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ANNUAL REPORT ON THE ENVIRONMENT

CHAPTER VII

**ECOLOGICAL  
RESOURCES**

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## VII. ECOLOGICAL RESOURCES

This chapter summarizes the status of ecological resources and the actions of public agencies and citizen groups in the management and preservation of these resources.

### A. ISSUES AND OVERVIEW

Open space and natural habitat continue to be reduced in Fairfax County, primarily because of development (both residential housing and commercial buildings) and road building. As this resource is reduced, increased emphasis must be placed on protecting, preserving and enhancing the remaining open space and natural habitat in Fairfax County.

Fairfax County contains a total of about 227,750 acres. Of this total, about 28,108 acres (12.3 percent) are in parks and recreation as of January 2004. Another approximately 25,712 acres (11.3 percent) are vacant or in natural uses. This compares to the about 26,700 acres (11.7 percent) that were vacant or in natural uses as of January 2003. However, not all this acreage can be considered as open space that is valuable for natural habitat. First, the park acreage consists of active recreation (ball fields, etc.) as well as passive recreation (stream valley parks, nature centers, etc.) Ball fields, while greatly needed in Fairfax County, do not do much for protecting natural habitat. In a like fashion, much private open space consists of mowed areas and isolated trees (not woodlands). Again, this does little for protecting natural habitat. Both active recreation areas and private open space, however, if properly designed can help the environment by reducing storm water runoff (by allowing storm water to infiltrate into the soil).

Second, while vacant land is often wooded, this land is subject to development. Considering the continuing rapid pace of development in Fairfax County, much of this land will soon become residential space, office space, retail space, etc., and not provide much in the way of protecting natural habitat. In 1980, vacant land accounted for 32.2 percent of the total land in Fairfax County. By 1990, this had dropped to 19.5 percent and the figure was 11.3 percent as of January 2004.

Therefore, Fairfax County needs to undertake stronger efforts in order to protect, preserve, and enhance the environmentally sensitive open space in the county. These efforts should include the establishment of a countywide Natural Resource Inventory, followed by a countywide Natural Resource Management Plan. Additionally, the county needs an aggressive program seeking easements on privately owned environmentally sensitive land and, as opportunities arise, to purchase environmentally sensitive land.

Recently, two significant efforts have occurred that should help in the County's preservation and protection of natural resources. First, as reported in the 2004 Annual Report on the Environment, the Fairfax County Board of Supervisors adopted an environmental vision for Fairfax County – *Environmental Excellence for Fairfax County: a 20-Year Vision*. This vision cuts across all activities in Fairfax County and outlines guidelines that hopefully will be followed in future planning and zoning activities in Fairfax County.

Second, as also reported in the 2004 Annual Report on the Environment, the Park Authority approved the Natural Resource Management Plan for park properties. Again, if this plan is implemented, improved preservation and protection of environmentally sensitive land should be the result.

EQAC continues to commend a number of organizations for their activities in protection, preservation, and enhancement of environmentally sensitive areas. These organizations include: the Northern Virginia Soil and Water Conservation District, the Virginia Department of Forestry, the Northern Virginia Conservation Trust, Fairfax ReLeaf, the Fairfax County Department of Public Works and Environmental Services, and the Fairfax County Park Authority and its staff. EQAC especially commends the Fairfax County Board of Supervisors for its vision and activities in environmental areas.

## **B. PROGRAMS, PROJECTS, AND ANALYSES**

### **1. The Fairfax County Board of Supervisors**

In past years, this chapter of the Annual Report mentioned various organizations and programs supporting environmental efforts in Fairfax County. However, the Fairfax County Board of Supervisors, while mentioned many times, did not have a section in this chapter. This changed in the 2005 Annual Report when a section was included on the board. The actions and decisions of the BOS do affect the county's natural resources. These actions and decisions include land use planning and zoning, transportation planning, allocation of staff resources, etc. The BOS has enacted a number of policies that do benefit the environment and many of these policies are embedded in county ordinances and the Policy Plan. However, there never has been an overarching vision dealing with the environment. This has now changed. As reported in the 2005 Annual Report on the Environment, the BOS has now adopted such an overarching vision -- *Environmental Excellence for Fairfax County: a 20-Year Vision*.

This vision is organized into six sections that cut across all areas in the county:

- Growth and Land Use
- Air Quality and Transportation
- Water Quality
- Solid Waste
- Parks, Trails, and Open Space
- Environmental Stewardship.

Some recommendations in this document that impact ecological resources include:

- Create more community parks for active and passive recreation – open spaces with native vegetation to sustain local wildlife and to create areas for walking, meditating or bird watching.
- Continue to acquire open space before it is too late through direct purchase or conservation easements to create more trails, connect trails and provide passive and active recreation areas.
- Provide adequate resources to maintain and appropriately develop our parks for passive and active recreation.
- Encourage conservation easements for open space and trails either to private organizations, such as the Northern Virginia Conservation Trust and The Potomac Conservancy, or to government agencies like the Fairfax County Park Authority or the Northern Virginia Regional Park Authority.
- Encourage organizations, for example, those that work on stream monitoring and stream valley restoration, to involve schools and residents of all ages in their work.
- Encourage community-based watershed stewardship groups and help them to work with all stakeholders to protect, enhance and improve the natural resources, and hence, the quality of life in their watersheds.
- Establish an aggressive program of community groups to adopt natural areas such as parks, trails, and stream valleys.

The summary of the document can be viewed at: [http://www.co.fairfax.va.us/dpwes/environmental/env\\_excel.htm](http://www.co.fairfax.va.us/dpwes/environmental/env_excel.htm) and the complete document is at:

[http://www.co.fairfax.va.us/chairman/environmental\\_plan.htm](http://www.co.fairfax.va.us/chairman/environmental_plan.htm)

This document is very significant in its potential for protection, preservation, and restoration of the county's natural resources. EQAC continues to commend the Board of Supervisors for adopting this vision and for the steps it is taking to implement these recommendations.

## 2. Department of Public Works and Environmental Services

### a. Stream Restoration

DPWES was involved in a number of stream restoration projects. Bioengineering techniques are being used where possible. The following projects were in progress or completed in 2006:

- **English Hills:** Stabilization of 175 linear feet of stream bank at 7820 Manor Drive. Construction is complete.
- **Haycock Longfellow Park:** In partnership with FCPA, a bioengineered solution was designed on approximately 270 feet of stream that featured large boulder cross-veins with step pools, a reestablished floodplain and native plantings while only requiring the removal of one tree. Construction is complete.
- **Hollington Place:** Stabilization of 150 linear feet of stream bank using bioengineering techniques to alleviate erosion at 7926 Hollington Place. A proposal for the final design has been received from the Architectural/Engineering firm and is currently being negotiated.
- **Hunters Branch:** Stream bank stabilization. Purchase Order negotiations are under way.
- **Runnymede Subdivision:** Stabilization of 1,200 linear feet of stream bank using bioengineering techniques. Construction is complete.
- **Clarke's Landing:** Stabilization of 280 linear feet of stream bank using bioengineering techniques. In construction.
- **Poplar Springs Court:** Restoration of 1,100 linear feet of stream bank using bioengineering techniques. A Design Task Order has been approved.
- **Beach Mill Road:** Stabilization of 200 linear feet of stream bank using bioengineering techniques. In construction.
- **Bridle Path Lane:** Stabilization of 1,200 linear feet of stream bank using bioengineering techniques. Design review is underway.
- **Swinks Mill Road:** Stream bank stabilization to provide structural protection at 819 Swinks Mill Road. Construction is complete.
- **Balmacara Phase II:** Stabilization of 200 linear feet of stream bank to provide structural protection. Construction is substantially complete. Plantings scheduled for early fall, 2007.
- **The Colonies at Scott's Run:** Stabilization of 180 linear feet of stream bank. Construction is complete.
- **Mount Vernon Estates:** Restoration of 600 linear feet of streambank using bio-engineering techniques. In construction.
- **Hope Park Road:** Restoration of 1,000 linear feet of stream bank plus removal of an unauthorized landfill. Design negotiations are under way.

- **Huntley Meadows:** Stream bank stabilization project using bioengineering techniques. This project is 100 percent complete, with good results, insofar as the stream bank withstood the record flooding of the June 2006 storm event and emerged mostly intact.
- **Kirby Road:** Stabilization of 200 linear feet of stream bank. Design negotiations are under way.
- **Difficult Run Stream Valley Park, Area 3, Upstream:** Partnered with FCPA to install root wads, large boulder revetments, a rock vane and vegetated geo-grids in the upstream portion of Difficult Run in order to recreate the natural meander of the channel while stabilizing the toe and banks. Construction is complete.
- **Difficult Run Stream Valley Park, Area 3, Downstream:** Flow was redirected with large boulder revetments and two rock vane structures. The bank was shaped and graded, a vegetated geo-grid was placed on the banks, and existing scour areas were filled to stabilize the eroding embankment toe adjacent to the parking area. Construction is complete.
- **Little Pimmit Run:** Emergency repairs were performed to a sanitary sewer line, including a temporary pump around sanitary flow, construction of 125 linear feet of new 24" sanitary sewer main, stream bank stabilization by gabion walls and riprap and restoration. Construction is complete.
- **Pleasant Ridge:** The streambank was restored and stabilized and a stormwater outfall was repaired. Construction is complete.
- **Governor's Run Phase II:** This project entails streambank stabilization and forebay construction. Construction is 95 percent complete. Planting of trees, shrubs, live stakes and final restoration of disturbed areas was to have commenced in fall, 2007.
- **Woodland Avenue:** This project entails stabilization of 120 linear feet of streambank to provide structure protection. Construction is 95 percent complete.
- **Dolly Madison Library:** Approximately 1,400 linear feet of streambank are to be stabilized using soil bioengineering technology. An A/E proposal has been approved and concept design was to have been provided in the summer of 2007.
- **Hollington Place:** Approximately 730 linear feet of streambank are to be stabilized using bioengineering techniques to alleviate sever erosion. The project is in the final design phase.
- **Clifton Creek:** Approximately 1,500 linear feet of streambank are to be stabilized using bioengineering techniques. The project is in the design phase.
- **Clifton Road:** Spot streambank stabilization is to be pursued using bioengineering techniques. The project is in the design phase.

**b. Green Roof Technology**

There are several vegetated roofs soon to be implemented by Fairfax County, one on an existing structure and two on new buildings. A vegetated roof demonstration project will be installed on part of the Herrity Building parking garage and is currently under construction. This project is being managed by the Facilities Management Division with support and funding provided by Stormwater Management. This demonstration project is intended to provide an easily accessible example of different vegetated roof technologies and methods for educational and research purposes. Government staff and those in the building industry, as well as residents and students of all ages, will benefit from this educational installation. Capital Facilities, also with support and funding provided by Stormwater Management, will be installing vegetated roof pilot projects on two new buildings. These buildings, Fairfax County's Bus Operations Center on West Ox Road and the Wolf Trap Fire Station, are both currently in the design phase.

