**CHAPTER VII**

# ECOLOGICAL RESOURCES

# VII. ECOLOGICAL RESOURCES

This chapter summarizes the status of ecological resources and the actions of public agencies and stakeholder 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 227,952 acres (excluding roads and water). Of this total, 33,465 acres (14.7 percent) are in parks and recreation as of January 2014. Another 15,120 acres (6.6 percent) are vacant or in natural uses. This compares to the approximately 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 6.0 percent as of January 2014.

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.

In 2004, two significant efforts 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. Park Authority staff began revision of this agency's Natural Resource Management Plan in fall 2012. The Park Authority staff held a public review in fall 2013 and adopted the revised Natural Resource Management Plan in January 2014. If this plan is implemented, improved preservation and protection of environmentally sensitive land should be the result. However, without additional funding, the Park Authority is not able to implement significant portions of the plan.

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 Restoration Project, the Fairfax County Department of Public Works and Environmental Services (DPWES) 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.

EQAC also commends those residents of Fairfax County who give donations and time to a number of county organizations involved in environmental activities. EQAC encourages such volunteer activity. The following paragraphs describing organizations' activities mention opportunities for such stewardship.

# 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 board 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 board 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 volume of the Comprehensive Plan. However, there never had been an overarching vision dealing with the environment. This has now changed. As reported in the 2004 Annual Report on the Environment, the board 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 document can be viewed at:
www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf

This document is very significant in its potential for the 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

In past years, this chapter of the Annual Report included a section on the Department of Public Works and Environmental Services. This section covered stream restoration projects and low impact development practices. However, this topic is also covered in the Water Resources chapter of this Annual Report and will not be repeated here.

## 3. Fairfax County Park Authority

The Fairfax County Board of Supervisors created the Fairfax County Park Authority (FCPA) 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 website at www.fairfaxcounty.gov/parks/.

### a. Acquisition of Park Land by FCPA

Between July 2014 and June 2015, the Park Authority added 33.6 acres to its parkland inventory. This brings the parkland inventory to a total of 24,809 acres as of June 2015.

FCPA purchased the following properties:

- On December 4, 2014, the Park Authority acquired the 9.978 acre Roat property within the Mason District. The property is located on Edsall Road just west of its intersection with Shawnee Road in Alexandria. The property will eventually be known as Monch Farm Park.

FCPA acquired the following property through donations:

- On November 18, 2014, Van Metre Investments donated 1.7 acres of fully wooded property it owned within Long Branch Stream Valley Park in the Braddock District.

- On December 19, 2014, Edith Rameika donated 0.22 acre of fully wooded property she owned on the Northern Border of Accotink Stream Valley Park in the Springfield District.

FCPA acquired the following property through dedications:

- On September 17, 2014, McLearen Road Property Owner, LLC dedicated 4.5 acres to the Park Authority in the Hunter Mill District. This dedication was a result of a 1982 rezoning proffer.

FCPA acquired the following property through land transfers:

- On September 4, 2014, the Fairfax County Board of Supervisors transferred 11.72 acres to the Park Authority. The property is known as Dulles Rock Hill Park in the Dranesville District.

- On September 10, 2014, Henry A. Long, Trustee transferred 5.49 acres to the Park Authority. The property was added to Cub Run Stream Valley Park in the Sully District.

FCPA did not acquire any properties during this period through land exchanges.

**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 (NRMP) for Park Authority property. The NRMP contained seven elements:

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

In 2013, Park Authority staff worked with a wide range of stakeholders to revise the agency Natural Resource Management Plan. The new plan is more closely focused on adaptive management of natural capital for biodiversity. Natural capital is generally synonymous with natural resources and includes: the living organisms; non-living components, such as air, water and soil; the ecosystems they form; and the services they provide. The revised Natural Resource Management Plan was adopted on January 22, 2014. Implementation of the Park Authority Natural Resource Management Plan has begun. Project-level implementation funding continues to be sought from available sources, and the Park Authority continues to seek funding to fill a vacant senior ecologist position. A long-term implementation strategy is planned for completion by end of FY 2016

The Natural Resources Management Plan can be viewed at www.fairfaxcounty.gov/parks/resource-management/nrmp.htm.

