

# FOREST PRESERVATION STRATEGY UPDATE

A REPORT FROM THE INTERAGENCY FOREST CONSERVATION TEAM



The Linden Oak is a Montgomery County Bicentennial tree adjacent to Rockville Pike at Beech Drive. This 250-year-old white oak is 95 feet tall and its branches spread 130 feet.

*A strategy to increase the quantity of forest canopy, improve the quality of forests and trees, and protect and restore forest ecosystems throughout the county.*

**MONTGOMERY COUNTY, MARYLAND**  
**July 2004**





# WHAT'S INSIDE?



This update is organized to follow the format and structure used in the original 2000 *Forest Preservation Strategy*. There are six main sections including where we started, riparian forests, upland forests, urban street trees, forests on private land, and forests on public lands. Within each section, action items from the Strategy are followed by a discussion of progress made toward each action item.

## FOREST PRESERVATION ACCOMPLISHMENTS

In January 2000, the County Executive established the multi-disciplinary Forest Preservation Task Force and charged them with developing a strategy to improve stewardship of the forest and tree resources across the County. The *Forest Preservation Strategy* presented an evaluation of existing conditions of forest and tree resources, identified areas of concern, and recommended goals to pursue. It proposed action items, or specific implementation steps, to enhance and increase existing forest and tree resources, restore and improve non-forested lands, and protect and restore forest ecosystems throughout the County.

Progress made thus far on these actions items is presented in this report. While it is important to recognize progress, it must also be recognized that this work is only a beginning. Improving the health and quantity of forests and trees in Montgomery County requires a long-term commitment that will evolve as our understanding of the issues and complexities deepens.

The health and sustenance of our forests and trees is severely threatened by the over-abundance of deer, non-native invasive plant species, redevelopment of small lots, and lack of maintenance of existing street trees. In Montgomery County, deer and non-native invasive plants suppress natural regeneration and plantings to the point where forests and the individual trees within them are not being replenished by new growth.

The process of redevelopment on small lots removes large trees without providing for adequate replacement or other compensation for their loss. Street trees on county maintained rights-of-way do not receive sufficient maintenance care to improve their health and lengthen their life-span. These four issues are inhibiting the growth and establishment of future trees and forests. They are in the forefront of efforts for the coming year.



*A young forest community provides a buffer for a small stream tributary.*

# WHERE DID WE START?

The Forest Preservation Strategy recommended several “first steps” to begin to fulfill the Task Force’s mission to enhance, increase, and restore forests and trees. Significant progress has been made towards these first steps.



# WHAT WAS RECOMMENDED?

1. Hire staff as authorized in Article V of Chapter 22A-30, Forest Conservation, of the county code to coordinate interagency, educational, public outreach, and planning initiatives to promote forest and tree preservation programs.

The Department of Environmental Protection hired a Forest Conservation Coordinator, in January, 2002. In March, 2002, recognizing that programs exist across county and state agencies that target forest and tree issues, and at times these existing programs overlap with each other, the Interagency Forest Conservation Team (IFC Team) was formed to better coordinate and promote these separate programs. This Team includes agency representatives who have direct or indirect management or regulatory responsibilities key to the successful management and protection of trees and forests in Montgomery County. The IFC Team meets monthly to pursue implementation of the *Forest Preservation Strategy*.



*In a mature yellow-poplar forest community, viburnums bloom in early spring.*

2. Establish a permanent Forest Preservation Website to provide technical information, track issues, and act as a clearinghouse for interagency and other forest preservation programs in the County.

A website was established to aid in the exchange of information between members of the IFC Team. Currently, the website houses information about the activities of the IFC Team, including minutes, definitions, and current topics. However, the website is not yet functioning as planned. GIS maps are being developed to assist in prioritizing areas where conservation efforts are needed and to track conservation efforts. When they are completed, these GIS layers will be added to the website. The IFC Team plans to continue developing this website to share information between members.

# WHAT WAS RECOMMENDED? (continued)

## 3. Include forest preservation data on riparian and upland canopy, street tree planting and maintenance, and forest cover on private and public lands as county environmental indicators.

Since FY00, the County’s annual budget reports have included program measures showing progress in implementing aspects of the Forest Preservation Strategy. Specific measures include data on land covered by forests and urban tree canopy, new street tree plantings, street tree maintenance frequencies, riparian stream buffer areas, and upland forests. Three of these program measures are being reported here for the first time because all of the necessary information has only recently become available. They are the percentage of county meeting urban/suburban tree canopy coverage goals, pollution reductions achieved by the tree canopy, and cost savings of tree canopy coverage. The pollution reduction and cost savings of tree canopy coverage provide some insight to the dollar value of Montgomery County’s trees and forests as “green infrastructure”.



*Cranberry among fallen leaves.*

The Forest Preservation Task Force supported the tree canopy coverage goals recommended for urban areas nationwide by American Forests. Calculations to determine tree canopy coverage were made possible by the recent acquisition of highly advanced IKONOS satellite imagery from the University of Maryland. A partnership between the Mid-Atlantic Regional Earth Science Applications Center (RESAC) and Montgomery County allowed this information to be acquired at no cost to the County. Montgomery County was the first area for which a mosaic of images was compiled to provide coverage of a large area. The IKONOS imagery, captured in April, 2002, provides a visual image of the area covered by tree crowns.

The Department of Environmental Protection interpreted this information to determine how much of the County was covered by tree crowns and where of the tree canopy coverage goals are met. While 42% of all land in Montgomery County is covered by tree canopy, only 25% of the County meets the canopy coverage goals.

Basic Land Character as defined by American Forests	Recommended tree canopy cover as a percent of land area	Actual tree canopy cover as a percent of County area	Percentage of all land in Montgomery County in each category*
Suburban Residential	50%	39%	64%
Urban Residential	25%	29%	3%
Central Business Districts	15%	20%	3%
Overall	40%	42%	—

Table 1. Tree canopy coverage goals as recommended by American Forests, percentage of Montgomery County covered by tree canopy, and percentage all land in Montgomery County in each basic land category.

\*Only 70% of Montgomery County can be classified into these broad categories. The remaining 30% is parkland or is not currently classified in the County’s property database.

