



**Monmouth County Park System
Deer Management Program
Annual Report**

2021

Prepared by the Monmouth County Park System's Deer Management Committee
June 11, 2021

Monmouth County Park System
DEER MANAGEMENT PROGRAM ANNUAL REPORT
to the Board of Recreation Commissioners
2020-2021

The Board approved the 2020/2021 Deer Management Program on June 22, 2020. 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-two park areas were hunted; a total of 10,993 hunter days and 950 deer were reported as harvested.

Twenty of the twenty-two 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 for this 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 952 2020/2021 hunting access permits to hunters licensed by New Jersey to deer hunt. Of those 952 hunters, 54% 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 2020-2021 permit. The \$40 application processing fee (or \$20 reduced fee for those 99 hunters eligible) yielded \$36,100 collected between September 2020

and February 2021 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 2020-21 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.

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 100 occurrences were recorded beginning May 1, 2020 through May 1, 2021. Incidents include major rule infractions as well as reports of theft and vandalism. There were three incidents reported; two hunters were hunting while not in tree stands, and one was hunting in a restricted area. All three incidents resulted in revocation of permits. 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 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.

Correspondence From the Public

- Two hunters asked that any cancelled hunting dates have a make-up date.
- One resident called to voice her objection to the deer management program.

Media Coverage

- NJ.com article, "It's the most dangerous time of the year for deer-car crashes in N.J." Monmouth County is among the top counties for deer-related accidents.
- NorthJersey.com opinion article, "Deer overpopulation is real in N.J. Our current maintenance approach isn't enough."
- New Jersey 101.5 opinion article, "N.J. deer are a menace – we need to kill more."
- Patch.com article, "Tinton Fall Vet saves dog nearly trampled to death by deer."

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, better enforcing leash laws, 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 2020/2021 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 2021/2022 permit.

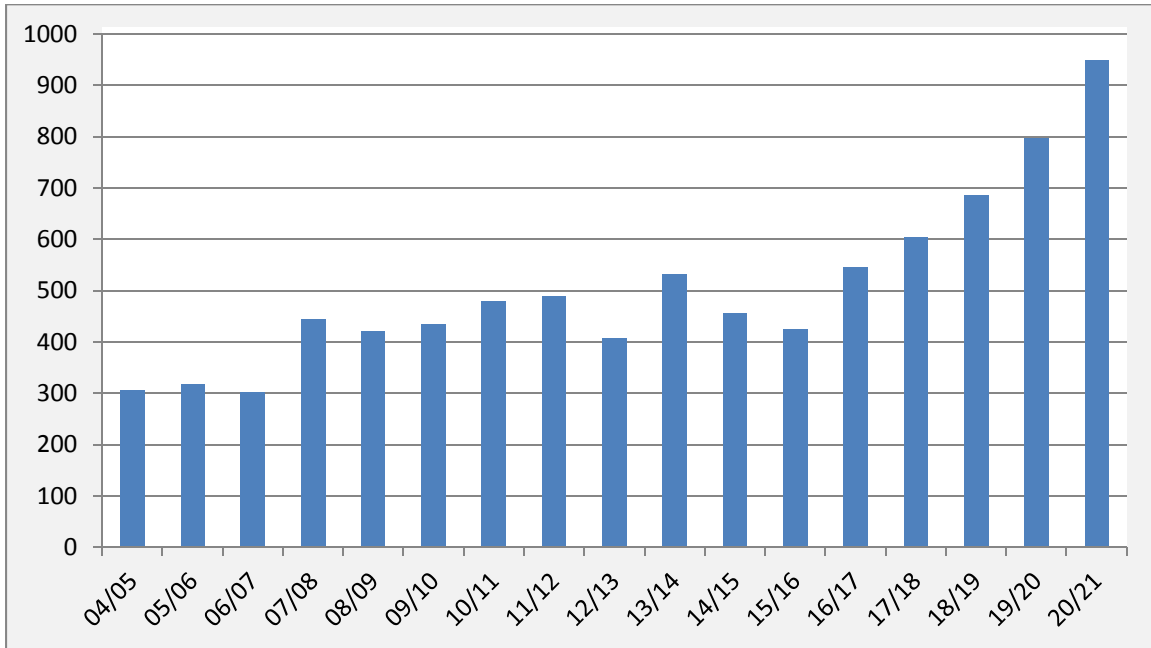
Hunters were notified at the time they received their permit that online reporting would once again be available, as had been introduced for the first time in 2020. In prior years, self-addressed, postage paid End-of-Season Harvest Report forms were mailed to each hunter. For the second year, an online form was posted January 31, and an email sent to those hunters who had provided an email address on their permit application (93%). Over 300 hunters reported online in response to this initial email blast. In mid-February a postcard was mailed to the remaining hunters, with instructions for online reporting as well as an option to phone in their results, with a deadline of March 15. A second reminder email was sent in March, followed by phone calls to 100 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 30, 2021, 917 hunters, or 96% of those permitted, had submitted a report.