The Park Authority made a great step forward with the adoption of the NRMP. Additionally, as the above paragraphs show, the Park Authority continues moving toward implementation of the plan. However, more resources (people and funds) need to be devoted to the implementation of the plan. However, the Park Authority

lacks sufficient funding to fully implement the plan. Some funding has been secured through the Environmental Improvement Program plus a combination of proffers, bonds, telecommunications fees and others. Much more needs to be added to the budget to fully fund the plan. FCPA staff estimates that full implementation would require approximately $8 million per year and dozens of staff positions. This includes about $3.5 million to focus on general natural resource management and $4.5 million for a non-native invasive plant control program. A more phased approach to funding would 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 $705,000 and five positions. The Fairfax County Park Authority staff lacks a number of functions and capabilities in regard to the NRMP, including: natural land managers; ecologists; restoration specialists; water resource specialists; wildlife specialists; planners; and project managers. 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. EQAC supports increased funding for this purpose. Resources devoted to the protection of the environment need to be increased.

**c. Status of Natural Resource Mapping Efforts**

The creation of a natural resource protection zone and geodatabase model is complete. A more robust field data collection technique was successfully tested and is being expanded to all applicable field datasets. The new data collection technique uses tablet computers and mobile GIS (geographic information system) combined with rapid assessment protocols to quickly and easily map natural resources data in the field and sync these data with a remote server. Applicable field datasets include Non-native Invasive Assessment Protocol (NNIAP) data, white-tailed deer browse impact (deer) data and community level vegetative classification (vegetative communities) data.

The Park Authority secured funding for inventories of NNIAP and deer data collection efforts. It has not secured funding for the vegetative communities inventory, which is estimated to cost $365,000. The Park Authority will submit requests to fund portions of the vegetative community inventory through the Environment Improvement Program (EIP) and its monopole funding sources.

**d. Invasive Plant Control Efforts**

Invasive plant control projects have occurred at over 70 parks throughout the county and have focused on monitoring, management and outreach.

Monitoring has consisted of surveying park lands using two types of protocols: early detection monitoring, and assessment and prioritization monitoring. Volunteers with the Early Detection Rapid Response (EDRR) program donated 250 hours and located two new invasive species on park land. Monitoring to assess and

prioritize management actions using the NNIAP protocol have been completed on approximately 15,000 acres, or 65 percent, of park land.

The Invasive Management Area (IMA) program continues its operations at 41 sites with 45 active volunteer leaders. In 2014, nearly 2,000 volunteers spent a total of 5,707 hours restoring habitat through the removal of invasive plants and the planting of native species. The IMA program began its ninth year by celebrating Take Back the Forest in April and May 2015. During those two months, over 850 volunteers logged 3,053 hours. Take Back the Forest was funded for a fourth year with a $10,000 grant from REI.

Contractors continue to be used to support IMA efforts and manage high priority sites. Approximately 900 acres of park land was treated using contractors who carefully conduct both chemical and mechanical treatments.

The partnership with Earth Sangha, a local non-profit organization, to control invasive plants at both the Marie Butler Leven Preserve and Wilburdale Park continues, and the partnership provides local native plants for restorations. Other partnerships that continue to benefit invasive plant control include Northern Virginia Soil and Water Conservation District, Virginia Department of Forestry, Virginia Cooperative Extension, Fairfax ReLeaf, Northern Virginia Conservation Trust, the Virginia Native Plant Society, Pawtomack Chapter, Fairfax Master Naturalists, DPWES and others to provide technical assistance regarding invasive species removal, and where possible, on the ground removal from parkland.

