



Monmouth County Park System
Deer Management Program
Annual Report

2018

Prepared by the Monmouth County Park System – May 2018

Monmouth County Park System
DEER MANAGEMENT PROGRAM ANNUAL REPORT
to the Board of Recreation Commissioners
2017-2018

The Board approved the 2017/2018 Deer Management Program on June 5, 2017. This annual report has been prepared to advise the Board regarding the administration of this program, its effectiveness, and the need for changes to the program as designed.

Twenty-one park areas were hunted; a total of 10024 hunter days and 604 deer were reported as harvested.

Eighteen 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. For the fifth consecutive year, Holmdel Park had distinct regions assigned to both Category 1 and Category 2. One new park area was included in the Deer Management Program in the 2017/2018 season: Freneau Woods 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. Attachment C provides 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 889 2017/2018 hunting access permits to hunters licensed by New Jersey to deer hunt. Of those 889 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. The \$25 application processing fee yielded \$22,225 collected between September 2017 and February 2018 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 over the age of 18 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.

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 Systems 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 58 occurrences were recorded beginning August 1, 2017 through April 1, 2018. Incidents include major rule infractions as well as reports of theft and vandalism. A total of 5 incidents were recorded during the season. These included such rule infractions as preparing to hunt in a non-hunting area, stolen tree stands and hunting without a MCPS permit. This season, there were two in-season permit revocations, for hunting outside of designated seasons/areas. Park staff continues to be vigilant in monitoring hunting activity and enforcing rules.

Written notice of the deer management program was mailed in advance of the scheduled hunting season to 2005 neighbors, defined as those within 200 feet of a park with area open for hunting.

Once again, media attention was light with most articles emphasizing the impact of deer related accidents on roadways. Coverage included articles highlighting the top deer-related vehicle accident sites in Ocean and Monmouth Counties. Monmouth County was reported as having the most deer-related accidents in 2016 with 999 carcasses removed from roadways. That number was expected to climb when 2017 numbers are released.

In addition, an article in the Two River Times emphasized the need for more hunting in Colts Neck.

Correspondence from residents included the following concerns:

- One resident was concerned about the number of out of state/county hunters who pay the same fee as County residents.
- One resident was concerned about the safety of trails with hunting nearby.
- One resident favored hunting but does not want hunting to expand to Sunday. She wants to feel confident that she can walk the trails at least one day without worrying about hunters.
- Two residents wrote in favor of the hunt and encouraged expanding the program.
- Two phone calls were received against hunting, one at Shark River Park and the other at Perrineville Lake Park.

Staff responded to each of these complaints.

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, limiting the number of hunters, limiting the number of tree stands, establishing a minimum distance between tree stands, eliminating baiting, and prohibiting trail use by non-hunters. 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 Uhrmacher'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 2017/2018 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 2018/2019 permit.

Self-addressed, postage paid End-of-Season Harvest Report forms were mailed to each of the 889 permitted hunters on February 1 with a March 1, 2018 return date. Phone calls were made and/or emails sent to 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 18, 2018, 874 hunters, or 98% of those permitted, had submitted a report.

Key information contained in the 874 responses included the following:

- 85% of permitted hunters actually hunted in a Monmouth County park during the 2017/2018 deer hunting season
- 35% of the permitted hunters harvested at least one deer
- A total of 604 deer were harvested at the 21 park areas open during the 2017/2018 season.
 - 338 or 56% 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 2017/2018 deer hunting season is summarized in the attached table (Table 1). The 2017/2018 season resulted in the highest Park System harvest to date. This may be explained by a combination of factors, including: the addition of one new hunting area this year and three new areas last year; the 2016 reduction in safety zone to 150', which allowed additional acreage to be hunted; the continued implementation of carry-in/carry-out procedures in select parks, which allowed for turnover of hunters in small areas; recent population growth due to high acorn mast; and overall good weather conditions.