Key information contained in the 917 responses included the following:

- 86% of permitted hunters actually hunted in a Monmouth County park during the 2020/2021 deer hunting season
- 48% of the permitted hunters harvested at least one deer
- 12% harvested 3 or more deer, and provided state confirmation numbers, qualifying them for a reduced permit fee in 2021-2022
- A total of 950 deer were harvested at the 22 park areas open during the 2020/2021 season.
 - 646 or 68% of the deer harvested were female
 - 95% were harvested by archery
 - 5% were harvested by shotgun or muzzleloader (Category 2 parks only)

The recorded harvest data for the 2020/2021 deer hunting season is summarized in the attached table (Table 1). The 2020/2021 season resulted in the highest Park System harvest to date. The continued upward trend over recent years may be explained by a combination of factors, including: an increase in the number of participating hunters; the continued expansion of huntable acreage when properties are expanded through acquisition; the continued implementation of carry-in/carry-out procedures in select parks, which allowed for turnover of hunters in small areas; and overall good weather conditions. Factors specific to the most recent season include the potential for more time spent hunting because hunters were home for Covid-related reasons, the continuation of an earn-a-buck requirement to first harvest an antlerless deer, and a monetary incentive to harvest three or more deer. A chart depicting annual harvest across all seasons is included below.

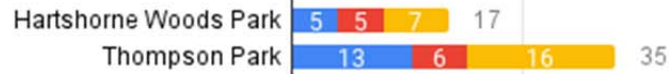
Annual Deer Harvest



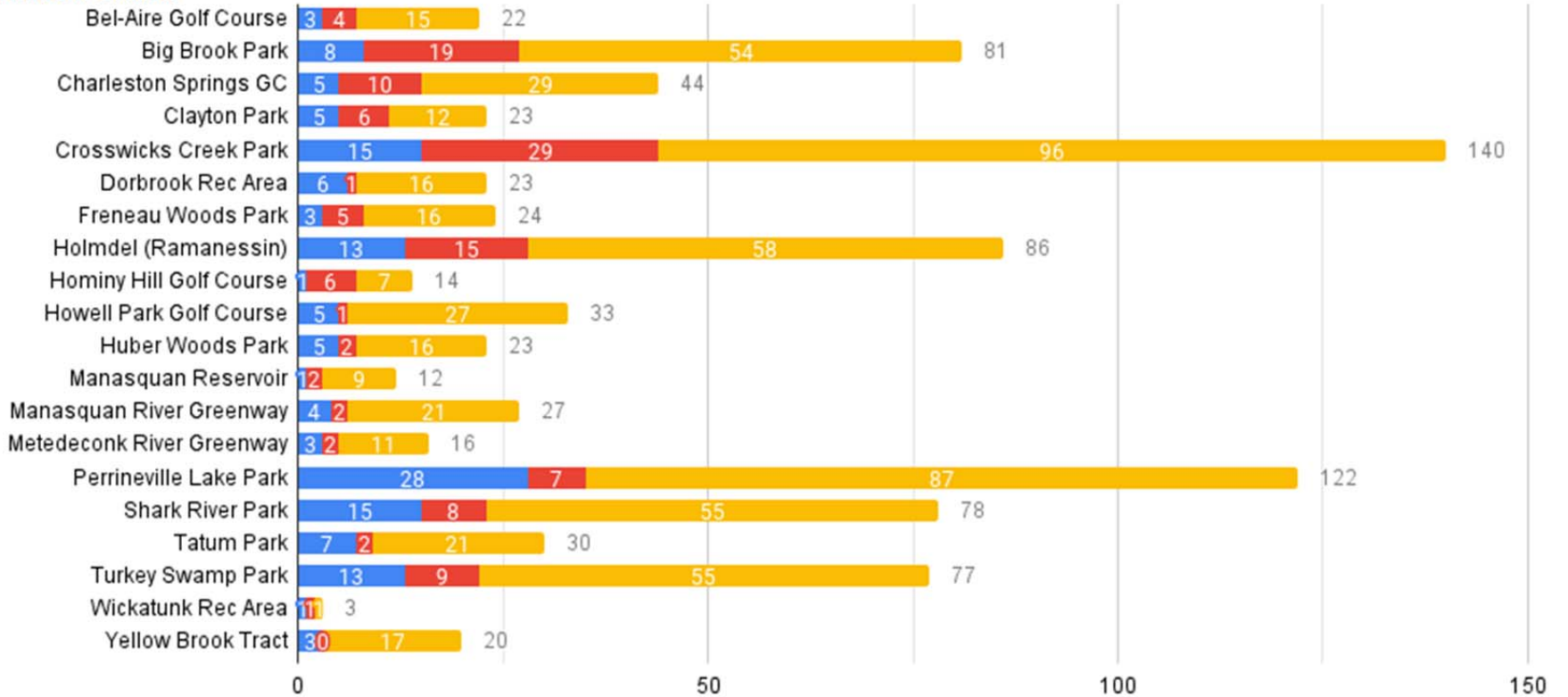
The total population reduction achieved by the hunt exceeds the number of deer harvested because of the lost reproductive capacity of each female deer harvested. Assuming, conservatively, that 50% of the females harvested would have produced 1 to 3 fawns this season, the harvest of 646 does would be indicative of a total single season population reduction ranging from approximately 1,273 to 1,919.