**e. Huntley Meadows Wetland Restoration Project**

After 22 years of planning, input from three environmental engineering firms, numerous design drafts, more than 60 public meetings and months of construction, Huntley Meadows Park has a renewed and refreshed wetland – construction is complete, monitoring and management have begun.

In the 1970s and 1980s, Huntley's central wetland was known for its regional significance as one of the most productive and diverse non-tidal wetlands in the mid-Atlantic area. It was a hemi-marsh, a shallow wetland less than three feet deep of approximately 50 percent open water and 50 percent vegetated water. Beavers built dams in a low floodplain area that had been a forested wetland and river oxbow to create a wetland that attracted many locally and regionally rare wildlife species, including American Bittern, Least Bittern, Yellow-crowned Night Heron, King Rail, Pied-billed Grebe, Common Moorhen and a long list of reptiles and amphibians.

Since the late 1980s, silt from surrounding neighborhoods, stormwater runoff and poorly regulated construction sites flowed into the wetlands. That silt combined with the colonization and spread of aggressive plant species and with the changing activity of nomadic beavers to slowly reduce the wetlands' habitat and wildlife

diversity. Cattails and rice-cut grass grew on the deposited silt and took over areas that used to be open water while beavers abandoned key dams. The wetland lost about one-third of its water depth.

In order to ensure that Huntley Meadows Park continued to have a functioning, healthy, diverse wetland that supported locally rare plants and animals on a consistent and long-term basis, management became necessary. This concept was first explored by the Fairfax County Park Authority in 1992. Extensive research was performed by three separate environmental engineering firms as well as extensive monitoring by park staff and volunteers. Twenty public meetings were held, and the input from them was integral and central to the planning process. Approximately 50 other public programs were held to discuss the project with park visitors. Those meetings determined that biodiversity, resource protection and environmental education were priorities for the Huntley community, and the wetland restoration realized and supported those priorities.

To restore the wetland to its 1980s condition and provide long-term wildlife habitat, the Fairfax County Park Authority and the Huntley Meadows Park community engaged in wetland restoration. There were five primary aspects of the project:

- An earthen berm to hold back water.
- A water control structure to manage water levels.
- Expansion of the wetland into the surrounding forest.
- Five deep pools to provide year-round wildlife habitat.
- Brush shelters and logs to provide additional wildlife habitat.

Construction started in April 2013 and was completed in March 2014. The $3 million cost of design, permitting and construction was funded by park bonds and grants and managed by Park Authority staff. Park staff and volunteers monitor, manage and maintain the restored wetland.

Various monitoring and management projects are now under way, and will continue in some form in perpetuity, A partial list of survey and monitoring projects includes: water quality; water depth, flow and temperature; groundwater; weather stations; plant communities; bird, crayfish and amphibian populations; aquatic macro-invertebrates; and periodic aerial photography.

The wetland and its flora/fauna have reacted how we expected they might in the first few years of managed water levels. We saw an increase in dabbling ducks (both in numbers and diversity) in the first winter, and marsh birds (bitterns, rails, grebes, coots) have stayed longer in the spring, often several weeks past migration. Our hope is that they will eventually stay and raise their young once the water levels and plant communities are fully restored. The management plan for the wetland (based on decades of research by FCPA staff, and similar managed wetland plans used around the country) is to have approximately three stasis years of water levels, punctuated by one year of flood or drought water levels, depending on

monitoring results. Even the stasis years will have seasonally fluctuating water levels and some mudflats in the summer – essential for maintaining the area as a wetland rather than a pond. This method has been used successfully in national wildlife refuges around the county for decades, and fits the goals of sustainable biodiversity set for this project. In short, it maintains the wetland in a state of hemi-marsh, or emergent marsh, rather than letting it transition into either meadow, pond or forest.

To learn more about the project, the awards it's already received or to contact park staff with more questions, please visit the project website, www.fairfaxcounty.gov/parks/huntley-meadows-park/restorationproject.htm.

Periodic public programs are also offered throughout the year to give visitors updates and tours of the wetland.