Three basic land character categories were defined by American Forests for urban areas associated with cities. They represent generalized land use categories. To apply these categories to Montgomery County, rural residential and agricultural lands were combined with medium and low density residential to provide numbers for the suburban residential category. Therefore, in Table 1, the suburban residential basic land character category includes a wider range of zoning categories than typically used by American Forests.

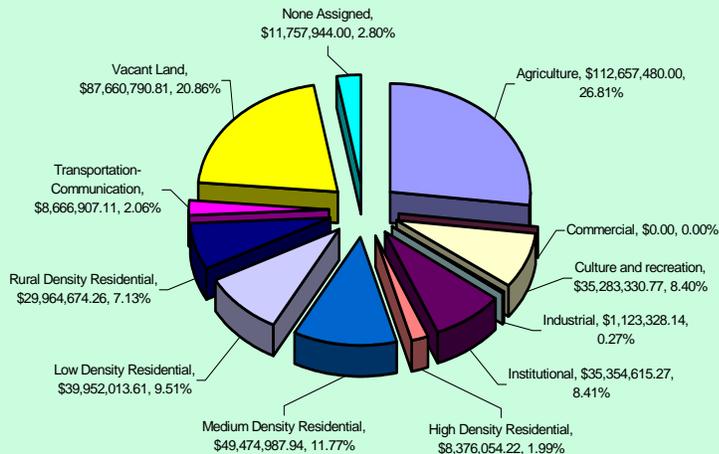


Figure 1. The value in dollars per year of stormwater runoff mitigation by tree canopy for a typical 24-hour single storm event observed within a two-year cycle. This value totals \$428,648,000 per year.

The CITYgreen model, also developed by American Forests, was applied to calculate the value of stormwater runoff mitigation, pollution removal, and carbon sequestering that is attributed to existing tree canopy in Montgomery County. These values are shown in Figures 1, 2, and 3.

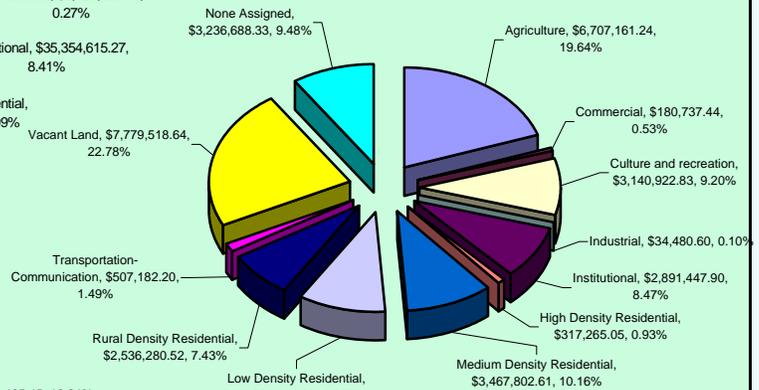


Figure 2. The value in dollars per year of air pollution removed by tree canopy across Montgomery County. This value totals \$34,146,000 per year.

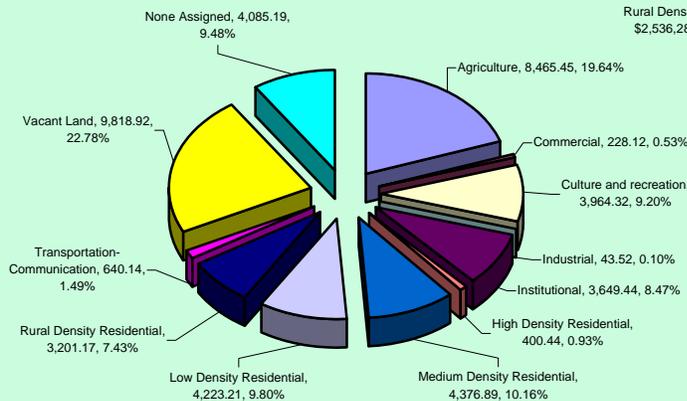


Figure 3. Tons per year of carbon sequestered by tree canopies across Montgomery County. This value totals 5,536,000 tons per year.

#### 4. Increase the County forest preservation efforts and funding by 10 percent per year for the next five years.

While funding for street tree maintenance and planting was increased during FY 02 and FY 03, the total increase was more than the equivalent of 10 percent per year for five years. Funding for these two programs remains at the higher levels. For most other programs associated with forests and trees, the County funding level has been increased, but due to budgetary constraints, not to the degree recommended in the Forest Preservation Strategy. County forest preservation efforts include acquisition of existing forest land through the Legacy Open Space and Park Acquisition Programs. These programs receive funding from Montgomery County, state, and other sources.



# RIPARIAN FORESTS



Riparian forests, or forests adjacent to streams, wetlands, and other water features, help filter pollutants, shade streams, and provide vital habitat for plants and animals. Better water quality is found where streams are protected by forests.

**OVERALL GOAL:** Increase the amount of reforested and protected riparian forest in the County.

## ACTIONS:

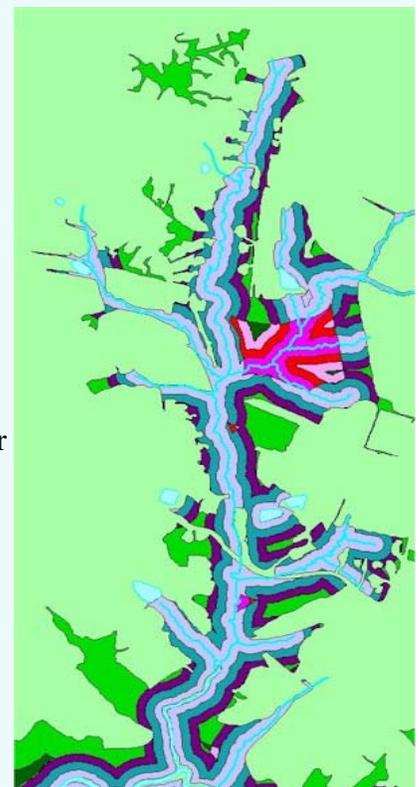
1. Increase the economic incentive and marketing for existing riparian forest preservation programs in the Agricultural Preservation Areas.

