Monmouth County Park System

Deer Management Program Annual Report

2022-2023

Prepared by the Monmouth County Park System's Deer Management Committee
June 7, 2023

As Adopted July 10, 2023
Monmouth County Board of Recreation Commissioners #R-23-7-10=253

Monmouth County Park System
DEER MANAGEMENT PROGRAM ANNUAL REPORT
to the Board of Recreation Commissioners
2022-2023

The Board approved the 2022-2023 Deer Management Program on June 20, 2022. This annual report has been prepared to advise the Board regarding the administration of this program, its effectiveness, and the need for adjustments to the program as designed.

Twenty-one park areas were hunted; a total of 7,743 hunter days and 535 deer were reported as harvested.

Nineteen of the twenty-one park areas were classified as Category 1 areas, defined as those areas that, within the portions designated for hunting, are largely undeveloped with limited public use. Thompson Park and Hartshorne Woods Park were classified as Category 2 areas, defined as those areas with regular public visitation that are closed to outdoor public use during the time they are available to hunting. Category 2 hunting at the North section of Holmdel Park was discontinued since the 2020-2021 season; the Category 1 program continued within the Ramanessin Tract of Holmdel Park.

Program Purpose

The purpose of the program is to reduce the population of white-tail deer in order to improve forest health and wildlife diversity. As a conservation and recreation agency, the Park System acquires and manages land both for resource protection and recreation opportunities. Responsible land stewardship and resource protection require that wildlife and its habitat be managed for the benefit of all animals and plants. Deer, one species, can have a significant negative impact on the abundance, growth, regeneration, and diversity of 700-800 native plant and animal species. In areas of overabundant deer population, deer consume ground cover and shrubs, affecting birds and other animals that rely on this vegetation, and browse young saplings, precluding the natural regeneration of forests. Changes in the forest composition from deer damage are clearly visible at many county park sites, threatening natural resources that were intended to be preserved by the County's acquisition of the land. Staff has previously prepared and distributed a detailed background report on the need for deer management and all options examined; hunting continues to be the most efficient and effective management option to reduce the overabundant deer population.

Program Administration

The Monmouth County Park System issued a total of 748 2022-2023 hunting access permits to hunters licensed by New Jersey to deer hunt. Of those 748 hunters, 57% were Monmouth County residents. Permits were issued in person at three park areas. All permitted hunters received a copy of the Park System's Rules and Regulations, Supplemental Rules and Regulations governing deer hunting (R-10-7-19=231), administrative procedures for deer hunting, and maps of the areas open for hunting. A Harvest Incentive Program was implemented in 2019, in which those hunters harvesting three or more deer and providing the appropriate state confirmation numbers on their End-of-Season report were eligible for a 50% reduction in the fee for a 2022-2023 permit. The $40 application processing fee (or $20 reduced fee for those 60 hunters eligible)

yielded $28,720 collected between September 2022 and February 2023 that was deposited in the Park System Trust Account to offset program expenses.

Hunting within the Park System is subject to the rules and regulations of both NJ Fish and Wildlife and the Park System. State rules do not allow hunting in public parks on Sunday and prohibit hunting within 150 feet of a building or structure with a bow from an elevated tree stand and 450 feet of a building or structure with a bow from the ground and with a shotgun or muzzleloader. Additional rules imposed by the Park System require that only licensed hunters age 18 and older be issued permits, require that all hunting be from elevated tree stands, and apply a 450-foot safety zone to all primary and secondary school property. The Park System may refuse or revoke permits as determined to be necessary.