Vegetated roof implementation will also be encouraged in an upcoming Public Facilities Manual amendment. Vegetated roofs are one of six Low Impact Development techniques currently in the process of being added to the Public Facilities Manual. Lists of suggested plants for both extensive (low-profile) and intensive (deep-profile) type roofs will be included in order to further facilitate design and implementation.

Additionally, Stormwater Management has several vegetated roof monitoring projects in the works. The demonstration roof on the Herrity parking garage will be monitored for several parameters, as will the currently functioning demonstration roof at the Providence District Supervisor's office. Stormwater is also giving support to a graduate student who is monitoring the privately owned Yorktowne Square Condominium vegetated roof/conventional roof comparison study site.

**3. Fairfax County Park Authority**

The Fairfax County Board of Supervisors created the Fairfax County Park Authority in 1950, authorizing the Park Authority Board to make decisions concerning land acquisition, park development, and operations. As a result, Fairfax County has a system of parks that serve a number of uses, including active recreation such as sports, historic sites and buildings, and preserving environmentally sensitive areas such as forests and stream valley lands. For current information on the county's parks, visit the FCPA Web site at <http://www.fairfaxcounty.gov/parks/>.

**a. Acquisition of Park Land by FCPA**

The FCPA added 281 acres between July 2006 and July 2007. This brings the parkland inventory to a total of 23,969 acres (which equates to 9.4 percent of the land mass of Fairfax County) as of July 2007.

FCPA purchased the following properties:

- Joseph and Bonnie Frey, 4.1461 acres. This parcel in Sully District was the last privately-owned property within the boundaries of E. C. Lawrence Park.
- Royal Pool Association, 1.0 acres. FCPA plans to demolish the existing pool and incorporate this property into Kings Park Park in Braddock District.
- Lawrence Doll and Dominion Hills Development, LLC, 1.562 acres. The addition of this parcel to Pimmit Run Stream Valley Park will permit construction of a stream valley trail.
- Crestwood Construction Corporation, 8.6535 acres. This acquisition of ecologically sensitive floodplain in Braddock District was added to Woodglen Lake Park.
- McCue and McCue Limited Partnership, 104.1681 acres. One of the largest parcels of underdeveloped land remaining in Mount Vernon District, this acquisition contains the archeological remains of the colonial town of Old Colchester.
- NVP, Inc., 3.6786 acres. Cultural resources associated with this property in Sully District are potentially eligible for inclusion in the National Registry of Historic Places.
- Ronald and Mary Beth Cuigan, 35.0 acres. FCPA used funding from the Coastal and Estuarine Land Conservation Program for this acquisition in Sully District.
- Daniel Garber, Neil Garber, John Garber, Geraldine Rigney, Mitchell Tolson, Jr., and Marta Ross, 31.5208 acres. This property in Mount Vernon District with Revolutionary War historical importance will be added to Mason Neck West Park.
- Kenneth Hall, Brian Hall, Bruce Hall, Alan Hall, Stephen Hall, and Nancy Hall Morris, 1.4975 acres. This parcel in Dranesville District provides a critical link for the Pimmit Run Stream Valley Park.

FCPA acquired the following properties through dedications:

- Ogelthorpe Limited Partnership, 1.651 acres. This property became part of Sully Woodlands in Sully District.
- Rosewood-Hooes, LLC, 0.7797 acres. This property in Mount Vernon District was added to Accotink Stream Valley Park.

- Carlyle 9B1 Fairfax, L.P., 12.3328 acres. This floodplain in the Sully District and within Cub Run Stream Valley became an addition to Sully Woodlands.

FCPA acquired the following properties through transfers:

- United States of America, 12.3287 acres. The Department of the Army transferred four ball fields and associated amenities known as McNaughton Fields Park in Mount Vernon District to FCPA in exchange for 20.9492 acres of the Berman Tract.
- Fairfax County Board of Supervisors, 3.9804 acres. This former right-of-way will be incorporated into Huntley Meadows Park, ensuring the preservation of two champion swamp chestnut oak trees and one champion pin oak tree.
- Fairfax County Board of Supervisors, 40.6108 acres. The former Clermont School Site, now Clermont Park, was transferred to FCPA after the placement of a conservation easement for the buffering of adjacent neighborhoods.

**b. Natural Resource Management Plan**

In past reports, EQAC recommended that the Fairfax County Board of Supervisors develop and implement a countywide Natural Resource Management Plan. EQAC noted that in order to do this, two tasks need to be accomplished first: complete a countywide Baseline Natural Resource Inventory and adopt a unified Natural Resource Conservation Policy.

EQAC's past recommendation on developing a countywide Natural Resource Management Plan has been partially fulfilled by FCPA. On January 14, 2004, the Park Authority Board approved the Natural Resource Management Plan for Park Authority property. The NRMP contains seven elements:

- Natural Resource Management Planning
- Vegetation
- Wildlife
- Water Resources
- Air Quality
- Human Impact of Parklands
- Education.

The complete NRMP can be viewed at <http://www.fairfaxcounty.gov/parks/nrmp.htm>.

The second year of the implementation of the NRMP was completed June 30, 2007. Some of the highlight of year three included:

- Policy and Best Practices
  - Completed revision to stormwater policy.
  - Drafted a non-invasive plant policy for plantings on parkland.
  - Revised and clarified beaver management procedures.
- Partnerships
  - Continued partnerships with Environmental Coordinating Committee, Environmental Quality Advisory Council, Department of Public Works and Environmental Services, Northern Virginia Soil and Water Conservation District, Virginia Department of Forestry, Earth Sangha, and others.
  - In partnership with Earth Sangha created a native arboretum at the Marie Bulter Leven Preserve.
  - In partnership with Earth Sangha, NVSWCD, and VDOF, built a rain garden at the Marie Butler Leven Preserve.
- NRMP Program
  - Secured \$300,000 for invasives management and \$150,000 for stewardship education the FY 2006 Carryover.
  - Secured \$200,000 for invasives management and \$50,000 for stewardship education in the FY 2008 budget.
  - Continued to enhance collaboration with other divisions of the FCPA on resource management issues.
- Resource Assessments and Planning
  - Developed scope for the Resource Assessment Toolkit.
  - Developed NRMP for Riverbend.
  - Developed scope for the GIS-based Ecological Modeling project.
- Resource Management
  - Park Authority staff conducted a burn of the meadows on Pleasant Valley Road in Sully Woodlands as well as at Huntley Meadows Park.
  - Two managed deer hunts at Sully Woodlands.
  - Worked on Natural Landscaping Committee and developed county policy language an implementation documents for the use of natural landscaping practices at public facilities.
  - Continued to restore riparian buffers in cooperation with DPWES.
  - Established temperature monitoring to evaluate buffer planting effectiveness at Lake Fairfax.

- Invasive Non-native Species
  - Continued and expanded the Invasive Management Pilot Program.
  - Developed scope for a countywide survey and prioritization report.
  
- Water Resources and Low Impact Development
  - Worked with DPWES to refine the process of reviewing, coordinating and implementing watershed plan projects.
  - Two rain gardens constructed at Cub Run and Mount Vernon RECenters.
  - LID features planned at five park sites in conjunction with upcoming infrastructure improvements.
  
- Stewardship Education
  - Produced three full-sized brochures (Wildlife Conflict, Pets in Parks, and Native Plants), plus five highway cards (Deer, Beaver, Coyote, Fox, and Dead Wood).
  - Conducted stewardship awareness exercises at every staffed park site and area.

While the Park Authority has made a great step forward with the adoption of the NRMP, more resources (people and funds) need to be devoted to the implementation of the plan. Furthermore, inventories of all parks need to be accomplished. The inventory needs to be extended to cover all of Fairfax County so that future planning for acquisition of sensitive lands can take place.

Unfortunately, insufficient staffing and funding are limiting implementation of the NRMP. The Fairfax County Park Authority staff lacks a number of functions and capabilities in regard to the NRMP: natural land managers, ecologists, restoration specialists, water resource specialists, wildlife specialists, planners and project managers. EQAC does support increased funding for this purpose, but also notes that obtaining some of the needed positions from within internal resources also can be done. EQAC recognizes that personnel cannot just be transferred from another job (and skill set) to this program, but increased staffing can be accomplished by hiring a new person with the right skills when normal attrition happens elsewhere on the FCPA staff.

**c. Green Infrastructure/Natural Resource Mapping Effort**

The goal of this project is to develop a framework for modeling ecologically significant resources to support land use and development decisions in Fairfax County. This information will also be used as needed by FCPA to provide for informed land acquisition decisions as well as to support park

planning processes. The successful achievement of this effort will satisfy a long-standing EQAC recommendation.

A demonstration model will be conducted for the Sully Woodlands region and the results used to refine the model protocol. Development of the model for the entire county will be considered based upon the results of this study and the availability of funding. The scope of work is developed and the project should be underway in 2007 with a late 2008 completion date.

**d. Invasive Plant Control Efforts**

Invasive plants are a problem because they can out compete and replace native species. This change in vegetation disrupts the life cycles of many flora and fauna that depend on native vegetation. The Park Authority's Strategic Plan includes a strategy to develop invasive plant guidelines for consideration by the Environmental Coordinating Committee as a countywide standard.

The Invasive Management Area Program is in the second year of a two-year pilot program. A number of volunteers have enabled the program to be established at 36 sites with 41 trained volunteer leaders. This program works on plots of land, typically ½ acre, to remove priority invasive species. Initial funding came from the Board of Supervisors Carryover budget support for the Environmental Improvement Program. The National Fish and Wildlife Foundation also provided FCPA with a grant.

The Invasive Conservation Corps is an internship opportunity that was to have been offered by FCPA for the first time in summer 2007. Nine graduate and undergraduate interns were to have performed mechanical control of invasive plants at 21 sites.

FCPA continues with outreach and education in this area. Another brochure, *Native Backyard Plants*, adds to two brochures (*Invasive Backyard Plants* and *Invasive Forest Plants*) already developed and distributed.

EQAC continues to commend the volunteers and the Park Authority staff who are cooperating in removing invasives; an increased effort should be established using dedicated funds for this purpose.

**e. Riparian and Bioengineering Projects**

The Fairfax County Park Authority, along with and in partnership with other agencies, continues to work on stream stabilization/bioengineering projects. See the Water Resources Chapter of this report for descriptions of these

projects. The stream restoration projects were the Barnyard Run at Huntley Meadows Park encompassing about 300 linear feet, and the Little Pimmit Run project, which included over 300 liner feet.

**f. Environmental Stewardship**

FCCA does offer a number of opportunities for volunteers and EQAC encourages county residents to take advantage of these opportunities. Information about these opportunities is available at <http://www.fairfaxcounty.gov/parks/volunteer.htm>.

More information about FCCA and its programs is available at these Web sites: <http://www.fairfaxcounty.gov/parks/resources/stewardship.htm> and <http://www.fairfaxcounty.gov/parks/resources>.

