

Montgomery County Deer Management Program

Annual Report and Recommendations FY 2003



Prepared by Rob Gibbs, Chair
Montgomery County Deer Management Work Group
June 2002

The Montgomery County Deer Management Work Group

Maryland Department of Natural Resources Wildlife and Heritage Division,
M-NCPPC, Montgomery County Department of Park and Planning
Montgomery County Cooperative Extension
Montgomery County Police Department
USGS, Biological Services Division, Patuxent Wildlife Research Station
U. S. National Park Service

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Executive Summary - Montgomery County Deer Management Program Annual Report and Recommendations FY 2003

Introduction

The Comprehensive Management Plan For White-tailed Deer in Montgomery County, MD, (Montgomery County Deer Management Work Group, 1995) calls for the Montgomery County Deer Management Work Group (DMWG), on an annual basis, to review deer-impact data and present a list of recommendations for the upcoming year. Recommendations will be submitted to and implemented by key County and State agencies and private landowners as appropriate.

This report makes recommendations for Montgomery County's deer management program for FY 2003 and presents to the reader the data and rationale upon which these recommendations are based.

Goal and Objectives

The goal of Montgomery County's deer management program is to reduce deer-human conflicts to a level that is compatible with human priorities and land uses. The deer management plan lists four objectives for attaining this goal.

1. Reduce, on a countywide basis, the number of deer-vehicle collisions (DVCs).
2. Reduce depredation on agricultural crops and ornamental shrubs and gardens to levels acceptable to county residents.
3. Reduce the negative impacts of deer on natural communities in order to preserve the natural diversity of flora and fauna within the county.
4. Continue a countywide education program to provide residents with information on deer, deer problems and how to minimize or prevent deer-human conflicts.

Overview of Deer Management Program Impacts

Management options implemented over the past 6 years (see page 5 of this report for a listing) appear to be having an effect. On Roads adjacent to Little Bennett Regional Park, The Agricultural History Farm Park, and Seneca Creek State Park, where managed hunts have been held to reduce deer populations, Deer-vehicle collisions (DVCs) have been reduced and have remained at lower levels (**See Appendix II - Report from MCDP, pp. 4-5**).

The number of complaint telephone calls received from County Residents in 2001 remained about the same as in 1999 and 2000 which were the lowest since the program began. Over 900 citizens have participated in the County's Homeowner Workshops to learn better methods of protecting their home landscaping and gardens from deer. Participants consistently give these workshops very good evaluations. Educational efforts, including brochures, cable TV programs, public service announcements, etc., are making citizens better aware of deer problems and solutions. Establishment of special phone numbers to report deer-related problems and a web page to provide information about deer issues has likely relieved frustration of citizens who previously had no specialized numbers to call. Changes to State regulations and procedures, recommended by the DMWG, have significantly increased the harvest of antlerless deer, and streamlined the Deer Management Permit (DMP) program that helps agricultural producers reduce deer numbers. These are important steps to reducing deer herds countywide.

Assessment of Deer Impacts

The DMWG collects data on deer-related vehicle collisions, agricultural crop damage, damage to home landscaping and damage to natural vegetation. The locations of deer related vehicle collisions, agricultural crop damage complaints, and homeowner complaints are mapped or otherwise geographically analyzed to determine where existing problems are most severe.

Areas with the greatest concentration of deer-related impacts are identified as "hotspots". These hotspots are then analyzed in further detail to determine local deer populations and gather other relevant information. Hotspots are then prioritized as follows. A table is produced in which each hotspot is assigned a numeric value reflecting the severity of different deer related impacts. Additional numeric values are assigned to reflect the relative value of significant natural Communities. Categories are weighted by doubling the numeric values of the most important impacts i.e. Deer-vehicle collisions, Agricultural Damage and the values for significant natural communities. Numeric values are summed for each Hotspot and the totals are used to determine the overall impacts for each area

and prioritize management implementation.

Recommendations

Nineteen areas have been identified as hotspots for deer impacts in the county for Fiscal year 2003. The table below lists, in prioritized order, the areas, the site-specific impacts, and recommendations selected for each. As stated in the Deer Management Plan, there is no single management option that can address the variety of deer impacts in the County. It will likely take a combination of options to begin to have an effect.

Table 13 DMWG Hotspots and recommendations for FY 2003

	Identified Hotspot Areas	Major Impacts	Deer Pop. Projected fall '02 Per square mile	FY 2000 Recommendations Numbers refer to text below
1	Rock Creek Reg. Park*	DVC, CC, NV	186	1, 2, 4, 5, 6
2	Northbranch SVP*	DVC, CD, CC, NV*	129	1, 2, 4, 5, 6
3	Little Bennett Reg. Park*	DVC, CD, NV	74	1, 2, 4, 5, 6
4	Seneca Creek State Park ¹	DVC, CD, CC, NV	-**	1, 2, 4, 5, 6
5	Ag/History Farm Park	DVC, CD, CC, NV	130	1, 2, 4, 5, 6
6	Goshen Recreational Park*	CD, NV	152	1, 4, 5, 6
7	Rachel Carson Cons. Park*	NV*	120	1, 2, 4, 5, 6
8	N. Germantown	DVC, CD, NV	235	1, 2, 4, 5, 6
9	Blockhouse Pt Cons Park*	NV*	97	1, 2, 4, 5, 6
10	Black Hill Regional Park*	NV*, CD	41	1, 2, 4, 5, 6
11	Northwest Branch	DVC, CC, NV	243	1, 2, 4, 5, 6
12	Paint Branch Area	DVC, CD, CC	64	1, 2, 4, 5
13	Wheaton*	DVC, CC, NV	90	1, 2, 3, 4
14	North Potomac	DVC, CC	n/avail	1, 2, 4, 5
15	S. Germantown	CC	n/avail	1, 2, 4, 5
16	S. Potomac	DVC, CC, CD	139	1, 2, 4, 5
17	Rock Creek Manor	CC, NV	186	1, 2, 4, 5
18	Ovid Hazen Wells Park	CC,	n/avail	1, 2, 4, 5
19	Poolesville	CD	n/avail	1, 4, 5

DVC-deer-vehicle collision; CD-crop damage; CC-citizen complaints; NV-natural vegetation damage

*Affecting natural vegetation in parks with species/communities of countywide significance.

** Population estimates are made on Regional level by MD-DNR using region-wide FLIR Index to deer density

Key to Recommendations

Non-lethal

1. Continue efforts in educating the public about deer issues, particularly on available non-lethal methods to reduce deer damage to personal property. Focus on communities in these areas.
2. Continue efforts with Department of Public Works & Transportation and the State Highway Administration to make improvements to road fencing, signage and design to reduce deer -vehicle collisions at specific locations.
3. Continue to monitor progress in the use of Immunocontraception to regulate deer populations.
4. Continue to encourage more local community involvement in deer management efforts.

Lethal

5. Continue and expand efforts to encourage effective deer population management on large parcels of private property.
6. Continue and expand population reduction programs on select state and county lands.

For more detailed explanations of specific recommendations see page 21.

Annual Report Montgomery County Deer Management Program and Recommendations for FY 2003

Introduction

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This report makes recommendations for Montgomery County's deer management program for FY 2003 and presents to the reader the data and rationale upon which these recommendations are based.

Background

In April 1993, responding to contacts from County residents and interest groups about the number and activities of white-tailed deer, the Montgomery County Council, by resolution 1) created a White-tailed Deer Management Task Force, 2) charged it to assemble and examine relevant information, and 3) requested its recommendations on how to respond to any problems subsequently identified.

The Report of the Task Force to Study White-tailed Deer Management, April, 1994 (hereafter the Task Force Report) concluded that the problems county residents are experiencing with deer crop damage, deer-vehicle collisions, garden and ornamental shrubbery depredations, impact to native plant communities in natural areas, and others – warrant attention and listed the following recommendations:

1. Develop a cooperative planning process between State and County agencies for the purposes of managing deer impacts in the County.
2. Develop a Comprehensive Deer Management Plan for the County.
3. Develop an educational program for county residents addressing deer impacts and remedial measures.
4. Improve the current system of recording and reporting deer-vehicle collisions.
5. Develop a program to monitor the effects of deer on natural vegetation in County Parks.
6. Utilize Geographic Information System (GIS) to facilitate data collection and management efforts.
7. Initiate a study of deer impacts to natural communities; deer demography and ecology.
8. Improve the current system of recording deer damage complaints
9. Provide for more thorough analysis of wildlife impacts during transportation planning process.

In the years since the Task Force Report was published all of the recommendations listed above have been implemented to various degrees. As part of a cooperative planning process, the Montgomery County Deer Management Group (DMWG) was established through a memorandum of understanding. The group is made up of representatives from the Maryland Department of Natural Resources Wildlife and Heritage Division (DNR); the Maryland-National Capital Park and Planning Commission, Montgomery County Department of Park & Planning (M-NCPPC); The Montgomery County Police Department (MCPD), The Montgomery County Cooperative Extension (MCE), The U.S. Geologic Survey, Biological Services Division (USGS) and the National Park Service Center for Urban Ecology (NPS-CUE). The DMWG developed the Comprehensive Management Plan for White-tailed Deer in Montgomery County, MD (hereafter referred to as the Deer Management Plan) and meets several times a year to review deer-impact data and develop a list of recommendations for the upcoming year. Recommendations are submitted to and implemented by key County and State agencies and private landowners as appropriate.

The Task Force Report lists and discusses available “management alternatives,” the application of one or more of which can ease conditions in specific problem areas. Eleven alternatives are addressed:

1. Maintain Status Quo
2. Modify Legal Harvest
3. Agricultural Depredation Permits
4. Direct Reduction
5. Repellents/Scare Devices
6. Fencing/Physical Exclusion
7. Contraception
8. Habitat Management
9. Trapping and removal/Relocation
10. Supplemental Feeding
11. Restoring of Predators

The report recognizes that some of the alternatives are impractical or impossible, or would impose a financial burden on the residents of Montgomery County. Other alternatives, developed by experienced wildlife managers, have been or are being applied in various locations around the country that are experiencing a deer problem similar to Montgomery County’s.

