection from deer browsing. Although deer continue to impact forest regeneration, the reduction in deer numbers has improved the health of the MDC forests. During the 2022 controlled hunt, 12 deer were harvested for a 15% success rate.

Zonal Activity

Current population status and long-term trends are analyzed for each DMZ. This approach facilitates the assessment and management of regional deer populations. 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 DMZ. However, without information on hunter distribution and effort by zones, the potential usefulness of these data is limited. To gain insight into hunter distribution and success rates by zone, we email deer hunters and asked them to complete an online Deer Hunter Survey. For the 2022 survey, a total of 4,206 hunters responded for a 37% response rate (calculated for hunters who received and opened the email).

Shotgun/Rifle Season

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 DMZ was multiplied by total number of deer permits issued in 2022 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 5). In general, higher hunter success rates suggest higher deer density. Of the 13 management zones, most firearms hunting (40%) occurred in four zones (1, 2, 5, and 9). Highest private land deer harvests were reported for DMZs 5, 9 10, and 12. DMZ 4B had the highest deer harvest per square mile (1.8) and also the greatest density of hunters (3.9 per square mile). Hunter success rate was also highest in DMZ 4B (45%), while success in DMZs 2 and 4A was the lowest (13 and 17%). The trend in hunter success rates by zone has varied over the past 3 years (Table 6). Although hunter success has been variable due to the weather and abundance of acorns, many DMZs have continued to produce relatively high hunter success rates over the past 3 years (Table 6).

Table 5. Zonal hunter numbers, harvest, and success rates for private land during the 2022 shotgun/rifle season.

Zone	Zone Hunted Private Land[A] Shotgun/Rifle	% of Hunters Answered Question[A]	Estimated # of Private Land Shotgun/ Rifle Hunters	Harvest	Area (sq. miles)	Deer Harvest/ Sq. Mile	Hunters/ Sq. Mile	% Success Rate
1	176	7.9	806	242	344.59	0.7	2.3	30
2	241	10.8	1104	141	410.69	0.3	2.7	13
3	146	6.6	669	180	273.33	0.7	2.4	27
4A	133	6.0	609	106	213.5	0.5	2.9	17
4B	104	4.7	476	216	120.66	1.8	3.9	45
5	320	14.4	1466	656	445.94	1.5	3.3	45
6	128	5.7	586	218	260.03	0.8	2.3	37
7	151	6.8	692	206	373.08	0.6	1.9	30
8	131	5.9	600	126	169.11	0.7	3.5	21
9	210	9.4	962	313	279.39	1.1	3.4	33
10	162	7.3	742	288	244.36	1.2	3.0	39
11	163	7.3	746	151	291.53	0.5	2.6	20
12	162	7.3	742	258	358.39	0.7	2.1	35
Total	**2,227**	**100.0**	**10,199**	**3,101**	**3,785**	**0.8**	**2.7**	**30**

[A] *Based on hunter survey question asking hunters which zone they primarily shotgun/rifle hunt in.*

Table 6. Zonal comparisons in private land shotgun/rifle harvest, hunter distributions, and success rates, 2020-2022.

Zone	Area (sq. miles)	Deer Harvest/Sq. Mile 2020	2021	2022	Hunters/Sq. Mile 2020	2021	2022	Hunter Success Rate (%) 2020	2021	2022
1	344.6	0.8	0.7	0.7	2.5	2.4	2.3	33	28	30
2	410.7	0.3	0.4	0.3	2.8	2.3	2.7	12	15	13
3	273.3	0.8	0.7	0.7	2.6	2.2	2.4	29	31	27
4A	213.5	0.4	0.4	0.5	3.1	2.7	2.9	14	14	17
4B	120.7	1.5	1.3	1.8	3.8	3.4	3.9	41	38	45
5	445.9	1.1	1.0	1.5	3.6	3.3	3.3	30	32	45
6	260.0	0.8	0.7	0.8	1.7	2.4	2.3	48	30	37
7	373.1	0.6	0.5	0.6	2.0	1.8	1.9	29	29	30
8	169.1	0.7	0.7	0.7	5.3	3.1	3.5	14	23	21
9	279.4	0.9	0.8	1.1	3.4	3.4	3.4	27	23	33
10	244.4	0.9	0.9	1.2	3.8	3.2	3.0	24	28	39
11	291.5	0.6	0.5	0.5	2.3	2.1	2.6	27	22	20
12	358.4	0.6	0.5	0.7	2.4	2.1	2.1	26	27	35
Total	**3,785**	**0.7**	**0.7**	**0.8**	**2.9**	**2.8**	**2.7**	**26**	**24**	**30**

Archery Season

Deer hunters were asked on the hunter survey, "In what zone do you do most of your archery hunting?" The percent of hunters in each DMZ was multiplied by total number of archery permits issued in 2022 to estimate total number of hunters by zone. Bowhunter success rates in 2022 were highest in zones 4B, 5, and 12 and lowest in zones 1 and 2. Success rates over the past few years have been similar for most zones (Table 7).

Table 7. Zonal comparisons of archery season success rates, 2019-2022.

Zones	Zone Hunted Archery[A]	% of Hunters Answered Question[A]	Estimated # of Archery Hunters[A]	Harvest	Hunter Success Rate (%) 2019	2020	2021	2022
1	125	5.4	834	192	37.8	38.1	26.3	23.0
2	181	7.8	1,208	203	16.9	18.3	14.9	16.8
3	198	8.5	1,321	376	25.4	29.9	29.0	28.5
4A	125	5.4	834	193	31.8	19.9	19.1	23.1
4B	94	4.0	627	244	39.3	31.7	31.9	38.9
5	233	10.0	1,555	564	38.6	31.7	29.6	36.3
6	104	4.5	694	182	26.9	32.7	26.5	26.2
7	264	11.4	1,761	571	38.2	41.7	30.2	32.4
8	119	5.1	794	203	35.6	22.6	23.3	25.6
9	153	6.6	1,021	297	33.9	27.8	22.1	29.1
10	122	5.3	814	268	39.4	32.1	28.2	32.9
11	388	16.7	2,589	856	33.9	51.6	33.4	33.1
12	216	9.3	1,441	552	41.2	41.3	28.5	38.3
Total	**2,322**	**100.0**	**15,493**	**4,701**	**33.8**	**34.1**	**27.1**	**30.3**

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

Archery Observations, Harvest, and Effort

To obtain additional information beneficial to zonal deer management, successful 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." Observation rates were measured based on number of deer observed per hour of hunting. Fawn recruitment (number of fawns added to fall population) is also 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

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season (September 15 – October 15) 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. 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 8). Observation rates of bucks, does, and fawns were similar to previous years, as was the percent of each class harvested (Table 9). In general, fawns are harvested at a lower rate than they are observed, compared to bucks which are harvested at a greater rate than they are observed (Table 9), obvious as many hunters desire to harvest mature animals, especially mature bucks.

Table 8. Observation rates (deer seen/hour; D/hr), number of fawns per doe (F:D), and number of deer harvested per hour (H/hr) collected at the time harvest was summarized for the first month of the archery season by Deer Management Zone (DMZ) in Connecticut, 2020-2022.

DMZ	Deer Harvested and Observed/Hour														
	First Month of Archery Season (Sept. 15-Oct. 15)														
	2020				2021				2022				Δ^3	Δ^3	Δ^3
	n	D/hr[1]	F:D	H/hr[2]	n	D/hr[1]	F:D	H/hr[2]	n	D/hr[1]	F:D	H/hr[2]	D/hr[1]	F:D[4]	H/hr
1	95	1.27	0.38	0.35	73	1.23	0.35	0.35	45	1.50	0.41	0.34	0.27	0.06	-0.01
2	69	0.96	0.43	0.34	43	1.11	0.53	0.37	65	0.94	0.64	0.34	-0.17	0.11	-0.03
3	126	1.06	0.66	0.36	68	1.17	0.58	0.43	122	1.16	0.42	0.37	-0.01	-0.16	-0.06
4A	66	1.10	0.42	0.40	41	0.76	0.71	0.31	51	1.01	0.56	0.38	0.25	-0.15	0.07
4B	105	1.14	0.62	0.34	41	1.32	0.67	0.41	86	1.28	0.54	0.33	-0.04	-0.13	-0.08
5	251	0.95	0.51	0.31	121	1.07	0.75	0.35	207	1.17	0.57	0.33	0.10	-0.18	-0.02
6	87	1.14	0.50	0.36	45	1.22	0.84	0.37	42	1.54	0.47	0.38	0.32	-0.37	0.01
7	217	1.08	0.62	0.36	127	1.08	0.50	0.38	164	1.16	0.51	0.35	0.08	0.01	-0.03
8	80	1.16	0.52	0.32	53	1.01	0.50	0.36	61	1.15	0.66	0.41	0.14	0.16	0.05
9	107	1.09	0.60	0.35	61	0.86	0.50	0.33	87	1.09	0.50	0.37	0.23	0.00	0.04
10	103	1.17	0.49	0.32	57	0.88	0.33	0.31	94	1.09	0.55	0.36	0.21	0.22	0.05
11	361	1.13	0.56	0.33	166	1.06	0.57	0.32	243	1.17	0.51	0.34	0.11	-0.06	0.02
12	179	1.03	0.54	0.35	98	1.22	0.54	0.34	161	1.07	0.55	0.37	-0.15	0.01	0.03
Total	1,846	1.09	0.53	0.35	994	1.07	0.57	0.36	1,428	1.18	0.53	0.36	0.11	-0.04	0.00

[1] Deer observed per hour hunted based on successful hunters.
[2] Deer harvested per hour hunted based on successful hunters.
[3] Change from 2021 to 2022.

Table 9. Hunter observations and harvest ratios reported during the first month of the archery season in Connecticut, 2019-2022.

Age-sex	First Month of Archery Season (Sept. 15-Oct. 15)							
	Observation %				Harvest %			
	2019	2020	2021	2022	2019	2020	2021	2022
Bucks	20%	23%	23%	24%	40%	42%	42%	43%
Does	51%	50%	51%	50%	48%	48%	48%	47%
Fawns	29%	27%	26%	26%	12%	10%	10%	10%

Weekend Archery Hunting

Prior to 2015, archery hunting was only allowed on Saturdays. Beginning in 2015 archery hunting was permitted on private land on Sundays in all zones except 2, 3, and 4A, and then in all zones in 2018. Allowing Sunday archery hunting has increased the weekend archery harvest substantially (Table 10). In 2022, archery hunters were asked about "How frequently they hunted on the weekend". A little over a third of archery hunters (36%) indicated they hunted Saturday and Sunday, 24% hunted one or the other depending on personal time, 20% hunt Saturdays only, 10% hunt one or the other depending on the weather, 8% do not hunt weekends, and 2% hunt Sundays only. Based on the survey, the majority of archery hunters hunted 1 to 2 Sundays a month (avg. 1.9 Sundays) during the 2022 season, slightly less than in 2021 (avg. 2.3 Sundays).

Table 10. Weekend harvest on private land during the archery season in Connecticut, 2014-2022.