State regulations were changed in 2010 to reduce the minimum distance from an occupied building where a bow hunter may have a nocked arrow from 450 feet to 150 feet. The Park System's Administrative Procedures for Deer Hunting were amended in 2016 to match the 150' state regulation in all archery areas; the Park System maintained the 450' buffer at all school properties and to all shotgun/muzzleloader hunting in the Category 2 areas. The Administrative Procedures for Deer Hunting were also amended in 2016 to establish a 'carry-in/carry-out' designation. In small tracts of land, relatively few hunters could preclude others by placing stands that may infrequently be occupied. To avoid this, and promote as much opportunity and harvest as possible, a carry-in/carry-out policy was implemented at Hominy Hill Golf Course and Wickatunk Recreation Areas, requiring daily removal of all stands. Bel-Aire Golf Course was included in the program for the first time in 2019, with a carry-in/carry-out designation.

An earn-a-buck requirement was implemented in all Category 1 areas in 2019 with the intended purpose of increasing the harvest of does, specifically in those areas where it was apparent many hunters were passing on antlerless deer while waiting for bucks. This requirement continued in the 2022-23 season. Hunters were required to submit a report online or via phone of their antlerless harvest with their state confirmation number prior to being eligible to harvest a buck; 67 hunters reported a qualifying harvest.

Park managers met with local enforcement authorities in advance of the hunting season to review the program. Staff are also responsible for administration of the registration system, periodic spot-checks of parking areas and hunting activity, and addressing any issues that arose. All field staff in the affected areas are issued orange hats and vests to wear while working within hunting areas and received training related to the hunting program, enforcement of the program rules, and posting of hunting area signage. As the regulated hunting seasons run from ½ hour before sunrise to ½ hour after sunset, shift hours at affected park areas are adjusted.

A record of all occurrences and incidents related to the Deer Management Program was maintained and made available to staff on the Park System's internal network. Occurrences included such minor rule infractions as failure to display a vehicle identification tag, unmarked tree stands, and having a tree stand in place too early or too late in the season. A total of 64 occurrences were recorded beginning May 1, 2022, through May 1, 2023. Incidents include major rule infractions. There were 13 incidents reported: four hunters tree stands were confiscated with no permit, climbing sticks and trail cameras found resulting in revocation of their permits; four hunters pruned vegetation more than ¾" in diameter and/or removal of trees, resulting in revocation of their permits. One hunter set up his brother's tree stand while ineligible with MCPS administrative procedures, and set up a trail camera, bait and harvested an antlered deer, resulting in both hunters revoked. One hunter did not display permit on tree stand which was from

previous hunting season and was revoked. One hunter was hunting from a ground blind and was revoked. One hunter set up tree stand displaying previous year's permit resulting in a warning.

Written notice of the Deer Management Program was mailed in advance of the scheduled hunting season to 2033 neighbors, defined as those within 200 feet of a park with area open for hunting.

Overall, correspondence and media coverage was light throughout Monmouth County. Throughout this hunting season, representatives of several municipalities, including Sea Girt and Ocean Township inquired about deer management guidance and assistance in their municipalities.

Comments on the program were solicited from staff and were received from permitted hunters via the End-of-Season Harvest Reports. Frequently repeated suggestions for increasing the harvest included increasing parking/access locations and maintenance, limiting the number of hunters, limiting the number of tree stands, establishing a minimum distance between tree stands, better enforcing leash laws, allowing trail cameras, prohibiting trail use by non-hunters, enforcing the prohibition of ATV use, and extending the hunting season, especially at Dorbrook Recreation Area. One of the most common hunter responses was to open the parks to Sunday bow hunting, as has been done on State Wildlife Management Areas. To be clear, the legislative change enacted in 2009 legalized Sunday bow hunting on state Wildlife Management Areas and private property only. This privilege does NOT extend to other public lands, such as municipal or county parks, state parks or forests, or to any Federal lands. New legislation has been introduced that may further open these areas for Sunday hunting, but at this time the Monmouth County Park System is NOT included in ANY Sunday hunting.