Since 1995 the following programs have been implemented in the county as part of the deer management plan:

- A comprehensive educational program on deer, their impacts and remedial methods including: informational brochures and publications, library materials, phone numbers for help, a traveling exhibit, media plan (i.e. Public Service Announcements about deer-vehicle collisions and cable TV traffic reports), several local Cable TV Programs on deer management in the county, programs on deer through County nature centers.
- County deer information phone line (301-495-3585), phone numbers for reporting deer damage and receiving helpful information (301-949-2909 or 1-877-463-6497) and internet web page (<http://mc-mncppc.org/environ/deer>) with educational information.
- An extremely successful program of workshops for homeowners on protecting their property from deer damage. Well over 900 county residents have attended.
- Test sites for Wildlife reflector systems and experimental warning signs have been installed at four locations along County roads identified as having high numbers of deer-vehicle collisions.
- Improved data collection for deer-vehicle collisions and other impacts using GIS system mapping.
- Program to monitor impacts to natural vegetation in County Parks.
- Cooperative effort with County and State road agencies to better address deer-vehicle collisions (DVCs) through roadway design.
- Cooperative effort with M-NCPPC Transportation Planning Office to review projects that involve bridges crossing wildlife corridors in order to allow for safe passage of wildlife under roadways.
- Cooperative effort with County and State park officials to initiate deer population management in parks where high deer populations were contributing to high numbers of deer-vehicle collisions, crop damage and/or damage to natural vegetation damage.

Goal and Objectives

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1. Reduce, on a countywide basis, the number of deer-vehicle collisions.
2. Reduce depredation on agricultural crops and ornamental shrubs and gardens to levels acceptable to county residents.
3. Reduce the negative impacts of deer on natural communities in order to preserve the natural diversity of flora and fauna within the county.

4. Continue a countywide education program to provide residents with information on deer, deer problems and how to minimize or prevent deer-human conflicts.

Materials and Methods

Assessment of Deer Impacts

The DMWG collects data on deer-related vehicle collisions, agricultural crop damage, damage to home landscaping and damage to natural vegetation. The locations of deer-related vehicle collisions, agricultural crop damage complaints, and homeowner complaints are mapped or otherwise geographically analyzed to determine where existing problems are most severe. The following sections give information on the data collected and how that data is interpreted.

a) Deer-vehicle Collisions

Deer-vehicle collisions (DVCs) represent important safety concerns including the potential for personal injury and death. For this reason reducing deer-vehicle collisions is a primary objective of the County's Deer Management Plan. Data on DVCs are collected from the following sources.

1. The Montgomery County Police Department (MCPD) keeps records on deer collisions on county roads that require police response as well as dead deer seen on roads by police officers and reported to the Division of Animal Control (Animal Control) for pick-up. The MCPD data, because it includes data on collisions in which the deer are not necessarily recovered, includes the most complete numbers for county roads but does not include all deer collisions on state roads or the many DVCs that go unreported. The data is analyzed by the MCPD and an annual report is issued. A copy of this report is sent to the DMWG and included in the appendix of this report.
2. Animal Control is responsible for picking up dead deer on county roads. Detailed location information on each pick-up is provided to the DMWG in an annual summary report. This data is mapped to determine the distribution of deer-vehicle collisions on county roads.
3. Road-killed deer on state roads within the county are picked up by the State Highway Administration (SHA). This data is provided to the DMWG and mapped.
4. The Cities of Rockville and Gaithersburg have separate Departments of Animal Control responsible for the pick-up of road-killed deer within the respective city limits.

The data provided by the above agencies in some cases is complementary and in other cases overlaps considerably. Due to the detailed location information provided, the flexibility of the database, and in order to eliminate overlap, only Animal Control and SHA data is used for mapping. The distribution of deer-vehicle collision locations is used to help delineate hotspots of high deer density and activity in the county.

In addition, a list of roads with high numbers of DVCs is developed. This list is reviewed by the DMWG and shared with the Department of Public Works and Transportation (DPWT) and SHA for review. Where appropriate, recommendations are made to implement measures to attempt to reduce the numbers of DVCs along these stretches of road.

b) Citizen complaints

Citizen complaints are received by a variety of agencies including DNR, M-NCPPC, local nature centers, the Montgomery County Cooperative Extension Service, The Maryland Nuisance Wildlife Information Line and the Montgomery County Council Office. Often, calls are referred from one agency to another. Consequently, there is no single database to keep track of this information.

Phone calls received by the M-NCPPC through the phone number listed on the brochure "Living with White-tailed Deer in Montgomery County, MD", represent a sample of these calls. Location information is recorded to identify the distribution of citizen complaints throughout the county. This representative sample of calls is also used to document caller concerns.

c) Damage to Agricultural Crops

Farmers and the County Cooperative Extension Service monitor damage to agricultural crops. Average yields over time are monitored for purposes of crop insurance. Deer management permits (DMP's) are issued by DNR to landowners who are experiencing excessive deer damage to agricultural crops. The permit allows the landowner to harvest deer outside of state hunting seasons and bag limits. Records are kept of the number of deer harvested on these permits and an annual report including the mapped locations for DMP's issued in Montgomery County is sent to the DMWG. This information is transferred to The DMWG's deer incident map and used to track locations of high crop damage. Additional information is gained through interviews with farmers.

d) Damage to Natural Vegetation in M-NCPPC Parks

1. The M-NCPPC, Montgomery County Natural Resources Management (NRM), has initiated a study to identify and document the impacts of deer on natural vegetation in the county. Twenty (20) permanent study plots have been established in various parks and habitats in the county. Each study plot is 20 meters by 20 meters in size. The plots were established in pairs; one plot is enclosed in deer proof fence the other plot is not and serves as a control. Data collection follows protocols from the Manual for Monitoring Vegetation on Public Lands (Storm 1992). Data is collected on overstory and sapling tree species, seedlings of tree and shrub species, shrub cover, ground and vine cover and herbaceous species. By comparing changes in vegetation inside and outside of these deer exclosures over several growing seasons, NRM staff is able to document and monitor the extent to which deer are altering park vegetation and correlate these impacts with local deer densities.
2. In early April 1996 additional study plots, of a different type, were established in parks to gather site specific data on the availability and use by deer of woody browse (stems and twigs of woody plants eaten by deer). The availability and use of woody browse in winter is a useful indicator of overall deer impacts on woody vegetation. A series of 1.67 meter radius plots was established in each park and inventoried using a twig count method (Storm 1992). All twigs 2.5 centimeters or greater in length and less than 1.5 meters above the ground are examined. The number of browsed and unbrowsed twigs for each woody species in each plot is recorded. The total of browsed and unbrowsed twigs represents the available browse. A ratio of browsed to total twigs is expressed as a percentage of available browse that was consumed. Additional study plots are added in new parks. Due to the extensive size of our park system all plots cannot be surveyed every year.
3. In 1993-94, 1995-96 and 1997-98 staff from the Maryland DNR Natural Heritage Program surveyed selected Montgomery County Parkland for Rare, Threatened, and Endangered (RTE) plant species (Weigand, 1997). As part of this work, observations were recorded about the condition of plant communities within these parks. Observations include the extent to which deer are impacting plant communities and the threat posed to RTE plant species. A report containing this information is provided to M-NCPPC for each inventory.

e) Lyme Disease

Citizen concern about the increasing incidence of Lyme disease in the county has increased in recent years and the DMWG is tracking data on this public health issue. Lyme disease is a bacterial disease transmitted to animals and humans by ticks, primarily the blacklegged or deer tick (*Ixodes scapularis*). The nymph stage of the tick, which is active from late spring through summer, is most likely to transmit Lyme disease. Symptoms can resemble the flu, severe arthritis and even Alzheimer's disease. When caught early, Lyme disease is easily treated with antibiotics.

The Maryland State Office of Veterinary and Public Health keeps data on the number of confirmed cases in each county. The DMWG contacts this office regularly to obtain these records and receive an update on data collection information and trends. In addition the DMWG attempts to keep current on issues related to Lyme disease and make this information available through our public education efforts.

Identification and Prioritization of hotspots

Locations of deer related impacts (deer-related vehicle collisions, citizen complaints, agricultural damage, damage to natural vegetation) are mapped or otherwise captured geographically. Areas with the greatest concentration of deer-related incidents are identified as "hotspots". Additional areas may be identified for management due to site-specific problems. In these cases the local problem is of great enough concern that it should be addressed even in the absence of other impacts. For example management action may be desirable for purposes of reducing vegetation impacts in parks that have resources of countywide significance or for an area identified as having an extremely high rate of crop damage, Lyme disease, etc.

These hotspots are then analyzed in further detail to determine local deer populations and gather other relevant information. Hotspots are then prioritized. A table is produced in which each hotspot is assigned a numeric value reflecting the severity of different deer related impacts. Additional numeric values are assigned to reflect the relative value of significant natural Communities. Categories are weighted by doubling the numeric values of the most important impacts i.e. Deer-vehicle collisions, agricultural damage and the values for significant natural communities. Numeric values are summed for each Hotspot and the totals are used to prioritize the overall impacts on the area.

Population Surveys

Deer population surveys provide important information for further evaluating hotspots, developing recommendations, establishing management goals and evaluating management efforts. Deer population counts are conducted in county parks identified as hotspots using spotlight counts, walking surveys and aerial counts. Spotlight counts are counts taken at night from vehicles using high-powered spotlights. Walking surveys involve walking park areas of known size and counting deer seen along transects. Aerial surveys are conducted from aircraft and involve counting deer visually during the day when snow is on the ground or using forward-looking infrared (FLIR) technology to videotape deer and counting is done from the videotape at a later date. In each case the number of deer observed is recorded. Spotlight counts and walking surveys are repeated several times to get an average number. Due to costs of using aircraft, aerial surveys are generally conducted only once a season.