Weekend Archery Harvest (Sept. 15-December 31) Private Land									
Year	2014[1]	2015[2]	2016[2]	2017[2]	2018[3]	2019[3]	2020[3]	2021[3]	2022[3]
Percent Harvest	29%	37%	37%	37%	40%	44%	37%	38%	34%

[1] Hunting permitted on Saturday only.
[2] Hunting permitted on Saturday and Sundays in all zones except 2, 3, and 4A.
[3] Hunting permitted on Saturday and Sundays in all zones.

Overall Private Land Deer Harvest

The 2022 private land deer harvest was highest for DMZs 5, 7, and 11 (Table 11). 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 11). Highest total deer harvest over the last 11 years had been reported in DMZ 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 increased 17% from 2021 to 2022.

Table 11. Private land deer harvest for all seasons (excluding landowner) in each of Connecticut's Deer Management Zones, 2012-2022.

	Year										
Zone	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	728	558	521	472	573	551	609	545	585	485	446
2	395	356	296	273	294	365	326	313	360	335	326
3	529	491	536	426	516	566	520	493	626	529	558
4A	348	320	275	228	295	330	319	335	263	226	279
4B	547	486	496	357	452	488	471	431	462	351	456
5	1,375	1,345	1,163	902	1,062	1,244	1,251	1,197	1,072	924	1,262
6	584	557	490	416	488	528	503	483	534	433	432
7	771	765	747	743	838	880	806	897	911	723	785
8	549	489	398	342	368	423	408	418	358	295	323
9	721	721	685	511	580	701	697	623	563	460	628
10	662	533	546	433	471	606	558	528	493	428	561
11	1,923	1,921	1,505	1,321	1,538	1,666	1,440	1,148	1,329	922	989
12	1,370	1,251	1,017	781	916	1,212	1,116	956	786	619	830
Total	10,502	10,748	8,675	7,205	8,391	9,560	9,024	8,367	8,342	6,730	7,875
% Change	3.0%	2.3%	-19.3%	-16.9%	16.5%	13.9%	-5.6%	-7.3%	-<1.0%	-19.0%	17.0%

Long-term Zonal Changes

Most zones have not required any changes over time; however, others have required more management efforts. In DMZ 4, a decreasing trend prompted harvest restrictions on female deer in this zone in 1999. During the shotgun/rifle and muzzleloader seasons, the antlerless-only tag on 2-tag permits was not valid in DMZ 4. In 2002, deer populations appeared to be stable in the southern portion, but not in the northern portion of DMZ 4. Following the 2002 season, 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). These changes increased private land shotgun/rifle hunter success in DMZ 4B but have yet to change hunter success in DMZ 4A (Figure 4). Similarly, increasing predator populations (mainly bear and bobcat) in DMZ 2 have impacted the deer population, resulting in persistently low private land shotgun/rifle hunter success (Figure 4). This prompted harvest restrictions on harvest of female deer beginning in 2016. During shotgun/rifle and muzzleloader seasons, the antlerless-only tag on 2-tag permits was not valid. With little evidence of change in hunter success the past few years, other restrictions may be considered in the future.

Archery hunter success in DMZ 2 has changed little over time (Figure 5), with DMZ 2 and 4A being the lowest in the state when looking at it on a zonal basis. (Table 7). What appears to be an increase in DMZ 2 and 4A in 2009 is an artifact of the change in reporting requirements from kill report cards to the current online/telephone reporting system (Figure 5). It is believed that no change occurred in DMZs 11 and 12 because there was an incentive to report harvest due to the replacement tag program. The decrease in success seen in DMZs 2 and 4A in 2015 (Figure 5) was due to it being a year with the highest acorn abundance. It is unclear about the

decline in success in DMZ 4A in 2020 and 2021. In addition to deer abundance, acorn abundance and weather can have a large impact on hunter success.

Figure 4. Private land shotgun/rifle hunter success in Deer Management Zones 2, 4A, and 4B, 1998-2022.
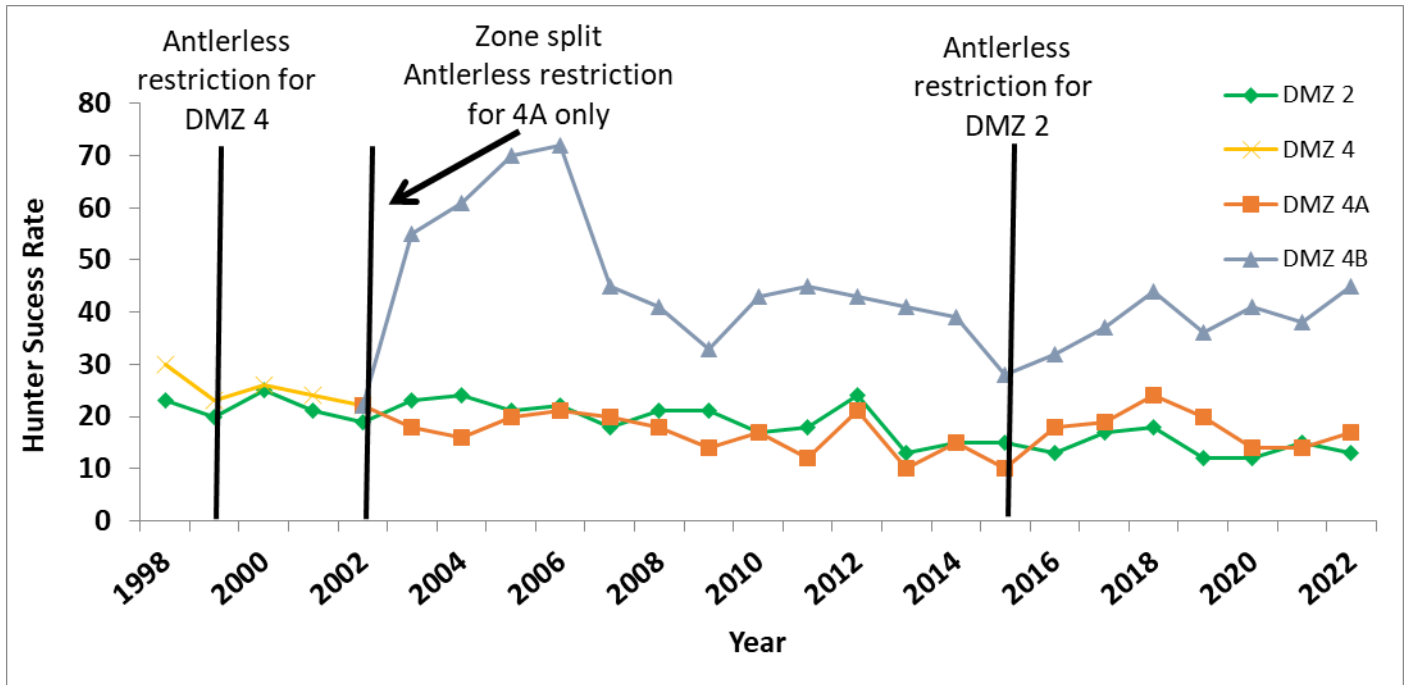
Figure 5. Archery hunter success in Deer Management Zones 2 and 4A, 2002-2022.
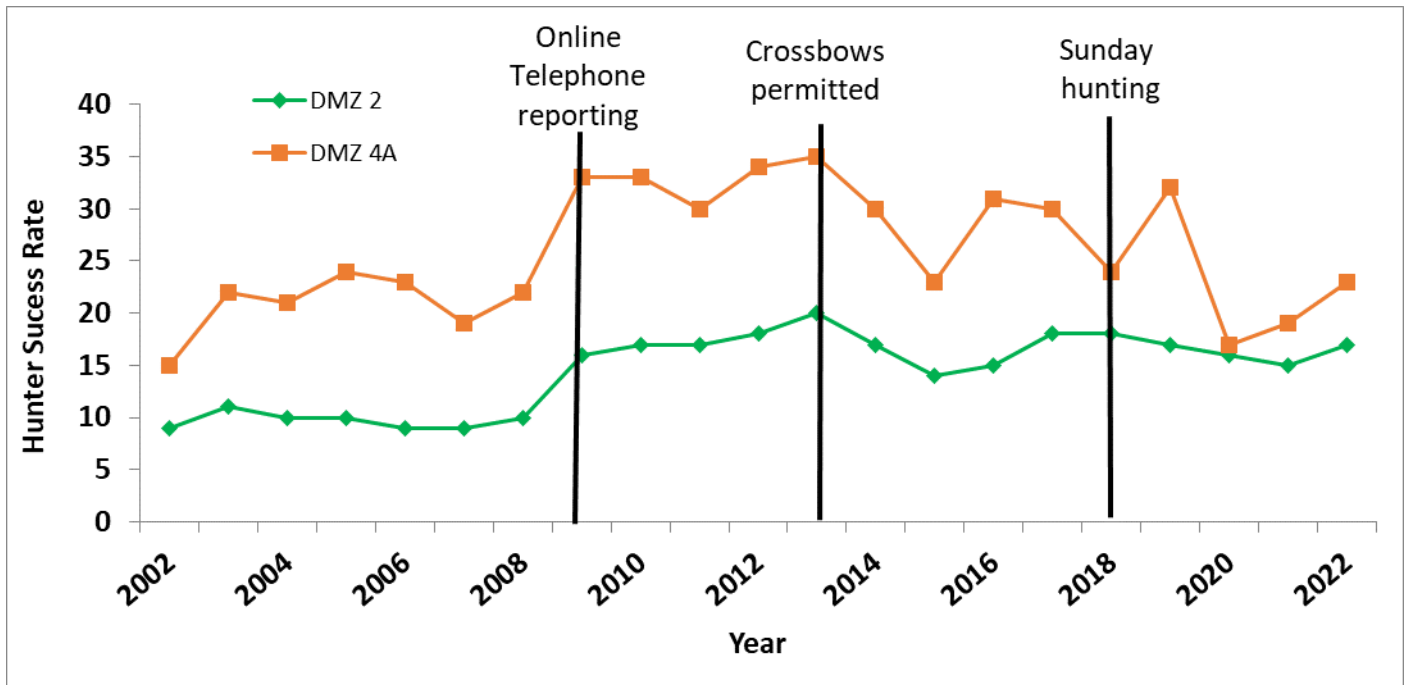
Replacement Tags

In addition to the initial permits that come with tags in areas with substantial deer problems, 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 increased nearly 5 times (from 200 to almost 1,000 deer annually and has now declined to just below 500). The buck harvest has steadily increased over the years with the addition of the earn-a-buck program in 2005. The number of roadkills in DMZ 11 has shown a steady decline since 1998 (Figure 6). 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), with the past three years averaging around 0.7 females per male (Figure 7).