**f. Environmental Stewardship**

FCPA offers a number of opportunities for volunteers, and EQAC encourages county residents to take advantage of these opportunities. Information about these opportunities is available at www.fairfaxcounty.gov/parks/volunteer/.
More information about FCPA and its programs is available at: www.fairfaxcounty.gov/parks/resources.

Many of the stewardship activities that occur on parkland could not take place without the efforts of many volunteers and partners. Groups and individuals participate in a wide range of volunteer opportunities in environmental stewardship on parkland, from becoming a permanent volunteer for the Park Authority to one-off events.

Specifically, volunteers engage in programming, leading walks and tours, writing fliers or brochures, answering the phone when a resident calls with an environmental question and hands-on resource management. FCPA partners with local agencies and nonprofits in two different annual stream clean-up events, although many individuals and friends groups participate in more regular clean-ups along certain sections of streams throughout the year. FCPA also has habitat restoration events, including invasive plant removal and native species planting that attract day participants and more committed volunteers (e.g. the IMA Volunteer Leaders). Wildlife monitors work on birds and salamanders and everything in between, often in coordination with a long-term wildlife monitoring program such as the Virginia Bluebird Society. The Fairfax Master Naturalists have taken on some of these projects or created new opportunities to contribute hundreds of hours to Park Authority sites. FCPA continues to offer many of its environmental stewardship opportunities for youths to get involved in their local parks. These include: permanent volunteer opportunities; community service hours for students; and Eagle and Gold Award projects for scouts. FCPA encourages its volunteers,

be they individuals, groups, students or scouts, to propose ideas of how they can help steward the parks.

### g. Fairfax County Park Foundation

Fairfax County residents 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 donations to the foundation can contact the foundation at:

Fairfax County Park Foundation
12055 Government Center Parkway
Fairfax, VA 22035
(703) 324-8581
parkfoundation@fairfaxcounty.gov
www.fairfaxparkfoundation.org/

## 4. NOVA Parks (Northern Virginia Regional Park Authority)

Three Northern Virginia counties (Fairfax, Loudoun and Arlington) and three cities (Alexandria, Fairfax and Falls Church) participate in NOVA Parks. NOVA Parks was founded in 1959 and currently operates 31 regional parks on 12,031 acres of land that it owns or leases throughout the region. It also holds conservation easements on 115 parcels covering more than 655 acres. Samples of environmental initiatives in NOVA Parks in Fairfax County in 2013 include the following activities:

### a. Acquisition

NOVA Parks acquired the half acre Tinner Hill site straddling the boundary of Fairfax County and Falls Church, adding needed open space in a developed part of the county. That location, coupled with the site's national and regional historic significance, made it a perfect candidate to be managed by NOVA Parks. The historic park was developed and opened to the public in January 2015.

### b. Planning & Development

NOVA Parks has reached many of the objectives set forth in its Five Year Strategic Plan for 2012-2017, helping to fulfill the agency's conservation and environmental priorities for the next five years.

One strategic plan goal is to enhance natural resource conservation in riparian areas, with objectives of: protecting parklands along major waterways for watershed quality and to preserve plant and animal habitat; expanding riparian buffers by planting trees or creating no-mow zones along waterways to enhance water quality and wildlife habitat; using low impact techniques when developing new park facilities; and developing partnerships with conservation organizations and volunteer programs to provide greater stewardship of significant resources. Another environmental goal is to actively assess opportunities to acquire additional properties, with objectives of: expanding public parkland to meet the open space and recreation needs of Northern Virginia's growing population; acquiring properties to meet NOVA Parks mission and land selection criteria with a focus on partnerships; and seeking opportunities to add new member jurisdictions where there are chances to preserve more land for the region.

**c. Sustainability**

Recently, NOVA Parks developed a sustainability report outlining all of its efforts in the last few years to become a model for sustainable practices in numerous areas, including:

- Controlling its carbon footprint.
- Reducing the use of chemicals through our progressive fertilizer & pesticide use policy.
- Habitat restoration.
- System-wide recycling efforts.