**g. Fairfax County Park Foundation**

Fairfax County citizens can donate to the Fairfax County parks through the Fairfax County Park Foundation. The Fairfax County Park Foundation is a 501(c)(3) not-for-profit organization and donations are tax deductible to the fullest extent allowed by law. The Foundation's mission is to raise funds to support the parks and land under the stewardship of the Fairfax County Park Authority. Less than half of the Park Authority's annual operating funds come from tax support. The Foundation's goal is to bridge the gap between income from tax support and user fees, and the cost to operate, maintain and preserve the county's park system. Those interested in giving tax-deductible donation to the Foundation, can contact the Foundation at:

Fairfax County Park Foundation  
12055 Government Center Parkway  
Fairfax, VA 22035  
(703) 324-8581  
[SupportParks@aol.com](mailto:SupportParks@aol.com)  
<http://www.FairfaxCountyParkFoundation.com>

**4. Northern Virginia Regional Park Authority**

Three Northern Virginia counties (Fairfax, Loudoun and Arlington) and three cities (Alexandria, Fairfax and Falls Church) participate in the Northern Virginia Regional Park Authority. NVRPA was founded in 1959 and owns and operates 19 regional parks and owns 10,256 acres of land throughout the region.

Current information about the Northern Virginia Regional Park Authority can be found on its Web site, <http://www.NVRPA.org/>.

## 5. Fairfax ReLeaf

Fairfax ReLeaf is a non-profit (501(c)(3)), non-governmental organization of private volunteers who plant and preserve trees, restore forest cover, restore habitat and improve community appearance in Northern Virginia. Members have testified to county officials and politicians that an unacceptably rapid rate of tree loss in Fairfax County continues. They state that the county has not taken effective steps to stem this loss of forest infrastructure. Fairfax ReLeaf is very active in tree plantings and is always eager to sign up new volunteers.

These tree plantings lead to a number of benefits:

- Maintenance and improvement of air quality
- Reduced heat island effects
- Reduction of noise
- Preserved human and wildlife habitats
- Reduction of energy use
- Reduction of surface runoff and improvement of water quality.

Fairfax ReLeaf remains very active in its efforts. The organization planted 2,027 trees in 2006 and volunteers spent about 150 hours removing invasives from trees. Some specific activities were:

- Distribution of seedlings for planting in both October and November
- Continuation of work in Pine Ridge Park, clearing out invasive species, planting trees, and mulching
- Planting of trees on the traffic circles at the new interchange at Route 28 and the exit to the Air and Space Museum
- At the annual Earth Day Arbor Day celebration, Fairfax ReLeaf did its first "RIP" (Remove Invasive Plants) at the campus of NVCC-Annandale Campus. Volunteers removed invasive English Ivy from a seriously overgrown natural area.

For further information on Fairfax ReLeaf, visit its Web site at <http://www.fairfaxreleaf.org>. The organization can be reached at:

Fairfax ReLeaf  
12055 Government Center Parkway  
Suite 703  
Fairfax, VA 22035  
Telephone: (703) 324-1409  
Fax: (703) 631-2196  
Email: [trees@fairfaxreleaf.org](mailto:trees@fairfaxreleaf.org)

## 6. Northern Virginia Conservation Trust

Past EQAC reports recommended that the Fairfax County Board of Supervisors form public-private partnerships for the purpose of obtaining easements on environmentally sensitive land. EQAC pointed out that entities such as The Nature Conservancy use easements very successfully as a way of protecting environmentally sensitive properties. With the signing of a Memorandum of Understanding on June 20, 2001 between the Fairfax County Board of Supervisors and the Northern Virginia Conservation Trust, such a public-private partnership now exists. The partnership is now in its seventh year with recent funding for FY 2008.

NVCT was founded in 1994 as the Fairfax Land Preservation Trust. In 1999, the Trust changed its name to The Northern Virginia Conservation Trust to better reflect the regional scope of the service area. NVCT is a 501(c)(3) nonprofit land trust dedicated to preserving and enhancing the natural and historic resources of Northern Virginia. NVCT also has formed public-private partnership with Arlington County and the City of Alexandria, and owns properties or easements in Arlington, Fairfax, Loudoun, Prince William and Stafford Counties and in the cities of Alexandria and Fairfax.

From the time NVCT accepted its first easement in 1999 through June 2007, NVCT has preserved about 650 acres of open space in Fairfax County through easements, fee simple ownership, and partnerships. Between July 2006 and June 2007, NVCT permanently protected more than 75 acres on the Potomac River Gorge through three conservation easements. (One of the Gorge easements was partially funded through a \$208,000 NOAA federal grant secured by NVCT.) The Gorge is the 15-mile scenic Potomac River section that lies between Great Falls south to Theodore Roosevelt Island. This stretch serves as a habitat for a variety of species, including 15 globally rare species, 100 state-rare species and 30 different vegetation communities, as well as an important river viewshed for National Parks and other public river vistas.

Tables VII-1, VII-2 and VII-3 provide details on all these properties.

NVCT also has a public outreach program – Adventures in Conservation – to bring hands-on volunteerism and environmental education opportunities. These activities included the planting of native trees, the removal of invasive plants, birding trips and guided hikes. NVCT naturalist-led kayak tours, part of its innovative environmental and conservation education program, “floating classrooms,” continue to be a huge success.

NVCT was listed in this year’s Catalogue of Philanthropy as one of the best small charities in Northern Virginia and was so recognized by the Board of Supervisors.

<b>Table VII-1. Easements Obtained by the Northern Virginia Conservation Trust</b>			
<b>District</b>	<b>Location</b>	<b>Acreage</b>	<b>Recordation</b>
Braddock	Annandale	2.6	5/28/2004
Dranesville	Great Falls	5.6	12/1/2000
Dranesville	Great Falls	5	12/22/2005
Dranesville	Clifton	5.3	5/27/2003
Dranesville	Great Falls	14.07	7/3/2003
Dranesville	McLean	62.7783	11/20/2006
Dranesville	McLean	7.7717	11/20/2006
Dranesville	McLean	1.9	12/14/2005
Dranesville	Great Falls	4.2	12/22/1999
Dranesville	Great Falls	5.1	8/14/2001
Dranesville	Great Falls	5	12/28/2000
Dranesville	Great Falls	5	7/18/2001
Dranesville	McLean	41	12/27/2005
Dranesville	McLean	6	8/1/2002
Dranesville	Great Falls	5	8/14/2001
Dranesville	McLean	5.03	12/18/2006
Hunter Mill	Vienna	0.39	3/28/2003
Mason	Alexandria	1.58	12/27/2002
Mt. Vernon	Lorton	33.73	5/18/2002
Mt. Vernon	Alexandria	0.4	
Mt. Vernon	Alexandria	0.92	6/20/2003
Mt. Vernon	Mason Neck	9	12/19/2003
Mt. Vernon	Alexandria	0.34	6/6/2005
Providence	Falls Church	1	4/14/2004
Providence	Falls Church	2.5797	3/10/2003
Providence	Falls Church	1.98	3/10/2003
Providence	Falls Church	1.56	3/10/2003
Providence	Falls Church	1.12	3/10/2003
Springfield	Springfield	0.87	10/30/2002
Springfield	Springfield	0.77	11/26/2002
Sully	South Riding	226	12/19/2003
Sully	Fairfax	1.51	7/17/2003
	<b>Total</b>	<b>465.0997</b>	

Source: *EQAC Annual Report*, Email from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Robert McLaren, August 1, 2007.

<b>Table VII-2. Fee Simple Properties Owned by the Northern Virginia Conservation Trust</b>			
<b>Property/District</b>	<b>Location</b>	<b>Acreage</b>	<b>Recordation</b>
Clifton Property/Dranesville	Clifton	8.66	Gift 6/2003
Davenport/Pimmit Run/ Dranesville	McLean	1	Gift 8/2000
Mason	Springfield	0.001	Gift 3/2005
Little Hunting Creek/ Mt. Vernon	Alexandria	2.01	Gift 2002
	<b>Total</b>	<b>11.671</b>	

Source: *EQAC Annual Report*, Email from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Robert McLaren, August 1, 2007.

<b>Table VII-3. Land Turned Over to Local Government and Associated Acreage</b>			
<b>Property/District</b>	<b>Location</b>	<b>Acreage</b>	<b>Recordation</b>
Bannister Outlots/Springfield	Springfield	0.6	12/2001
	<b>Total</b>	<b>0.6</b>	
<b>Assisted Acreage</b>			
<b>Property/District</b>	<b>Location</b>	<b>Acreage</b>	<b>Recordation</b>
Turner Farm/Dranesville	Great Falls	17	1998/99
FCPA Elklick/Sully	South Riding	157	12/2003
	<b>Total</b>	<b>175.2</b>	

Source: *EQAC Annual Report*, Email from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Robert McLaren, August 1, 2007.

EQAC encourages all landowners whose property contains environmentally sensitive land such as wetlands, stream valleys and forests to consider contacting NVCT and learning more about easements. If these landowners grant easements, they will not only protect sensitive land, but can realize some financial benefits. A perpetual easement donation that provides public benefit by permanently protecting important natural, scenic and historic resources may qualify as a Federal tax-deductible charitable donation. Under the Virginia Land Conservation Act of 1999, qualifying perpetual easements donated after January 1, 2000 may enable the owner to use a portion of the value of that gift as a state income tax credit. Fairfax County real estate taxes could also be reduced if the easement lowers the market value of the property.

Additional information on NVCT can be found on its Web site, <http://www.nvct.org>.

## **7. The Nature Conservancy**

The Nature Conservancy has a very successful program of obtaining easements from property owners for conservation. Its program was the inspiration for EQAC's past recommendations for Fairfax County to seek conservation easements as a measure of protecting ecological valuable property. (This recommendation led to the public/private partnership with the Northern Virginia Conservation Trust mentioned above.) The Nature Conservancy does not hold any easements in Fairfax County at present; however, it owns one preserve (the Fraser Preserve) of approximately 233 acres on the Potomac River. For further information on The Nature Conservancy, see <http://www.nature.org>.

## **8. The Potomac Conservancy**

Other organizations also hold easements in Fairfax County. This and the following paragraphs report on these organizations. One of these is the Potomac Conservancy. This organization was formed in 1993 by individuals concerned about inappropriate development, clear cutting and other activities that were beginning to have a negative impact on the unspoiled character of the Potomac Gorge. This led to the formation of the nonprofit land trust now known as the Potomac Conservancy. The Conservancy was incorporated on August 24, 1993 in Maryland as a nonprofit corporation. The Conservancy is registered in Maryland, Virginia and West Virginia, and is an easement holder in Maryland's Conservation Reserve Enhancement Program.

The Potomac Conservancy currently holds easements of four properties in Fairfax County. These properties total 13.46 acres with 0.14 of that being river frontage. For further information on the Potomac Conservancy, see <http://www.potomac.org>.

## **9. The McLean Land Conservancy**

The McLean Land Conservancy was formed to promote and foster the preservation, protection, conservation and balanced use of the McLean area's unique natural, cultural, recreational and historic resources. MLC's main objective is to preserve open green space.

MLC has worked to raise awareness of the value of protecting natural resources. A healthy balance of land use will maintain and enhance the character and quality of life in McLean, as well as the economic sustainability of the region in the face of rapid build-out.