Figure 6. Comparison of trends in roadkills and the antlered and antlerless deer harvests during the archery deer season in Deer Management Zone 11, 1995-2022.
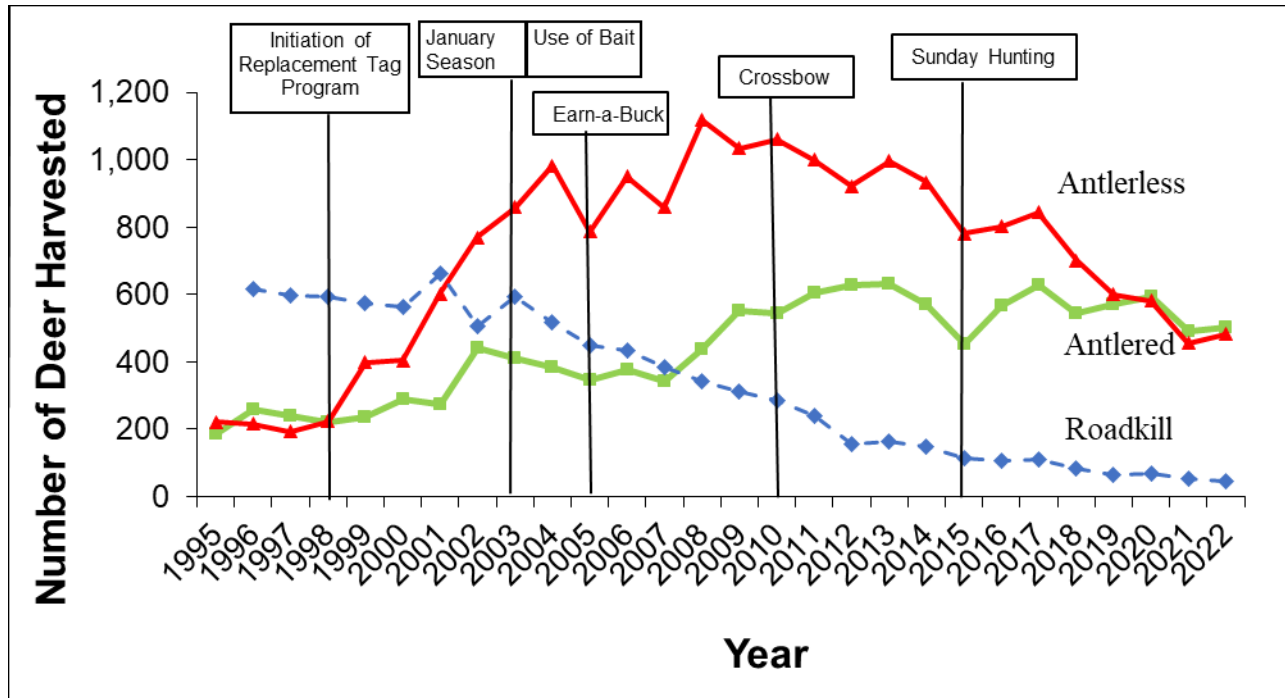
Figure 7. Changes in sex ratios of harvested deer from Deer Management Zone 11 after implementing various management strategies during the archery season, 1995-2022.
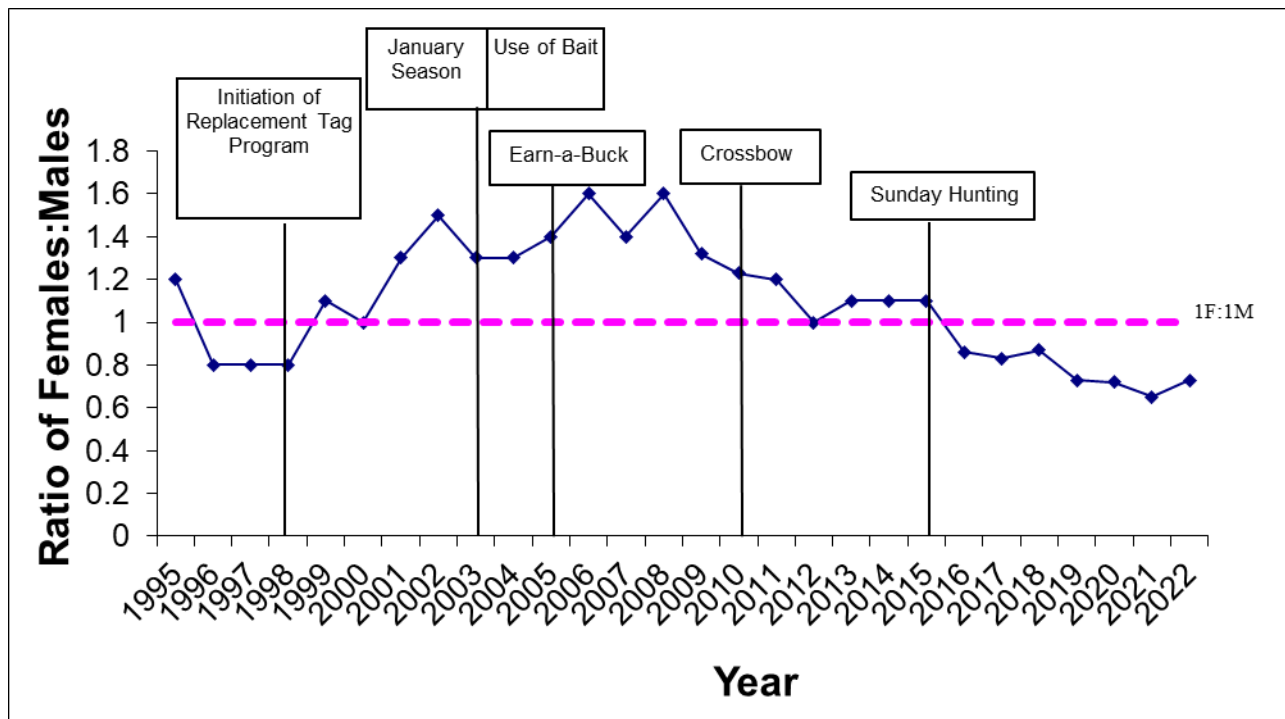
Deer Harvest Sex Ratios

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 12). In zone 2 and 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 were similar in 2020 and 2022 but favored males in 2021 (Table 13). In 2022, 45% (4,728) of the total regulated deer harvest (excluding crop damage harvest) was comprised of antlerless deer. A significant proportion of the harvest included females, which contributes to population control efforts (Appendix 3).

Table 12. Sex ratios (male:female) and antlered to antlerless ratios of deer harvested during the regular hunting season and through crop damage in 2022.

	Muzzleloader	Shotgun/Rifle	Archery	Landowner	Crop Damage	Total
Male:Female	1.2:1	2.0:1	1.4:1	2.1:1	0.8:1	1.6:1
Antlered:Antlerless	0.7:1	1.5:1	1.0:1	1.6:1	0.7:1	1.2:1

Table 13. Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2020-2022.

2021		2022		Males per Female			3-year Average
Males	Females	Males	Females	2020	2021	2022	(2020-2022)
5,747	3,052	6,635	4,224	1.5:1	1.9:1	1.6:1	1.7:1

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 7 or more 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 shotgun/rifle season was 40% in 2012, 44% in 2013, 45% in 2014, 42% in 2015, 36% in 2016, 39% in 2017, 39% in 2018, 36% in 2019, 34% in 2020, 33% in 2021, and 34% in 2022. Of all antlered bucks harvested (1 or 2 points, 3 or 4 points, 5 or 6 points, 7 or 8 points, 9 or 10 points, or >10 points), 8-pointers were the most frequent point category (Figure 8). The number of points on antlered bucks has remained relatively consistent over the past 4 years (Figure 8).

Figure 8. Number of antler points on bucks collected by the telecheck/online reporting system during the shotgun/rifle hunting season in Connecticut, 2019-2022.
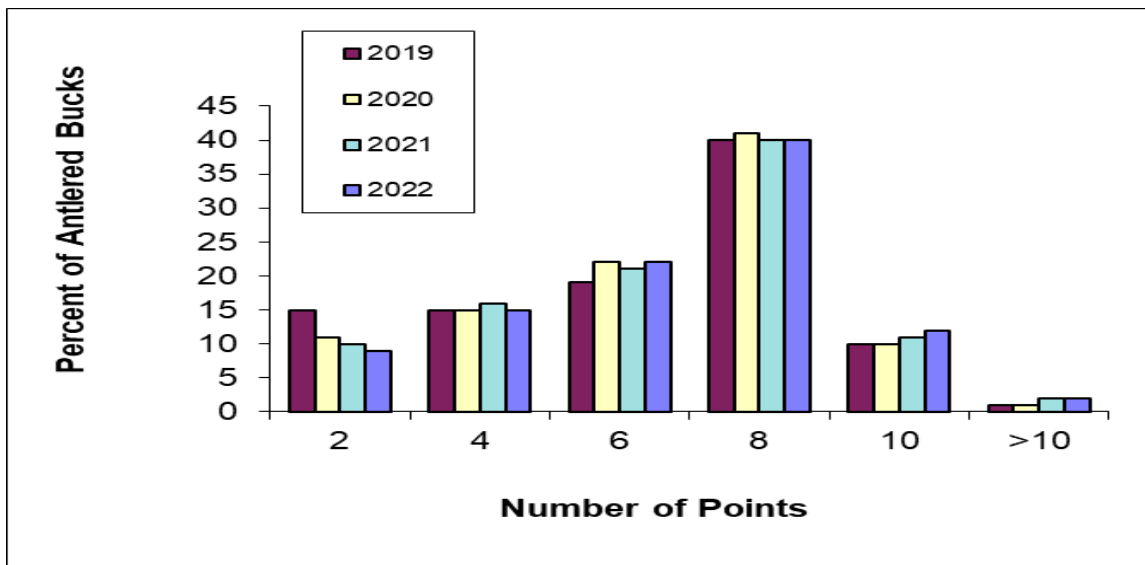
Non-hunting Deer Mortality

Non-hunting deer mortality, particularly roadkills and crop damage, 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 2022, 902 non-hunting deer mortalities were reported (Appendix 4). Of those, 270 were killed in deer-vehicle collisions. Deer-vehicle collisions accounted for 91% of all reported non-hunting mortality (excluding crop damage; 605) in 2022. Non-hunting mortality comprised 7.9% of the total reported deer mortality in Connecticut, including crop damage harvest (Appendix 4). 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 amount of roadkills in 2022 was 1,620. At one time, DMZ 11 accounted for as much as 21% of all roadkills (2000) in Connecticut. A steady decline has been observed in the past 10 years, with 13.3% of all road-killed deer being reported in DMZ 11 (Fairfield County, Figure 3) in 2022. The number of roadkills per square mile has also declined but has been stable over the past few years (Appendix 5). The amount of roadkills in DMZ 11 has shown a steady decline since implementation of the replacement tag program, extension of the archery season, and allowing the use of bait on private land (Figure 6).

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 which 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. In 2015, the crop damage application and also deer registration process were streamlined. Crop damage applications can now be obtained from the Department's website (https://portal.ct.gov/DEEP/Wildlife/Nuisance-Wildlife/Deer-Crop-Damage-Permit-Program) and filled out electronically.

Crop damage shooters are no longer required to mail in paper tags upon removing a deer but must report their removal online or by telephone. During the 2022 calendar year, 605 deer were taken with crop damage permits (Appendix 6). From 1993 to 2022, annual deer removal with crop damage permits fluctuated between 239 and 946 deer. Deer removals in DMZ 6 and 7 accounted for 29% of deer removed with crop damage permits in 2022. Crop damage removals increased from May to October, with 62% of the annual removals occurring in September and October (Figure 9). This increase is typically thought to reflect increasing interest in hunting as fall approaches rather than any damage-related trend. An additional 31 deer were killed in November and December using jacklight permits, which is allowed only under special circumstances.