In September 2008 a resident of Wall Township filed a civil complaint seeking a temporary injunction to stop hunting at Shark River Park in Wall on the basis that a local ordinance prohibits the discharge of firearms. The Township was not a party to the complaint. This injunction was denied in Superior Court on September 29, 2008 and on appeal on October 10. The County then sought and received a motion for summary judgment on February 20, 2009, thus dismissing the matter. Judge Urhmacher's ruling concluded that the State Legislature explicitly gave the County full control of the land managed by the Park System and that "a municipal ordinance cannot operate to prohibit a deer hunt undertaken on a County park, even though that County park may be within its borders." The resident filed an appeal of this decision and the Appellate Court issued a decision January 25, 2010 affirming the motion judge's ruling granting summary judgment. The Appellate Court looked to the Board of Recreation Commissioner's statutory authority in finding that the "State scheme is sufficiently comprehensive to preclude municipal regulation." The resident's request for the Supreme Court of New Jersey to hear a further appeal was denied on July 12, 2010. While municipal ordinances regulating the discharge of firearms are not applicable to County park lands, the opinions and concerns of municipal officials are considered in the design and implementation of the Deer Management Program. No further developments have since occurred.

Program Effectiveness

Hunters who were issued Park System hunting access permits for the 2022-2023 deer-hunting season were required to submit an end-of-season report as a condition of the permit. The purpose of the end-of-season report is to gather harvest data for the Park System's Deer Management Program. The penalty for failing to submit an end-of-season report by the established deadline is ineligibility for a 2023-2024 permit.

Hunters were notified at the time they received their permit that online reporting would once again be available, as had been introduced for the first time in 2020. In prior years, self-addressed, postage paid End-of-Season Harvest Report forms were mailed to each hunter. For the fourth year, an online form was posted January 31st, and an email sent to those hunters who had provided an email address on their permit application (98%). A second reminder email was sent March 2nd. Beginning April 1st, phone calls were made to 103 hunters from which there was no response in an effort to gather as much data as possible regarding their hunting effort and harvest. As of April 28, 2023, 717 hunters, or 96% of those permitted, had submitted a report.

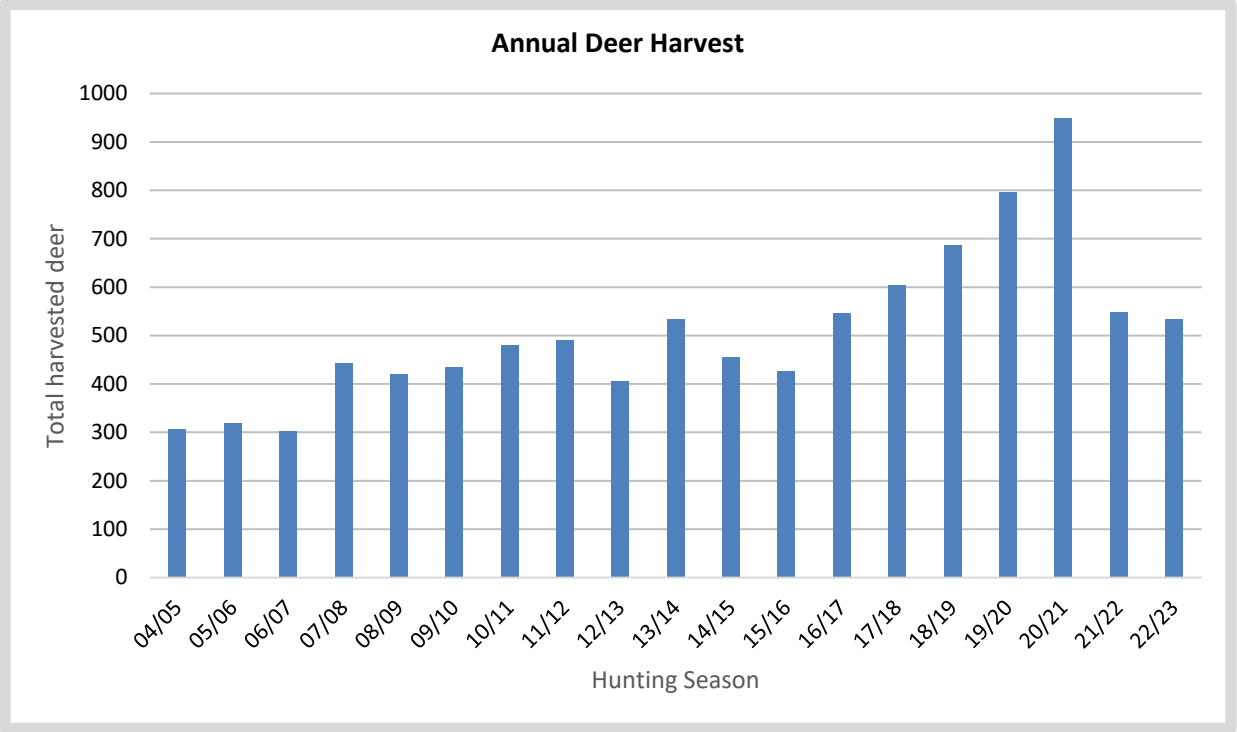
Key information contained in the 717 responses included the following:

- 91% of permitted hunters actually hunted in a Monmouth County Park during the 2022-2023 deer hunting season
- 36% of the reporting permitted hunters harvested at least one deer
- 9% harvested 3 or more deer, and provided state confirmation numbers, qualifying them for a reduced permit fee in 2023-2024
- A total of 535 deer were harvested at the 22 park areas open during the 2022-2023 season.
  - 365 or 68% of the deer harvested were female
  - 92% were harvested by archery
  - 8% were harvested by shotgun or muzzleloader (Category 2 parks only)

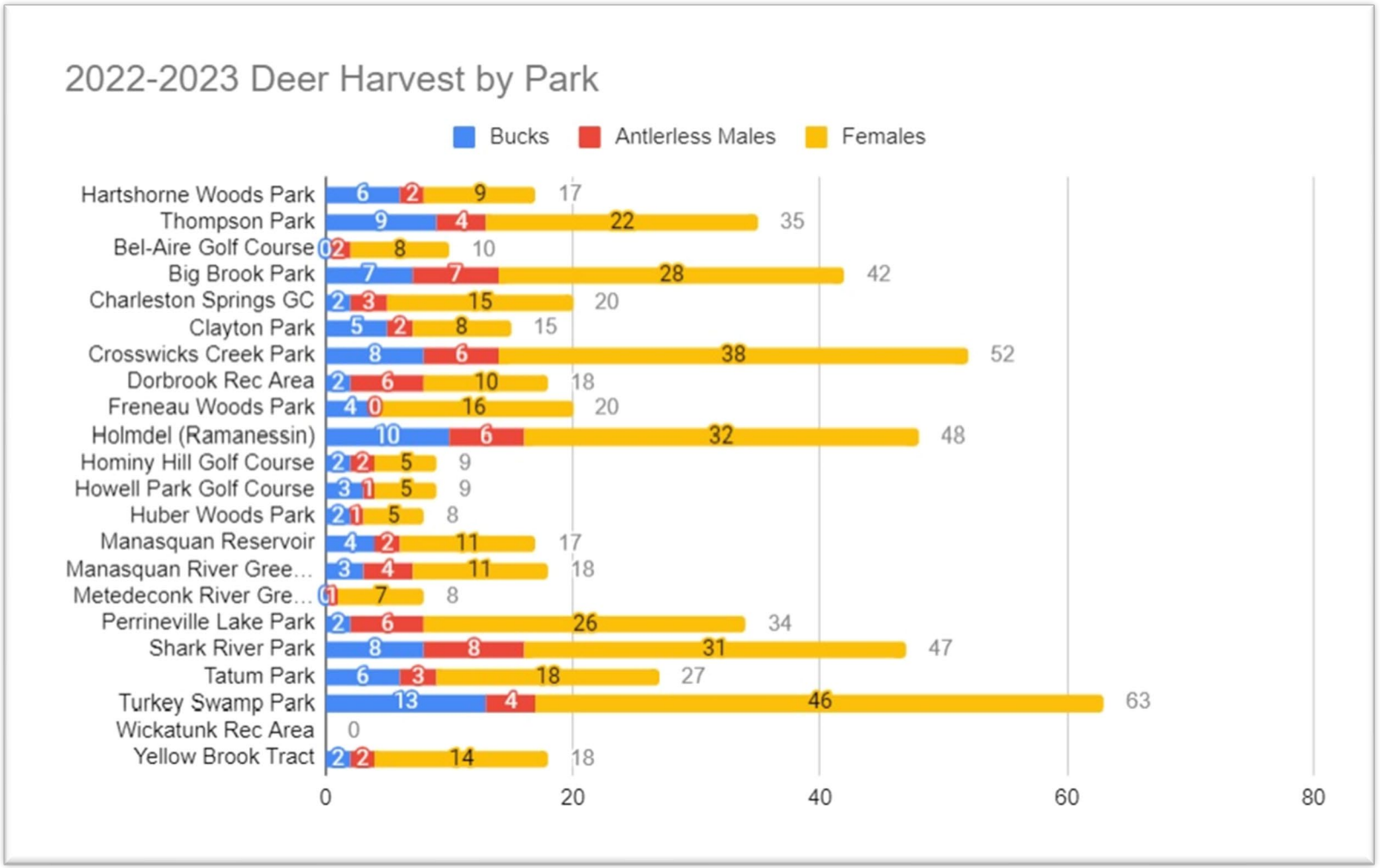
The recorded harvest data for the 2022-2023 deer hunting season is summarized in the attached table (Table 1). The 2022-2023 season had comparable totals to the previous season, only differing by 14 deer. However, both the 2021-2022 and the 2022-2023 seasons resulted in significantly lower harvest compared to recent years. While harvest numbers had steadily increased annually from the 2015-2016 season through the 2020-2021 season, the 2021-2022 and 2022-2023 seasons had approximately 43% less harvested deer on average compared to the 2020-2021 season. Deer harvest numbers may be lower the past two hunting seasons due to the outbreak of a disease that effected white-tailed deer called Epizootic Hemorrhagic Disease (EHD) during the 2021-2022 season. This disease is caused by a virus and transmitted through biting midges, a small insect in the *Culiciodes* genus. The midges are typically present in New Jersey in late summer and early Fall, which is when EHD levels are the highest