Pohick Bay Regional Golf Course follows a Nutrient Management Plan approved by the Virginia Department of Conservation & Recreation to ensure sustainability for the wetlands, the Potomac River and the Chesapeake Bay. The course is also certified with Audubon International and with Groundwater Guardian Greensite. The course completed a new pump station in 2014 that will reduce groundwater withdrawals for irrigation.

In 2014, Pohick Bay Regional Park continued improvements on its trail system to protect the Pohick Bay tributaries and watershed, by restoring poorly designed trails and stream crossings and relocating unsustainable trail segments to maintainable areas. The work is being funded by a grant from the Bureau of Land Management, in partnership with improvement of its trail system at Meadowood Recreation Area across Gunston Road from Pohick Bay Regional Park. During an Earth Day cleanup, volunteers at Upton Hill Regional Park mulched the park's natural surface trails to prevent erosion.

**d. Vegetation Management**

The W&OD Trail regularly offers invasive plant removal as a scout project option, and the W&OD Trail staff selectively applies herbicides to the park's fence lines for

invasive vines and woody plants, such as tree of heaven, mile-a-minute vine and oriental bittersweet, allowing native species to have less competition.

Invasive plant control efforts also continued at Occoquan Regional Park, Bull Run Regional Park and Bull Run Shooting Center, and at Meadowlark Botanical Gardens. Bull Run Shooting Center works on invasive vine removal through hand-cutting, pulling and clipping. At Hemlock Overlook Regional Park, NOVA Parks' site administrator, Adventure Links, controls invasive autumn olive by cutting. At Upton Hill Regional Park, volunteers work regularly on invasive plant removal. At Pohick Bay Regional Park, large patches of bamboo were removed from the golf course and water chestnuts were removed from the shoreline.

NOVA Parks roving park naturalist completed almost 50 programs that interpreted the impact of invasive species on the environment.

Riparian buffer tree plantings were completed at Bull Run Regional Park along Cub Run. As part of SpringFest Fairfax, 14 new trees were planted at Occoquan Regional Park.

**e. Wildlife**

Meadowlark Botanical Gardens and Pohick Bay Regional Park continue cooperative programs with the Audubon Society of Northern Virginia and the Northern Virginia Bluebird Society on topics including birding, native plant culture and gardening with deer. The Virginia Bluebird Society has been working at the Pohick Bay Golf Course for many years and typically has one of the most productive sites in the state. Bull Run Regional Park continues to expand its inventory of bluebird boxes. A Boy Scout program was completed at Bull Run that involved the placement of bat boxes throughout the park

**f. Environmental Education and Outreach**

NOVA Parks continues to have a roving park naturalist regularly visit the high-attendance parks like pools, campgrounds and golf courses, bringing live wildlife and other exhibits and providing programming about nature and the environment. This has been especially enjoyed by summer campers who are visiting the pools at Upton Hill Regional Park on the Fairfax County/Arlington County line and at Bull Run Regional Park. The naturalist also attends events and functions such as the Walter Mess 5K race and the Friends of the W&OD 10K race.

In 2015, the NOVA Parks Foundation awarded grants through its Nature Nuts program, to seventeen Fairfax County public schools for children to attend an environmental education field trip at Hemlock Overlook Regional Park. Adventure Links at Hemlock Overlook Regional Park in Clifton offers a variety of outdoor and environmental education, and team development, programs for public and private

schools, religious and community groups, sports teams, corporations, professional organizations and local, state and federal government and military agencies.

Eight Fairfax County schools attended nature visit programs at Potomac Overlook Regional Park.