MLC is a 501(c)(3) land trust organization that was incorporated in the Commonwealth of Virginia in January 2000 and recently became a “full-fledged” land trust in Virginia, with the ability to hold conservation easements. As a result, the conservation easements MLC identified and negotiated before July 2004 were deeded to Fairfax County, but with MLC assigned as the easement monitor.

MLC has concentrated on the preservation of riparian buffers on privately owned land. Successful projects include the protection of one acre adjacent to the headwaters of Four Mile Run, important because the health of the headwaters is critical to the health of a stream, and 2.77 acres on Pimmit Run in a pristine wooded area. These two easements are held by Fairfax County but monitored by MLC.

## **10. The National Park Service**

Another holder of conservation easements in Fairfax County is the National Park Service. NPS holds 38 easements covering 326.67 acres. A future Annual Report on the Environment will provide more details on these easements.

## **11. The Virginia Outdoors Foundation**

The Virginia Outdoors Foundation was created by an Act of the Virginia General Assembly (Chapter 18 of Title 10.1) in 1966. VOF is defined by the Act as a ‘body politic’ of the Commonwealth and is governed by a seven member Board of Trustees appointed by the governor. The Attorney General’s Office has opined that VOF is both a State Agency and an independent instrumentality. The VOF was established “...to promote the preservation of open-space lands and to encourage private gifts of money, securities, land or other property to preserve the natural, scenic, historic, scientific, open-space and recreational areas of the Commonwealth.” The primary mechanism for accomplishing VOF’s mission is through open-space easements. Open space easements allow land to continue to be privately owned but restricted to serve and protect land for the public good.

The Virginia Outdoors Foundation currently holds six easements in Fairfax County as shown in Table VII-4.

Additional information about VOF can be seen at its Web site: <http://www.vofonline.org/>.

<b>Table VII-4. Easements Held by the Virginia Outdoors Foundation in Fairfax County</b>		
<b>Original Donor*</b>	<b>Acres</b>	<b>Date Recorded</b>
Thayer, Virginia Pratt and Robert H.	59.33	10/30/1969
American Horticultural Society	8.15	10/03/1978
McCormick-Goodhart, Nita Emma et al.	26.665	06/13/1988
McCormick-Goodhart, Nita Emma et al.	5.25	06/13/1988
McKee-Bennett, Thistle	20.47	12/28/1990
Ridder, Marie W. and Albert Andrews, Jr., trustees	7.858	12/23/1998
<b>Total Acres under Easement</b>	<b>127.723</b>	

Source: File from Virginia Outdoors Foundation to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 3, 2007.

\* Note that the original donors listed may not be the current landowner of record as the eased property may have been sold since the deed of easement was recorded.

## 12. Northern Virginia Soil and Water Conservation District

The Northern Virginia Soil and Water Conservation District continues to provide leadership in the area of bioengineering techniques in streambank stabilization and in the general area of erosion and stormwater control. NVSWCD works in partnerships with other agencies and organizations. For example, it has partnered with the Fairfax County Park Authority, Virginia Department of Forestry, the Fairfax County Department of Public Works and the Reston Association. See the Water Resources chapter in this report for descriptions of stream stabilization/bioengineering projects for which NVSWCD has provided leadership.

All Agricultural and Forestal Districts are required to have a conservation plan. NVSWCD develops soil and water quality conservation plans that comply with the Chesapeake Bay Preservation Act guidelines. They include best management practices to reduce sediment pollution erosion, to reduce excess nutrients from animal waste and fertilizers, and to prevent the misuse of pesticides and herbicides. The plans also include the establishment and maintenance of vegetated riparian buffers next to all streams and within Resource Protection Areas. Plans are updated and technical assistance is provided as needed. Soil and water quality conservation plans were prepared for 169 acres, which included stream buffers for 6,430 linear feet. Several of the conservation plans were developed to meet the county’s requirements for Agricultural and Forestal Districts. All plans meet the county’s requirements for

the Chesapeake Bay Preservation Ordinance. One composting facility was constructed for a horse operation, with the help of state cost-share funding.

NVSWCD's annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy, and decreasing and filtering stormwater runoff. Those planted in riparian areas also help to protect stream channel stability and stream water quality, as well as improving the surrounding habitat. This seedling program offered citizens a package of native tree and shrub seedlings for a small cost. In 2007, NVSWCD distributed a variety of 8,250 native tree and shrub seedlings (including ferns where were very popular), mainly in packages of 16.

NVSWCD is the local sponsor of Envirothon, a hands-on competition among high school teams to demonstrate their knowledge of natural resources – forestry, soils, wildlife, aquatic ecology – and special issue topics, such as urban-rural interface and recreational stress on natural resources. There are local, regional and national competitions.

In the spring and summer of 2007, NVSWCD launched a Neighborhood Ecological Stewardship Training program, a series of adult education opportunities designed to connect people to their local environment. Over the course of many weeks, 140 participants engaged in classes and activities that included watershed explorations on land and by water, soils art, journaling, stream ecology courses, and evening bat observations. More than 35 organizations partnered with NVSWCD to support and carry out the program.

**a. Stream Restoration**

Stream restoration projects are discussed elsewhere in this annual report, and NVSWCD participates in many of them. However, one is worth some additional discussion. NVSWCD, in partnership with many others, completed the Little Pimmit Run stream restoration project (657 feet, mainly on parkland) in June 2007. This 675-foot segment of degraded stream channel (stream and riparian area) was restored, using the principles of natural stream channel design and innovative techniques. The goal was to make this area stable and aesthetically pleasing, to include a trail crossing that functioned in harmony with the other measures, and to protect threatened sanitary sewer lines next to and crossing the stream. The resulting effort is interesting for two reasons – it is a good demonstration of natural stream channel design and construction, using some innovative ways to protect threatened sewer lines, plus it shows how a public-private partnership can achieve successful stream restoration. The partners included NVSWCD, homeowners with property adjacent to the stream and park, Vanasse Hangen Brustlin engineering firm, Angler Environmental Construction, DPWES Waste Water Collection Division, the Park Authority

and the Dranesville District Supervisor's office. The project is a good demonstration of how citizens and government can work together to solve environmental problems – and the citizens paid a significant portion of the cost.

Since completion, the stable channel has successfully carried stormwater flows. Today, a blue heron can be seen fishing in the pool full of small fish, the riffles are home to a growing abundance and diversity of aquatic insects, and a mother duck and her ducklings were seen riding out a storm in a pool. The riparian zones are taking root, and as they mature, they increasingly will provide both buffer and rich habitat. Thus are the results of an ecologically excellent design and a good partnership.

**b. Fairfax Soil Survey and Soil Scientist**

Fairfax County used to have soil scientists on the staff, but in a budget cut several years ago, the office was abolished. In past Annual Reports, EQAC deplored this move and recommended that soil scientist expertise be bought back to the county staff. While the Board of Supervisors did not exactly follow this recommendation, it did satisfy the intent of EQAC's recommendation by funding NVSWCD to finish the county's soil survey. The funding for this became available to NVSWCD in Fiscal Year 2004 and continued through Fiscal Year 2007. The field surveys will be complete in 2007 and the final reports and maps will be available in 2008.

The resulting database and maps will incorporate the new information and scientific knowledge acquired about soils in the last 30 years. However, the updated maps will not eliminate the need for site-specific surveys when construction or changes in site use occur. The maps will better describe, characterize, and define the properties of the soil components within existing delineations. The map will also show that inclusions of other soil types can exist, but will not show the extent of smaller inclusions. Site-specific surveys will be need for this fine detail.

One new effort that is being done under the soil survey is the characterization of man-made soils (urban soils). The characteristics of urban soils can be quite different from native soils. One significant difference is the ability of water to infiltrate urban soils (much less than many native soils). Knowing where urban soils exist and the type of urban soil can be critical to stormwater control efforts that incorporate infiltration of water (rain gardens, grassy swales, etc.).

The NVSWCD soil scientist also provides additional services to Fairfax County. He conducts infiltration studies for proposed infiltration practices,

such as rain gardens, porous pavers and underground detention. Additionally, the NVSWCD staff provided soils information to consultants, developers, realtors, homeowners and the public. Because of the continuing need for site-specific surveys, and because of the value of the other services the soil scientist provides, EQAC recommended in its 2005 and 2006 Annual Reports on the Environment that the Board of Supervisors continue funding for the soil scientist.

The Board of Supervisors did provide FY 2008 funding to NVSWCD to cover the cost of a soil scientist, thereby satisfying EQAC's recommendation. EQAC thanks the board for funding this important function.

The importance of having the expertise of a soil scientist available is illustrated by a special research project conducted by NVSWCD. The project evaluated the physical characteristics of the soil medium in rain gardens that have been installed in the county during the past two to five years. The report includes findings and recommendations for improving the design, installation and maintenance of rain gardens.

The use of rain gardens as a component of the overall stormwater management system on newly developed construction is a relatively new phenomenon. To justify and promote such use, monitoring of existing rain gardens to assess operational standards is very important. At present, most of such monitoring is concentrated on the chemical performance of these facilities and is based on the analysis of pollutants coming into the rain garden in stormwater and exiting the rain garden through the under drain system. What is missing is adequate monitoring of the physical performance of rain gardens in the years after the initial installation. Rain gardens function by providing adequate infiltration capacity to allow the incoming runoff to pass through the filter medium inside within a reasonable amount of time. The physical performance of the filter medium might change with time and therefore affect the rain garden's ability to function as a stormwater Best Management Practice. NVSWCD conducted a study of twenty rain gardens in Fairfax County to determine the infiltration capacity; the relation that capacity has to other physical properties of the filter media such as soil texture (percentages of sand, silt and clay), organic matter content, and bulk density; and the compatibility of the actual facilities with the original approved design specifications. Results of the assessment were varied. Some rain gardens were built in exact accordance with the plans submitted to and approved by the county and functioned very well. Others had physical features that differed from the approved plans and resulted in lower performance. Other rain gardens were inadequately maintained which resulted in lower performance. Three rain gardens, or 20 percent of those studied, had inadequate soil mixes that failed

to infiltrate any water during testing. This was the most serious problem encountered.

Of the recommendations made as a result of the findings of this study, perhaps the most important are as follows:

- Improve construction oversight of rain gardens by developing a training and certification regimen for site inspectors. More knowledge of the proper functioning of rain gardens would result in fewer poorly designed facilities passing final inspections.
- Improve the construction of rain gardens by developing a training and certification regimen for private contractors. The Virginia Department of Conservation and Recreation and qualified Soil and Water Conservation Districts are in a good position to help with development of a training program.
- Eliminate the use of geo-textile fabric between the planting soil and gravel layer and as a protective wrap around the under drain. Over time, geotextile fabric can clog with fine particles and reduce the infiltration capacity of the rain garden.
- Educate the owners of privately maintained rain gardens on the proper form and functioning of the facilities. The study found that publicly maintained rain gardens were generally in better shape than privately maintained facilities. Better knowledge of the proper functioning of rain gardens would result in better maintenance of privately maintained facilities.