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 338 does would be indicative of a total single season population reduction ranging from approximately 773 to 1111.

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 2011, and again in 2014, unusually deep snow cover significantly impacted the movement of deer important to effective helicopter counts and no counts were conducted. In 2012 no counts were conducted due to a lack of any measurable snow. 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 (see Attachment D) 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.

Annual spring spotlight counts were conducted at six park areas in April and May of 2007-2017, with the exception of 2013 when post-Sandy operations limited counts to just two park areas. Additional counts are scheduled for April and May 2018. The 2017 counts yielded estimated densities ranging from 20 to 125 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 included as Attachment D.

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 enclosure sites at 7 park areas since 2003 as part of an on-going Deer Enclosure Study (Clayton Park, Hartshorne Woods Park, Holmdel Park, Shark River Park, Tatum Park, Thompson Park and Turkey Swamp

Park). The enclosures 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 enclosures are compared to those in plots outside the enclosures. In 2017 all nine enclosures 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 enclosures, indicating that in the absence of deer the forest is able to begin regeneration. Photos of the Thompson Park enclosure are included as Attachment E.

The second study, the Forest Health and Composition Study, was initiated in 2006. Species of trees, saplings, shrubs, vines and herbaceous plants as well as height and percent of vegetative cover have been sampled in 270 plots in 14 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 worsening.

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 enclosure 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. One highlight to note, is that the Hartshorne Woods Park enclosures seem to indicate the start of recovery from intense browse pressure; percent cover and diversity indices are leveling between the fenced plots and the exterior plots.

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 fourteen year life of the Deer Management Program, a total of 6170 deer have been harvested of which 3603 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, Shark River 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. Several other parks with areas of quality forest and sizeable deer herds, Bel-Aire Golf Course, Weltz Park, and have not been included in the program to date. Changes to the program will 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 2016/17 season.

During the course of the 2016/17 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. Cooperative efforts will continue.

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
2017-18 End-of-Season Deer Harvest Report**

	Location	# Hunters	Total # Days Hunted	Harvest			
				Male		Female	Sum
				Antlered	Antlerless		
Category 2	Hartshorne Woods Park, Middletown	20	59	5	4	7	16
	Holmdel Park North, Holmdel	15	39	2	2	9	13
	Thompson Park, Middletown/Holmdel	31	99	8	5	19	32
Category 1	Big Brook Park, Marlboro	79	791	13	15	32	60
	Charleston Springs Golf Course, Millstone	42	353	8	6	14	28
	Clayton Park, Upper Freehold	35	435	8	8	14	30
	Crosswicks Creek Park, Upper Freehold	102	1368	20	6	35	61
	Dorbrook Recreation Area, Colts Neck	31	214	1	1	13	15
	Freneau Woods Park, Marlboro/Aberdeen	41	324	5	2	2	9
	Holmdel Park / Ramanessin Sect, Holmdel	69	1001	15	7	38	60
	Hominy Hill Golf Course, Colts Neck	36	165	1	4	6	11
	Howell Park Golf Course, Howell	32	287	5	0	12	17
	Huber Woods Park, Middletown	33	245	7	3	12	22
	Manasquan Reservoir, Howell	42	217	4	1	4	9
	Manasquan River Greenway, Freehold/Howell	32	456	6	1	17	24
	Metedeconk River Greenway, Freehold	17	81	3	1	2	6
	Perrineville Lake Park, Millstone/Roosevelt	93	975	23	6	36	65
	Shark River Park, Wall/Neptune/Tinton Falls	88	992	12	5	23	40
	Tatum Park, Middletown	48	460	10	2	7	19
	Turkey Swamp Park, Freehold	115	1023	14	6	32	52
	Wickatunk Recreation Area, Marlboro	18	98	3	0	1	4
Yellow Brook Tract, Howell	43	343	8	0	3	11	
TOTALS			10024	181	85	338	604