NOVA Parks partners with REI's adventure school, introducing people to the outdoors at Pohick Bay, Hemlock Overlook and Fountainhead Regional Parks. The Park Authority's naturalists hold regular educational canoe and kayak trips at Pohick Bay, and the roving naturalist conducts environmental programs at Meadowlark Botanical Gardens as well as at Bull Run and Pohick Bay Regional Park campgrounds. Potomac Overlook Regional Park and W&OD Trail staff hosted booths at various county fairs to inform the public about the environment

Occoquan Regional Park hosted the Occoquan River Festival, bringing together 18 environmental, conservation and recreation groups to educate the public about the Occoquan River and surrounding watershed. The festival included Citizen Science demonstrations on stream quality by the George Mason University (GMU) Biology department

In addition, the park continued its partnership with the Occoquan Watertrail League and a graduate student at GMU on a citizen science study of exotic snails in the Occoquan River. Earth Day events were held at Upton Hill and Hemlock Overlook. NOVA Parks and Friends of the W&OD held environmental outreach sessions at a 10K race event in Vienna, with about 400 participants and visitation at education booths. Pohick Bay Regional Park participates in the Mason Neck Eagle Festival and partners with Mason Neck State Park Interpretive Rangers to provide nature talks to campers at Pohick Bay campground.

**g. Stewardship**

Occoquan, Fountainhead and Bull Run Marina Regional Parks hosted cleanup events on the Occoquan River with Friends of the Occoquan, removing dozens of bags of trash from the reservoir. Pohick Bay Regional Park hosted the Alice Ferguson Foundation Rivershore Cleanup. At Sandy Run Regional Park, rowing crew teams took part in water cleanup days, removing trash from the Occoquan Reservoir in the vicinity of the park.

Environmental stewardship opportunities for volunteers are available at Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park, Pohick Bay Regional Park and various other parks on occasion. NOVA Parks implemented a program that allows youths to access its fee-based park facilities through volunteer service. It has a wide variety of community partnerships in place that encourage groups to take advantage of the regional parks for environmental and historic education and service projects. More information can be found at www.nvrpa.org/park/main_site/content/volunteer. For current

information about the Northern Virginia Regional Park Authority, visit its website, www.NOVAParks.com.

## 5. Fairfax ReLeaf

Fairfax ReLeaf is a nonprofit (501(c)(3)), non-governmental organization of private volunteers who plant and preserve trees in Northern Virginia, preserve native habitat and educate the public about the benefits of trees. Staff and volunteers appreciate and support the county's goals to increase the tree cover in Fairfax County.

Tree plantings:

- Improve the appearance of roadways, parks, schools and private land in Fairfax County.
- Improve air quality.
- Reduce heat island effects.
- Reduce noise.
- Preserve human and wildlife habitats.
- Reduce energy use.
- Reduce surface runoff and improve water quality.

Fairfax ReLeaf planted and distributed 5,077 trees and shrubs in calendar year 2014. More than 1,000 volunteers spent a total of over 2,500 hours planting tree seedlings, removing invasive species and maintaining planting sites. Highlights of the 2014 plantings were:

- The planting of 746 trees and shrubs in riparian areas.
- The planting of 1,691 trees on homeowner association and private property.
- The planting of 772 trees and shrubs in parks, including private, county and national parks.
- The removal of invasive vines strangling mature trees within a Resource Protection Area.

In 2014, Fairfax ReLeaf provided many opportunities for community groups to serve Fairfax County. These included five school group plantings, two Lions Club plantings, two Boy Scout and an Eagle Scout project. ReLeaf led two corporate workdays, during which employees from Winchester Homes and GAP Solutions gave their time to improve Fairfax County. Fairfax ReLeaf also conducted a workshop to prepare individuals to lead plantings.

In 2015, Fairfax ReLeaf planned to continue its park and homeowners association plantings while increasing partnerships with agencies such as the Northern Virginia Soil and Water Conservation District and the Fairfax County Stormwater Planning Division.

Fairfax ReLeaf offers a number of opportunities for stewardship. For further information on Fairfax ReLeaf, visit its website at 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

## 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 noted 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 (NVCT), such a public-private partnership now exists. The partnership is now in its 13th year.

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 partnerships 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. NVCT was one of a handful of the first land trusts accredited throughout the country by the Land Trust Accreditation Commission.