### **13. Fairfax County Wetlands Board**

If you own property on the waterfront in Fairfax County, you may need a permit from the Fairfax County Wetlands Board before you build or make improvements on your property. These activities, known as land disturbing activities, often require a permit if done in an area that has been identified as a tidal wetland. Land disturbing activities that may require a permit from the Wetlands Board include the following:

- Any construction project on or adjacent to a tidal body of water
- Any construction project in which fill material is placed in or near tidal wetlands
- Projects designed to protect property adjacent to shorelines.

The Wetlands Board adopted the Tidal Wetlands Mitigation and Compensation Policy in 2005 to ensure conformance with the spirit and the intent of the Chesapeake 2000 Agreement, which seeks, among other things, “to achieve a no net loss of jurisdictional tidal wetlands acreage and function through regulatory programs...” Upon seeking to encourage wetlands permit applicants to avoid, minimize and reduce tidal wetland losses, the Wetlands Board policy provides for compensatory mitigation when impacts are unavoidable. Because Fairfax County has so little tidal land available which could be used for wetland creation or mitigation, the board envisioned that a potential means for wetlands applicants to mitigate and compensate for future tidal wetland losses could be through the establishment of an in lieu fee fund. Thus, the Wetlands Board and the Northern Virginia Regional Park Authority have entered into a Memorandum of Understanding so that NVRPA can accept in lieu fees from future wetlands permit holders as the compensatory mitigation for unavoidable tidal wetlands impacts. On May 22, 2006, the Wetlands Board voted to adopt a Memorandum of Understanding between the Northern Virginia Regional Park Authority and the Wetlands Board.

To support the Wetlands Board’s Mitigation and Compensation Policy, the Board voted on the following details pertaining to the implementation and the administration of the Policy during the February 22, 2007, meeting:

- Mitigation for every one square foot of wetlands lost will be replaced or compensated at a 1:1 ratio.
- A mitigation/compensation fee of \$28 per square was established for permitted wetland impacts.
- The \$28 per square foot assessment shall apply to both vegetated and non-vegetated tidal wetlands because all tidal wetlands are considered valuable.
- Riprap is considered to have habitat value as shoreline stabilization, therefore only the landward 50 percent of a riprap revetment footprint is considered as a wetland loss.
- When living shoreline stabilizations are properly designed and sited such stabilizations provide an overall enhancement to wetland function and value. The mitigation compensation shall fee not be charged for such stabilizations.

Of the three wetlands ordinance violations which the Wetlands Board was seeking to resolve in 2006, two violations have been resolved in 2007 and one violation is still in the process of being resolved.

Of four wetlands permit applications which have been reviewed by the Wetlands Board in 2007, three denials for permits were rendered and one permit application request was approved by the Wetlands Board.

Two permit denials will be appealed to the Virginia Marine Resources Commission in November 2007.

At the April 2007 Wetlands Board Meeting, the Wetlands Board voted to approve a Living Shoreline Policy for shoreline stabilizations. Both the Living Shoreline Policy and the Wetlands Mitigation Compensation Policy will be added to the Board's Submission Guidelines.

For further information, contact the Wetlands Board at:

Fairfax County Wetlands Board Staff  
 Department of Planning and Zoning, Planning Division  
 12055 Government Center Parkway, Suite 730  
 Fairfax, VA 22035-5504  
 (703) 324-1210  
<http://www.co.fairfax.va.us/dpz/environment/wetlands.htm>

#### **14. Virginia Department of Forestry**

The Virginia Department of Forestry has provided forestry related services in Fairfax County for over 30 years. VDOF is also participating in several efforts aimed at improving riparian zones. In these efforts, VDOF partnered with the Northern Virginia Soil and Water Conservation District, the Department of Public Works and Environmental Services and the Fairfax County Park Authority.

The Virginia Department of Forestry is the lead state agency to oversee the planting and recordation of forest buffers planted in the state of Virginia. In 2006, approximately 5,500 seedlings were planted along 3,020 linear feet of stream corridors under the leadership of the Virginia Department of Forestry in Fairfax County. Partners involved in these plantings were Eagle Scouts, Earth Sangha, Elementary School Children, private landowners and Fairfax ReLeaf.

The Virginia Department of Forestry participates in the Fairfax County Arbor Day on the last Saturday in April each year. The County earned again, for the 24th year, the Tree City USA award. This award is given for having a planting plan, management plan, a Tree Board/Commission, and sponsoring an Arbor Day Celebration. The award is applied for by the Fairfax County Urban Forest Management Division and given through the State Department of Forestry. Tree seedlings are distributed by VDOF to citizens attending the Arbor Day celebration. In 2006, 550 seedlings were distributed for planting by residents in their communities.

The Virginia Department of Forestry sponsored a drop-off site in Fairfax County for the Growing Native project. This project involves the collection of tree seeds (acorns, hickory nuts, black walnuts etc.) which are transported to

VDOF nurseries where the seeds are planted and seedlings are grown. In 2006, approximately two pick-up truckloads of seeds were collected. Each year 500-700 seedlings are given to citizens for planting on public lands in Fairfax County.

The conservation of the forested land base in Fairfax County is a part of the VDOF plan. The Fairfax County office works closely with the Northern Virginia Conservation Trust to review easements for the conservation of forests. Also, Agricultural and Forestal District forest management plans are prepared by VDOF; these efforts support the management of forested land for conservation purposes. Six A&F plans covering 202 acres were prepared in 2006. VDOF also provides forestry management advice to Home Owners Association and Civic Groups. In 2006, three community forestry plans were prepared covering 75 acres.

The Virginia Department of Forestry also helps protect water quality and forest resources in the county by reviewing and commenting on rezoning applications and development plans. VDOF reviewed 47 applications and plans in 2006. In addition, VDOF annually inspects dry hydrants to make sure they are available to fight wildfires in the county.

The department maintains an active public education and out reach program. Audiences range from school groups to adults. Topics range from general discussion of the importance of urban forests for environmental quality to technical training in planning and installing rain gardens and forested riparian buffers. In 2006, VDOF conducted 13 talks on the general benefits of urban forests and 3 workshops on rain gardens and buffers.

## **15. Virginia Department of Transportation**

The Virginia Department of Transportation mitigates unavoidable impacts to water resources within Fairfax County that occur during highway construction projects as required by federal and state laws and regulations. VDOT has created six such wetland mitigation sites in Fairfax County:

- Approximately 0.5 acres off southbound Route 28 adjacent to Dulles Airport
- Approximately 2 acres off westbound Route 7 adjacent to Sugarland Run
- Approximately 0.2 acres off southbound Route 29 adjacent to Big Rocky Run
- Approximately 2 acres off northbound Route 6197, Roberts Parkway adjacent to the Burke Railway Express Station
- Approximately 2.5 acres off northbound Route 228, Dranesville Road adjacent to Sargarland Run

- Approximately 2 acres off northbound Richmond Highway (Route 1) adjacent to an unnamed tributary of Cameron Run (Belle Haven).

These sites were created to mitigate unavoidable wetland impacts from construction of Route 28 widening, Fairfax County Parkway, Roberts Parkway Bridge Overpass, the Springfield Interchange Improvements, the Route 29 Bridge replacement over Big Rocky Run, and the Woodrow Wilson Bridge Replacement. The Dulles and Sugarland sites have met wetland performance criteria and the remaining sites are undergoing five-year monitoring as required by Federal and State permits. VDOT completed three years of monitoring at the Dranesville and Big Rocky Run sites and the fourth year of monitoring is in progress. The second full year of monitoring is complete at the Roberts Parkway and Belle Haven sites and the third year of monitoring is in progress. Wetlands establishment at all these sites have been impressive. VDOT performs on-going maintenance activities to ensure performance criteria are met. These sites provide a water quality benefit in these watersheds as well as habitat for a host of amphibians, birds and mammals.

Federal and state water quality regulations are now requiring mitigation of streams impacted by transportation projects. VDOT estimates the need for mitigation of about 6,000 linear feet over the next three years. This number would increase if more funds for construction became available. However, VDOT notes that opportunities for stream restoration credit or competitive purchase of commercial bank credits within the watersheds of Fairfax County are limited. Therefore, VDOT is interested in discussion of opportunities for potential stream restoration sites within and beyond the state's right-of-way. This could include partnering with Fairfax County agencies and private property owners. Another possible partner would be the Northern Virginia Soil and Water Conservation District. EQAC urges county staff and NVSWCD to explore such possibilities.

VDOT, in partnership with the Virginia Transportation Research Council and the University of Virginia, had been involved in several environmental research studies. Further details of each of the projects below are available at <http://vtrc.virginiadot.org/default.htm>.

- *Identification of Wildlife Hotspots along Roadways in Virginia's Coastal Zone:* Completed in November 2006, this project was an expanded analysis of the wildlife crossing study from the previous year (see <http://www.virginiadot.org/vtrc/main/online%Freports/pdf/06-r2.pdf>) which included two wildlife underpasses on the Fairfax County Parkway. This new study used mapped wildlife corridor information to identify locations on roads that may be appropriate for mitigation measures to reduce animal-vehicle collisions.

- *Understanding Cattail (Typha spp.) Invasion and Persistence in VDOT Mitigation Wetlands:* The proposed work is intended to help identify the environmental conditions that enable *Typha spp.* to rapidly colonize primary succession on created mitigation wetlands. Understanding these conditions may help to minimize or eliminate this rapid colonization in created wetlands.
- *Optimal Selection & Design of Stormwater BMP Facilities in a Highway Setting:* The purpose of this research is to develop a stormwater management BMP document that will supplement the recently updated VDOT Manual of Practice for Stormwater Management. (EQAC urges VDOT to consult with Fairfax County Department of Public Works and Environmental Services in this study to take advantage of DPWES's knowledge and experience in this area.)
- *Recycling of Salt-Contaminated Storm-Water Runoff for Brine Production at VDOT Road-Salt Storage Facilities:* This study investigates the use of recycling the salt-contaminated stormwater runoff at the facilities for on-site brine production. This brine could potentially be used for both prewetting purposes and direct application for VDOT snow removal operations.

VDOT will be participating in a joint pilot project with VTRC and the Fairfax County Department of Transportation on the use of low impact development measures for the proposed Lorton Connector Road in the Laurel Hill development. This five-year pilot project will monitor the effectiveness of LIDs in managing stormwater runoff from the roadway.

VDOT continues to include landscaping in several construction projects to enhance road improvements. Fairfax County projects include

- Ox Road between Burke Lake Road and Davis Drive (completed April 2004 and the three-year establishment period was completed spring 2007)
- Gambrill Road Park and Ride Lot (completed June 2005 and the two-year monitoring period was completed spring 2007)
- Richmond Highway widening from Lorton Road to Telegraph Road (completed October 2005 and the landscaping is in the second year monitoring of a three-year establishment period)
- Ox Road between Davis Drive and the Prince William County Line (completed May 2006 and the landscaping is in the second year monitoring of a three-year establishment period)
- Lorton Road between Richmond Highway and Silverbrook Road (completed August 2006 and the landscaping is under a one-year establishment period).