Preliminary discussions have been held between agencies and departments to provide opportunities to piggyback easement programs that protect natural resources with easement programs that primarily manage development density. While many of these programs require soil and water conservation, specific requirements for protecting riparian forests are not included. Targeting properties with agricultural and conservation easements as "receiving" areas for offsite mitigation for forest conservation requirements provides additional economic incentives to landowners in the Agricultural Preservation Areas to protect natural resource features. Forests on the Bachelor's Purchase property are protected due to monetary incentives provided by overlapping conservation programs including Transfer of Development Rights Program, Rural Legacy Program, and Forest Conservation Banking. The IFC Team is committed to increasing the amount of land and natural resources protected by combining the benefits of available easement programs, thereby making them more attractive to landowners.

2. Support continued federal and state funding of Conservation Reserve Enhancement Program through 2005.

In 1998, the Conservation Reserve Enhancement Program (CREP) was established as an extension of the long-standing Conservation Reserve Program (CRP). It provides rental payments for marginally productive crop lands that are taken out of production to establish riparian forested or grassed buffers, or restore wetlands. CREP reimburses landowners for up to 87.5% of the costs of establishing forested or grassed buffers, or restoring wetlands. Also, the landowner receives an annual rental payment per acre for land that is taken out of production to create buffers or wetlands. Rental payments for planting forest buffers is 50-75% higher than rental rates provided under the CRP. Rental rates are based on soil type and productivity of the land. Through an easement component of CREP, landowners can be paid to preserve lands managed under these practices in perpetuity. CREP easements can be used to protect woodlands adjacent to forest buffer plantings.

The Montgomery Soil Conservation District administers the CREP program and is very active in encouraging landowners to establish forested and grassed buffers. Since its inception, about 1,660 acres, including 362 acres of forest buffers, have been restored under the CREP program in Montgomery County.



*Buffers of increasing widths are mapped along stream system.*

The Department of Economic Development has accomplished the objectives of the easement component of CREP through the acquisition of 3,387 acres in Rural Legacy conservation easements. This program compliments CREP and draws from the same source of funds. It incorporates mechanisms to protect the natural resources by either maintaining or establishing 60-foot buffers along both sides of streams. As of July, 2003, Montgomery County has been awarded \$17,000,000 to purchase Rural Legacy easements, of which \$11,275,000 has been expended. Properties have been identified for the majority of the balance and negotiations have begun.

While an objective of both the *Forest Preservation Strategy* and the Rural Legacy program is to promote the CREP program, landowners choose which program they prefer to use to implement the required riparian buffers. In all settled easements thus far, the landowners have chosen to implement the riparian buffer provisions through the Rural Legacy conservation easement instead of through CREP. While CREP may not be the preferred vehicle by which riparian buffers are established, objectives of the CREP easement program are met through the Rural Legacy conservation easement provisions.

### 3. Reforest a total of 300 acres and protect 1000 acres per year of riparian forest throughout the County for the next five years.

In FY02 and FY03, 230 acres of riparian areas were reforested through the Montgomery County Forest Conservation Law (FCL). During these same 2 years, 515 acres of forest (mostly upland areas) were cleared as a result of new development in Montgomery County. During FY02 and FY03, an additional 227 acres of riparian forests were planted across the County through other programs. The imbalance between the number of acres cleared for new development and number of acres reforested is of concern for forest conservation. While the FCL was not intended to stop the lost of forest lands, recent changes in the law are expected to reduce the loss compared to the number of acres reforested.



*A grassy area adjacent to a riparian forest buffer that has been widened with recently planted trees.*

Perpetual easements that eliminate the potential for development and retain the natural resources were placed on 476 riparian acres in FY02, and 556 riparian acres in FY03 through programs administered by the Montgomery County Planning Board. Easement programs administered through the Department of Economic Development provided protection for an additional 1,744 acres in FY02, and 3,789 acres in FY03. This acreage includes riparian areas and upland forests. Easement programs included in these figures are the Conservation Reserve Enhancement Program, the Maryland Agricultural Land Preservation Foundation, the Montgomery County Agricultural Easement Program, the Maryland Environmental Trust, the Rural Legacy Program, and the Transfer of Development Rights Program.

### 4. Identify and inventory all riparian areas that can be preserved or reforested.

The M-NCPPC has completed an inventory of forested and non-forested riparian areas as part of land use and watershed management plans for several county watersheds. Future IFC Team action items include exploration of ways to promote preservation and reforestation of these areas, as well as ways to identify and inventory riparian areas countywide.

# UPLAND FORESTS

Upland forests, or forests located on drier ground beyond the riparian area, play important roles in wildlife habitat, air quality, and water quality and quantity. They are tremendous economic, aesthetic, and environmental resources. At the same time, they are the most difficult to preserve because they can be easily developed for other uses.



**OVERALL GOAL:** Increase the amount of protected upland forest in the County.

## ACTIONS:

### 1. Identify and prioritize upland forests throughout the County for preservation.

Forests in several watersheds have been identified and prioritized as part of recent county master planning efforts. Future county master plans will include this information. Forest conservation goals and needs are taken into consideration when land use and zoning classifications are assigned in master plans. These classifications are assigned to maximize the preservation of the highest priority forests. Forested areas that should be purchased through Legacy Open Space or other park acquisition efforts are identified through the master plan process.

Legacy Open Space is a relatively new program to conserve Montgomery County's most significant open space including forests. This program includes a formalized process to identify open space, farmland, historic lands, and natural resources such as forests for conservation and prioritize the order of protection of these lands. The order of protection is influenced by threats to the natural resources, opportunities presented by funding sources including outside funds and partnerships, willingness of sellers, and other factors.

Since October 2000, Legacy Open Space has been successful at protecting more than 2,435 acres, including 2,300 acres of forests, through in-fee purchases and easements. These lands were protected using \$18,769,000 from the County and \$12,907,000 matching funds from Maryland GreenPrint Program, Maryland Rural Legacy Program, municipal, private, and other donations. The projected county funding level for FY05 and FY06 is \$7,000,000 each year.