Figure 9. Crop damage deer removals by month, 2022.
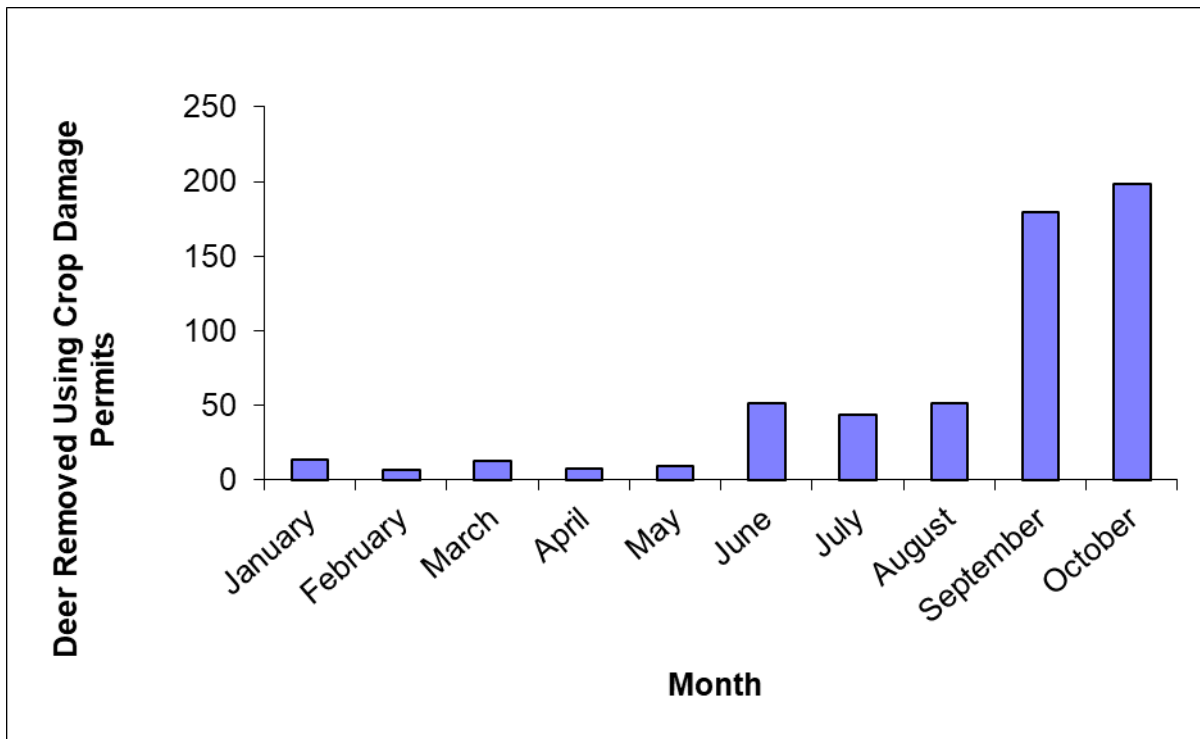
Population Trends

Based on aerial deer surveys conducted between 1975 and 2006 and population reconstruction models applied between 2011-2022, a statewide population estimate was calculated. Using these methods, over the past 20 years the population peaked at 152,000 in the early 2000s and declined some in the later 2000s (110,000) (Figure 10). Keep in mind that both methods are only estimates; aerial surveys are heavily impacted by forest type and snow cover; and the population reconstruction model uses variables based on reported hunter harvests and sightings of fawns, does, and bucks collected at time of harvest reporting, along with reported roadkills. A correction factor based on research has been applied to all variables.

Figure 10. Statewide deer population estimates based on aerial surveys (1975-2006) and population reconstruction models (2011-2022) in Connecticut.
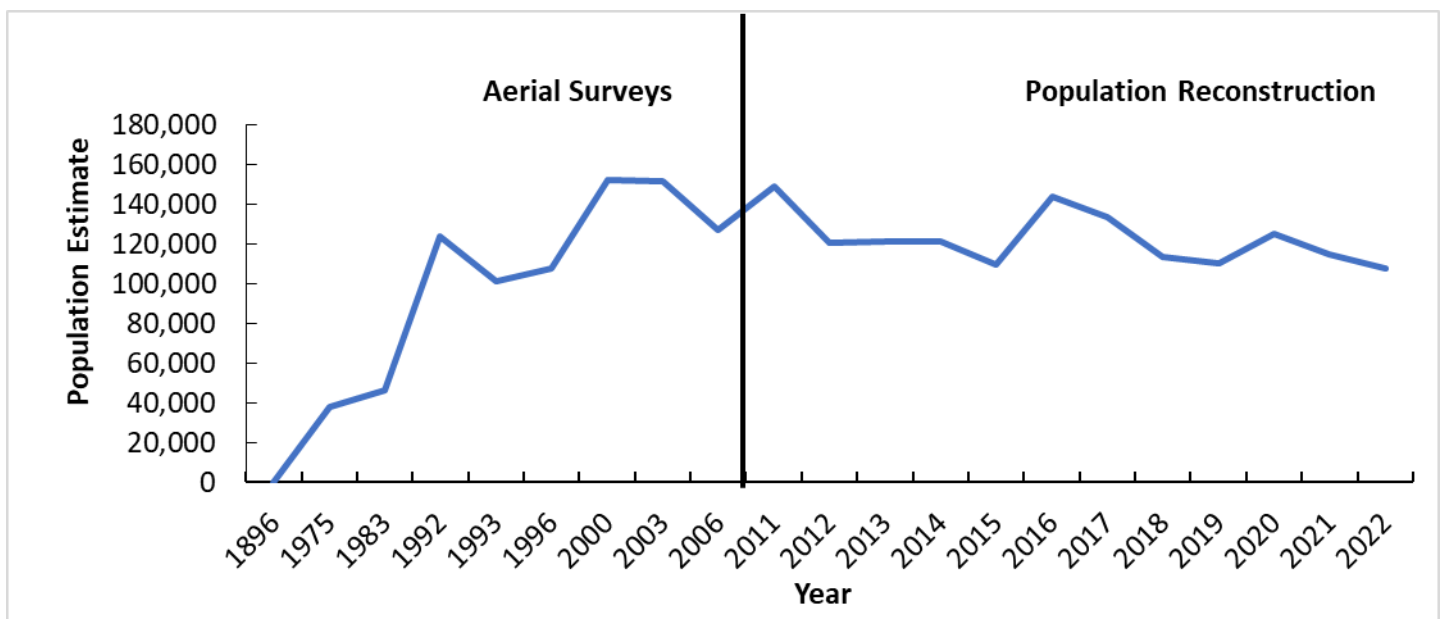
The 2022 survey included the question, "How would you describe the status of the deer population in the zone you hunt most from last year to this year?" Hunter perceptions of deer population trends were ranked on a scale of 0 (decreasing population) to 6 (increasing population). Just over half (51%) of the hunters who responded to the survey believed that the population was stable, 37% believed the population was declining, and 12% believed it was increasing. DMZs 4A, 4B and 5 had the highest average rank (2.6 and 2.8) (Figure 11), indicating that the population was mainly stable. In general, hunters perceived that deer populations are relatively stable or decreasing slightly in most zones over the past 3 years. Hunter perceptions seem to align with population estimates, which align with management objectives in several zones.

Figure 11. Perception of zonal deer population trends (average rank) by Connecticut's deer hunters, 2020-2022.
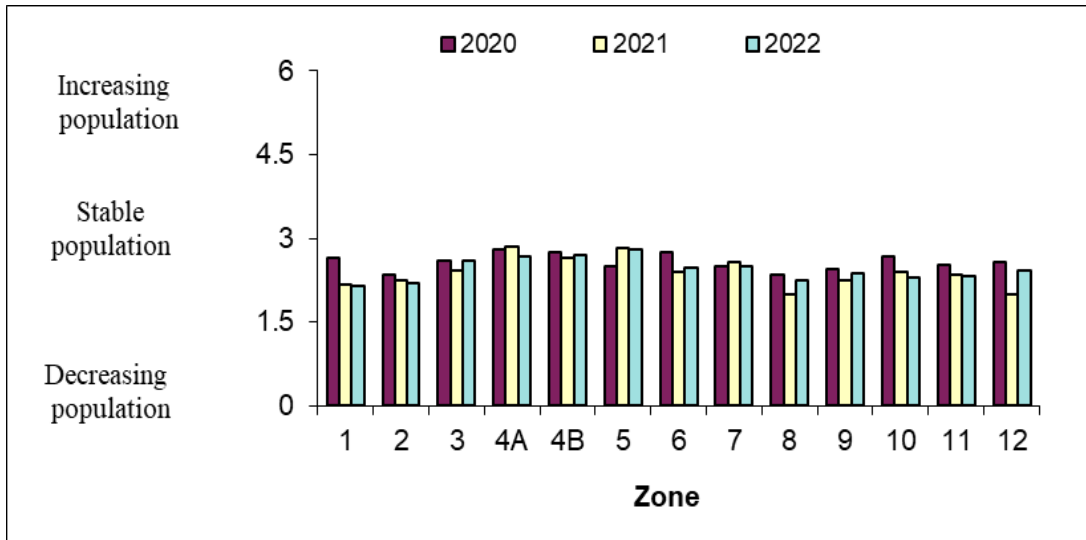
Fall Acorn Crop

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 2022, 46% of the hunters who responded to the survey ranked the fall acorn crop as scarce, 29% as non-existent, 22% as moderate, and 3% as abundant. DMZs 7 and 11 had the highest average rank (1.14 and 1.44), while DMZs 1 and 8 had the lowest average ranks (0.81 and 1.11) (Figure 12). On a scale of 0-6, the average rank statewide was 1.27. Substantial damage was caused to oak trees for consecutive years by spongy (formerly known as gypsy) moth outbreaks (2018 and 2019) in eastern Connecticut and then for multiple years in western Connecticut. The long-term implication on the oak trees is still unknown, although some recovery is evident based on surveys over the past few years in eastern Connecticut.