VDOT is including landscaping in projects currently underway or scheduled to start in 2007/2008:

- Backlick Road Park and Ride Lot
- Route 50 Pedestrian Bridge at Seven Corners Shopping Center
- Telegraph Road/Capital Beltway interchange improvements associated with the Woodrow Wilson Bridge Project.

Funding for VDOT to plant and maintain wildflower meadows has remained level through the last several years. Therefore, VDOT has refocused effort to manage locations that have performed consistently well and have the best visual advantages for motorists, without compromising safety. VDOT maintains about 17 acres of flowering bulbs, wildflowers, and native grasses planted throughout Fairfax County. These areas are reseeded and controlled for weed invasion as needed throughout the growing season.

VDOT has increased its integrated vegetation control of invasive, non-native vegetation along interstate and primary roads in Fairfax County. One specific problem is bamboo. Many residents plant this species along their property lines with the state right-of-way, but bamboo quickly spreads to interfere with drainage and visibility of highway signs. EQAC encourages property owners to find native alternatives to bamboo since this invasive plant does spread very rapidly and is difficult to control.

## 16. Urban Forestry

### a. Urban Forest Management Division

In 2006, in addition to carrying out its core services relating to land development (see Forest Conservation Branch update) and forest pest management (see Forest Pest Branch update), the Urban Forest Management Division focused on several other projects that included:

- Finalizing the Tree Action Plan: The Tree Action Plan represents a long-range strategic plan for the county's urban forestry program. As directed by the Board's Environmental Committee in September 2005, UFMD worked with the Fairfax County Tree Commission and a stakeholder group called the Tree Action Plan Work Group to develop specific recommendations on how to implement the conceptual-based Tree Commission Tree Action Plan Framework. The Tree Action Plan was finalized by the work group and reviewed by the Board of Supervisor's Environmental Committee in December 2006. The Board publicly endorsed the Tree Action Plan as an official road map to manage and protect the county's tree resources in January 2007. The Tree Action Plan contains 12 core recommendations that relate to three major goals to preserve existing tree assets, to plant new trees and

increase the weight of urban forestry considerations within county policies and planning efforts. The 12 core recommendations are:

1. Engage and Educate (the community)
2. Build Strong Partnerships and Alliances
3. Optimize Tree Conservation in County Policies
4. Improve Air Quality and Address Climate Change through Tree Conservation
5. Improve Water Quality and Stormwater Management through Tree Conservation
6. Use Ecosystem Management to Improve and Sustain the Health and Diversity of our Urban Forest
7. Strengthen State Enabling Authority for Tree Conservation
8. Encourage Sustainable Design Practices
9. Plant and Protect Trees by Streams, Streets and Trails
10. Optimize Tree Conservation in Land Development
11. Optimize Tree Conservation in Utility and Public Facility Projects
12. Support and Refine the County's Urban Forestry Programs

For more information on the Tree Action Plan, please use the following Web link:

<http://www.fairfaxcounty.gov/dpwes/environmental/trees.htm>.

- Development of Tree Actions in the FY 2008 Environmental Improvement Program. Trees were identified as a special area of interest in the FY 2008 EIP, which was developed during CY 2006. UFMD worked with other agencies in the development of 27 actions that directly or indirectly support the county's efforts to conserve and protect tree resources as follows:

1. GL08-06(B) Mapping of Fairfax County's Vegetation Ecosystems.
2. GL08-07(B) Expanded Construction Site Monitoring for Tree Conservation.
3. GL08-08(B) Establish a Tree Fund.
4. GL08-09(B) Review and Improve Suggested Tree-Related Proffer Language.
5. GL08-10(B) Tree Preservation Legislation.
6. GL08-11(B) Urban Forestry Roundtable.
7. GL08-12(C) Consider Amending Article 13 of the Zoning Ordinance (Landscaping & Screening).
8. AQ08-01(B) Regional Urban Forestry SIP Working Group.
9. AQ08-05(C) Increasing Tree Canopy at Governmental Parking Facilities.
10. WQ07-4(B) Riparian Buffer Restoration.

11. WQ08-15(B) Benchmarking Watershed Tree Cover Levels.
12. WQ08-4(C) Establishing Tree Cover Goals for Watersheds.
13. SW08-4(C) Recycling Natural Wood Waste.
14. PT07-08(B) Interpretive Signs Along FCPA Trail System.
15. PT07-12(B) Parkland Acquisition.
16. PT07-13(B) Open Space Easements/NVCT Partnership.
17. PT07-14(B) Park Authority Conservation Easement Initiative.
18. PT07-17(B) Park Authority Natural Resource Management Plan Implementation – Encroachment Enforcement.
19. PT08-01(B) Park Natural Resource Management.
20. PT08-03(B) Park Information Systems.
21. PT08-04(B) Developing Natural Landscaping Guidelines and Policies for County Properties.
22. PT08-06(C) Implementing Natural Landscaping Practices on County Properties.
23. PT08-07(C) Planting Trees for Energy Conservation at County Facilities.
24. ES08-08(C) Bayscaping: Improving Water Quality, Increasing Biodiversity, and Enhancing Community.
25. ES08-09(C) Promoting the Use of Natural Landscaping Practices by the Private Sector.
26. ES08-10(C) Partnering with Non Profit Tree Planting Groups in Establishing a Countywide Tree Planting Program.
27. ES08-11(C) Promoting Stewardship Of Urban Forest Resources.

UFMD and other agencies have worked on many of these actions during CY 2006 and 2007; an updated set of actions was presented in September 2007 by county staff in the FY 2009 EIP. For more information on these actions and the Environmental Improvement Program, please use the following Web link:

<http://www.fairfaxcounty.gov/living/environment/eip/>

- Strengthening Tree Preservation Policies and Procedures: In February 2005, the Board of Supervisors directed UFMD and the Zoning Evaluation Division of the Department of Planning and Zoning to review and strengthen tree conservation policies and procedures used during the review of zoning cases. As part of this effort, a committee consisting of representatives of UFMD; the Zoning Evaluation Division, DPZ; the Office of the County Attorney; the Planning Commission; and the Providence Magisterial District Board of Supervisor staff was formed to examine the effectiveness of model proffer language relating to tree preservation and landscaping. The standardized proffers were

completed by the committee and offered to developers as a resource in 2006. This effort resulted in a suggested approach that developers could apply to tree conservation matters within the context of proposed zoning cases.

While not a codified standard, the new standardized proffer language will help developers communicate very specific intentions regarding tree preservation, conservation and removal efforts within zoning cases, and will improve the county's ability to ensure compliance with proffered commitments during construction activities. In addition, the new language provides an enhanced system of assigning monetary values to trees to be preserved and using these values as the basis for determining tree bonds which a developer will post to help ensure the successful completion of proffered commitments.

- Establishing a county fund for tree preservation and planting: This project established a funding mechanism to facilitate the expenditure of donations from zoning cases and other sources, including the annual Environmental Improvement Program, to fund a countywide tree planting program. On June 20, 2005, the Board of Supervisors directed staff of the Department of Public Works and Environmental Services, the Department of Planning and Zoning, and the County Attorney's Office to investigate the possibility of creating a funding mechanism for a countywide tree planting program through the use of reparations obtained from violations of tree save commitments, cash proffers and in-kind proffer commitments obtained during the land development process.

In 2006, Land Development Services established criteria to approve, track and report on tree-related projects funded through the Tree Preservation and Planting Fund. It is anticipated that this fund will be used to support tree-related activities such as:

- Tree planting projects on county properties and on Virginia Department of Transportation rights-of-way.
- Grants to support the activities of non-profit tree planting groups.
- Natural landscaping-related projects on county property.
- Development of educational materials and workshops.
- Implementation of a local "Heritage, Memorial, Specimen and Street Tree" ordinance.

The Tree Preservation and Planting Fund and associated standard operating procedure were finalized and put into use in 2006.

- Developing a tree canopy measure for the 2007 Metropolitan Washington DC air quality plans: In response to a June, 2005 Board

Matter directing staff to prepare a report that delineates what urban forestry-related practices, including tree planting, the county can use to improve air quality and how these practices can be included in the air quality management plans, UFMD organized several meetings that gathered urban forestry officials from several Northern Virginia jurisdictions, USDA Forest Service researchers, Virginia Department of Forestry representatives and regional non-government organizations to examine what should be done to build a stronger link between urban forestry practices and Federal Clean Air Act regulations.

From these initial meetings, a more formal group, called the Northern Virginia Urban Forestry SIP Work Group emerged to examine what steps Virginia jurisdictions should do to take advantage of new U.S. Environmental Protection Agency policy approving “tree canopy programs” as “promising and emerging” voluntary measures that can receive limited offset credits (up to six percent of total) in ozone mitigation programs. In 2006, the work group contributed to a larger effort organized by the Metropolitan Washington Air Quality Committee to examine this issue and contributed to the development of a draft Tree Conservation Measure which is expected to be included in the 2007 regional SIP.

- Natural Landscaping Committee: On June 21, 2004, the Board of Supervisors directed staff to identify county properties where natural landscaping could be used to reduce maintenance practices that can cause harmful environmental impacts such as air pollution and reduce the need and expense of mowing, pruning, edging, and using fertilizers, pesticides, and herbicides; staff was directed to prepare a report with a proposed countywide implementation plan. In response, the County Executive tasked UFMD with convening the Natural Landscaping Committee to identify practices, policies and a countywide implementation plan. A final report and recommendations was prepared and presented to the board’s Environmental Committee and approved by the BOS on July 11, 2005. The board directed the County Executive to commission a multi-agency group to:
  - Update the palette of natural landscaping techniques and practices as new information and research emerges.
  - Establish formal guidelines for retrofitting the landscapes of county properties both with and without developed facilities.
  - Develop natural landscaping guidelines and specifications for new facilities.
  - Draft a countywide Natural Landscaping Policy to communicate the purpose, goals and importance of natural landscaping features on county properties.

- Implement a five-year natural landscaping plan in an aggressive but cooperative fashion.
- Produce an annual progress report that evaluates the level of cost-effectiveness and benefits that specific natural landscaping practices, techniques and projects are likely to provide.
- Submit natural landscaping projects to the staff Environmental Coordinating Committee for possible inclusion into the annual Environmental Improvement Program.

In 2006, the NLC started work on developing guidelines for retrofitting the landscapes of county properties and started work on developing a countywide Natural Landscaping Policy. This work is expected to be completed in CY 2007.

- Northern Virginia Urban Forestry Roundtable: The lack of regional communication over urban forestry issues is thought to have limited past efforts to obtain tree conservation legislation and to develop other effective programs and practices related to the management of trees and forest resources. The NVUFR was formed in 2005 to bring local environmental groups, tree commissioners and urban forestry officials together to examine ways to cooperate over regional issues such as efforts to obtain tree conservation legislation and to develop urban forestry practices and measures for ozone mitigation. UFMD provided leadership during the formation of NVUFR and has been instrumental in organizing regional conferences on trees and air quality since November 2005. NVUFR activities increased in 2006, resulting in efforts to establish a formalized mission statement and organizational structure which is expected to be finalized during CY 2007.