Using the report maps, park staff delineates the area covered, determines the area of deer habitat present and determines the number of deer per square mile of habitat. To determine the area of deer habitat GIS is used to measure the acreage of land that is forest, field, or cropland. Housing areas are excluded. Park staff then estimates what the population will be after this year's fawns are born. Biological data collected during direct reduction management programs is used to determine doe: fawn ratios and other parameters necessary to better predict population growth specific to each park. These data are used to establish short and long-term population management goals.

It is important to note that while the population survey methods used are currently the best available to estimate deer densities in our area, the results are only estimates. Aerial surveys in particular represent a one-time snap shot of deer observed in the area at that time. As the technology improves so will the accuracy of the data. Recent studies have demonstrated that surveys most often under count deer, resulting in estimates lower than actual densities (Jay McAninch, Minn. DNR, personal communication). For the purposes of the recommendations outlined here, the population data should be considered as the minimum density for each site surveyed.

Additional data collected by DNR on the number and sex of deer harvested in the County is used to determine population trends on a countywide (rather than park by park) basis. These data are also used to evaluate if changes to hunting regulations recommended in past years are having desired effects. Additionally, in the winter of 1996, DNR initiated a five-county Regional FLIR survey. This survey, encompassing Montgomery, Prince George's, Anne Arundle, Baltimore and Howard counties, offers significant promise toward the development of a region-wide index to deer density. This index, when developed over time, will allow managers to track long-term trends in deer populations and concomitantly evaluate the effects of management recommendations on a landscape scale.

Developing Recommendations

Deer impact data, population data and other relevant information is used to develop a list of deer management options that might be used for each hotspot. A list of general and specific recommendations is developed.

General recommendations have countywide application and might include continued educational efforts, identification of areas where more data is required, adjustments to county or state regulations. Specific recommendations include management options that might be applied at specific locations such as local educational workshops for communities experiencing damage, use of fencing or reflectors on specific stretches of high-risk roadways, or the implementation of population reduction management on a specific parcel of land.

Determining Cultural Carrying Capacity

The goal of Montgomery County's Deer Management Plan is to reduce deer-human conflicts to a level that is compatible with human priorities and land uses. Biologists refer to the maximum population density at which deer-human conflicts are at acceptable levels as the cultural carrying capacity (CCC). CCC is driven by human values and tolerance levels that vary from location to location and change over time. As educational efforts outlined in the County's deer management plan move forward, citizens will learn how to better cope with and reduce deer impacts (i.e. by use of repellents, fencing, vegetation management, and improved driving habits); human tolerance for deer should increase accordingly. At the same time, as population management efforts are implemented (i.e. changes to state hunting regulations, managed hunts, contraception experiments), deer numbers will begin to stabilize and in some cases be reduced. It is presumed that at some point the deer population and human tolerance of deer will reach equilibrium. There is no way of determining this number before it is reached.

An important goal of the deer management program is to reduce the negative impacts of deer on natural communities in order to preserve the natural diversity of flora and fauna within our county parks. Different parks in the county serve different purposes. Conservation parks and other park areas designated as being of high natural value are the highest priority. Studies have shown that in forested areas where the goal is to preserve natural diversity, deer densities should be maintained at approximately 18-30 deer per square mile to allow for optimum forest regeneration and assure habitat for forest species (Tilghman, 1989). Because land-use in our parks includes affording the public the opportunity to see deer

and enjoy them as well as preserving natural diversity the most appropriate number of deer will likely be at the high end of this number or slightly higher.

In park areas that serve other functions such as recreation, or that are small and/or of generally lower natural quality, deer impacts are of less concern therefore population management may not be a priority.

Results and Discussion

Assessment of Deer Impacts

a) Deer-vehicle Collisions

Table 1 is a summary of Deer-vehicle collisions (DVCs) reported by the MCPD, Animal Control and SHA for the years 1994 - 2001. The total number of deer-vehicle collisions reported by MCPD for 2001 was 2,003. The total number of mapped Deer-vehicle collisions as reported from Animal Control and SHA for 2001 equals 1,836. Table 2 is a list of roads and locations in the county that have consistently high numbers of deer-vehicle collisions. An asterisk identifies roads that are within hotspots. This list is forwarded to The Montgomery County Department of Public Works & Transportation and the State Highway Administration annually.

Numbers of DVCs reported from specific roads can vary widely from year to year. For example a 1.5-mile stretch of Brink Road in 1996 and 1997 had one of the highest concentrations of DVCs in the county (18 and 21 respectively). In 1998 the same stretch of road had only 7. In 1999 the number increased to 11, in 2000 it was 9 and in 2001 it was 13. It is likely that deer are responding to a number of natural and man-made conditions including crop rotation, acorn production, development or other pressures that can change drastically from year to year. This makes it difficult to establish patterns and to justify expensive long-term remedies for what may be temporary conditions.

Table 1. Deer-vehicle Collision Data 1994 - 2001

Source	1994	1995	1996	1997	1998	1999	2000	2001
MCPD ¹	1,343	1,244	1,776	1,705	1,774	1,891	2,033	2,003
Animal Control	447	509*	521*	547*	631*	1,059*	1,112*	1,123*
SHA	211	192*	200*	390*	608*	572*	675*	713*

1 - number includes incidents where deer were struck but deer were not recovered.

* - Mapped locations

Various sources as noted

Deer-vehicle collisions are widespread throughout the county. While DVC concentrations are identified and analyzed for remedial actions, these concentration points make up only a fraction of the total. DVCs are mapped using grids approximately 1000 feet square. In 2001 Animal Control and SHA recorded road-killed deer picked up 798 grid blocks. Of the 798 blocks 83% (662 blocks) had only 1 or 2 DVCs. Ninety-two percent (92%) had three or fewer collisions. The vast majority of collisions countywide don't occur in concentration areas but are spread broadly over the county. Therefore, countywide efforts in education, improved driving habits, improved signage and road design are important to long-term, general reductions of DVCs.

It was noted that DVCs were high at several cloverleaf interchanges of Interstate 270. Due to high traffic volumes and high speeds it is likely that DVCs are especially dangerous at these location. Methods to address these localized DVCs are being investigated.

Table 2. Roadways identified as problem areas for deer crossing by the DMWG in 2001

	<u>Road</u>	<u>Location</u>	<u>Length of stretch** in miles</u>	<u># Collisions</u>	<u># per mi.</u>
1	*Needwood Rd	Redland to Equestrian La	1	9	9.0
2	Brink Road	355 to Wildcat Rd	1	9	9.0
3	*Bowie Mill Rd.	RT. 115 to Dun Horse	1	8	8.0
4	Brink Road	Leaman La. to just past Whitman Rd	1.5	12	8.0
5	Ednor Rd	Norewood rd to Old Orchard Rd	0.9	7	7.8
6	Shady Grove Rd	370 to S. of Mill Run Dr	1.2	9	7.5
7	Rt 118	Riffleford to Citizens La.	2	15	7.5
8	Randolph	Kemp Mill Rd. to Rt. 650	1.5	11	7.3
9	Rt 28	Rt 124 to Norman Dr.	0.75	5	6.7
10	*Muncaster Mill Rd	Emory La to N. of Avery Park Dr	1.25	8	6.4
11	Bowie Mill Rd.	Bready to 108	1.25	8	6.4
12	Briggs Chaney Rd	Cloverly Park to Wildwood Dr.	2.5	16	6.4
13	Seneca Rd	Rt 28 to Deakins La.	1.8	11	6.1
14	Kemp Mill Rd	Randolph Rd To Arcola	2	11	5.5
15	Montrose Rd	270 to Montrose Village Terr.	1.1	6	5.5
16	Muncaster Mill Rd	Airpark to Redland Middle School	1	5	5.0
17	Riffleford Road	118 to Seneca Creek	1.5	7	4.7
18	*Airpark Road	Muncaster Mill to Woodfield Sch. Rd	1.75	7	4.0
19	*Muncaster Road	Rolling Rd to Rock Creek Bridge	1.6	6	3.8

* Road located within hotspot

** mileage indicates the length of roadway impacted

b) Citizen complaints

The total number of phone calls received by APHIS and the M-NCPPC from 1992-2001 are summarized in Table 3. The number of phone calls dropped from 179 in 1998 to 99 in 1999 and has remained at about that level for the past three years increasing very slightly to 101 in 2001. It is important to note that the annual number of calls does not necessarily represent the level of concern. Since most citizens are only going to call this number once, each phone call represents a new household where deer have begun to cause citizen concern.

Citizen complaints range from concerns about deer-vehicle collisions to an increase in deer ticks and Lyme disease. By far the most often heard complaint from citizens is the damage done by deer to landscaping vegetation. An issue of growing concern to county residents is the increased exposure to Lyme Disease (see section on Lyme Disease below. Most calls (>75%) were from citizens living adjacent to or within several blocks of parkland. The most common concerns are listed below and prioritized according to how frequently each concern was expressed.

1. Damage to landscaping and gardens has increased to unacceptable levels.
2. The number of deer ticks in the area has increased the risk of contracting Lyme disease (callers voicing this concern often had a family member or neighbor with the disease).
3. The number of deer feeding on property has increased in recent years. (Many callers expressed the desire to have numbers reduced)
4. Deer have become extremely bold and can no longer be frightened from yards. In some cases deer are viewed as posing a physical threat, especially to children.

5. The number of deer struck or nearly struck on the road has reached unacceptable levels.
6. The amount of deer droppings in yard has reached a point that is intolerable and a potential health threat for children playing in grass.
7. Repellents and barriers are often ineffective and/or unacceptable at current deer numbers.

In addition to phone calls and letters from individuals the county received requests from two community groups to have deer population management conducted on parkland adjacent to their communities.

Table 3. Citizen deer complaints received by APHIS and M-NCPPC from Montgomery County citizens, 1992- 2001.