### 2. Increase economic incentive programs, such as forest banking, for upland forest preservation on private land.

Preliminary discussions have been held between agencies and departments to provide opportunities to piggyback easement programs that protect natural resources with easement programs that primarily manage development density. While many of these programs require soil and water conservation, specific requirements for protecting riparian forests are not included. Targeting properties with agricultural and conservation easements as "receiving" areas for offsite mitigation for forest conservation requirements provides additional economic incentives to landowners in the Agricultural Preservation Areas to protect natural resource features. Forests on the Bachelor's Purchase property are protected due to monetary incentives provided by overlapping conservation programs including Transfer of Development Rights Program, Rural Legacy Program, and Forest Conservation Banking. The IFC Team is committed to increasing the amount of land and natural resources protected by combining the benefits of available easement programs, thereby making them more attractive to landowners.

Montgomery County's Legacy Open Space staff has supported proposed federal legislation that provides tax incentives for lands donated to conservation programs and capital gains tax incentives on lands sold for conservation protection. Programs such as Montgomery County's Legacy Open Space Program, Maryland Greenprint Program, and Maryland Rural Legacy Program could greatly benefit from this legislation.

### 3. Protect 500 acres of upland forests per year for the next five years.

Through programs administered by the M-NCPPC Planning Board, perpetual easements that eliminate the potential for development and retain the natural resources were placed on 745 upland acres in FY02, and 449 upland acres in FY03. Easement programs administered through the Department of Economic Development provided protection for 1,744 acres in FY02, and 3,789 acres in FY03. This acreage includes riparian areas and upland forests. Easement programs included in these figures are the Conservation Reserve Enhancement Program, the Maryland Agricultural Land Preservation Foundation, the Montgomery County Agricultural Easement Program, the Maryland Environmental Trust, the Rural Legacy Program, and the Transfer of Development Rights Program.

In FY02 and FY03, 515 acres of forest (mostly upland areas) were cleared as a result of new development, and in FY03, only 15 acres of uplands were reforested through requirements of the Montgomery County Forest Conservation Law (FCL). In FY03, an additional 6 acres of upland forests were planted through other

programs across the County. In general, uplands have more buildable area making them more attractive and under greater pressure to provide space for new development than riparian areas and steep slopes. The imbalance between the number of acres cleared for new development and number of acres reforested is of concern for forest conservation. While the FCL was not intended to stop the loss of forest lands, recent changes in the law are expected to reduce the loss compared to the number of acres reforested.



*This upland forest community has a dense understory of tree regeneration.*

### 4. Review and amend development standards that contribute to forest loss and fragmentation.

The development standards contained in the County Zoning Ordinance and Subdivision Regulations, and the provisions for development contained in the County's FCL have the greatest influence on our ability to minimize forest loss and fragmentation. To address these issues, amendments to the FCL proposed by the Montgomery County Planning Board were enacted by the County Council in November, 2001. Data collected as part of the Planning Board's implementation of the law prior to November, 2001, demonstrated that overall forest cover in the County was continuing to decline despite requirements for retention and reforestation contained in the law. Among the reasons for the continued decline was that the FCL only required preservation of certain high priority forested areas (primarily stream buffers), and reforestation requirements neither deterred clearing of other areas nor compensated for all the forest that was lost.



*One of the oldest communities of upland oaks and hickories is found inside the capital beltway in the Ayr lawn Park.*

While acknowledging the need to balance forest preservation with land development rights, the recent changes in the FCL are designed to maximize opportunities to protect and establish more forested areas. One major change involved adding minimum retention and planting requirements for certain developments. These included sites developed in agricultural and resource areas, planned-unit developments, sites developed using cluster or other similar optional method development standards in single-family residential zones, and sites requesting environmental waivers. These situations were chosen because they had larger open space requirements, and the development standards for them provided for the maximum flexibility for unit types and setbacks.

Other changes aimed at reducing forest loss and discouraging preservation of forest fragments included expanding the categories of forest which are recognized as highest priority for retention, and changing the definition of forest so that narrow bands of retained or planted trees with little forest value are excluded. To address the difficulty in protecting or establishing larger forested areas as part of high density development where options for clustering or other flexibility in development standards do not currently exist, the changes in the law increased opportunities available for off-site forest banking and payment of fees-in-lieu of onsite and offsite reforestation. These changes should provide incentives for forest preservation on non-developing properties and result in larger-area reforestation projects planted with the accumulated fees.

A comprehensive review of development standards in the Zoning Ordinance and Subdivision Regulations has not been preformed yet. Efforts to revise certain road standards will be underway soon and should be coordinated with the IFC Team in an effort to address this action item.

*“Trees: A Technical Manual”* originally published by M-NCPPC in September, 1992, is being updated to provide developers and residents with information concerning current regulations and improved practices. It is in final stages of review.

# URBAN STREET TREES

Street trees are those growing within public rights-of-way, or adjacent to streets and roads. The benefits of these trees range from cooler summertime temperatures, to calmer traffic, to cleaner air and water. Also, urban trees provide habitat for wildlife. The County is responsible for maintaining all trees within the rights-of-way of all streets maintained by the County.



**OVERALL GOAL:** Improve the street tree maintenance program to meet state law and national standards.

## ACTIONS:

1. Replace current annual operating budget cycle with a “green infrastructure” Capital Improvement Program (CIP) project for street tree planting and maintenance.

As the Task Force’s report recommended, in FY02 and FY03, the Department of Environmental Protection (DEP) proposed CIP budget initiatives to create a green infrastructure program to support street tree plantings and maintenance. Due to limited resources, these proposals were not approved. For the FY05 budget cycle, the Department of Public Works & Transportation proposed a CIP budget initiative to reduce backlogs. In FY 05, DPWT received an additional \$150,000 in funding for street tree maintenance.



*Street trees along this residential street cool pavement, intercept rain, and help clean the air.*

2. Develop a long-term street tree planting and maintenance strategy.

The IFC Team has held preliminary discussions on developing a long-term street tree maintenance strategy and how to update the existing inventory of street trees and better capture new plantings completed through the subdivision development process.

Since the spring of 2003, the Department of Environmental Protection has been targeting street tree plantings to achieve multiple environmental objectives. These include reducing peak storm water flows, cleaning storm water runoff, removing air pollutants, and reducing urban temperature impacts, as well as reducing energy needs and costs of heating and cooling. Street trees are being planted in communities where IKONOS imagery detected low tree canopy coverage. Emphasis is on planting in communities located within priority watersheds for water and air quality protection as identified through the Countywide Stream Protection Strategy and the Air Quality Protection Strategy.