#### **b. Forest Conservation Branch**

In 2006, Forest Conservation continued to serve its traditional customers: citizens, builders, developers, planners, engineers, landscape architects, private arborists and other county staff and agencies, including the Board of Supervisors, Planning Commission, Tree Commission, Environmental and Facilities Review Division, Environmental and Facilities Inspections Division, Department of Planning and Zoning, Office of Capital Facilities, Park Authority and the School Board.

However, staff was also able to also serve some new customers. In the wake of Hurricane Katrina in August, 2005, staff from the Forest Conservation Branch was requested by a consortium of federal and state agencies and professional associations to travel to New Orleans to assist with the assessment of potentially hazardous trees damaged by the horrific storm that swept the region. In March and April 2006, two teams of two

staff each joined professional arborists from all over the country who volunteered to go to the region and helped assess and inventory the conditions of hundreds of trees damaged by the hurricane in an effort to get the Federal Emergency Management Agency to assist with the pruning and removal of trees that potentially threatened the residents of the area. The effort was nationally recognized and federal money was eventually made available to help mitigate the conditions.

In requests closer to home, branch staff was requested to help mediate a utility easement clearing issue in the Dranesville District. After decades of little maintenance, Columbia Gas Transmissions swept through the Herndon area and through parkland bordering the Potomac River, severely trimming back trees anchored on private properties adjoining the gas line easement. The ensuing public outrage precipitated requests from the Board of Supervisors for FC staff to evaluate the conditions of more than 200 trees damaged by the line clearing operation. While fully within their rights to maintain their pipeline easement, Columbia Gas Transmissions was presented with a six-page punchlist of tree pruning and removals to compensate for the damages to adjoining trees caused by their contractors.

In the FY 2007 budget approved by the Board of Supervisors, FC received two additional positions in order to provide more presence on development sites with tree-related proffered conditions. The positions were eventually established as an Urban Forester III and an Urban Forester II, and the personnel regimen was started and position descriptions were created for them in preparation for interviews near the end of the year 2006.

Table VII-5 summarizes the workload of the Forest Conservation Branch based on the requests for assistance that were completed for FY 2004, 2005 and 2006. These figures demonstrate that the number of requests for assistance in 2006 appear to have increased by almost ten percent from the previous years. This may have been due, in part, to improved record-keeping, but it also shows a dramatic increase in requests for site inspections (30 percent), which seems to validate the need for additional staff to handle this increase.

**Table VII-5  
Urban Forest Management Division Workload,  
2004 through 2006**

Type of Assignment	Number of Completed Requests		
	2004	2005	2006
Waivers	64	56	39
Zoning Cases	191	206	264
LDS Requests: Plan Review	677	651	671
LDS Requests: Site Inspections	663	620	807
Other (Bd of Supervisors, Park Auth., Other County Agencies, etc.)	610	431	388
Hazardous Tree Investigations	17	19	5 *
<b>Total Completed</b>	<b>2,222</b>	<b>1,983</b>	<b>2,174</b>

LDS – Land Development Services (intra-agency)

\*Completed requests for **Hazardous Trees** do not include nine requests referred to the Virginia Department of Transportation and other County agencies which were inspected by UFMD staff, but for which no correspondence was generated.

### c. Forest Pest Management Section

#### i. Gypsy Moth Caterpillar

The gypsy moth was first detected in Fairfax County in 1981. To avoid the environmental, economic and health hazards associated with this pest the Board of Supervisors enacted an Integrated Pest Management Program to control the gypsy moth. The purpose of the program is to reduce gypsy moth populations below defoliating levels. The goal of the program is to minimize the environmental and economic impacts of the pest by limiting the amount of tree mortality and use of pesticides in the environment. The control methods considered annually are:

- Mechanical: the gypsy moth egg mass Search, Scrape, and Destroy Campaign and Burlap Banding for Gypsy Moth Caterpillars. These are citizen involvement programs.
- Biological: the release and monitoring of gypsy moth parasites and pathogens.
- Chemical: the aerial and ground applications of Diflubenzuron and Bacillus thuringiensis in areas of high levels of infestation.
- Educational: the self-help program and lectures to civic associations and other groups.

In calendar year 2007 gypsy moth caterpillar populations increased dramatically compared to previous years. Insect populations are cyclical

in nature and it is very probable that this increase is a sign that outbreak populations are imminent. For the first time in several years, there was measurable defoliation reported in Fairfax County, the State of Virginia and other states in the northeastern United States. Staff from the Forest Pest Program has determined that there were 50 acres defoliated in Fairfax County during the spring of 2007. According to the Virginia Department Forestry, there were 70,000 acres of defoliated forest in the state. No defoliation numbers are currently available for the United States; however, it is expected that they will dramatically increase. The gypsy moth staff will continue to monitor populations in the fall of 2007 and treatment is very probable in 2008.

ii. Fall Cankerworm

The fall cankerworm is native to the United States and feeds on a broader range of trees than the gypsy moth. Periodic outbreaks of this pest are common, especially in older declining forest stands. The area of the county that had the most severe infestations of fall cankerworm was in the Mount Vernon and Lee magisterial districts. Typically, this insect will defoliate in the early spring when the trees are able to withstand the impacts and little long-term damage is expected; however, tree mortality is possible when combined with conditions that place stress on the trees, such as drought. Nuisance to homeowners occurs when large numbers of caterpillars hang from the trees and migrate to the ground.

The Forest Pest Program conducted an aerial treatment program during the spring of 2003. Staff has monitored for adult female moths throughout the Mount Vernon and Lee Districts since January of 2001. The result of the winter 2006 - 2007 monitoring effort indicated that no aerial treatment was required in the spring of 2007.

The Forest Pest Program will monitor for fall cankerworm again this winter. It is expected that populations of this pest will be low in the near future.

iii. Emerald Ash Borer

The emerald ash borer (*Agrilus planipennis*) is an exotic beetle from Asia and was discovered infesting ash trees in the state of Michigan in 2002. This beetle is known to attack only ash trees and can kill trees in as little as two years. After it was discovered, the United State Animal Plant Health Inspection Service established a quarantine around the infested area in order to contain the pest. Unfortunately, a tree nursery owner inside of the quarantine area illegally shipped infested ash trees to a nursery in Maryland. During the summer of 2003, 13 of the ash trees

were planted at the Colvin Run Elementary School site (Dranesville District). These trees were removed by the Virginia Department of Agriculture and Consumer Services and incinerated.

The removed trees contained evidence that adult beetles had escaped into the environment. In order to prevent the beetles from becoming established in Fairfax County, APHIS and VDACS conducted an Emerald Ash Borer Eradication Program. It was ordered that all ash trees within a one-half mile radius of the school site be removed and incinerated. This area included a total of 278 ash trees, 90 of which were on 29 privately owned properties. All tree removals were conducted in March of 2004.

On December 12, 2003 the Commissioner of VDACS added the emerald ash borer to the list of insects that can be controlled by service districts. On January 26, 2004, the Board of Supervisors directed Forest Pest Section staff to coordinate with VDACS in implementing the Emerald Ash Borer Eradication Program. Staff of the Forest Pest Program began assisting VDACS shortly after the insect was added to the list and board direction was given. FPP duties included surveying the area around Colvin Run Elementary for ash trees, conducting public notification meetings, preparing maps for tree removal contractors, monitoring contracted services, preparing mailings and responding to media inquires.

Since the trees were removed in 2004, staff has been monitoring for the presence of adult beetles. In 2007, monitoring is being conducted by observing native ash trees in various locations around Fairfax County. Staff will continue to monitor for this pest and provide control if warranted. At the end of the summer, the monitored trees will be examined for life stages of the emerald ash borer. This effort would not have been possible except for the cooperation of the Virginia Department of Transportation.

The Maryland Department of Agriculture has maintained an emerald ash borer monitoring program similar to efforts in Fairfax County. MDA recently examined its sentinel trees in Prince Georges County and found evidence of emerald ash borer larvae. This discovery is significant since it means that the insect is surviving and reproducing in Maryland. It is too early to say what impact this will have on Fairfax County; however, it is of concern due to the proximity of Prince Georges County, Maryland and Fairfax County, Virginia. Staff is waiting for guidance from state and federal agencies in this matter; however, it is likely that monitoring efforts for this insect will continue for the foreseeable future and will likely be expanded.

**d. Tree Commission**

In 2006, Tree Commission activities focused on generation of the Tree Action Plan that Chairman Connolly charged the commission with developing in December 2004. Tree Commission members co-chaired the Tree Action Plan Work Group and participated in the task groups that developed individual parts of the plan. In addition, the Tree Commission worked with UFMD to prepare proposed language to amend the Board of Supervisors' Environment Agenda so that it would contain specific strategies and recommendations focused on tree conservation. The board approved the new tree language and it was added to the board's Environment Agenda in September 2006. For more information, use the following Web link:

[http://www.fairfaxcounty.gov/living/environment/eip/2008eip/section\\_b.pdf](http://www.fairfaxcounty.gov/living/environment/eip/2008eip/section_b.pdf)

In 2006, the commissioners continued to use their monthly meetings to research and discuss county tree and landscape issues and policy. Various speakers made presentations to the commission. In addition to participating in numerous public events such as the Fairfax County Earth Day-Arbor Day Celebration and the county's Land Conservation Awards program, commissioners also provided input on various land use and development proposals affecting trees and landscaping. The commission continues to support and advocate for the passage of legislation dealing with tree preservation and the use of native and desirable landscape trees during development.

**e. Tree Preservation Enabling Legislation**

In light of continued opposition encountered during previous Virginia State Legislative Assemblies to amend the tree replacement provisions of §15.2-961 to include tree preservation requirements, the Board of Supervisors did not forward proposed legislation, but instead forwarded a supporting position for tree conservation legislation as part of the 2006 Legislative Program. The legislative proposal supported two tree conservation bills, SB 939 and HB 2486 that were introduced by State Senator Patricia Ticer and State Delegate David Bulova, respectively. Neither of these bills was enacted, so it is anticipated that the county will include a legislative position supporting tree conservation legislation in the 2007 Legislative Program.

**f. Mapping and Analyzing the County's Tree Cover**

In 2006, UFMD continued efforts to delineate the distribution of naturally occurring and landscaped vegetation, using the National Vegetation Classification System. However, this project received less attention than in previous years due to staff hours needed to generate the Tree Action Plan. Since the NVCS tree cover mapping is prerequisite to implementing

multiple aspects of the Tree Action Plan and associated Urban Forest Management Plans, it is anticipated that UFMD will need to devote more resources to the mapping effort in 2007 than in 2006.

## **17. Agricultural and Forestal Districts**

Landowners may apply to place their land in special Agricultural and Forestal Districts that are taxed at reduced rates. A&F Districts, which are created by the Commonwealth of Virginia, must have 200 or more acres. A&F Districts of local significance, governed by the Fairfax County A&F District ordinance, must have at least 20 acres and must be kept in this status for a minimum of eight years.