in the Northeast region. Once the first hard frost occurs in the Fall, the midges die off and the EHD endemic typically ends. Signs and symptoms of EHD include fevers, hemorrhages, swelling of the neck, head, and face, loss of fear of humans, and lameness. Due to high fevers, dead deer infected with EHD are often found in or near water, presumably as they are trying to cool down. Deer infected with EHD in New Jersey tend to die within 36 hours after showing signs of the disease. While EHD can kill many deer in one season, there is generally no long-term impact of an EHD outbreak and herd sizes are typically able to recover. The 2022-2023 season had 468 fewer hunting days and 61 less permitted hunters than the 2021-2022 season, but still resulted in about the same harvest, showing some evidence of herd recovery. Historically, EHD outbreaks have occurred in New Jersey in 1955, 1975, 1999, 2007, and 2010-2012. EHD is present annually in the Southern U.S. and tends not to affect deer populations as they have developed immunity to the virus over many years. EHD is becoming more common and severe in the Northern U.S. as the climate changes. EHD can resemble other viral diseases in deer and tissue sampling is required to distinguish EHD from other diseases that affect deer populations, such as bluetongue virus.

Additionally, many hunters reported that they chose not to hunt because of the EHD outbreak and related concerns. Awareness of EHD among hunters likely contributed to fewer hunters applying for permits in the 2022-2023 season compared to some previous seasons.