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
# calls to Aphis	1,123	166	211	125	175	136	134	57	52	58
# calls to M-NCPPC	U/A	U/A	U/A	48	82	47	54	42	47	43
Total calls	U/A	U/A	U/A	173	257*	185	179	99	99	101

* M-NCPPC announced its first year of managed deer hunts in 1996; this event likely led to increased number of calls.

Note: these numbers do not include several hundred annual calls to MD DNR offices. (pers. Comm. P. Peditto)

Source: U.S. Dept. of Agriculture, AHPIS, Annapolis, Md and M-NCPPC

c) Damage to Agricultural Crops

Agricultural producers have a number of methods that they can utilize to reduce deer damage. Those that utilize small acres for high priced crops may find the use of fencing to be cost-effective. The use of dogs contained by underground or invisible fences has been very effective in nurseries and orchards. Farmers raising row crops often manage too much land to make these methods cost effective. Since many sites experiencing agricultural damage are located outside of the urban zone where hunting with firearms is permitted, an approach to reducing deer impacts would be through increased bag limits, improvements to the DMP program, and increased efforts to manage deer populations on private property. Where agricultural damage does exist in the urban zone it is often adjacent to parkland or other private open space. In these cases where the use of fencing and/or dogs is not cost effective, cooperative efforts between the agricultural producer and adjacent landowners may be needed to reduce deer numbers and damage.

An informal survey of farmers operating in hotspots last year by the County Extension Agent identified the following information. Estimated losses, where available, are included in table 7.

1. Crop loss due to deer is being evaluated by farmers in several ways including harvest machinery equipped with a global positioning system (GPS) that maps yields, and comparisons between damage to different crop types.
2. Crop losses ranged from minimal in some areas to 100 % in certain fields. Losses countywide probably average 10 to 15% with corn and soybeans sustaining heavy losses due to the high number of acres of these two crops. Other crops Impacted include vegetables, small fruit, tree fruit, ornamentals, and hay.
3. Some farmers are modifying the crops they choose to plant in certain fields or in some cases abandoning certain fields altogether.
4. Crop damage seems to have leveled off over the past two years. This is likely attributed to better than average crop yields resulting from generally good weather conditions. Deer damage is most noticeable and has a proportionally larger impact on crop production during times of drought or other stress when crop production is marginal.

In 2001 Deer management permits (DMPs) were issued at most of the same locations in the county as in previous years. Figure 1 shows locations of DMPs. Table 4 shows the number of deer harvested using DMPs from 1992 to 2001. The decrease in deer harvested with DMPs in 2001 is likely the result of several factors. 1) Lower numbers of deer and depredation where DMPs have been used regularly, 2) Lack of ability to use DMPs within the urban zone (the urban zone is the southeast two-thirds of the county in which the discharge of firearms requires a county police exemption). Agricultural damage in the urban zone may not be well represented by DMP's. Unless a farmer can get an exemption to the weapon ordinance a DMP may be of limited use and landowners may be reluctant to apply for them.

Table 4. DMPs issued by DNR in Montgomery County 1992-2001

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
# deer harvested on DMPs	68	82	188	330	361	400	415	415	432	291

Source - DNR

As a result of DMP use and regulation changes over the past several years, some farmers have experienced a drop in deer numbers and depredation. A 2001 survey of Maryland farmers released by the Maryland Agriculture Statistics Service showed that since 1996 there has been some reduction in crop losses due to deer statewide. The decrease in damage varied depending on the crops grown. Unfortunately the central region of the state, including Montgomery County, did not show as much improvement as some other areas. While losses per acre of soybeans decreased by 19% and losses of corn increased only slightly (4%), losses of wheat increased by 200%. This may be because farmers are more restricted in their use of DMPs within these more urban areas.

d) Damage to Natural Vegetation in M-NCPPC Parks

1. Data from 20 permanent study plots were collected during the 1995-2001 growing seasons. The working hypothesis for this study is that plant growth within deer exclosures will be greater than outside. A qualitative assessment of a data set consisting of maximum height of seedlings, and density of forest understory inside and outside of deer exclosures, strongly suggests the following: 1) Deer impacts are reducing height, number and species diversity of seedlings within our parks, 2) understory density has been dramatically reduced and 3) The effects appear greatest in parks with higher densities of deer. Studies done in Pennsylvania, Virginia and elsewhere have shown that an overabundance of deer can profoundly affect the species composition and density of forest understory (McShea and Rappole 1997) and the regeneration of forest trees (Tilghman 1989). This in turn affects wildlife diversity, particularly for forest interior birds, small mammals and other species that nest in the understory or on the forest floor (DeCalesta 1994; McShea and Rappole 1997). The development of a prominent browse line in several of the parks further suggests that deer are an important factor in the reduction of saplings and seedlings. Figure 1 illustrates the difference in vegetation density inside and outside of study exclosures. These photos were taken in fall of 2000 when exclosures had been in place for approximately 6 years.

Figure 1 Photos taken inside and outside of deer exclosure showing difference in forest understory.



Within deer enclosure at Black Hill Regional Park- Understory vegetation includes dense growth of shrubs and seedlings



Outside of deer enclosure at Black Hill Regional Park Understory vegetation has been nearly completely consumed by deer.

2. Seventy-eight browse plots were inventoried during late winter 2001 to determine the availability and usage of woody plant browse. These data are summarized in table 5 along with data from previous years. Percent browsed is considered heavy at 50-100%, moderate at 10-49% and light at 1-9% (Aldous, 1944). Fall of 2001 produced a moderate acorn crop and the winter was quite mild with little snowfall. These factors likely led to a generally lower than average consumption of browse this past winter. However, qualitative assessment of long-term trends of this data set strongly suggests that total available browse is slowly being reduced and that the percentage of browse consumed each year is slowly increasing in parks where deer populations are not being managed.

3. Reports issued by staff from the Maryland DNR Natural Heritage Program entitled "Inventory of Rare, Threatened and Endangered Plant Populations and Significant Habitats on Select Park Lands of the M- NCPPC in Montgomery County, Maryland" (1995,1997, 1999) comment on the high density of deer present in many of the parks surveyed and the impacts on plant communities. The following excerpt from the 1995 report summarizes their observations.

"Every park surveyed during this project has an overpopulation of deer. The severity of this problem varies from one park to another, but it represents a considerable threat to the native vegetation in every park. Browse lines are evident in many forested areas, indicating deer populations have exceeded the carrying capacity of the land...As a result of overpopulation, and selective browse habits, deer are determining the dominant vegetation in some areas. Plants that are favorite food, such as lilies and orchids, are declining and becoming locally rare. Conversely, plants that are seldom browsed are becoming more dominant. ...adverse changes to the floristics of natural areas are occurring. If quality of the vegetation and integrity of natural communities is to be stabilized over the long term, acceptable methods of deer control must be found and implemented."

Table 5. Summary of browse availability and use by deer in selected parks Winter 1996 – 2002

Percent browsed is considered heavy at 50-100%, moderate at 10-49% and light at 1-9% (Aldous, 1944).

Note that population management was initiated in FY97 at LBRP and AHFP and FY 01 at NB and BHRP

Park	Available woody stems per plot							% browsed						
	'96	'97	'98	'99	'00	'01	'02	'96	'97	'98	'99	'00	'01	'02
Little Bennett Reg. Park (LBRP)	113	78	81	89	57	63		42	36	54	42	44	41	
Ag/history Farm Park (AHFP)	89	55	75	44	74	85		47	55	60	76	48	45	
North Branch SVP (NB)	75				40	124		70				71	44	
Rachel Carson Cons. Park (RCCP)		84	74	67	79	115			33	44	47	53	29	
Black Hill Reg. Park (BHRP)		121		47	112	82	13		44		67	57	39	48
Goshen Rec. Park		109		112	55	36			40		42	53	31	
Rock Creek RP Lake Frank Area	32	53		153				39	51		62			
		65		65	20	60			46		60	52	23	
Blockhouse Pt Cons Park		103	100	90			147		35	52	50			39
Cabin John Reg Park	104			104			108	23			33			50
Hoyles Mill Cons Park							56							53
Northwest Branch SVP	63			252			235							64
Rock Creek SVP	119			75			91		51		38			43
Wheaton Reg. park		160		97	148		95		35		32	32		45
North Germantwn SP							99							83

Source M-NCPPC Natural Resources Management

e) Lyme Disease

The number of cases of Lyme Disease has increased steadily in Maryland since 1990. Reported cases of the disease in Montgomery County for the years 1994-2001 are included in table 6. This information is likely incomplete. In order to be recorded a case of Lyme disease must first be reported by the diagnosing physician to the appropriate county or state agency and it must meet certain rigorous criteria. It is generally believed that Lyme disease is underreported in Maryland. In addition, many cases that are reported fail to meet the strict criteria and are not included in annual totals. Efforts continue to improve the accuracy and completeness of this data.

Studies are also underway in Maryland and other states to test a deer feeder that automatically applies insecticide to deer that kills ticks. Four years into this 5-year study researchers at the US Department of Agriculture in Beltsville, Maryland have seen a 70% or greater reduction in ticks present in study plots (John Carroll, personal communication). It is thought that reduction may reach 90% under ideal conditions. It should be noted that food is dispensed in small amounts and feeders are not operated continuously and therefore should not serve as a major supplemental food source. Arrangements are underway for this feeder to be made available for public purchase within a year. These feeders, once available, may become a useful tool in reducing the incidence of Lyme Disease in parks or communities where citizens wish to purchase and maintain them.

Table 6. Number of confirmed cases of Lyme Disease in Montgomery County by Year

1995	1996	1997	1998	1999	2000	2001
26	56	42	52	55	80	69

Source: Maryland State Center for Veterinary and Public Health

Identification and Prioritization of hotspots

The occurrence of deer-related incidents is widespread across the county, however, when data on deer-vehicle collisions, deer damage permits, citizen complaints and impacts to natural vegetation are mapped

or otherwise analyzed geographically, areas of concentration or hotspots are evident (see figure 2). Table 7 lists the areas identified as hotspots by the DMWG for FY 2003 and summarizes site-specific impacts as well as estimated deer populations for FY 2003. Hotspots were in general associated with open space that provides habitat as well as protection from hunting.