Figure 12. Perception of acorn crops (average rank) by Connecticut's deer hunters, 2019-2022.
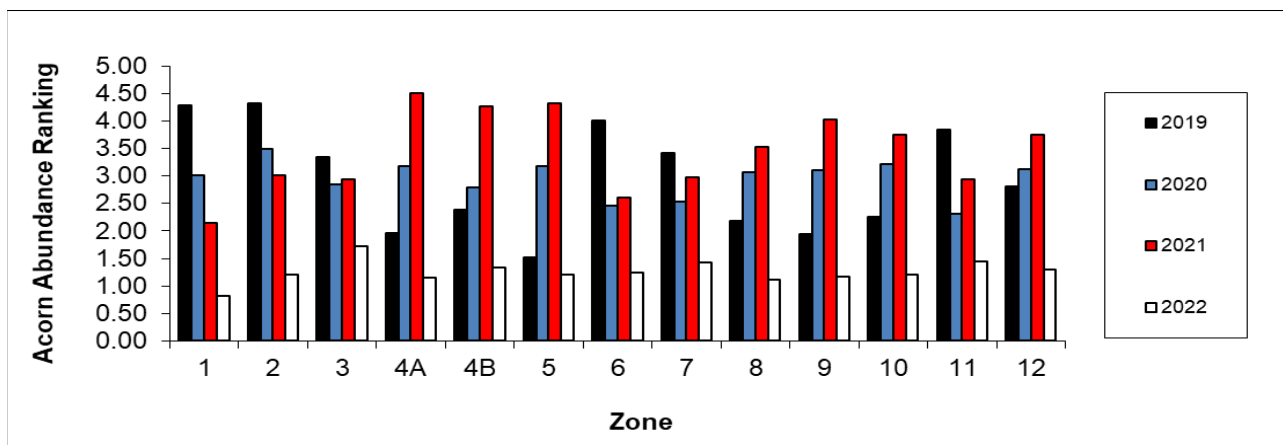
The past 29 years of data on acorn abundance and deer harvest rates suggest that a correlation exists between hunter success and acorn abundance (Figure 13). In 1993, when acorns were abundant, hunter success was one of the lowest recorded, and in 2004, when acorns

were scarce, 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 warm weather during the hunting season. During the 2015 and 2016 seasons, the abundance of acorns and warm weather resulted in lower hunter success rates. During the past couple of years, the lack of acorns has led to increased success rates. On average, the acorn crop statewide has been moderate in most years, scarce about every 5 to 6 years, and abundant every 4 years. In local areas, extensive spongy moth damage has resulted in limited acorn productivity and severely impacted many white oak stands, resulting in large areas with nothing but standing dead oak trees. Depending on the severity of damage that occurs in the coming years, the spongy moth outbreak could have a major impact on Connecticut's forested landscape for years to come.

Figure 13. Relationship between private land shotgun/rifle hunter success rates and fall acorn productivity, 1993-2022.
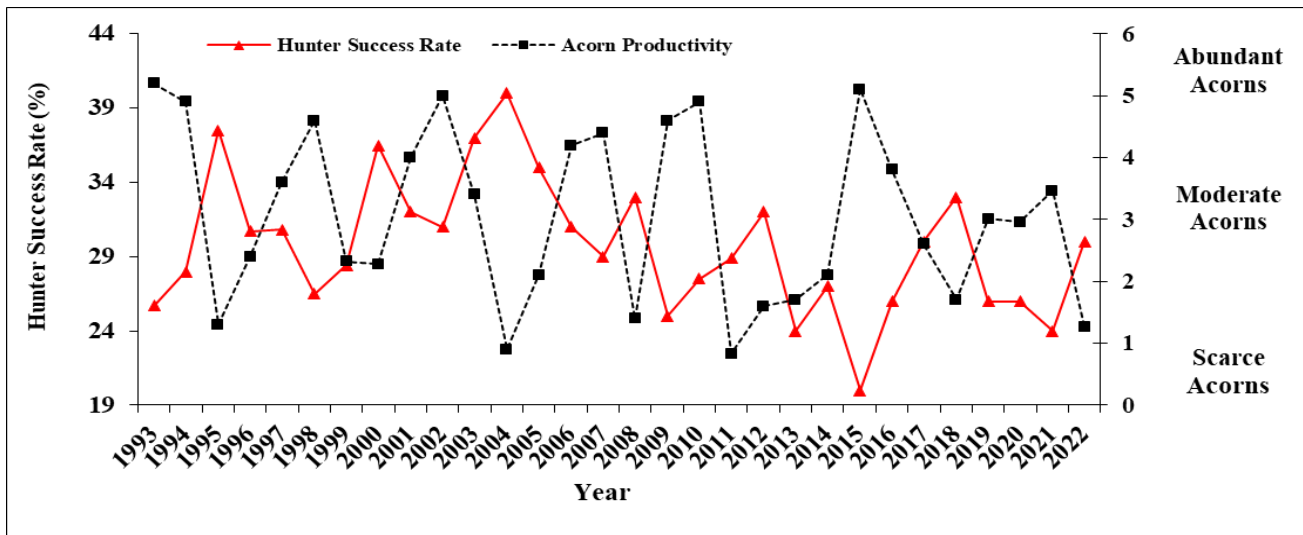
Deer Hunter Expenditures, Effort, Venison Calculations, and Opinions

Deer hunting-related expenditures contribute significantly to Connecticut's economy. Deer permit sales were down in 2022, generating $1,313,286 in revenue for the Connecticut General Fund, slightly less than in 2021 ($1,366,485). However, data collected from the annual deer hunter surveys indicated that Connecticut deer hunters spent an estimated $7,108,582 on deer hunting-related goods and services in 2022, up from the $6,029,291 spent in 2021.

In 2022, deer hunters spent a cumulative total of 344,431 days afield. Private land shotgun/rifle and archery hunters used the greatest percentage of available hunting days during those seasons (34% and 23% respectively). State and private land muzzleloader hunters used the next greatest percentage of days (18% and 17%). Typically, bowhunters have used a smaller percentage of available hunting days (13%) because the archery season is much longer than the firearms season. However, over the past of couple years, usage has increased, possibly due to the availability of having both weekend days as options or partly due to the COVID-19 pandemic.

On the deer hunter survey, hunters were asked if they had "more", "less", or "the same" amount of time to hunt this year compared to last year. The majority of hunters (43%) indicated they had the "same amount of time", 31% indicated they had "less time", and 26% indicated they had "more time". Based on the survey, the three biggest factors affecting hunters' ability to hunt was amount of time, health issues, and family obligations. The one thing that would provide hunters more time and be potentially less impactful on family obligations would be if Sunday hunting was allowed during the firearms season. We asked hunters "How many Saturdays do they currently hunt"; "How many Sundays they would expect to hunt"; "If they support Sunday hunting during the firearms season"; and "If Sunday hunting was permitted, what statement would best describe their actions regarding it". Half (50%) of all hunters currently hunt all three available Saturdays and nearly half (46%) indicated they expected to hunt all three available Sundays (Table 14). The majority of hunters supported Sunday hunting (84%), and most would hunt Saturdays and Sundays (44%) (Table 14).

Table 14. Weekend Firearms Hunting Interest and Support, 2022.

How many weekend days do you currently/expect to hunt during firearms season?	% Currently Hunting Saturdays	% Expected to hunt Sundays
Hunt 0 Weekends	8	16
Hunt 1 Weekend	13	8
Hunt 2 Weekends	29	30
Hunt 3 Weekends	50	46
Do you support Sunday hunting during the firearms season?	**Yes (%)**	**No (%)**
	84	16
If Sunday hunting was allowed what statement best describes your actions?	**(%)**	
I would hunt Saturdays and Sundays	44	
It wouldn't change my opportunities	22	
I would hunt one or the other depending on personal time	22	
I would hunt one or the other depending on weather	11	
I would hunt Sundays only	1	

From a hunter effort standpoint, it took fewer days to harvest a deer during the 2022 archery season (13.9) than it did during the 2021 archery season (15.8 days/deer harvested; includes successful and unsuccessful hunters). The likelihood is that many hunters who had not spent much time archery hunting purchased permits in 2020 and 2021 during the height of the COVID-19 pandemic and spent some time hunting without much success. This calculation is based on total number of hours hunted divided by 8.

Hunters were asked "how satisfied" they were with their Connecticut deer hunting experience in 2022". Excluding hunters who had no opinion (about 7%), over a third of hunters were moderately satisfied with their hunting experience (38%), a third were very satisfied (35%), and the remainder were slightly satisfied (14%) or not at all satisfied (13%), a slight improvement over opinions in 2021.

Hunters were asked "what the primary reason is why they hunt in the zones in which they do". The primary reason for archers was "it is close to home" (46%) and "they have access to private land there" (40%), while for firearms and muzzleloader hunters the primary reason was "they have access to private land there" (49% and 46%) and "it is close to home" (35% and 34%). Other reasons for archery, firearms, and muzzleloader hunters included "have access to state land there" (7%, 8%, and 11%), "high deer densities there" (2%, 1%, and 2%), and "other" reasons (3%, 4%, and 6%).

Hunters who indicated they primarily hunted in DMZs 1, 2, 3, and 4A were asked their opinions about reducing the archery tag limit from 4 tags (2 antlerless/2 either sex) to two tags (1 antlerless/1 either sex). Hunters were split on their opinions about whether they supported that option or not, with 38% of hunters favoring the reduction, 42% not favoring a reduction, and 20% unsure.

Hunter comments on the survey were grouped into specific categories for those that reached double digit numbers (not percentages) and included 31% mentioning predators (bears, bobcats, and coyotes) and the need for hunting/trapping seasons for bears and bobcats; 24% requesting increased opportunities to hunt Sundays during various seasons, such as state land archery and firearms seasons; 14% believed the deer population was in decline; 11% mentioned reducing bag limits during various seasons; 9% expressed concern about the lack of acorns; 6% experienced conflicts with non-hunters (especially mountain bikers and dogs off leash); 3% mentioned changes, such as expanding shooting hours, while another 3% mentioned deer not being active till after legal shooting hours. Many other comments were made, but at a much lower frequency.

Sightings

Hunters mentioning bears and bobcats and the need for hunting/trapping seasons probably come from their increased sightings of bears, bobcats, and moose seen while hunting. Connecticut has been experiencing an increasing population of these species since the early 1990s. To document this increase, hunters are asked on the hunter survey how many bears, bobcats, and moose they observe during the season in relation to how many days they spend hunting. As the number of days hunted before seeing a bear, bobcat, or moose decreases, it would indicate an increasing population (Table 15), which is a much better indicator than just total number of sightings as there is a "catch per unit effort" involved.

Table 15. Hunter sightings of bears, bobcats, and moose, 2012-2022.

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bear Sightings [A]	100	73	63	30	32	27	27	28	24	10	16.2
Bobcat Sightings [A]	47	41	31	21	22	18	18	28	17	8	14.7
Moose Sightings [A]	1,027	718	841	524	562	458	507	564	512	472	466

[A] *Hunter sightings are reported as days hunted/one animal observed based on annual Deer Hunter Surveys.*

Deer hunters reported personally observing 95 moose and captured an additional 112 on trail cameras in 35 towns in 2022, with sightings being reported in 106 different towns over the past 26-years. Sightings have been reported from 8 to 43 different towns each year (Figure 14). Moose were observed in Barkhamsted, Canaan, Canton, Colebrook, Cornwall, Goshen, Granby, Hartland, Harwinton, Kent, New Hartford, Norfolk, Salisbury, Suffield, Stafford, and Union for 6 of the last 10 years (Figure 14). Most of the towns where hunters report the greatest number of moose sightings occur along the Connecticut-Massachusetts border. In 2022, hunters spent roughly 466 days in the field for every moose observed, slightly less days than in 2021 when hunters spent roughly 472 days in the field for every moose observed (Table 15). The increase in moose sightings may be more related to an increase in trail camera use (although not used to calculate the sighting rate) than a true increase in the population as all other indicators have shown a declining population throughout Connecticut and New England. Unlike bears and bobcats, moose, which are a northern species, face many unfavorable conditions at the southern extent of their range in Connecticut.