The IFC Team met with representatives from the Casey Trees Endowment Fund who presented information on the process they used to conduct a volunteer-based street tree inventory in Washington, DC. Casey Trees is separate from DC's street tree program and is supported through a \$50,000,000 endowment fund. It works toward helping the city improve street tree conditions by involving communities and fostering stewardship among the residents of DC. At this time, the IFC Team determined that the costs, the amount of staff time required, and primary objectives are beyond the resources and scope of needs to conduct a street tree inventory in Montgomery County.

3. Improve the overall condition of street trees, lower per-tree maintenance costs, minimize liability, reduce storm damage potential, and improve the appearance of street trees and adjacent property values by providing sufficient funding to achieve a six-year maintenance cycle.

Improving overall conditions of street trees is a long-term goal that requires effort on many fronts. In FY00, the County Executive recommended, and the County Council approved, an increase in funds under the operating budget for the street tree maintenance program to begin to address the backlog in tree maintenance. The funding levels for these programs remained at the higher levels during FY02, FY03, and FY04.



*A wide green space between the sidewalk and street provides better growing conditions for street trees.*

During FY03, 2,870 trees were pruned to resolve hazardous conditions and 988 trees were pruned to clear traffic signs and signals. None of the County’s street trees received routine maintenance. Also, 643 street trees were removed due to diseases, insects, and physical damage and 293 stumps were ground. The backlog for removal of dead trees is approximately 21 months, and 18 months for stump removals.

The development of an improved, long-term maintenance strategy is in initial phases. As resources permit, this maintenance strategy will begin to address maintenance costs, maintenance cycles, liability issues, and the overall condition and appearance of street trees. The national standard recognized by the Forest Preservation Strategy recommends a six-year maintenance cycle. Due to insufficient funding, routine maintenance has not occurred since FY98. Therefore, no maintenance cycle can be calculated for Montgomery County at this time.

Year	FY98	FY99	FY00	FY01	FY02	FY03
Number of street trees pruned per year	1,376	7,395	5,373	5,075*	3,044*	3,858*
Cost per tree for routine maintenance	\$63	\$60	\$58	\$86	\$71	\$47
Street tree maintenance frequency in years	218	41	52	*	*	*
Ratio of street trees removed to replaced	3.9:1	1.9:1	2.7:1	1.5:1	0.63:1	0.38:1

Table 2. The number of street trees pruned, cost per tree for routine scheduled maintenance, street tree maintenance frequency, and ratio of street trees removed to trees replaced per year from FY99 to FY03 in Montgomery County.

\*Routine pruning did not occur during FY01, FY02, and FY03. These numbers reflect trees pruned for emergencies, storms, and traffic safety only. Since no routine pruning was completed between FY01 and FY03, no street tree maintenance frequency exists.

4. Provide sufficient funding for tree planting to bring the tree maintenance program into compliance with the Maryland Roadside Tree Law and begin reducing the large number of vacant tree planting sites along county roadways.

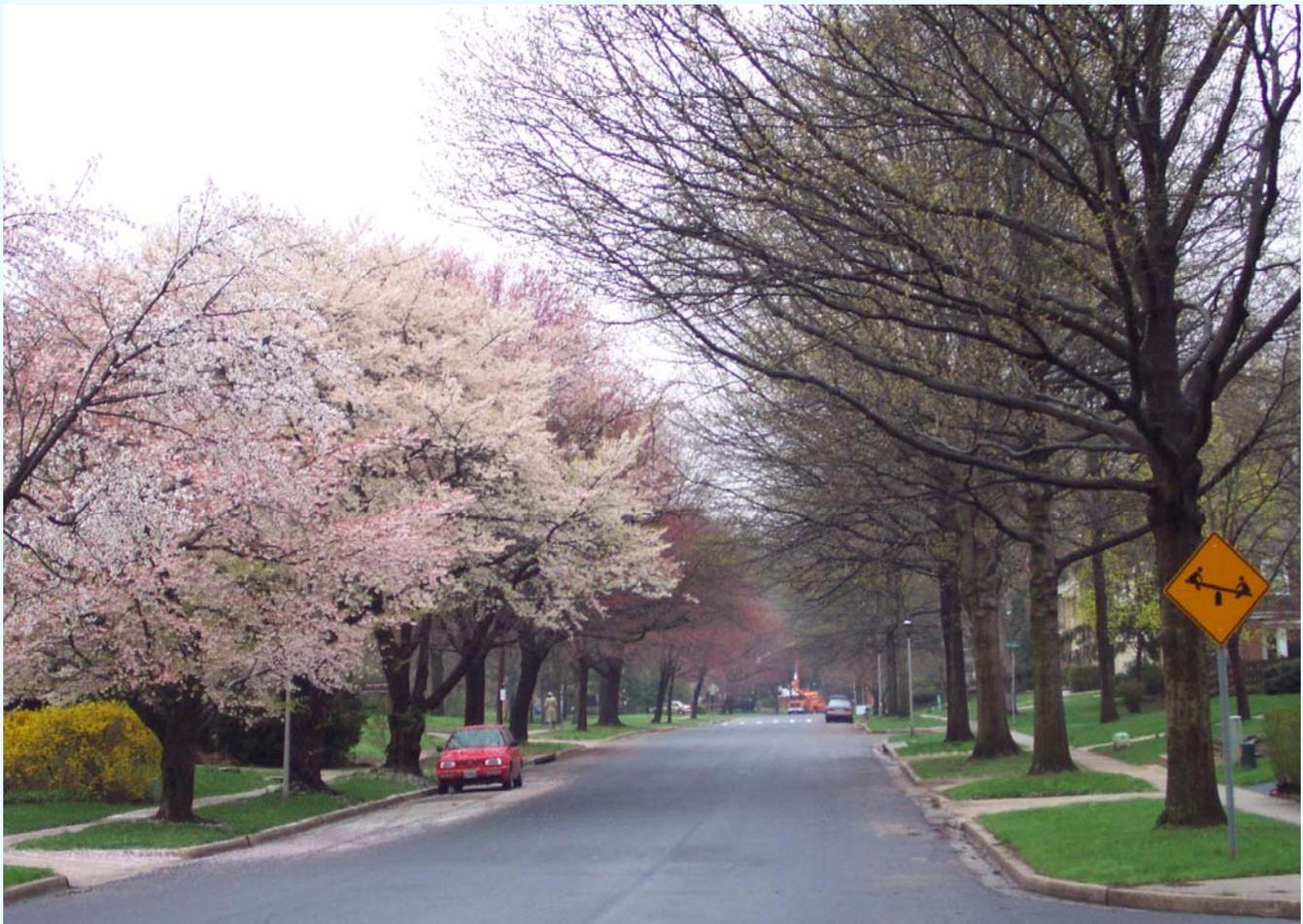
In FY01, increases in funding for the street tree planting program were approved and responsibilities for planting were shifted to from the Department of Public Works & Transportation to the Department of Environmental Protection. To meet the County Executive’s goal of planting 1,000 more trees than are removed each year, funding and plantings were increased significantly.