Table 7 DMWG identified Hotspots for FY 2003

	Identified Hotspot Areas	DVCs in area	Deer Density Fall '02 (Per sq. mile)	Deer browse³	Crop/landscape Damage
1	Rock Creek Reg. Park*	46	186	23%	None reported ¹ /Some damage ²
2	Northbranch SVP*	28	129	44%	Up to 100% loss ¹
3	Little Bennett Reg. Park*	20	74	41%	20-30% losses; up to 75% adj park ¹
4	Seneca Creek State Park ⁴	36	- ⁴	n/avail	Some damage ²
5	Ag/History Farm Park	26	130	45%	Fields abandoned ¹
6	Goshen Rec Park*	1	78	31%	Very High ¹
7	Rachel Carson Cons. Pk*	7	120	29%	10-25 % losses ¹
8	N Germantown	36	235	83%	10-15 % losses ¹ /Some damage ²
9	Blockhouse point	8	97	39%	None reported ¹ /Some damage ²
10	Black Hill Reg. Park*	16	41	48%	33% losses ¹ /Some damage ²
11	NW Branch Area	18	243	64%	None reported ¹ /Some damage ²
12	Paint Branch	41	64	n/avail	None reported ¹ /Some damage ²
13	Wheaton/**	37	90	45%	None reported ¹ /Some damage ²
14	North Potomac		152	n/avail	None reported ¹ /moderate damage ²
15	S. Germantown	14	235	n/avail	10-15 % losses ¹ /Some damage ²
16	S. Potomac	41	116	n/avail	None reported ¹ /High damage ²
17	Rock Creek manor	6	186	43%	None reported ¹ /moderate damage ²
18	Ovid Hazen Wells	4	n/avail	n/avail	10-15 % losses ¹
19	Poolesville	n/app	n/avail	n/avail	High in some areas ¹

DVC-deer-vehicle collision; CD-crop damage; CC-citizen complaints; NV-natural vegetation damage

* Effecting natural vegetation in parks with species/communities of countywide significance.

1 Crop damage based on conversations w/ farmers, CES, and knowledge of local land-use.

2 Landscape/garden damage based on conversations with homeowners, and number of phone complaints.

3 Percent browsed is considered heavy at 50-100%, moderate at 10-49% and light at 1-9% (Aldous, 1944).

4 Population estimates are made on Regional level by MD-DNR using region-wide FLIR Index to deer density

Insert Map here.

Table 8. Weighted Impact Indexes used to prioritize Hotspots for FY 2003 – See table 8. for an explanation of the impact indexes used in this table.

	Impacts Identified Hotspot Areas	Deer-vehicle Collisions¹ (weight- x2)	Crop Damage² (weight- x2)	Deer browse³	Significant Habitat⁴ (weight- x2)	Deer Population Density⁵	landscape damage⁶	Totals	Weighted Totals
1	Rock Creek Reg. Park*	4(8)	1(2)	3	3(6)	4	3	18	26
2	Northbranch SVP*	2(4)	2(4)	3	4(8)	3	3	17	25
3	Little Bennett Reg. Park*	2(4)	3(6)	3	4(8)	2	1	15	24
4	Seneca Creek State Park ⁸	3(6)	2(4)	3	3(6)	2	3	15	24
5	Ag/History Farm Park	2(4)	3(6)	3	2(4)	3	3	16	23
6	Goshen Rec Park*	1(2)	4(8)	3	2(4)	4	1	15	22
7	Rachel Carson Cons Park*	1(2)	2(4)	3	4(8)	3	2	15	22
8	N Germantown	3(6)	2(4)	4	1(2)	4	2	16	22
9	Blockhouse point*	1(2)	1(2)	4	4(8)	3	2	15	21
10	Black Hill Reg. Park*	2(4)	3(6)	3	3(6)	1	1	13	21
11	NW Branch Area	2(4)	1(2)	4	2(4)	4	3	17	21
12	Paint Branch	3(6)	2(4)	3	2(4)	2	2	14	21
13	Wheaton/*	3(6)	1(2)	3	2(4)	2	3	14	20
14	North Potomac	2(4)	1(2)	3	2(4)	4	3	15	20
15	S. Germantown	1(2)	2(4)	3	2(4)	4	2	14	19
16	S. Potomac	3(6)	1(2)	3	1(2)	2	3	12	18
17	Rock Creek manor	1(2)	1(2)	3	2(4)	4	3	14	18
18	Ovid Hazen Wells	1(2)	2(4)	3	2(4)	3	1	12	17
19	Poolesville	1(2)	3(6)	3	1(2)	2	1	11	16

* Effecting natural vegetation in parks with species/communities of countywide significance.

¹ Deer-vehicle Collisions from DPW&T and SHA

² Crop damage based on conversations w/ farmers, CES, and knowledge of local land-use.

³ Deer Browse surveys in various parks –

⁴ Importance factor of adjacent natural areas based on DNR surveys (see text)

⁵ Based on aerial population surveys

⁶ Landscape/garden damage based on conversations with homeowners, and numbers of area phone complaints

⁷ Weighted totals calculated by doubling class number for Deer-vehicle Collisions, Agricultural Damage, and Significant Habitat.

Table 8 shows the assigned indexes for each impact for each hotspot and the weighted totals used to prioritize hotspots. Table 9, below, shows how the numeric values were assigned to the various deer impacts to develop impact indexes.

Table 9. Definition of Impact indexes used to prioritize hotspots

Impacts Index Value	Deer-vehicle collisions w/in half mile of area	Deer Population Density (#/sq mi)	Agricultural Damage in area	Natural Vegetation Impacts Browse	Significance of Natural Community	Landscape damage
1	0-14	<61	No Agriculture in area	No natural areas	Low Quality No significant concerns	No complaint calls or reports
2	15-29	61-95	Light damage 10-20% losses	Browse 1-9%	Good Quality no rare or uncommon plant species	Few complaint calls; minimum local measures taken
3	30-44	96-130	Medium damage 21-33% losses	Browse 10-49%	Moderate to High Quality w/ rare or uncommon species	Moderate # of complaint calls and moderate local measures taken
4	>44	>130	Heavy damage >33% losses	Browse > 49%	Very High Quality; of Countywide significance	High number of calls and measures taken

Population Surveys

Table 10 shows change in populations in selected County Parks over time. In most cases where no population management is being administered the populations generally rise over time. Population management has been initiated over the past 6 years in several parks in the county. Population surveys show that these management efforts are effectively reducing the populations. In most cases these populations are still high and without continued management would likely begin to increase again. Table 11 lists parks where population management has been conducted, the method of management used and the numbers of deer harvested at these operations during FY 2001 and 2002.

Harvest records from DNR shown in table 12 indicate that deer populations are increasing countywide. Changes made to deer bag limits (the number of deer a hunter is permitted to harvest) over several years were designed to increase the number of female or antlerless deer harvested. In the long-term it is the harvest of does that is required to reduce deer numbers. The number of antlerless deer listed in Table 12 has increased indicating that these efforts are working though it will take several years or more to know what effect this will have on the population over the long-term.

Table 10. History of deer population density estimates in selected parks

Estimates of population density are made in the fall and winter using a combination of spotlight counts, Visual counts from helicopter and forward-looking infrared (FLIR) surveys from helicopter.

	spring 1996	spring 1997	spring 1998	spring 2000	spring 2001	spring 2002	Estimate fall 2002
Park	#/sq.mi	#/sq.mi	#/sq.mi	#/sq.mi	#/sq.mi	#/sq.mi	#/sq.mi
Little Bennett RP ¹	125	142	101	88	63	61	74
Ag/History Farm Park ¹	163	259	155	100	128 ³	108	130
North Branch SVP ²	73		116	124	110	107	129
Black Hill Reg. Park ²			138	170	85	34	41
Rock Creek RP	118	170	135		215	155	186
Rachel Carson CP		207		113	133	100	120
Wheaton		60	51	Not avail.	71	75	90
Northwest Branch						220	243
N. Potomac (Muddy Br. SVP)			71	Not avail.	105	127	152
Goshen Recreational Park		136		153	169	127	152
Upper Paint Branch SVP					47	53	64
Blockhouse Point Cons Park		68				81	97
N. Germantown Park						196	235

¹ Hunts were initiated in late 1996/early 1997 at Little Bennett Regional Park and Ag/ History Farm Park.

² Sharpshooting was conducted at North Branch SVP and Black Hill Reg. Park during winter of 2001.

³ Increased numbers in 2001 and 2002 are likely due to development adjacent to park pushing in additional deer.

Table 11. Deer harvests for Montgomery County Park's Deer Population Management Program in FY 2002.

Park	Management Action	Harvest FY 2001	Harvest FY 2002
Little Bennett Regional Park	Managed Hunt	286	112
Agricultural History Farm Park	Managed Hunt	171	75
Black Hill Regional Park	Sharpshooting	120	40
North Branch Stream Valley Park	Sharpshooting	138	33
Rock Creek Regional Park	Sharpshooting		141
Rachel Carson Conservation Park	Managed Hunt		129
Goshen Recreational Park	Managed hunting by farm lessee		39

Source – M-NCPPC

Table 12. Deer harvest in Montgomery County FY 1993-2002 and Percent of harvest that was antlerless.

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
total number	1600	1635	2081	2306	2819	2624	3304	3609	3670	3,546
# of antlerless	717	768	923	1013	1511	1504	1961	2138	2255	2,305
% antlerless	45%	47%	44%	44%	54%	57%	59%	59%	61%	65%

Source - DNR

Conclusions

Nineteen areas have been identified as hotspots for deer impacts in the county for Fiscal year 2003. Table 13 lists these areas, the site-specific impacts, and recommendations selected for each. As stated in the Deer Management Plan, there is no single management option that can address the variety of deer impacts in the County. It will likely take a combination of options to begin to have an effect.