Figure 14. Moose sightings reported on deer hunter surveys, 1996-2022.
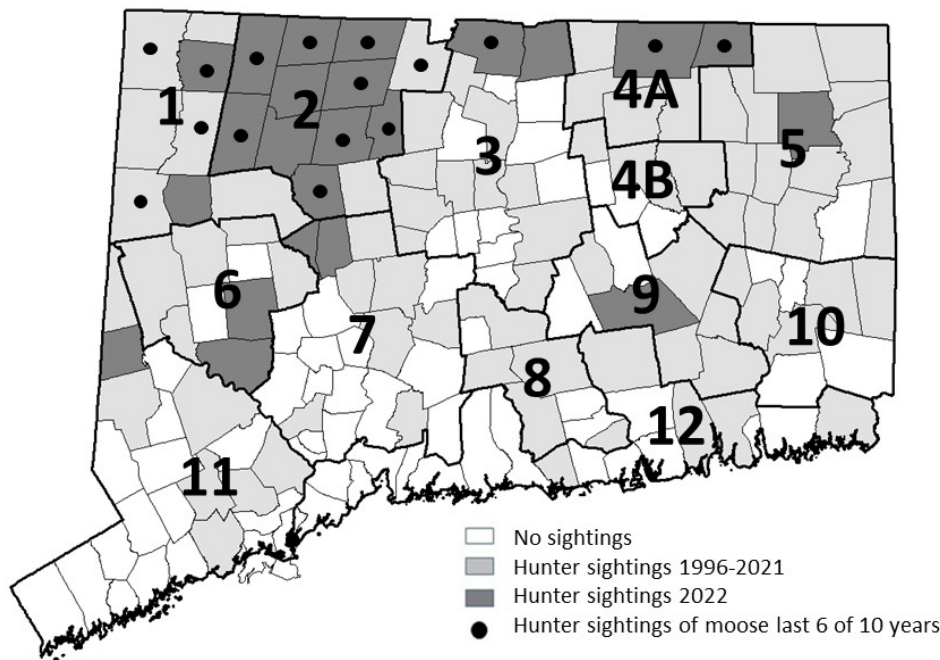
Conclusion

Over the past several decades, deer population size, human land-use practices, and public attitudes toward wildlife have changed considerably. Today, hunters may legally take up to 14 deer (including the January archery season on private land in DMZs 11 and 12) 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. From 1992 through 2007, permit issuance 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 have been attributed to the poor economy at the time. In 2009, permit issuance declined slightly, likely due to the switch to online license sales. Since 2010, permit issuance has continued to decline annually due to changes in the lottery system and the ability to purchase permits at any time rather than in advance of the hunting season, and a decline in hunter numbers. Permit issuance in recent years is now at the same level as it was in 1988. 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, a harvest which had more than doubled is now beginning to decline while roadkills have

continued to trend downward. Increased harvest opportunities appear to have stabilized deer populations in many areas of the state and population reconstruction models show a stable to declining population in recent years.

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 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 (https://portal.ct.gov/-/media/DEEP/wildlife/pdf_files/game/urbandeer07pdf.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 (https://portal.ct.gov/-/media/DEEP/wildlife/pdf_files/game/deeroptionspdf.pdf).

Mentor a New Hunter

Connecticut's deer hunters are an aging population (56% are $\geq$ 50 years old). Hunter numbers are starting to decline, with fewer hunters left to pass on the legacy. Without seasoned hunters passing on their skills, it will be more challenging for new hunters to gain that knowledge without first-hand experience.

HUNTER AGE STRUCTURE 2022

<20	20-29	30-39	40-49	50-59	60-69	70+
3%	10%	16%	15%	22%	22%	12%

Connecticut designates specific days when experienced adult hunters are encouraged to take a youth hunting, helping them learn safe and effective hunting practices, develop observational skills, and gain confidence and the comfort level they need to discover a passion for hunting and the outdoors.

Specific Youth training days for the deer season and others are in the *Connecticut Hunting and Trapping Guide* or at https://portal.ct.gov/DEEP-Junior-Hunting.

Mentoring is also important for new adult hunters, so do not limit your efforts to just youths. The same skills taught to youth hunters are needed to help adults new to hunting learn the ropes. Whether it be a coworker, friend, or neighbor — either youth or adult — take the time to introduce a new hunter to a lifetime of appreciation for our natural resources through hunting.

Appendix 1. Total reported deer killed by town, 2022.

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Andover	36	18	6	3	0	0	0	63
Ansonia	3	2	0	1	0	0	0	6
Ashford	43	92	31	18	5	0	0	189
Avon	11	5	1	2	5	0	0	24
Barkhamsted	16	15	8	3	0	0	0	42
Beacon Falls	10	12	3	3	0	0	0	28
Berlin	38	21	5	6	3	1	0	74
Bethany	37	11	2	4	8	1	0	63
Bethel	39	5	0	3	0	13	4	64
Bethlehem	4	8	2	2	2	0	0	18
Bloomfield	31	11	1	2	0	0	0	45
Bolton	11	23	1	6	8	0	0	49
Bozrah	21	26	14	6	3	0	0	70
Branford	22	3	1	1	1	0	0	28
Bridgeport	2	0	0	0	0	0	0	2
Bridgewater	18	13	2	7	1	0	0	41
Bristol	8	3	2	0	0	2	0	15
Brookfield	40	3	1	1	0	1	0	46
Brooklyn	23	30	14	8	1	1	0	77
Burlington	25	30	1	5	0	0	0	61
Canaan	29	32	7	5	0	0	0	73
Canterbury	46	63	34	12	3	0	0	158
Canton	21	11	4	4	3	4	0	47
Chaplin	38	49	21	11	6	1	0	126
Cheshire	66	14	1	5	31	3	3	123
Chester	15	13	6	2	0	0	0	36
Clinton	18	3	0	1	0	0	1	23
Colchester	44	52	26	3	3	0	0	128
Colebrook	9	7	1	1	0	0	0	18
Columbia	32	32	17	2	0	0	0	83
Cornwall	18	33	9	6	1	0	0	67
Coventry	60	88	19	11	0	1	1	180
Cromwell	15	4	1	0	0	1	0	21
Danbury	44	8	0	0	0	1	0	53
Darien	41	0	0	0	0	9	1	51
Deep River	15	12	3	2	0	0	0	32
Derby	8	1	1	2	2	1	0	15
Durham	30	32	1	11	3	0	0	77
East Granby	21	4	1	0	3	0	0	29
East Haddam	62	68	25	19	3	0	0	177
East Hampton	23	38	8	10	1	5	0	85
East Hartford	12	6	0	3	6	0	1	28
East Haven	17	1	0	0	0	1	0	19
East Lyme	30	32	1	1	1	7	0	72
East Windsor	32	31	5	6	0	1	0	75
Eastford	28	60	5	15	0	2	0	110
Easton	70	22	3	6	11	0	0	112
Ellington	19	15	10	4	0	1	0	49

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Enfield	43	16	3	4	0	10	0	76
Essex	2	1	0	0	0	0	0	3
Fairfield	47	12	0	1	0	0	0	60
Farmington	10	1	0	0	6	20	1	38
Franklin	18	44	13	9	5	1	0	90
Glastonbury	36	25	6	11	39	11	0	128
Goshen	23	20	13	3	0	0	0	59
Granby	13	13	8	1	1	7	0	43
Greenwich	41	1	0	0	0	0	0	42
Griswold	27	52	16	6	30	0	0	131
Groton	47	7	8	4	10	0	0	76
Guilford	71	21	9	9	8	1	0	119
Haddam	32	35	31	10	0	0	0	108
Hamden	35	7	1	2	28	1	0	74
Hampton	21	38	23	5	6	0	0	93
Hartford	1	0	0	0	0	0	0	1
Hartland	7	14	4	3	0	0	0	28
Harwinton	17	29	9	4	8	0	0	67
Hebron	35	54	19	10	0	0	0	118
Kent	20	28	7	8	15	0	0	78
Killingly	53	72	21	18	0	0	0	164
Killingworth	37	41	6	9	0	0	1	94
Lebanon	76	99	46	22	34	0	0	277
Ledyard	53	43	12	5	4	5	0	122
Lisbon	9	10	14	2	0	1	0	36
Litchfield	43	58	13	8	3	1	0	126
Lyme	23	38	7	3	1	0	0	72
Madison	49	12	1	3	0	1	0	66
Manchester	27	4	0	2	0	1	0	34
Mansfield	83	57	22	10	11	1	0	184
Marlborough	28	29	12	5	0	0	0	74
Meriden	13	12	1	1	0	0	0	27
Middlebury	10	8	2	1	0	6	0	27
Middlefield	28	18	4	7	17	0	0	74
Middletown	44	33	12	9	0	2	0	100
Milford	24	5	0	0	6	0	0	35
Monroe	33	8	1	1	0	0	0	43
Montville	46	36	17	3	9	2	0	113
Morris	8	16	7	5	0	1	0	37
Naugatuck	15	11	2	0	0	0	0	28
New Britain	0	0	0	0	0	0	0	0
New Canaan	38	0	0	0	0	4	1	43
New Fairfield	40	5	1	0	0	2	1	49
New Hartford	28	27	6	6	2	0	0	69
New Haven	4	0	0	0	0	0	0	4
New London	0	1	0	0	0	0	0	1
New Milford	42	42	7	7	16	0	0	114
Newington	6	1	0	0	0	2	0	9
Newtown	127	45	3	13	1	13	1	203

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Norfolk	6	15	5	3	0	0	0	29
North Branford	29	8	1	1	0	4	0	43
North Canaan	7	9	5	2	0	0	0	23
North Haven	20	4	0	1	0	1	0	26
North Stonington	56	70	22	11	3	2	0	164
Norwalk	17	0	0	0	0	0	0	17
Norwich	28	23	6	4	0	5	3	69
Old Lyme	44	14	2	3	0	0	0	63
Old Saybrook	10	5	0	0	0	0	0	15
Orange	32	3	2	2	4	0	0	43
Oxford	43	21	1	2	6	2	1	76
Plainfield	55	38	21	4	14	0	0	132
Plainville	4	1	0	0	0	1	0	6
Plymouth	19	20	8	4	0	0	0	51
Pomfret	41	61	12	17	4	0	0	135
Portland	13	20	6	2	1	12	0	54
Preston	34	33	14	10	8	2	0	101
Prospect	30	10	0	3	0	2	0	45
Putnam	28	18	9	5	0	0	0	60
Redding	56	22	0	1	1	0	0	80
Ridgefield	64	7	1	4	0	2	0	78
Rocky Hill	10	11	1	3	0	3	2	30
Roxbury	13	18	5	3	11	0	0	50
Salem	24	22	7	5	1	0	0	59
Salisbury	45	52	8	9	0	0	0	114
Scotland	16	39	9	8	0	0	0	72
Seymour	26	5	1	0	0	0	0	32
Sharon	18	50	7	6	3	0	0	84
Shelton	41	3	1	1	35	1	0	82
Sherman	38	13	0	7	0	0	0	58
Simsbury	15	5	4	0	8	3	0	35
Somers	20	21	2	6	0	0	0	49
South Windsor	14	16	4	3	6	1	0	44
Southbury	30	35	6	2	27	15	0	115
Southington	33	13	3	5	3	9	2	68
Sprague	16	22	4	4	0	0	0	46
Stafford	44	54	39	12	0	1	0	150
Stamford	57	0	0	0	0	0	0	57
Sterling	24	34	19	6	25	0	0	108
Stonington	71	38	10	6	15	5	0	145
Stratford	10	0	0	0	0	1	0	11
Suffield	51	35	5	11	1	6	0	109
Thomaston	12	8	4	1	2	0	0	27
Thompson	68	69	18	15	0	0	0	170
Tolland	48	21	16	4	0	0	0	89
Torrington	21	24	5	5	0	5	0	60
Trumbull	22	0	0	0	0	0	0	22
Union	22	28	13	5	0	0	0	68
Vernon	22	11	1	2	0	0	0	36