Year	FY98	FY99	FY00	FY01	FY02	FY03	FY04
Number of Street Trees Planted	342	780	403	891	1,725	1,702	1,522
Number of Street Trees Removed	852	1,148	958	1,016	946	643	1,323*

Table 3. The number of street trees planted and street trees removed from FY98 to FY04 in Montgomery County.  
 \*The number of trees removed in the first half of FY04. In the fall, a large number of trees were removed due to damage from Hurricane Isabel.

With increases in the operating funds for the street tree planting program, about 1,700 trees are planted each year in county maintained rights-of-way. Since FY02, the number of street trees planted substantially exceeded the number of trees removed. This reverses the discouraging situation shown for FY98-01 when street tree removals far exceeded replacements or new plantings. The street tree planting program has begun to reduce the large number of vacant planting sites across the County.

In an effort to review opportunities for increasing cost-efficiencies for trees planted on publicly-maintained land, the Office of Legislative Oversight (OLO) plans a study in late FY04. Information will be collected on current tree procurement, installation, inspection, and inventory activities on public land and in public rights-of-way among the different county agencies. The OLO will assess current inter-agency coordination that occurs with respect to tree procurement and installation, and explore potential opportunities for inter-agency resource sharing. Comparative data about tree management practices of similar-type agencies in other jurisdictions will be included. The IFC team will work closely with the County Council and OLO in the development of this study.



*Trees increase property values and add to the sense of well-being, as well as provide many environmental benefits.*

# FORESTS ON PRIVATE LAND



Of the forested land in Montgomery County, 64 percent is in private ownership. Inherently, these privately owned forests and trees are the most vulnerable to losses from development. While action items for Riparian Forests and Upland Forests are geared towards increasing the amount of forest land protected, they overlap with the following goals for forests on private lands.

## **OVERALL GOAL:** Increase the amount of urban and suburban forests and canopy cover on private properties in the County.

### **ACTIONS:**

1. Amend the existing Forest Conservation Law so that there is no net loss of forest cover in the County from new development.

The 2001 Montgomery County Forest Conservation Law (FCL) changes discussed under Action Item #4 in the Upland Forests section of this report, and other changes made at the same time to eliminate loopholes in the existing requirements, contribute toward meeting this action item. Most notable of the loopholes in the previous law was the single lot exemption primarily intended to allow construction of new single-family residence on lots recorded prior to enactment of the FCL, provided the construction involved a minimum amount of forest clearing. The previous wording of the exemption and the previous definition of “lot” resulted in the exemption having broader applicability to other types of new development on undeveloped lots. These lots were developed for industrial, commercial, or institutional uses that should have generated afforestation requirements and contributed to offsetting forest loss. The changes eliminated this and other unintended exemptions.

Concerns are increasing over the amount of tree and canopy lost during redevelopment on small single lots. Within the older communities in Montgomery County, small lots are being sold, the trees are being removed, and the old homes are being torn down and replaced by large houses that extend to the limits of the building setbacks. This alters the character of these neighborhoods significantly. While the value of the large new home is extremely high, the loss of mature trees and canopy is cause for concern environmentally, aesthetically, and with regards to the sense of well being of neighborhood residents. The loss of trees is a tangible issue that is readily identified and verbalized; it has become the focal point of the issue.

On small lots, the larger new structures leave little space for tree roots. In fact, large portions of existing root systems are removed during construction. Most measures to preserve large trees and tree save plans are not effective within the confined setbacks on small lots. Therefore, many established trees are removed or severely injured during the redevelopment process.



*Riparian buffers on private lands are an important component of our resources.*

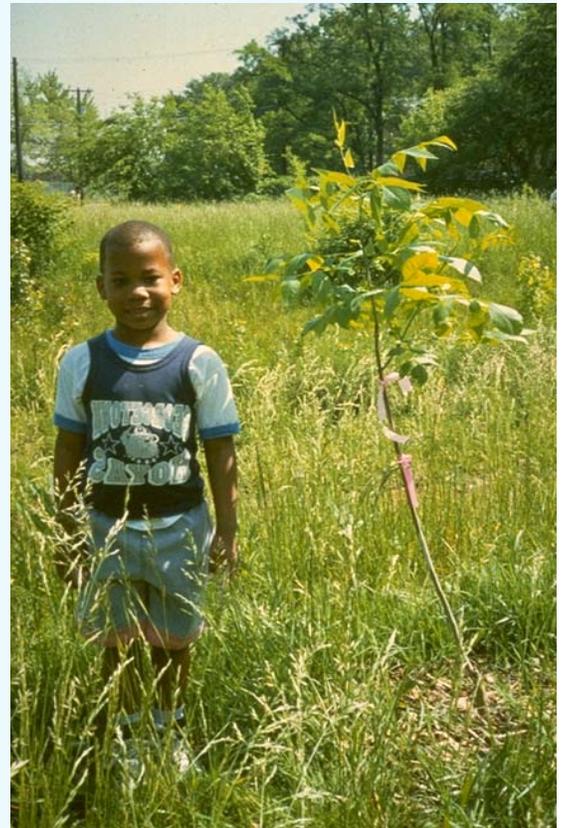
To date, there is little that can be done through regulation and permitting to allow for redevelopment of small lots while protecting trees and canopy. While the FCL can be applied to restrict the size of new homes that can be built or to alter the setbacks to save trees, it is applied during the subdivision review process. The FCL does not apply to the majority of redeveloped lots because they are too small to go through the subdivision review process. Currently, there are no provisions within the sediment control permitting process to protect trees on these lots as they undergo redevelopment.