Management options implemented over the past 5 years (see page 5 of this report for a listing) appear to be having an effect. On Roads adjacent to Little Bennett Regional Park, The Agricultural History Farm Park, and Seneca Creek State Park, where managed hunts have been held to reduce deer populations, DVCs have been reduced (See Appendix II - Report from MCDP, pp. 4-5).

The number of complaint telephone calls received from County Residents in 2001 remained about the same as in 1999 and 2000 which were the lowest since the program began. Over 900 citizens as well as landscape students and professionals have participated in the County's Homeowner Workshops to learn better methods of protecting home landscaping and gardens from deer. Participants consistently give these workshops very good evaluations. This past year the program was advertised and presented upon request to community organizations. This increased our average attendance and proved to be an effective way to share these methods with the communities that need them most.

Additional Educational efforts, including brochures, cable TV programs, public service announcements, etc., are making citizens better aware of deer problems and solutions. Establishment of special phone numbers to report deer-related problems and a web page to provide information about deer issues has likely relieved frustration of citizens who previously had no specialized numbers to call.

Efforts continue to review and amend all transportation plans that include bridges that cross wildlife corridors to better accommodate safe wildlife passage under roadways to reduce DVCs. Most of these projects have been modified to improve wildlife passage. The DMWG is continuing to monitor test sites for the Streiter-lite wildlife reflector system to determine if they can help reduce DVCs. An additional site will be added this year bringing the total number of reflector sites in the county to 6.

DNR has continued to streamline the Deer Management Permit program that assists Agricultural producers in reducing deer-damage to agricultural crops. State officials report that crop damage has declined in some areas. Changes to State regulations and procedures, recommended by the DMWG, have significantly increased the regional harvest of antlerless deer. These important steps seem to be reducing deer herds and deer-human conflicts countywide though they still have little affect where hunting is not permitted.

In 2001 the Montgomery County Deer Management Workgroup was represented on the State Non-lethal Task Force initiated by Governor Glendening as well as the Animal Services Committee –Wildlife Subgroup initiated by the Washington Area Council of Governments (COG). Both groups explored current state-of-the-art techniques for reducing wildlife-human conflicts and have published materials to promote better understanding and more effective use of these non-lethal techniques. It was gratifying to see that Montgomery County was ahead of the curve in having implemented most of the techniques discussed as part of our deer management efforts. It was also a great pleasure to work with the dedicated individuals that participated in those groups.

Table 13 DMWG Hotspots and recommendations for FY 2003

	Identified Hotspot Areas	Major Impacts	Deer Pop. Projected fall '02 Per square mile	FY 2000 Recommendations Numbers refer to text below
1	Rock Creek Reg. Park*	DVC, CC, NV	186	1, 2, 4, 5, 6
2	Northbranch SVP*	DVC, CD, CC, NV**	129	1, 2, 4, 5, 6
3	Little Bennett Reg. Park*	DVC, CD, NV	74	1, 2, 4, 5, 6
4	Seneca Creek State Park ¹	DVC, CD, CC, NV	-**	1, 2, 4, 5, 6
5	Ag/History Farm Park	DVC, CD, CC, NV	130	1, 2, 4, 5, 6
6	Goshen Recreational Park*	CD, NV	152	1, 2, 4, 5, 6
7	Rachel Carson Cons. Park*	NV**	120	1, 2, 4, 5, 6
8	N. Germantown	DVC, CD, NV	235	1, 2, 4, 5, 6
9	Blockhouse Pt Cons Park*	NV**	97	1, 2, 4, 5, 6
10	Black Hill Regional Park*	NV**, CD	41	1, 2, 4, 5, 6
11	Northwest Branch	DVC, CC, NV	243	1, 2, 4, 5, 6
12	Paint Branch Area	DVC, CD, CC	64	1, 2, 4, 5
13	Wheaton*	DVC, CC, NV	90	1, 2, 3, 4
14	North Potomac	DVC, CC	n/avail	1, 2, 4, 5
15	S. Germantown	CC	n/avail	1, 2, 4, 5
16	S. Potomac	DVC, CC, CD	139	1, 2, 4, 5
17	Rock Creek Manor	CC, NV	186	1, 2, 4, 5
18	Ovid Hazen Wells Park	CC,	n/avail	1, 2, 4, 5
19	Poolesville	CD	n/avail	1, 2, 4, 5

DVC-deer-vehicle collision; CD-crop damage; CC-citizen complaints; NV-natural vegetation damage

*Affecting natural vegetation in parks with species/communities of countywide significance.

** Population estimates are made on Regional level by MD-DNR using region-wide FLIR Index to deer density

Key to Recommendations – see below for more detailed discussion of recommendations.

Non-lethal

1. Continue efforts in educating the public about deer issues, particularly on available non-lethal methods to reduce deer damage to personal property. Focus on communities in these areas.
2. Continue efforts with DPWT and SHA to make improvements to road fencing, signage and design to reduce deer vehicle collisions at specific locations.
3. Continue to monitor progress in the use of Immunocontraception to regulate deer populations.
4. Continue to encourage more local community involvement in deer management efforts.

Lethal

5. Continue efforts to encourage effective deer population management on large parcels of private property.
6. Continue and expand population reduction programs on select state and county lands.

Recommendations for FY 2003

In accordance with the Comprehensive Management Plan for White-tailed deer in Montgomery County, Maryland, the DMWG recommends the following. Agencies that should take lead responsibility for each recommendation are listed in parenthesis after that action. The final decision to proceed with any recommendation is up to the lead agency or agencies and it is expected that appropriate public input will be considered. Many recommendations will require more than one year to be fully implemented thus

there will likely be overlap in recommendations for consecutive years. It is expected that all actions will be done in cooperation with the DMWG.

Non-lethal

- 1. Continue public education efforts.** This includes educating the public about deer issues, particularly on available non-lethal methods to reduce deer damage to personal property.
 - a. Continue the very successful homeowner workshop program. Update program to keep current with new innovations. Focus workshops in identified hotspots as well as locations that call to request them. Increase number of Master Gardeners that are trained to present the program. (Montgomery County Cooperative Extension [MCE])
 - b. Continue to provide and update educational materials and information available through: the County Library System, MCE, County and State deer and wildlife information phone numbers, the World Wide Web, the Maryland National Capital Park and Planning Commission (M-NCPPC), County cable TV, Etc. (Listed Agencies)
 - c. Continue efforts to educate through different media including local cable and public television, and radio by producing special programs and providing spokespersons for deer issues. (M-NCPPC, MCE, DNR)
 - d. Continue and increase distribution of seasonal Public Service Announcements (PSAs) warning of active times for deer-vehicle collisions in order to increase awareness. (DNR, MNCPPC)
 - e. Continue working with Council of Governments (COG) Animal Services Committee –Wildlife Subgroup, and members of the DNR Non-lethal Task Force to explore better use of existing non-lethal wildlife management methods and support development and testing of new methods and technologies (MNCPPC).
 - f. Continue work begun last year to make changes to County Regulations to allow the use of specialized deer fencing over 6.5 feet to protect landscaping and crops from deer.

2. Continue efforts to improve road fencing, signage and design to reduce deer-vehicle collisions.

An ad hoc committee was formed in 1996 by the DMWG and met regularly for a year to investigate available methods of excluding deer from roadways and other methods of reducing deer-vehicle collisions. It included representatives from the Montgomery County Department of Public Works & Transportation (DPWT), State Highway Administration (SHA), Humane Society of the United States (HSUS), and The Fund for Animals. The DMWG continues to work with these agencies to implement the actions recommended by this committee listed below.

- a. Continue to monitor and evaluate test sites for the Strieter-lite reflector system sites, two of which were installed November '97 and two in October 2000. Add additional reflectors to these sites where gaps exist or where deer may be going around installations.
- b. An additional test site this year. Work with DPWT and SHA to determine best location (DPWT, M-NCPPC)
- c. Keep current and where possible cooperate with other studies that investigate methods of reducing deer-vehicle collisions. SHA is currently working on testing new data collection methods, road signs and other technology to warn motorists of deer on roads. (DPWT, M-NCPPC, SHA, DNR,)
- d. Continue efforts to upgrade existing deer crossing signage.
 - Where appropriate, install additional signs to existing deer crossing signs to designate distances for crossings, i.e. "next 2 miles". (DPWT, SHA)
 - Continue efforts to research, design, install and monitor experimental signage designed to make motorists more aware of deer hazards. SHA has studies underway. (DPWT, SHA, DMWG)
- e. Continue to evaluate roadway hotspots and examine accident mitigation methods.

- Continue work with SHA to discuss high numbers of DVCs at some interchanges of Interstate 270 and discuss possible remedial actions including possible changes to fencing design, fence inspections, vegetation, addition of signage (using new designs), etc. (SHA, DMWG)
- Cooperate with SHA statewide effort to evaluate DVC's on State roads.

3. Continue to monitor progress in the use of Immunocontraception to regulate deer populations.

- a. Continue to monitor efforts at NIST and other study sites around the country. (DMWG)
- b. Continue discussions with HSUS begun in December 1996 regarding the possibility of initiating a second study site in the county at a park location. M-NCPPC offered use of Wheaton Regional Park as a site for studies to begin in fall of 1998 but HSUS was over committed to other projects and could not cooperate on a joint project at that time. M-NCPPC will continue to monitor deer populations at this and other potential park sites where immunocontraception might be tested in the future. (DNR, M-NCPPC)

4. Continue to encourage more local community involvement in deer management efforts.

Deer impacts are often experienced throughout a community. In many cases it is incumbent upon the community to work together and address community concerns regarding deer. Several approaches to reducing deer damage to home landscaping and gardens may have a greater effect when applied on a community level. Neighbors or communities can work together in their use of fencing, vegetation management, and repellents. Adjustments to community covenants regarding fencing restrictions or feeding of wildlife are examples of cooperative efforts. Communities, in many cases, may be better able than the county or state to fund and/or implement other local management efforts such as installation of deer reflectors along a road, or even a community based managed hunting program on private lands. Any of these efforts will involve a high level of cooperation, organization and communication within the community as well as coordination with appropriate county or state agencies.