A chart depicting annual harvest across all seasons is included below.



The total population reduction achieved by the hunt exceeds the number of deer harvested because of the lost reproductive capacity of each female deer harvested. Assuming, conservatively, that 50% of the females harvested would have produced 1 to 3 fawns this season, the harvest of 365 does would be indicative of a total single season population reduction ranging from approximately 718 to 1,083.


2022-2023 Deer Harvest by Park
Bucks
Antlerless Males
Females
Hartshorne Woods Park 6 2 9 17
Thompson Park 9 4 22 35
Bel-Aire Golf Course 0 2 8 10
Big Brook Park 7 7 28 42
Charleston Springs GC 2 3 15 20
Clayton Park 5 2 8 15
Crosswicks Creek Park 8 6 38 52
Dorbrook Rec Area 2 6 10 18
Freneau Woods Park 4 0 16 20
Holmdel (Ramanessin) 10 6 32 48
Hominy Hill Golf Course 2 2 5 9
Howell Park Golf Course 3 1 5 9
Huber Woods Park 2 1 5 8
Manasquan Reservoir 4 2 11 17
Manasquan River Gree... 3 4 11 18
Metedeconk River Gre... 0 1 7 8
Perrineville Lake Park 2 6 26 34
Shark River Park 8 8 31 47
Tatum Park 6 3 18 27
Turkey Swamp Park 13 4 46 63
Wickatunk Rec Area 0
Yellow Brook Tract 2 2 14 18
0
20
40
60
80

The objective of the Park System's Deer Management Program is to retain a healthy native forest community by reducing deer populations to a maximum of 10 per square mile and maintaining populations at that level. This is a long-term management goal, not something that can be achieved in a few years. Several indicators are monitored to evaluate progress towards this goal:

Deer Population Counts - Counting deer is made difficult by their mobility and the fact that they spend a good deal of time under cover and cannot be reliably seen or counted. Regardless, the Park System staff has initiated efforts to establish estimates of deer density within select park areas. Counts have not been performed in every park open for hunting for two principal reasons: 1) aerial counts are ineffective in parks where forest cover and the presence of many evergreens obscure visibility, and 2) spotlight counts can only be performed within areas of a park with a drivable route adjacent to edge habitat.

Each winter from 2003 through 2010 at least one aerial survey was conducted when the visual contrast offered by snow cover was used to facilitate deer counts from the helicopter operated by the County Shade Tree Commission. In 2010 four park areas were surveyed on one of two dates (February 8 or 18) and two parks, Thompson and Holmdel, were surveyed on both days. The results continue to support a conclusion that the population remains above the 10 deer per square mile density considered the maximum for retaining a healthy shrub layer. It can be assumed that, as only deer visible from the helicopter are counted, the survey results represent an under count of actual deer densities; this is particularly true where the presence of forest cover and evergreens obscure visibility and when weather conditions prompt the deer to bed down in dense cover. Research by others suggests that the percentage of deer counted by helicopter can range from as low as 36% of the total population in the absence of snow cover to as high as 78.5% in a oak-hickory forest with snow cover. In the years since, counts have not been conducted due to either adverse conditions when there is snow or a lack of any measurable snow.

Annual spring spotlight counts were conducted at six park areas in April and May each year since 2007, with the exception of 2013 when post-Sandy operations limited counts to just two park areas and 2018 when excessively wet conditions allowed counts in only three parks. Counts were NOT conducted during 2020 due to the Covid-19 pandemic. The 2021 counts yielded estimated densities ranging from 25 to 106 deer per square mile. Again, as the routes do not include the parks' entire edge habitat and as only deer visible from the route at the time of the inspection are counted, the spotlight surveys always yield an estimate lower than actual deer densities. Research by others suggests that as many as 50 percent of the deer present may not be observed by a spotlight count.