2020-2021 Deer Harvest

CATEGORY 2 AREAS



CATEGORY 1 AREAS



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 2019 counts yielded estimated densities ranging from 24 to 64 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 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 2019 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.

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 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 seventeen year life of the Deer Management Program, a total of 8,604 deer have been harvested of which 5,215 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 Park, 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.

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
2020-21 End-of-Season Deer Harvest Report**

	Location	# Hunters	Total # Days Hunted	Harvest			
				Male		Female	Sum
				Antlered	Antlerless		
Category 2	Hartshorne Woods Park, Middletown	17	47	5	5	7	17
	Thompson Park, Middletown/Holmdel	50	140	13	6	16	35
Category 1	Bel-Aire Golf Course, Wall Township	33	275	3	4	15	22
	Big Brook Park, Marlboro	66	717	8	19	54	81
	Charleston Springs Golf Course, Millstone	44	364	5	10	29	44
	Clayton Park, Upper Freehold	32	336	5	6	12	23
	Crosswicks Creek Park, Upper Freehold	108	1281	15	29	96	140
	Dorbrook Recreation Area, Colts Neck	30	190	6	1	16	23
	Freneau Woods Park, Marlboro/Aberdeen	39	445	3	5	16	24
	Holmdel Park / Ramanessin Sect, Holmdel	89	1153	13	15	58	86
	Hominy Hill Golf Course, Colts Neck	30	217	1	6	7	14
	Howell Park Golf Course, Howell	38	348	5	1	27	33
	Huber Woods Park, Middletown	37	340	5	2	16	23
	Manasquan Reservoir, Howell	26	199	1	2	9	12
	Manasquan River Greenway, Freehold/Howell	42	426	4	2	21	27
	Metedeconk River Greenway, Freehold	57	236	3	2	11	16
	Perrineville Lake Park, Millstone/Roosevelt	108	1088	28	7	87	122
	Shark River Park, Wall/Neptune/Tinton Falls	100	962	15	8	55	78
	Tatum Park, Middletown	47	366	7	2	21	30
	Turkey Swamp Park, Freehold	121	1315	13	9	55	77
Wickatunk Recreation Area, Marlboro	33	153	1	1	1	3	
Yellow Brook Tract, Howell	37	375	3	0	17	20	
	TOTALS		10993	162	142	646	950