- a. The County and State should continue to provide information and assistance to communities that express a desire to address deer impacts in their community. These might include additional local public meetings, educational workshops, literature and recommendations on specific management efforts that could be undertaken by the community. DNR provides technical advice for communities on deer management issues. (M-NCPPC, DNR, MCE)
- b. Continue to examine appropriate methods for evaluating concerns and desires of local communities and incorporating them into the decision-making process regarding localized deer management efforts that may be undertaken by the county. This may include surveys on deer impacts and preferences for management options. Survey results would be used as one more piece of data to be considered along with other information gathered by the DMWG and the County (i.e. Deer-vehicle collisions, crop and landscape damage, damage to natural vegetation, etc.)

Lethal

5. Continue to encourage effective deer population management on large private properties.

The vast majority of land in the County is private and any effort to manage deer populations on these lands can only be undertaken by the landowners. When large parcels of land containing deer habitat and high populations of deer are developed, the deer are pushed into new areas. The result is a disruption of established home ranges and travel corridors, increased population density in the surrounding area and the potential for an increase in deer related impacts including deer-vehicle collisions, crop and landscape depredation and impacts on natural vegetation. Proactive deer management efforts could reduce deer populations thus reducing pressure on surrounding areas as these large parcels are developed.

- a. Work through DNR, M-NCPPC, the County Development Review Committee and representatives of the development community to encourage deer management on large parcels of private land - especially land scheduled for development. Efforts should include identification of landowners/developers and the development of an informational packet that includes available management options, the DNR publication titled “Deer Hunting - a Valuable Deer Management Tool For Private Landowners” and incentives for implementation etc. (DNR, M-NCPPC)

6. Continue and expand population reduction programs on select State and County lands.

Table 14 lists the parks in which deer population management is recommended for FY 2003. These include continuing ongoing management efforts as well as initiating new efforts. Decisions on specific details as to the type of population management implemented, the duration of the operation, and annual harvest goals should be decided by the appropriate park agencies and DNR.

- a. Continue ongoing management programs, adjusting methods and harvest goals as needed.

Table 14 Parks Identified by DMWG for deer population management for Fiscal Year (FY) 2003

Park Area	FY initiated	Recommended Mgt. Action
Seneca Creek State Park	1997	Continue population mgt
Little Bennett Reg. Park	1997	Continue population mgt
Ag/History Farm Park	1997	Continue population mgt
Black Hill Regional Park	2001	Skip upcoming year Continue to monitor impacts
Northbranch SVP*	2001	Continue population mgt
Rachel Carson Cons. Park	2002	Continue population mgt
Rock Creek Regional Park	2002	Continue population mgt
Goshen Recreational Park	2002	Continue population mgt
Blockhouse Point Cons. Park		Initiate population mgt this year
NW Branch Recreation Park		Initiate population mgt this year

- b. Initiate new population management programs in two parks – Blockhouse Point Conservation Park and Northwest Branch Recreation Park. All sites have been surveyed to determine deer population densities. Additional studies to determine the extent to which deer are impacting the natural vegetation have been carried out by M-NCPPC staff and are discussed elsewhere in this document. Decisions on specific details as to the type of population management implemented, the duration of the operation, and annual harvest goals should be decided by the appropriate park agencies and DNR.
- c. Make efforts to maintain population management on large parcels of land that are added to the park system - especially where population management has been in place prior to the parcel becoming parkland. This proactive measure should help prevent the need for more intensive and expensive population management in the future.

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The Montgomery County Deer Management Work Group
 The Maryland Department of Natural Resources, Wildlife Division
 M-NCPPC Department of Parks, Montgomery County, Maryland
 National Biological Service, Center For Urban Ecology

**Public Information Meetings on the Implementation of
 Deer Management Options in Montgomery County, Maryland**

Summary of Comments and Nominal Group Technique Data

November 13, 1995

Introduction

This report summarizes the results of two public meetings held to discuss deer management in Montgomery County during which over 2300 individual comments were recorded from 222 citizens. Several dozen additional comments were received by phone and mail following the meeting.

Background

In April 1993, in response to concerns of county residents and interest groups about the number and activities of white tailed deer (*Odocoileus virginianus*), the Montgomery County Council created the White-tailed Deer Task Force to examine information relative to conflicts between deer and people in Montgomery County, and make recommendations on how to respond to these. The Task Force published its findings and recommendations in April 1994, in the Report of the Task Force to Study White-tailed Deer Management. The report listed deer-related problems that warranted attention, including damage to agricultural crops, deer-vehicle collisions, depredation to gardens and ornamental shrubbery, impacts to parks and other natural areas and public concern over issues such as Lyme disease.

As a result of this group's recommendations, the Comprehensive Management Plan for White-tailed Deer in Montgomery County, Maryland was jointly developed by the Maryland Department of Natural Resources Wildlife Division (DNR), the M-NCPPC Department of Parks, Montgomery County and the National Biological Service's Center for Urban Ecology. The goal of Montgomery County's Deer Management Plan is to reduce deer-human conflicts to a level that is compatible with human priorities and land uses. The plan lists eleven management options that could be used to address deer issues in the county.

Maintain Status Quo
 Repellents/Scare Devices
 Fencing/Physical Exclusion
 Habitat Management
 Supplemental Feeding
 Modify Legal Harvest

Agricultural Depredation Permits
 Direct Reduction
 Contraception
 Trapping and Removal/Relocation
 Restoration of Predators

Meeting Format

Public meetings, co-sponsored by the Maryland Department of Natural Resources (DNR) and the Department of Parks, Montgomery County (M-NCPPC) were held October 24 and 25, 1995 at

Gaithersburg High School and Winston Churchill High School respectively. The meetings were designed with two purposes in mind. One was to educate the public about deer impacts and management options. The second was to solicit individual comments from the public on which options they felt were acceptable for use in the county. The first forty-five minutes of each meeting was devoted to informal education. A number of displays and written documents on deer-related issues and available management options were available to participants; experts from DNR and M-NCPPC were available to answer questions. Several formal presentations were then presented. County Council Member Nancy Dacek discussed the deer-related concerns that led to the development of the deer management plan. Dong Hotton, the state deer biologist with DNR, gave a presentation on deer biology and an overview of the deer management options. Participants then broke into small work groups to discuss and make comments on the different management options. Each of these work groups was accompanied by two staff persons, one to act as a facilitator and one as a recorder. As a final exercise, each group used a nominal group technique (NGT) to choose the management options that each thought were the most acceptable. Following the group sessions, closing remarks were presented by Josh Sandt, Director of DNR-Wildlife Division, Don Cochran, Director of Parks, Montgomery County and Rick Barton, Director of State Parks, DNR.

After the meeting comments were tabulated and summarized along with the results of the NGT. This information will be used in the decision making process to implement deer management in the county.

Summary of General Comments

Many participants voiced a strong opinion that action must be taken to reduce human/deer interaction and that controlling the population was an important part of that process. There were also many participants who suggested that citizens of Montgomery County must learn to tolerate such interactions and adjust to deer populations, rather than visa versa. Some participants felt that more education is necessary to better understand both the problem and effective methods of controlling the problem. There was also a request to improve knowledge of White-tailed Deer density within Montgomery County. Participants expressed an interest in further research of each option in order to maximize effectiveness. Other concerns include:

Safety

Specific safety concerns will be addressed for each option, however, public safety concern was repeatedly voiced regarding deer related vehicle accidents, disease transfer, and hunting within urban areas.

Cost effectiveness

Many participants favored options which were not only efficient but cost effective. Options such as Repellents, Fencing, and Habitat Alteration were supported for use by individual landowners, but not at a level which would incorporate tax dollars. These options were criticized for their high prices, ineffectiveness, and lack of addressing population management.

Animal rights and cruelty to animals

Many participants voiced an opinion that Modify Legal Harvest, Agricultural Damage Permits, and the use of Direct Reduction is inhumane. There were also participants who expressed an opinion diat while they feel hunting is inhumane, it would be supported only after non-lethal methods had been implemented with little or no success. Cruelty to animals was also voiced as a concern associated with Trapping/Relocation and Reintroducing Predators.

Comment Summaries

During the small group sessions, citizen comments and concerns were recorded. The following is a

summary of those comments. In order to condense the over 2300 comments that were recorded, some similar statements have been combined. The number in parenthesis represents the total number of citizens recorded with that comment or concern.