Infill and redevelopment of neighborhoods will not likely remain a localized problem. Rather, redevelopment of small lots is expected to spread to most areas where zoning, small lot size, and age of existing community makes land more valuable for its building potential than for any existing structures. Larger lots will not likely be affected because there is more space for a larger structure and trees roots to exist simultaneously. Currently, the IFC Team is looking at reasonable solutions to protect and replace trees during the redevelopment process.

## 2. Establish a county tree planting program that encourages volunteer community participation.

Nationwide, one of the most recognizable tree planting programs is Arbor Day. During the last several years, Arbor Day has been celebrated in Montgomery County with a large gathering at the Agricultural History Farm. This celebration is very successful at transferring information about the importance of trees and forests to county residents, adults and children. Also, the celebration is successful at gathering together local owners of small businesses, county agencies and departments, and conservation groups such as the Forest Conservancy Board of Montgomery County. The Arbor Day celebration fulfills one of the requirements to maintain the prestigious designation of Tree City, USA. It includes a kick-off for the Big Tree program and a reforestation project completed by attendees. Cooperation within M-NCPPC has provided funding for the Arbor Day Celebration for FY04. The IFC Team is working to establish a permanent source of funding to continue and expand this educational program.

Resident volunteers play a part in the M-NCPPC Reforestation Program, and could play a part in other county tree planting and forest habitat restoration efforts if the necessary staff and funds were available to coordinate this potentially important group.



*A volunteer plants an ash tree to create a buffer.*

## 3. Provide adequate staffing for the enforcement of the Forest Conservation Law and monitoring of forest conservation areas.

M-NCPPC staffing assigned to address this action item has not changed since publication of the *Forest Preservation Strategy*. Currently, there are three full-time inspectors who contribute approximately one-half of their time to implementation and enforcement of forest conservation plans and the Montgomery County Forest Conservation Law. While this staffing level is minimally acceptable for meeting these objectives, it does not provide opportunities for monitoring or management of forest conservation areas outside the time-frame of actual development. Thus, the long-term condition and viability of these conservation areas is not known. Additional staffing is needed to fully accomplish this action item.

#### 4. Establish tree planting incentives and technical support to increase tree canopy cover on private property.

In Ayr lawn, a neighborhood in Bethesda, the Department of Environmental Protection (DEP) collected detailed information about each yard and street tree. This information is being used to better understand the composition and functions of communities of trees in neighborhoods. Also, it will be used as part of the data input in a variety of urban forest models. These models seek to better simulate the value of trees for pollution abatement, energy saving, and carbon sequestering.

For FY02 and FY03, DEP submitted budget proposals for a “Volunteer Planters for Montgomery” initiative to establish a program of partial tree subsidies to foster increased volunteer tree plantings on private properties and establish a tree fund to accept private donations to continue this as a self-sustaining planting program. While these initiatives were not approved due to resource limitations, efforts continue to find other sources of funding.



*Tree canopy consists of the leaves and branches, or crowns, of individual trees.*

#### 5. Establish minimum tree canopy cover standards for development projects.

The guidelines developed by the American Forests and endorsed by the Forest Preservation Strategy in combination with the IKONOS imagery will provide the information needed to develop minimum tree canopy cover standards for development projects. The IFC Team will be discussing and making recommendations for these standards, and it is anticipated that they will be incorporated through amendments into “*Environmental Guidelines, Guidelines for Environmental Management of Development in Montgomery County*” (M-NCPPC, in review).

#### 6. Provide technical assistance to help manage invasive and pest plant and animal species on private land.

The WeedWarrior program developed by M-NCPPC Montgomery County Department of Parks and Planning, trains volunteers to remove non-native invasive plants from park lands. These volunteers learn about the importance of using native species on their own properties. They are encouraged to inform members of their communities of the problems concerning invasive plant and animal species. This public program serves as a model for developing practices geared towards private lands.

The MD Department of Natural Resources (DNR) Forest Service offers several programs to private residents who own forest land. These programs focus on enhancing forest stewardship through management plans. Forest stewardship management plans incorporate landowner objectives with best management practices to improve the health and diversity of the forests. Several cost-share programs provide financial assistance for management treatments. Further, easement programs exist to provide protection of these privately owned forest lands.

# FORESTS ON PUBLIC LAND

In Montgomery County, most publicly-owned land is readily accessible. For example, the stream-valley park system crosses all types of land use and has miles of trails and many areas for parking. These public lands are subject to stresses from intensive recreational use, disturbance to riparian buffers, soil compaction, damage from deer browsing, and invasion from non-native pest species.

**OVERALL GOAL:** Ensure the long-term health and protection of forested areas on public land.

## ACTIONS:

1. Develop a strategy to manage invasive and pest plant and animal species on public lands.

Progress has been made towards managing three major problems: non-native invasive plant species, gypsy moths, and white-tailed deer.

### *Non-native Invasive Plants*

The M-NCPPC Montgomery County Department of Parks and Planning has developed a draft Non-native Invasive Plant Management Plan to protect and enhance natural communities and diversity by removing non-native invasive plants, restoring and maintaining natural communities, and educating residents and staff about the threat of non-native invasive species. The plan clearly states that non-native invasive plants are the second most important threat to biodiversity nationwide following destruction of habitat by people. The plan prioritizes activities and outlines steps to develop a broader program. Successful management of non-native invasive plants must include preventing further invasion; monitoring, prioritizing, managing, and controlling infestations, and increasing public awareness. The draft management plan is expected to be presented to the Planning Board and the County Council in 2004.