Information about and data from the Park System aerial surveys and spotlight surveys is available in a separate report, the Deer Management Program Background Information, available on the website or by request.

Multiple consecutive years of consistently lower count numbers in conjunction with improved forest health must be seen to conclude that the program is achieving its objective.

Forest Health Conditions – The health of the forest is the best measure of the effectiveness of the program. Two related studies initiated by the Park System provide for a reliable and consistent assessment of vegetative health, enabling the impact of deer on forest composition and structure to be assessed in a quantifiable way over time. The studies also provide insight on how well the many components of the forest can recover. The end goal is to restore the conditions that prevailed in the recent past, where forest structure, diversity of species, ecological processes and functions provide for the greatest overall benefit.

Park System staff have constructed 9 deer exclosure sites at 7 park areas since 2003 as part of an on-going Deer Exclosure Study (Clayton Park, Hartshorne Woods Park, Holmdel Park, Shark River Park, Tatum Park, Thompson Park and Turkey Swamp Park). The exclosures provide a physical barrier to access by deer while allowing access by small mammals, insects, and birds. The plant species in plots within the 30-foot by 30-foot exclosures are compared to those in plots outside the exclosures. In 2022 all nine exclosures were evaluated for percent cover and species composition. Although percent cover and diversity indexes change from year to year, the overall trends have shown improvement in at least one measure in seven of the nine exclosures, indicating that in the absence of deer the forest is able to begin regeneration. For example, throughout the study, Thompson Park interior plots tended to have a higher quality plant community, greater species richness, and more native species when compared to the exterior exclosures, which were subject to deer browse.

The second study, the Forest Health and Composition Study, was initiated in 2006 and expanded each year. Species of trees, saplings, shrubs, vines and herbaceous plants as well as height and percent of vegetative cover have been sampled in 547 plots in 23 parks. These plots are evaluated for the condition of the herb and shrub layers and measure the establishment of tree saplings and seedlings to replace forest canopy in comparison to the mature trees present. The extent and nature of any degradation can be indexed and mapped and it can be determined whether deer browsing pressure may be limiting forest regeneration. Over time, this information will enable the Park System to evaluate whether conditions are improving or deteriorating.

In most park areas, it is too early in both the Park System's efforts to manage deer populations and to formally monitor forest health, to judge the impact of the program on forest health. While the Thompson Park exclosure has consistently shown the potential for a natural restorative process to occur, the data collected to date supports the conclusion that browsing pressure is still too high at the current level of deer population. Full recovery may require greater intervention and decades to achieve.

Harvest Numbers – Over time, if the program is in fact reducing the number of deer in the areas open for hunting, the year-to-year harvest numbers should begin to flatten and/or require an increased level of effort. Because we continue to refine the program from season to season, adding areas, modifying boundaries, adjusting hunting types and schedules, it is not possible to make direct comparisons for many areas. Harvest numbers within the parks are also greatly influenced by external factors, such as weather conditions and the presence or absence of hunting on the property surrounding each park. The increasing use of crossbows (first allowed in 2009-2010) may also affect

the hunter day/harvest ratio. More years of data are needed to reasonably determine whether changes in harvests and level of effort are indicative of changes in population or are the result of other factors. It is known that over the nineteen-year life of the Deer Management Program, a total of 9,687 deer have been harvested of which 5,972 were does. Had these deer and their cumulative annual reproductive capacity not been removed, today's deer population within the County Parks and surrounding properties would be exponentially higher.

There is continued concern that the current program does not adequately reach prime areas of quality forest at Holmdel Park, Huber Woods Park, and Tatum Park where only small portions of the forested area have been hunted in order to minimize the impact on park visitors and neighbors. Limited hunting at Thompson Park may be keeping the deer population from escalating, but not significantly reducing the population. Other parks with areas of quality forest and sizeable deer herds, such as Weltz Conservation Area, have not been included in the program to date. Changes to the program may be needed in the future to address this issue.