MAINTAIN STATUS QUO

Unacceptable (135)	More research necessary (10)
Acceptable (29)	Public safety may be sacrificed (2)
Ineffective solution to the problem (16)	Cost effective (1)

REPELLENTS

- | | |
|--|--|
| - Effective on a limited basis (63) | - Will not effect population growth (12) |
| - Acceptable (36) | - Possibility of pollution (noise and chemical) (9) |
| - Ineffective (34) | - Public education necessary (8) |
| - Too costly (31) | - Further experimentation-chemical and scare devices (3) |
| - Moves overpopulation to other areas (21) | - May effect species other than deer (2) |
| - Unacceptable (14) | |

FENCING

- | | |
|---|--|
| - Too costly (64) | - Aesthetically unpleasing (6) |
| - May be useful on a site specific basis (61) | - Use of wildlife corridors in county planning (6) |
| - Acceptable (37) | - Moves overpopulation to other areas (6) |
| - Unacceptable (32) | - May effect species other than deer (5) |
| - Ineffective; Techniques must be improved (23) | - May effect property value (1) |
| - Will not effect population growth (15) | - Encouraged for use before lethal measures (1) |

HABITAT ALTERATION

- | | |
|---|---|
| - Acceptable (45) | - Plan future development for wildlife compatibility (5) |
| - May be useful on a site specific basis (40) | - Further experimentation is needed (5) |
| - Ineffective due to the animals ability to adapt to environmental changes (26) | - Public education is necessary (2) |
| - Will not effect population growth (20) | - Necessary to develop a comprehensive management plan for use of habitat alteration in Montgomery County (1) |
| - Too costly (20) | - Moves overpopulation to other areas (1) |
| - Unacceptable (16) | - Encouraged for use before lethal measures (1) |
| - May effect species other than deer (1 5) | |
| - Countywide changes are needed (5) | |

SUPPLEMENTAL FEEDING

- | | |
|--|--|
| - Will not effect population growth (66) | - Acceptable for use during crisis situations only; to improve health within specific herds (10) |
| - Unacceptable (53) | - May negatively effect natural deer behavior (8) |
| - Too costly (23) | - Ineffective (4) |
| - Acceptable (17) | |
| - Concern for spread of disease (16) | |

MODIFY LEGAL HARVEST

- Acceptable (76)
- Unacceptable (52)
- Effective only where hunting is permitted (23)
- Inhumane (20)
- Concern for public safety (20)
- Use of public park lands (16)
- Increase doe harvest (13)
- Acceptable only after non-lethal measures have been unsuccessful (7)
- Cost effective (5)
- Opposition to archery hunting (5)
- Ineffective in suburban areas (4)
- Encourage the use of Hunters Harvest Share (3)
- Use of archery hunts in urban areas (2)
- Open land which is currently not being hunted (2)

AGRICULTURAL DEPREDATION PERMITS

- Effective method of control (72)
- Unacceptable (33)
- Acceptable if abuse is restricted (15)
- Permit system must be more efficient (12)
- Acceptable only after non-lethal measures have been unsuccessful (11)
- Permit consistency necessary to effect population (9)
- Permit system needs to be expanded to residential homeowners (5)
- Listing of qualified hunters is necessary to facilitate permittee (5)
- Encourage the use of Hunters Harvest Share (1)
- Permit holders find it difficult to control population (1)

DIRECT REDUCTION

- Acceptable (42)
- Unacceptable (32)
- Acceptable on a site specific basis (19)
- Opposition to the use of sharpshooters (18)
- Support the use of sharpshooters (15)
- Acceptable only after non-lethal measures have been Unsuccessful (12)
- Inhumane (11)
- Too costly (11)
- Encourage the use of Hunters Harvest Share (10)
- Encourage safe and humane measures (10)
- Ineffective (5)
- Use of archery hunts in urban areas (2)
- Implementation of such a program must be long term to succeed (1)
- Encourage such a program to supplement youth education/hunting experience (1)
- Increase doe harvest (1)

CONTRACEPTION

- Acceptable (47)
- Unacceptable (42)
- Too costly (35)A
- Additional research is necessary (23)
- Effective on limited herds (22)
- Unproven (13)
- Ineffective on unrestricted populations (9)
- Concern for safety of humans-consumption (8)
- Concern for trauma placed on animal (4)
- Biologically unsound (3)
- Ineffective delivery system (2)

TRAPPING/RELOCATION

- Unacceptable (67)
- Ineffective (42)
- Too costly (36)
- Concern for trauma and high mortality rate (29)
- Inhumane (18)
- No relocation sites (14)
- Acceptable (13)
- Additional research is necessary (4)
- Concern for the spread of disease (2)

RESTORE PREDATORS

- Unacceptable (130)
- Inhumane (13)
- Ineffective solution (12)
- Acceptable (11)
- Acceptable on large tracts of land in rural areas (8)
- Concern for danger to humans & domestic animals (8)
- Too costly (4)
- May effect species other than deer (1)
- Additional research is necessary (1)

OUTCOME OF NOMINAL GROUP TECHNIQUE

Numbers were assigned as follows. Each participant could assign up to six points -three to their top choice, two to second and one to third. "Total for all groups supporting" (column two) represent the total number of points assigned to that option out of a total of 1331 possible points. Column three is the percentage of the total number of points.

<input type="checkbox"/> DEER MANAGEMENT OPTIONS	TOTAL FOR ALL GROUPS SUPPORTING	% OF PARTICIPANTS
MAINTAIN STATUS QUO	26	2.0 %
REPELLENTS	70	5.3 %
FENCING	135	10.0 %
HABITAT ALTERATIONS	112	8.4%
SUPPLEMENTAL FEEDING	6	.5 %
MODIFY LEGAL HARVEST	315	23.7%
AGRICULTURAL DAMAGE PERMITS	138	10.4 %
DIRECT REDUCTION	276	20.7 %
CONTRACEPTION	221	16.6 %
TRAPPING/RELOCATION	23	1.7 %
RESTORE PREDATORS	9	.7 %

NUMBER OF PARTICIPANTS : 222

NUMBER OF RESPONSES : 1331

The purpose of the nominal group exercise was to quantify comments from the citizens on the acceptability and perceived effectiveness for the different options. It is important to note that while this technique ranks preferences, the purpose of the exercise is not to choose the top ranked choices as the options that will be used to the exclusion of others. The Comprehensive Management Plan for Deer in Montgomery County, Maryland calls for the use of all viable options where and when they are most effective and efficient. This data will be used by the designated State and County agencies that are responsible for implementing deer management options.



**WHITE-TAIL DEER & VEHICLE COLLISIONS
FOR
MONTGOMERY COUNTY, MARYLAND**

April 30, 2002

prepared by

Corporal William M. Wilhelm

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SUMMARY AND COMMENTS ABOUT THIS YEAR'S REPORT

Data and Report compiled by:	Corporal William M. Wilhelm, Germantown District
Collision Data supplied by:	Austin Story, Communications Center
Deer Destruction Report:	Captain John Quinn, Office of Professional Standards

The increase in urban development, loss of habitat, human population, and traffic volume, along with a strong deer herd are the primary reasons for the **2,003** deer/vehicle collisions which were reported in 2001.

This is the first year Montgomery County has had a slight reduction in deer/vehicle strikes. There were 30 fewer collisions in 2001 than in 2000. (See chart on Page 4.)

We must not forget that many deer/vehicle collisions are **NOT** reported. The official count for this year is reported at **2,003**. The real number of collisions lay between 3,000 and 4,000 per year in Montgomery County, Maryland.

Montgomery County recorded 16 personal injury collisions for 2001 — a decrease of one from 2000. (See chart on Page 5.)

Montgomery County Police Officers had to destroy 243 white-tailed deer during 2001. (See chart on Page 5.)

For the fifth consecutive year, the managed hunts in Seneca State Park, Little Bennett Park, and the Agricultural History Farm Park have produced reductions in collisions on roadways adjacent to these Parks. The total has dropped by a **minimum of 197 collisions** in the past five years.

The reported incidents on the roads adjacent to the Contraception Project at the National Institute of Science and Technology Campus (NIST) have been high the past five years. During 2001, it virtually was unchanged with one less collision. (See chart on Page 6.)

Hunting complaints handled by Montgomery Count Police virtually stayed the same during 2001. Hunting complaints have continually decreased since 1994. (See chart on Page 7.)

Reported Incidents of White-tail Deer and Vehicle Collisions

Montgomery County, Maryland

by Year and by District

District	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
Rockville	508	517	481	459	346	345	226	206	Numbers for each District are not available for these years.	
Bethesda	139	130	116	112	137	180	154	148		
Silver Spring	125	137	121	99	91	84	71	69		
Wheaton	507	548	504	498	484	430	290	353		
Germantown	724	701	669	606	647	737	503	657		
Total	2003	2033	1891	1774	1705	1776	1244	1433	861	782



2001

Deer and Vehicle Personal Injury Collisions

Montgomery County, Maryland by District

Station	Number
Rockville	5
Bethesda	2
Silver Spring	0
Wheaton	1
Germantown	8

Comparison of Total Personal Injury Collisions

Montgomery County, Maryland

by Year

2001	2000	1999	1998	1997	1996	1995	1994	1993
16	17	11	19	7	7	9	8	3

USE OF FORCE REPORTS

Montgomery County Police Officers used their service weapons to destroy **243** white-tailed deer in 2001.

Comparison of Annual Incidents of Use of Force



in Montgomery County, Maryland by Year

2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
243	255	228	220	209	196	166	180	82	59

Comparison of Annual Deer and Vehicle Collisions on Selected Roadways near Managed Hunt Areas*by Year

Location	2001	2000	1999	1998	1997	1996	2001 Increase	2001 (Decrease)
Seneca State Park								
Clopper Road	5	11	14	17	24	46		-6
Great Seneca Highway	3	5	6	20	26	55		-2
NIST Project	37	38	42	36	34	18		-1
Little Bennett Park								
Frederick Road	4	1	1	1	11	14	+3	
Clarksburg Road	6	9	10	8	18	29		-3
Agricultural History Farm Park								
Muncaster Road	8	13	13	10	17	19		-5
Fieldcrest Road	13	10	13	14	4	8	+3	
Airpark Road	8	8	10	15	6	11		0
Rt. 124 near Airpark Rd.	0	0	2	3	2	2		0
Total Collision Reductions								
	2001	2000	1999	1998	1997	1996	Total Reduction for 5 year period	
	16	16	35	49	81		197	

* Note: 1996 was the first year for the managed hunts in the parks.

2001 Hunting Complaints Handled by Montgomery County Police

Offense	Number
Hunting without written permission	33
Hunting/shooting too close to a building/roadway	30
Hunting on Park property	3
Bow/arrow violations	6
Spotlight/poaching - nighttime	19
Total	91



Comparison of Hunting Complaints
Handled by Montgomery County Police
by Year

2001	2000	1999	1998	1997	1996	1995	1994
91	90	105	116	115	128	104	123

Data supplied by:

MCP Communications Center - Austin Story

Office of Professional Standards - Captain John Quinn

Report prepared by:

Corporal William M. Wilhelm

Montgomery County Police, Germantown District

301-840-2650

Report design by: Tookie Gentilcore, Volunteer