Town	Archery	Shotgun/Rifle	Landowner	Muzzleloader	Cropkill	Roadkill	Other	Total
Voluntown	27	43	10	8	4	0	0	92
Wallingford	66	33	5	9	4	11	3	131
Warren	13	25	2	1	2	0	0	43
Washington	23	43	7	7	26	0	0	106
Waterbury	7	2	0	0	0	1	0	10
Waterford	53	29	9	7	0	0	0	98
Watertown	19	23	2	1	0	0	0	45
West Hartford	1	0	0	0	0	2	0	3
West Haven	10	0	0	0	0	0	0	10
Westbrook	19	3	0	2	0	0	0	24
Weston	26	19	0	0	0	0	0	45
Westport	3	1	0	0	0	0	0	4
Wethersfield	4	2	0	0	1	0	0	7
Willington	40	27	17	8	0	0	0	92
Wilton	97	19	0	10	5	0	0	131
Winchester	17	8	3	2	0	1	0	31
Windham	24	38	12	5	6	0	0	85
Windsor	16	5	1	0	1	3	0	26
Windsor Locks	3	0	0	0	0	0	0	3
Wolcott	9	6	0	1	0	2	0	18
Woodbridge	34	4	0	2	0	6	0	46
Woodbury	26	30	7	4	4	10	0	81
Woodstock	56	90	23	20	0	1	0	190
Total	**4,894**	**3,710**	**1,096**	**748**	**605**	**270**	**27**	**11,350**

Appendix 2. Deer harvest on state hunting areas, including Deer Lottery Hunting Areas (DLHA), 2022

Fall Archery	Muzzleloader	Lottery Area #	No-Lottery	Code	● Hunting Permitted ▲ Designated Deer Bowhunting Only Area (▲ areas are open during shotgun and muzzleloader) ▲/● Some Sections open to Archery ONLY ❍ Daily/Season Permit Required ✱ Special Conditions Shaded lines = Harvest/mi² greater than 10	Square miles	Fall Archery	Muzzleloader	Lottery	No Lottery	Total Harvest	Harvest/mi²
●	●	62		308	Aldo Leopold WMA	0.87	0	0	3	0	3	3.45
●	●		●	201	Algonquin SF	1.04	6	1	0	9	16	15.38
●	●		●	202	American Legion SF	1.62	1	0	0	4	5	3.09
●	●		●	272	Assekonk Swamp WMA	1.07	3	1	0	3	7	6.54
●	●		●	244	Babcock Pond WMA	2.36	0	2	0	3	5	2.12
▲				203	Barber Pond WMA	0.11	0	0	0	1	1	9.09
●	●		●	273	Barn Island WMA	1.58	4	1	0	4	9	5.70
▲/●	●		●	274	Bartlett Brook WMA	1.10	0	1	0	1	2	1.82
▲				275	Bear Hill WMA	0.57	1	0	0	1	2	3.51
▲				276	Beaver Brook SP	0.56	5	0	0	0	5	8.93
▲				309	Bennett's Pond SP	0.72	4	0	0	0	4	5.56
▲				277	Bigelow Hollow SP	0.80	3	0	0	0	3	3.75
▲				245	Bishops Swamp WMA	1.18	9	0	0	0	9	7.63
▲				337	Black Pond WMA	0.11	0	0	0	0	0	0.00
▲				204	Black Rock Lake (state and federally owned)	0.62	1	0	0	0	1	1.61
▲				205	Bloomfield Flood Control Area (Site 1)	0.51	9	0	0	0	9	17.65
		52		329	Bristol Water Company	6.75	0	0	12	0	12	1.78
▲/●	●		●	207	Camp Columbia SF	0.94	0	2	0	1	3	3.19
●	●		●	347	Candlewood Hill WMA	0.31	1	1	0	0	2	6.45
▲				208	Cedar Swamp WMA	0.43	2	0	0	0	2	4.65
		56		310	Centennial Watershed SF	6.77	42	0	30	0	72	10.64
●	●		●	209	Centennial Watershed SF (Canaan Block)	0.23	0	0	0	2	2	8.70
▲				311	Centennial Watershed SF (formerly Bpt. Hydr.) -Shelton	0.16	0	0	1	0	1	6.25
▲				310	Centennial Watershed SF -Monroe Parcel (Hattertown)	0.05	0	0	0	0	0	0.00
▲/●	●		●	246	Cockaponset SF	26.85	40	13	0	48	101	3.76
▲				313	Collis P. Huntington SP	1.61	4	0	0	0	4	2.48
▲				247	Cromwell Meadows WMA	0.79	6	0	0	0	6	7.59
▲				210	CT Light & Power (borders Newgate WMA)	0.32	3	0	0	0	3	9.38
▲				248	Durham Meadows WMA	0.80	2	0	0	0	2	2.50
▲				315	East Swamp WMA	0.10	2	0	0	0	2	20.00
▲				211	East Twin Lakes Water Access Area	0.15	2	0	2	0	4	26.67
●	●		●	249	Eightmile River WMA	0.48	1	0	0	0	1	2.08
●	●		●	250	Ellithorpe Flood Control Area	0.64	0	0	0	1	1	1.56
▲				332	Enders SF (Worthen Parcel ONLY)	0.55	0	0	0	0	0	0.00
●	●		●	278	Franklin Swamp WMA	1.07	3	0	0	1	4	3.74
▲				316	George C. Waldo SP	0.23	1	0	0	0	1	4.35

Fall Archery	Muzzleloader	Lottery Area #	No-Lottery	Code	● Hunting Permitted ▲ Designated Deer Bowhunting Only Area (▲ areas are open during shotgun and muzzleloader) ▲/● Some Sections open to Archery ONLY ○ Daily/Season Permit Required ✱ Special Conditions Shaded lines = Harvest/mi² greater than 10	Square miles	Fall Archery	Muzzleloader	Lottery	No Lottery	Total Harvest	Harvest/mi²
●	●		●	213	Goshen WMA	1.51	7	1	0	6	14	9.27
▲				318	Great Swamp Flood Control Area	0.53	2	0	0	0	2	3.77
●			●	214	Hancock Brook Lake (federally owned)	1.10	0	0	0	1	1	0.91
○				280	Harkness Memorial SP ▲ (Verkade Property)	0.44	6	0	0	0	6	13.64
▲				251	Higganum Meadows WMA (off Clarkhurst Road)	0.40	4	0	0	0	4	10.00
▲				252	Higganum Reservoir	0.23	0	0	0	0	0	0.00
▲				215	Housatonic River WMA	0.87	2	0	0	0	2	2.30
●	●		●	216	Housatonic SF	17.63	2	5	0	20	27	1.53
●	●		●	302	James V. Spignesi WMA	0.81	1	0	0	3	4	4.94
▲				217	John Minetto SP	1.12	0	0	0	0	0	0.00
▲				281	Killingly Pond SP	0.27	1	1	0	0	2	7.41
●	●		●	253	Kollar WMA	1.40	5	0	0	5	10	7.14
●	●		●	254	Larson Lot WMA	0.38	0	1	0	2	3	7.89
▲				282	Lebanon Coop Mgmt. Area	0.33	2	0	0	0	2	6.06
▲				283	Little River Fish and Wildlife Area	0.08	0	0	0	1	1	12.50
▲				218	Mad River Dam Flood Control Area	0.70	1	0	0	0	1	1.43
▲				255	Mansfield Hollow Lake (excluding SP)	3.14	11	0	0	0	11	3.50
▲				256	Mansfield State-Leased Field Trial Area	0.37	2	0	0	0	2	5.41
●	●		●	263	Maromas Coop WMA	2.48	7	2	0	6	15	6.05
●	●		●	219	Mattatuck SF	7.02	10	3	0	15	28	3.99
●	●		●	220	MDC – Colebrook Reservoir/Hogback Dam	6.50	0	0	0	0	0	0.00
▲				221	MDC – Greenwoods Pond	0.31	1	0	0	0	1	3.23
		64		343	MDC Barkhamsted Res. -Barkhamsted Block	6.69	0	0	3	0	3	0.45
		67		346	MDC Barkhamsted Res-Hartland Block	5.78	0	1	9	0	10	1.73
		58		330	MDC Nepaug Resevoir - Valentine/Pine Hill Block	2.32	0	0	20	0	20	16.39
●				349	MDC Lake McDonough	1.22	2	0	0	0	2	0.86
▲		66		345	MDC Sweetheart Mnt. Block	0.78	7	0	0	0	7	8.97
●	●		●	339	Meadow Brook WMA	0.42	1	0	0	0	1	2.38
▲				338	Menunketesuck Pond WMA (formerly Chapmans Pond)	0.26	3	0	0	0	3	11.54
●	●		●	257	Meshomasic SF	14.22	17	8	0	23	48	3.38
▲				258	Messerschmidt Pond WMA	0.72	1	0	0	0	1	1.39
●	●		●	259	Millers Pond	0.41	0	0	0	3	3	7.32
▲				341	Mohawk SF - Clark Pond Tract	0.19	1	0	0	0	1	5.26
●	●	63		342	Mohawk SF - Ziegler/Johnson Tract	0.51	1	0	0	1	2	3.92
●	●		●	285	Mohegan SF	1.50	0	1	0	7	8	5.33
▲				260	Mono Pond	0.45	3	0	0	0	3	6.67
▲				222	Mount Riga SP	0.47	2	0	0	0	2	4.26
●	●		●	223	Nassahegon SF	1.30	5	0	0	0	5	3.85
▲/●	●		●	286	Natchaug SF	7.93	42	21	0	64	127	16.02
●	●		●	261	Nathan Hale SF Mgmt. Area	2.27	6	1	0	10	17	7.49