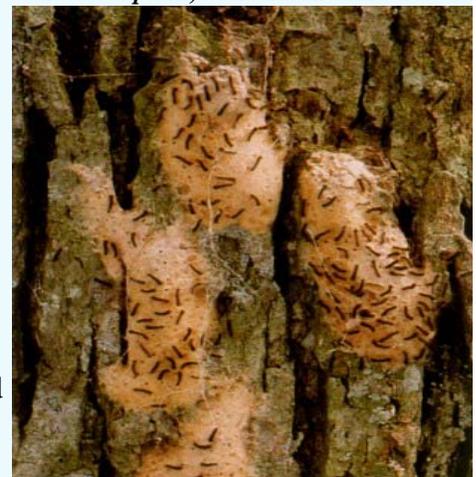


*Kudzu, a non-native invasive plant, overtakes mature trees.*

The WeedWarrior Program, initiated in 1999 by the M-NCPPC Montgomery County Department of Parks and Planning, continues to grow. This program trains resident volunteers to remove non-native invasive plants and teach their neighbors about this important problem. Currently, more than 200 registered WeedWarriors are removing non-native invasive plants from 40 park areas.

### *Gypsy Moth Suppression Program*

In Montgomery County, gypsy moth caterpillars defoliate hardwood trees annually. Defoliation leads to tree mortality, and declines in forest and tree health, growth rates, and other vital functions. A gypsy moth suppression program is essential to maintain the environmental health benefits of forests and trees.



*Gypsy moth caterpillars on egg masses.*

The IFC Team is working to increase current funding levels to complete annual surveys of gypsy moth egg masses and to establish funding to implement treatments recommended by the Maryland Department of Agriculture. The IFC Team developed a protocol for prioritizing suppression efforts in areas with expected outbreaks. In FY03, sufficient funds were allocated to treat all areas where caterpillar populations were expected to be high. A multi-department proposal for funding was submitted for the FY04 budget cycle. While the proposal received high priority ratings, in these difficult financial times the funding levels were not increased. In FY 05, \$30,000 was provided for the annual survey and projected suppression costs.

### ***White-tailed Deer***

The M-NCPPC Department of Parks and Planning's wildlife staff is working to identify how growing deer populations are affecting forest regeneration and composition. Recent assessments of two data sets indicate that deer browsing is reducing height, number, and species diversity of tree seedlings and other plants within our parks. The total amount of browse material available is being reduced and the percentage of browse consumed each year is increasing. Deer are eating virtually all desirable tree species shorter than 6-feet. This jeopardizes the future of our forests because older trees are not being replaced naturally or by planting. Additionally, while woody plants are their primary source of food, many herbaceous species have been eliminated due to excessive browsing.

In 1995, a Deer Management Work Group was established and includes MD DNR Wildlife and Heritage Division, M-NCPPC, MC Cooperative Extension, MC Police Department, USGS



*Due to over-browsing by deer, pink lady's slippers are uncommon.*

Biological Services Division, and the US National Park Service. This group developed and implemented “*The Comprehensive Deer Management Plan for Montgomery County*” and produces an annual report. Actions implemented to date are geared towards reducing the negative impacts of deer including deer-vehicle collisions, depredation to crop and landscape plants, preserving native plant and animal communities, and education. They include a wide range of educational, non-lethal management, and population management techniques on county parkland.

## **2. Establish public agency guidelines to restore forest and tree canopy to available open space on public lands.**

Efforts to restore forests, understory plant communities, and tree canopy should start with an inventory of the existing resources on open space and public lands. Open space and public lands includes school properties, libraries, and rights-of-way that will not be used for roads. While some agencies have policies that disallow forests and trees for safety reasons, guidelines should be created to restore forest and tree canopy wherever possible.

A forest management program exists for Montgomery County park property under M-NCPPC stewardship. It includes vegetation inventory, reforestation, non-native invasive plant removal, and habitat restoration work.

Year	Number of Trees Planted within the Park System
FY99	1,149
FY00	1,217
FY01	1,046
FY02	2,052
FY03	1,181

Table 4 shows the number of trees that have been planted within the developed areas of the Montgomery County Park System since FY99. These trees are grown at the Pope Farm Nursery and then transplanted. Once transplanted, the trees receive two years of after-care including watering, mulching, pruning, and de-staking. They provide many benefits including lowering summertime temperatures, reducing peak storm water runoff, increasing aesthetic value of the parks, and creating great places to picnic.

Within the developed areas of Montgomery County parks, individual trees are inspected for hazardous conditions about once in 4 years. This includes a formal inspection process, as well as informal observations taken when crews are in the area for other reasons. Maintenance is limited to removal of hazardous conditions due to limitations of funds. When funds and time permit, a few very significant large trees receive routine care.

### 3. Encourage interior forest restoration and preservation by creating “exclusion or limited use” areas.

Natural resource management plans are developed for lands acquired through in-fee purchases by the Legacy Open Space program. These plans evaluate existing resources to determine the appropriate balance between protection and use by residents. In these areas, trails are designed, constructed, and maintained as sustainable trails. Most of them are natural surface trails.

### 4. Increase funding for public initiatives, such as Legacy Open Space, to purchase and protect high priority forested lands.

The Legacy Open Space program has received a steady stream of funding through FY04. Consistency in funding provides a measure of security that is important during negotiations with landowners. Legacy Open Space staff continue to search for alternative funds. In previous years, they have received \$12,907,000 from Maryland GreenPrint Program, Maryland Rural Legacy Program, municipal, private, and other donations.

Since FY99, \$17,000,000 in Rural Legacy Conservation Easement funds has been provided to Montgomery County through this grant program. This increased funding has been used to protect high priority forested lands in the Rural Legacy area. This included the protection of approximately 1,300 acres of continuous forest lands in the Hoyles Mill area in Boyds.

In FY03, the Federal Farm and Range Protection Act provided \$268,000 to purchase easements on farms, including the forested lands on these farms. Three properties are in negotiations. Additional funds have been provided by the Maryland Agricultural Land Preservation Foundation.

Currently, M-NCPPC is evaluating the high priority forest lands within the Broad Run, Bennett Creek, and Patuxent watersheds, as well as areas that are reviewed when master plans are developed. Forests in these areas have been targeted for protection through funds from the Montgomery County Legacy Open Space and Maryland Program Open Space. While many of these discussions have involved the in-fee acquisitions of "key" properties, protection could be accomplished through conservation easements rather than in-fee purchases. The benefits of purchasing only the conservation easements include maintaining properties in the private sector, reducing costs, maintaining tax revenue, and increasing voluntary participation in programs.

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***The Forest Preservation Strategy is the beginning of a long-term commitment by the residents and government of Montgomery County to identify and implement the measures needed to assess, manage, and restore our forests and trees at every opportunity.***