NVCT has several ongoing projects in Fairfax County and is currently pursuing over a dozen prospects for protecting land in partnership with interested landowners. These lands encompass diverse landscapes, from stream valleys and wetlands to historic properties and forested tracts in residential areas. NVCT added one new easement to its portfolio in 2014, a 5.5-acre wooded property along Indian Run that was zoned for industrial use. In total, the trust has now preserved over 700 acres through conservation easements, fee ownership and partnerships throughout Fairfax County. NVCT now holds 35 conservation easements and owns four parcels in Fairfax County. All of these properties are monitored at least annually to assure compliance with the terms and conditions of the easements and to preserve the conservation values.

NVCT has enforcement responsibility for a conservation easement held by the Fairfax County Park Authority on the 41 acre historic Salona property in McLean. The easement was executed in 2006. A task force to make recommendations on the future of the property was appointed by Dranesville Supervisor John Foust in 2011. NVCT was represented on the task force and was active in considering all use options and their potential impacts on the conservation and historic values of the property. In early 2014, the task force recommended to the Fairfax County Board of Supervisors the creation of Salona Park as a History and Environmental Learning Center that includes a visitors' center, a protected meadow complex and an agricultural portion of the property with teaching and community-supported farming.

Tables VII-1 and Table VII-2 provide details on NVCT properties. Figure VII-1 presents a map of these properties.

NVCT continues to engage in outreach initiatives in Fairfax County to emphasize the importance of land conservation and the benefits of natural green space. As part of the Fairfax County community, NVCT participated in several local festival events throughout the county in 2015 including SpringFest Fairfax, Occoquan RiverFest and Clifton Day. Through a partnership with the Herndon Environmental Network, NVCT showed the environmental documentary *Green Fire* during the annual Herndon Environmental Network Film Series. NVCT has also continued to host volunteer restoration activities, focused on removal of non-native invasive plants, at NVCT and partner properties throughout the county. These events take place throughout the year and include celebration of the Martin Luther King Jr. Day of Service, Potomac Watershed Cleanup Day and National Public Lands Day.

As can be seen by the paragraphs above, NVCT offers many opportunities in stewardship for Fairfax County residents. Additional information on NVCT can be found on its website, www.nvct.org.

**Table VII-1. NVCT Fee-Owned Properties in Fairfax County**

| Property/District | Location | Acreage | Recordation |
|---|---|---|---|
| Davenport/Pimmit Run/ Dranesville | McLean | 1.0 | Gift 8/11/2000 |
| Little Hunting Creek/ Mt. Vernon | Alexandria | 2.07 | Gift 5/20/2002 |
| Clifton Property/ Springfield | Clifton | 8.66 | Gift 6/26/2003 |
| Mason | Alexandria | 0.001 | Gift 5/30/2005 |
| | **Total** | **11.731** | |