Fairfax County's policy is to conserve and protect and to encourage the development and improvement of its important agricultural and forestlands for the production of food and other agricultural and forest products. It is also Fairfax County policy to conserve and protect agricultural and forestlands as valued natural and ecological resources that provide essential open spaces for clean air sheds, watershed protection, wildlife habitat, aesthetic quality, and other environmental purposes. The purpose of the Local Agricultural and Forestal District program is to provide a means by which Fairfax County may protect and enhance agricultural and forest lands of local significance as a viable segment of the Fairfax County economy and as an important economic and environmental resource. All district owners agree to no intensification of the use of their land for the life of the district.

Since the 2006 EQAC Annual Report on the Environment, there have been only two changes to the A&F Program. The number of local districts increased from 43 to 45 while the number of state districts remained constant at two. The two new districts are in Great Falls (about 45 acres). Total acreage in A&F districts increased from about 2,934 acres to about 2,979 acres.

## **18. Gunston Cove Ecological Study**

Gunston Cove is a tidal freshwater embayment of the Potomac River located approximately 20 miles south of Washington, DC. The cove is formed by the juncture of Pohick Bay and Accotink Bay, though which the waters of Pohick Creek and Accotink Creek flow to the Potomac River.

An ecological study of Gunston Cove, conducted by the Department of Environmental Science and Policy at George Mason University, and supported by the Department of Public Works, continued during 2005. This study is a continuation of work originated in 1984 at the request of the county's Environmental Quality Advisory Council and the Department of Public Works (now the Department of Public Works and Environmental Services). This on-

going monitoring program was established to determine impacts from local point sources and nonpoint sources and to evaluate the status of the Gunston Cove ecosystem. Information from this study is intended to form the basis for well-grounded management strategies for maintenance and improvement of water quality and biotic resources in the tidal Potomac.

The executive summary of the 2004-2005 report by Jones and Kelso summarizes details from their report and covers water quality, phytoplankton biomass, zooplankton, fish larvae and fish, and benthic organisms. The following is extracted from this summary.

Chlorophyll *a* exhibited a distinct seasonal pattern in both cove and river in both years. The main difference was that values were higher in both areas in 2004 than in 2005.

Cyanobacteria dominated phytoplankton density in both years and in both areas due to their small cell size, but diatoms were clearly most important in terms of phytoplankton biovolume (and probably biomass). Green algae were also important in terms of biovolume on certain dates in the cove.

In the river, most indicators of phytoplankton have not exhibited a significant change over the period since 1983/84. However, since about 2000, chlorophyll *a* has shown a distinct downward trend nearing 10 ug/L. Phytoplankton density has remained rather constant over the past several years. Major and substantial decreases have been observed in all forms of nitrogen and VSS and BOD have made significant declines since 1983/84. Dissolved oxygen has also shown an increase over the whole study period, but not in recent years.

Rotifers were the most abundant zooplankton and followed a typical seasonal pattern of much elevated summer abundances in both years. In 2004 the high levels were reached in the cove in late May and were sustained through most of the summer while in 2005 it was early July before similar levels were attained. In the river, levels were substantially lower than in the cove and had a different seasonal pattern between the two years with a spring maximum in 2004 and a summer maximum in 2005.

Cladocerans were present at substantial numbers, but mainly during restricted periods. *Bosmina* attained higher levels in 2004 than in 2005 in both areas. The other cladocerans *Diaphanosoma*, *Daphnia*, *Ceriodaphnia*, *Moina*, and *Leptodora* were much more common in 2005 than in 2004 in both areas. Copepod nauplii were present in similar densities in cove and river in 2004, but were substantially higher in the cove in 2005. The calanoid copepod *Eurytemora* exhibited a strong spring peak in abundance in the river in 2004 and in the cove in 2005. *Diaptomus* was much more common in the cove than

in the river in 2005 and visa versa in 2004. Other calanoids were generally present at low levels except for late June 2004 in the river.

Many zooplankton groups in the cove and some in the river have demonstrated a significant linear increase since 1990. Rotifers peaked in about 2000 and have started a slight decline, but are still well above 1990 levels. The decline has been steeper in the river than in the cove. The small cladoceran *Bosmina* has remained steady in recent years, while the most common larger cladoceran *Diaphanosoma* and the very large predaceous cladoceran *Leptodora* have declined. This decline may be due to the increase in planktivorous fish like blueback herring and alewife in the past few years. *Daphnia* and chydorids have held their own. Copepod nauplii have continued a steady increase in the cove, while adults have remained flat. Again, this may be related to fish predation.

Trawl collections differed in species dominance between the two years. In 2004, Blueback herring were the most common fish species collected in trawls representing 78 percent of all fish caught. The normally dominant white perch represented eight percent, followed closely by alewife (eight percent), then spottail shiner (two percent), channel catfish (one percent), and blue catfish (one percent). In 2005 white perch returned to the top spot (36 percent), followed by alewife (22 percent), blueback herring (ten percent) and blue catfish (ten percent).

In the cove, the trend line for trawl catches indicates a leveling of a long-term decline that began in the 1980s. Adult and juvenile white perch continued a downward trend that began in about 2000. The mean catch per trawl of blueback herring, alewife, bay anchovy, and tessellated darter has increased in recent years, making up for the shortfall in white perch.

In the river, trawl catches have been on the rebound since about 1999 with the trend line approaching that of the cove. White perch continue to make up about half of the total catch, but are increasing more slowly than the total catch. Larger numbers of channel catfish, blue catfish, bay anchovy, and spottail shiner have helped to make up the difference.

Banded killifish was the most common species collected at seine sites in both years comprising 33 percent of the total catch in 2004 and 61 percent of the total catch in 2005. Alewife, white perch and spottail shiner were the main subdominants.

In seine samples, the catch of banded killifish remained strong and continues to dominate all other species. White perch has recovered somewhat after reaching record lows in 2003. Blueback herring, alewife, spottail shiner, and inland silversides were caught in numbers comparable to most previous years.

Neither alewife nor blueback herring were observed to spawn in Pohick Creek in 2005 or 2006. Gizzard shad were the only species observed. Larvae samples have not been processed yet. Since 1996, either adult alewife or alosine larvae have been collected in Pohick Creek every year except 2002. Alewife adults were also observed in the creek in 2004, though identification of larvae caught there is still in progress. No blueback herring adults were caught in Pohick Creek in either 2003 or 2004 continuing the record since 1988. Gizzard shad adults were caught in Pohick Creek in all years between 2003 and 2006. Larval gizzard shad were also caught in 2003, and spawning certainly occurred in the creek in 2003 and probably in 2004, too.

Water quality in Pohick Creek remains good enough to support spawning by alewife and gizzard shad. Perhaps consideration should be given to modifying the creek environment to encourage more spawning or better survival of the young larvae and to protect the adult fishes from fishermen.

The 20-year record of data from Gunston Cove and the nearby Potomac River is starting to reveal many interesting long-term trends that will aid in the continued management of the watershed and point source inputs. The studies should continue to get a better idea of long-term trends.

## C. COMMENTS

1. The Fairfax County Board of Supervisors has endorsed the goals and actions within the Tree Action Plan, adopted a new tree canopy cover goal for the county of 45 percent coverage by the year 2037 and adopted a tree conservation ordinance to strengthen tree preservation policies and procedures. In addition, trees were identified as a special area of interest in the FY 2008 Environmental Improvement Program.

EQAC commends the Board of Supervisors for its progressive approach to improving the retention and expansion of this valuable ecological resource. It is imperative that these programs not be allowed to weaken or be given less priority in future years. EQAC feels that continued emphasis of tree actions in the Environmental Improvement Program document is necessary to assure continued emphasis and eventual meeting of goals.

2. In past Annual Reports, EQAC recommended that the Board of Supervisors emphasize public-private partnerships that use private actions such as purchase of land and easements by existing or new land trusts to protect forests and other natural resources, including champion/historic trees. With the signing of a Memorandum of Understanding between the Board of Supervisors and the Northern Virginia Conservation Trust, such a public-private partnership came into being.

Thus, EQAC's recommendation has been satisfied. EQAC continues to commend the Board of Supervisors for this action and recommends continued support for this partnership. EQAC notes that the MOU was for a three-year period and this period is over. While the Board of Supervisors continues to fund the public-private partnership with NVCT, no new MOU has been put into place by Fairfax County. Since this interjects uncertainty into the future of this program, and the program has proved its value, EQAC feels that an MOU covering a three-year or five-year period should be put into place.

3. In past Annual Reports, EQAC recommended that the Board of Supervisors develop and implement a countywide Natural Resource Management Plan – an ecological resources management plan that can be implemented through the policy and administrative branches of the county government structure. Two necessary tasks should be accomplished first -- prepare and adopt a unified Natural Resource Conservation Policy, and complete a countywide Baseline Natural Resource Inventory. EQAC notes that slow progress is being made in this area due to efforts by the Fairfax County Park Authority staff in its efforts to establish a natural resources baseline inventory. The FCPA has developed a countywide green infrastructure map that appears to be a basis for a Natural Resource Inventory. Additionally, the Urban Forest Management Division is continuing efforts to devise a countywide map for use as a layer on the county's GIS that will delineate the distribution of naturally occurring and landscaped vegetation. However, these efforts must be supplemented by an inventory of the county that accounts for flora and fauna. The Park Authority has now prepared a Natural Resources Plan for management of the county's parks. EQAC also notes the accomplishment of the Park Authority in preparing and publishing a Natural Resources Plan for management of the county's parks and urges the Park Authority to fully implement this plan. EQAC fully supports these efforts, urging that they culminate in a countywide Resource Management Plan. EQAC's intent is that Fairfax County should have all the tools in place (the policy and the data) to create a plan that will support the active management and conservation of the county's natural resources.

## **D. RECOMMENDATIONS**

1. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. This partially fulfills a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. However, most of this plan cannot be implemented without additional staff and funding for the FCPA. While EQAC recognizes and commends the board for funding well over \$1 million towards Environmental Agenda projects that support the goals and objectives in the FCPA's Natural Resource Management Plan over the past three carryover budget years (FY 2004 thru FY 2006), the FCPA staff estimates that implementation of the plan will require \$3 million plus per year. A more phased approach will allow FCPA to begin to manage 10 percent of parklands and set up

the program to be phased in over time. Phase 1 with this approach would require \$650,000 and six positions. EQAC strongly feels that the plan needs to be implemented. Therefore, EQAC recommends that the Board of Supervisors provide funding and some staff positions to implement Phase 1. EQAC recommends that some of the six staff positions should be found from internal FCPA staff assets.

2. Despite continued opposition encountered during the 2002, 2003, 2004, 2005 and 2006 Virginia State Legislative Assemblies, EQAC continues to recommend that the Virginia State Code §15.2-961 be amended to include tree preservation requirements. Mature trees provide a number of benefits to the environment and the quality of life in Fairfax County. These benefits include improved air quality and improved stormwater management. The value of preserving trees during the development process (versus cutting them and replacing with small plantings) is too great to give up on fighting to get tree preservation legislation. Major opposition to tree preservation legislation comes from the Home Builders Association of Virginia. Staff suggests in its responses to EQAC's 2006 recommendations that Fairfax County facilitate meetings with the local building industry to build consensus over tree preservation. EQAC endorses this approach.

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