Fall Archery	Muzzleloader	Lottery Area #	No-Lottery	Code	● Hunting Permitted ▲ Designated Deer Bowhunting Only Area (▲ areas are open during shotgun and muzzleloader) ▲/● Some Sections open to Archery ONLY ○ Daily/Season Permit Required ✱ Special Conditions Shaded lines = Harvest/mi² greater than 10	Square miles	Fall Archery	Muzzleloader	Lottery	No Lottery	Total Harvest	Harvest/mi²
●	●		●	319	Naugatuck SF	21.15	15	0	0	15	30	1.42
▲				320	Naugatuck SF (Great Hill Block)	0.37	6	0	0	1	7	18.92
▲/●	●	28		321	Naugatuck SF* (Quillinan Reservoir Block)	0.90	2	1	2	0	5	5.56
▲/●	●		●	287	Nehantic SF	7.91	5	0	0	16	21	2.65
●	●		●	224	Nepaug SF	2.10	5	1	0	3	9	4.29
▲				225	Newgate WMA	0.70	3	0	0	0	3	4.29
●	●		●	288	Nipmuck SF	14.40	23	5	0	21	49	3.40
▲				227	Northfield Brook Lake (federally owned)	0.31	0	0	0	0	0	0.00
▲				289	Nott Island	0.13	2	0	0	0	2	15.38
▲/●	●		●	264	Nye Holman SF	1.20	11	0	0	2	13	10.83
▲/●	●		●	290	Pachaug SF	40.84	34	18	0	50	102	2.50
●	●		●	229	Paugnut SF	2.70	2	2	0	3	7	2.59
▲/●	●		●	322	Paugussett SF	3.04	3	4	0	5	12	3.95
●			●	291	Pease Brook WMA	0.33	1	0	0	1	2	6.06
●	●		●	230	Peoples SF	4.60	2	1	0	3	6	1.30
▲				292	Pomeroy SP	0.32	5	0	0	1	6	18.75
●	●		●	324	Pootatuck SF	1.72	1	0	0	3	4	2.33
●	●		●	293	Quaddick SF	0.90	6	0	0	5	11	12.22
●	●		●	294	Quinebaug River WMA	0.88	11	1	0	7	19	21.59
▲				295	Quinebaug River WMA (Aspinook Pond)	0.03	0	0	0	0	0	0.00
▲				326	Quinnipiac River SP	0.53	10	0	0	0	10	18.87
●	●		●	296	Red Cedar Lake (Camp Mooween)	0.93	2	0	0	0	2	2.15
●	●		●	231	Robbins Swamp WMA	2.45	4	2	0	5	11	4.49
●	●		●	232	Roraback WMA	3.10	2	1	0	7	10	3.23
●	●		●	297	Rose Hill WMA	1.08	2	1	0	7	10	9.26
▲				298	Ross Marsh WMA	0.45	3	0	0	0	3	6.67
▲				299	Ross Pond SP	0.58	2	0	0	0	2	3.45
▲				267	Salmon River Cove and Haddam Neck	0.19	0	0	0	0	0	0.00
●	●		●	300	Salmon River SF (including Holbrook Pond)	10.90	19	4	0	27	50	4.59
▲				268	Scantic River SP	0.92	6	0	0	0	6	6.52
●	●			301	Selden Neck SP (Selden Island)	0.88	0	0	1	0	1	1.14
○				233	Sessions Woods WMA	1.20	0	0	0	0	0	0.00
●	●		●	269	Shenipsit SF	11.85	12	5	0	27	44	3.71
●	●		●	333	Silvio O. Conte NWR - Salmon River Div. (federal land)	0.41	2	0	0	1	3	7.32
▲				234	Simsbury WMA	0.57	1	0	0	0	1	1.75
●	●		●	228	Skiff Mtn. Coop WMA	1.13	1	2	0	1	4	3.54
▲/●				350	Stewart B. McKinney NWR	0.72	2	0	0	1	3	4.17
▲				235	Sucker Brook Flood Control Area	0.24	3	0	0	0	3	12.50
▲				236	Suffield WMA	0.30	0	0	0	1	1	3.33
●	●		●	303	Sugarbrook Field Trial Area	0.31	2	0	0	2	4	12.90

Fall Archery	Muzzleloader	Lottery Area #	No-Lottery	Code	● Hunting Permitted ▲ Designated Deer Bowhunting Only Area (▲ areas are open during shotgun and muzzleloader) ▲/● Some Sections open to Archery ONLY ❍ Daily/Season Permit Required ✶ Special Conditions Shaded lines = Harvest/mi² greater than 10	Square miles	Fall Archery	Muzzleloader	Lottery	No Lottery	Total Harvest	Harvest/mi²
▲				237	Sunnybrook SP (west of Newfield Rd.)	0.69	0	0	0	0	0	0.00
●	●		●	304	Talbot WMA	0.79	2	1	0	2	5	6.33
●	●	60		334	Tankerhoosen WMA	0.78	7	1	3	0	11	14.10
▲				238	Thomaston Dam (federally owned)	1.33	3	0	0	0	3	2.26
●	●		●	239	Topsmead SF (north and west of Rte. 118)	0.28	0	0	0	3	3	10.71
❍	❍	26		327	Trout Brook Valley SP	0.47	2	0	3	0	5	10.64
●	●		●	240	Tunxis SF	15.88	4	1	0	9	14	0.88
●	●			270	Wangunk Meadows (off Rte. 17a)	1.00	1	1	0	3	5	5.00
●	●		●	305	West Thompson Dam (federal land)	1.71	4	2	0	5	11	6.43
▲				241	Whiting River Flood Control Area	0.29	0	0	0	0	0	0.00
▲				242	Wood Creek Flood Control Area	0.17	1	0	0	0	1	5.88
▲				328	Wooster Mountain SP	0.69	0	0	0	0	0	0.00
●	●		●	271	Wopowog WMA	0.73	0		0	2	2	2.74
●	●		●	243	Wyantenock SF	6.38	7	2	0	12	21	3.29
		51		306	Yale Forest (owned by Yale University)	12.03	0	0	22	0	22	1.83
●	●		●	307	Zemko Pond WMA	0.71	1	0	0	1	2	2.82

Caution should be used when evaluating harvest on individual properties as errors can occur in the reporting process.

Appendix 3. **Sex ratios (male:female) of deer harvested during Connecticut's regulated hunting seasons, 2020-2022.**

Season	2020		2021		2022		3-year Average (2020-2022)		Males per Female		
	Males	Females	Males	Females	Males	Females	Males	Females	2020	2021	2022
Archery											
State Land	399	276	378	199	294	258	357	244	1.45	1.90	1.14
Private Land	2,835	2,094	2,377	1,402	2439	1710	2,550	1,735	1.35	1.70	1.43
Subtotal	**3,234**	**2,370**	**2,755**	**1,601**	**2,733**	**1,968**	**2,907**	**1,980**	**1.36**	**1.72**	**1.39**
Muzzleloader											
State Land	65	59	37	28	82	41	61	43	1.10	1.32	2.00
Private Land	272	325	213	206	331	294	272	275	0.84	1.03	1.13
Subtotal	**337**	**384**	**250**	**234**	**413**	**335**	**333**	**318**	**0.88**	**1.07**	**1.23**
Shotgun/Rifle											
State Land	427	182	429	158	442	166	433	169	2.35	2.72	2.66
Private Land	1,891	975	1,706	826	2,034	1,067	1,877	956	1.94	2.07	1.91
Subtotal	**2,318**	**1,157**	**2,135**	**984**	**2,476**	**1,233**	**2,310**	**1,125**	**2.00**	**2.17**	**2.01**
Landowner	608	319	607	233	747	349	654	300	1.91	2.61	2.14
Total	**6,497**	**4,230**	**5,747**	**3,052**	**6,369**	**3,885**	**6,204**	**3,722**	**1.54**	**1.88**	**1.64**

Appendix 4. Non-hunting deer mortality reported in Connecticut, 2009-2022.

Cause of Death	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Road	1,902	1,456	1,683	1,177	1,211	1,081	749	619	687	608	480	451[1]	417	270
Dog	1	1	0	2	0	5	0	0	2	2	1	1	0	0
Unknown	92	49	82	58	89	59	62	49	43	31	14	46[1]	39	27
Illegal	3	10	4	6	4	2	2	0	2	1	0	4[1]	1	0
Crop Damage	780	715	804	864	831	812	464	462	560	569	520	239	373	605
Total	**2,778**	**2,231**	**2,573**	**2,108**	**2,135**	**1,959**	**1,277**	**1,130**	**1,294**	**1,211**	**1,015**	**740[1]**	**830**	**902**
Non-hunting: Harvest	1:4.2	1:5.5	1:5.0	1:6.7	1:5.9	1:6.8	1:7.4	1:9.4	1:9.3	1:9.3	1:10.7	1:14.7	1:10.8	1:12.5
% Mortality*	19.1	11.1	11.6	13.5	14.5	14.6	12.2	9.5	9.7	9.7	8.5	6.3	8.4	7.9
% of Harvest	23.6	12.4	14.0	14.7	17.0	16.1	14.0	10.6	10.7	10.7	9.3	6.8	9.3	8.6

* *Crop damage harvest is included under non-hunting mortality.*
[1] *Revised numbers from 2020 Deer Summary report due to volume of reports received late*

Appendix 5.   Frequency of deer roadkills in each of Connecticut's Deer Management Zones, a 5-year comparison, 2018-2022.

Zone	2018	2019	2020[1]	2021	2022	Five-year Total	Zonal %	Habitat (sq. miles)	Roadkills/Sq. Mile 2020	2021	2022
1	47	31	21	23	1	123	5.5	344.1	0.06	0.07	0.00
2	51	28	50	45	17	191	8.6	409.85	0.12	0.11	0.04
3	81	85	75	86	77	404	18.2	272.1	0.28	0.32	0.28
4A	26	26	15	15	2	84	3.8	213.1	0.07	0.07	0.01
4B	29	26	28	11	2	96	4.3	120.0	0.23	0.09	0.02
5	41	50	32	25	6	154	6.9	444.9	0.07	0.06	0.01
6	53	29	29	29	26	166	7.5	259.1	0.11	0.11	0.10
7	79	71	77	71	52	350	15.8	370.9	0.21	0.19	0.14
8	6	6	5	1	2	20	0.9	167.6	0.03	0.01	0.01
9	10	14	3	2	7	36	1.6	277.8	0.01	0.01	0.03
10	51	32	36	18	16	153	6.9	243.6	0.15	0.07	0.07
11	85	55	53	55	47	295	13.3	290.76	0.18	0.19	0.16
12	49	23	27	36	15	150	6.8	356.4	0.08	0.10	0.04
Total	**608**	**476**	**451**	**417**	**270**	**2,222**	**100.0**	**3,770.2**	**0.12***	**0.11***	**0.07***

* *These numbers are averages, not totals.*
[1] *Revised numbers from 2020 Deer Summary report due to volume of reports received late*

Appendix 6. Deer removed using crop damage permits in Connecticut's Deer Management Zones, 2010-2022.

						Year							
Zone	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
1	45	37	67	44	39	32	37	38	46	30	25	24	23
2	19	17	25	15	16	15	20	18	14	10	4	9	14
3	70	99	70	97	99	30	58	85	71	80	20	62	78
4A	4	10	15	16	8	10	8	3	12	19	8	6	0
4B	39	28	41	56	55	24	13	23	41	35	10	15	19
5	57	93	87	88	77	55	37	45	66	46	8	37	70
6	78	56	74	62	89	49	41	49	47	38	16	32	87
7	88	123	127	118	110	72	60	77	74	86	58	49	87
8	32	28	36	40	41	11	11	23	28	15	6	14	20
9	55	56	56	77	65	35	40	18	31	39	26	30	51
10	75	104	90	83	90	53	53	82	55	47	20	30	54
11	118	93	113	91	79	45	57	55	53	35	19	29	53
12	35	60	63	44	43	30	27	44	31	40	19	36	49
Total	**715**	**804**	**864**	**831**	**812**	**464**	**462**	**560**	**569**	**520**	**239**	**372**	**605**

Photo courtesy of John Smith with the impressive buck he harvested in 2022.