In April of 2015, representatives from the Park System's Deer Management Committee were invited to attend a meeting of the County's Board of Agriculture where farmers expressed their ongoing difficulty in producing crops due to damage from deer. The Board of Agriculture will be exploring options with the State to further reduce populations.

Representatives from the Colts Neck Wildlife Committee approached the Park System in 2016 regarding collaboration to reduce the deer population. Municipal efforts resulted in changes to township ordinance to improve hunting access on private land; the Board of Recreation Commissioners approved inclusion of both Dorbrook Park and Hominy Hill Golf Course in the MCPS program beginning with the 2016-2017 season.

During the course of the 2016-2017 season, the Park System was contacted by representatives from Eatontown, Ocean Township, and Wall Township requesting that additional cooperative measures be taken to manage deer within portions of the townships.

In March of 2018, representatives of the Park System attended a meeting of the Millstone Township Agricultural Advisory Council to offer expertise and share thoughts on developing a municipal/regional deer management program. In the spring of 2019, staff met with members from other nearby county park agencies to discuss their programs and to share details of our program. Cooperative efforts will continue.

In August of 2022 Park System representatives met with a NJ DEP deer biologist to review the MCPS deer management program, receive updates on alternative controls such as contraceptives, and discuss deer disease prevention. It was concluded by both parties during this meeting that there is still a regional need for deer management.

During the course of the 2022-2023 season, the Park System was contacted by representatives from several local municipalities including Sea Girt and Ocean Township requesting deer management guidance and/or collaboration regarding deer management in their municipalities.

Although reasons for herd reduction vary amongst partners from forest protection to public safety and property damage, all stakeholders are in agreement that overpopulation must be managed. Clearly, the burgeoning white-tail deer population is a regional problem as deer

populations are not confined to individual properties, municipalities, or public lands. Any localized management actions are quickly minimized by population imbalances elsewhere; an ongoing cooperative management effort at multiple levels and amongst private and public lands will be necessary to restore a sustainable population.

Table 1: **Monmouth County Park System**
2022-23 End-of-Season Deer Harvest Report

	Location	# Hunters	Total # Days Hunted	Harvest			
				Antlered Males	Antlerless Males	Females	Sum
Category 2	Hartshorne Woods Park, Middletown	22	57	6	2	9	17
	Thompson Park, Middletown/Holmdel	43	149	7	5	20	32
Category 1	Bel-Aire Golf Course, Wall Township	18	160	0	2	8	10
	Big Brook Park, Marlboro	56	436	7	7	28	42
	Golf Course, Millstone	27	236	2	3	15	20
	Clayton Park, Upper Freehold	24	271	5	2	8	15
	Crosswicks Creek Park, Upper Freehold	79	897	8	6	38	52
	Dorbrook Recreation Area, Colts Neck	23	146	2	6	10	18
	Freneau Woods Park, Marlboro/Aberdeen	36	335	4	0	16	20
	Holmdel (Ramanessin), Holmdel	70	919	10	6	32	48
	Hominy Hill Golf Course, Colts Neck	20	126	2	2	5	9
	Howell Park Golf Course. Howell	20	184	3	1	5	9
	Huber Woods Park, Middletown	14	149	2	1	5	8
	Manasquan Reservoir, Howell	31	232	4	2	11	17
	Manasquan River Greenway, Freehold/Howell	32	259	3	4	11	18
	Metedeconk River Greenway, Freehold	18	153	0	1	7	8
	Perrineville Lake Park, Millstone/Roosevelt	68	670	2	6	26	34
	Shark River Park, Wall/Neptune/Tinton Falls	82	834	8	8	31	47
	Tatum Park, Middletown	46	374	6	3	18	27
	Turkey Swamp Park, Freehold	72	874	13	4	46	63
	Yellow Brook Tract, Howell	22	290	2	2	14	18
	TOTALS	817	**7743**	98	72	365	**535**