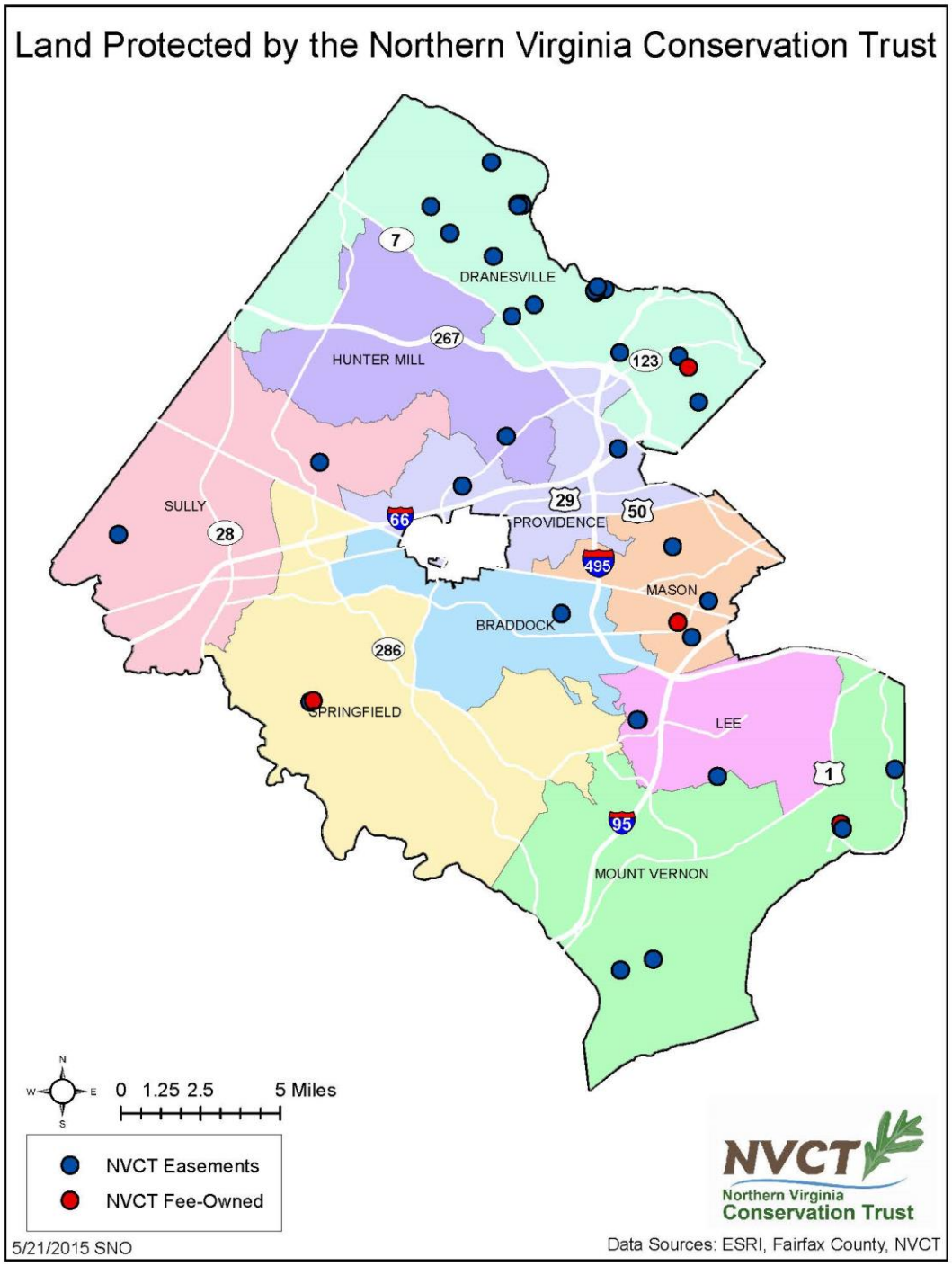
*NVCT Submission for EQAC Annual Report 2015*, Attachment to email, from Shannon O'Neil, Land Stewardship Specialist, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 12, 2015.

**Table VII-2. Easements Obtained by the Northern Virginia Conservation Trust**

| District | Location | Acreage | Recordation |
|---|---|---|---|
| Braddock | Annandale | 2.61 | 6/1/2004 |
| Dranesville | Great Falls | 4.2 | 12/22/1999 |
| Dranesville | Great Falls | 5.6 | 12/29/2000 |
| Dranesville | Great Falls | 5.0 | 12/29/2000 |
| Dranesville | Great Falls | 5.0 | 8/14/2001 |
| Dranesville | Great Falls | 5.1 | 8/15/2001 |
| Dranesville | McLean | 6.0 | 8/2/2002 |
| Dranesville | Great Falls | 14.33 | 7/3/2003 |
| Dranesville | McLean | 1.9 | 12/14/2005 |
| Dranesville | Great Falls | 5.0 | 12/22/2005 |
| Dranesville | McLean | 41.0 | 12/28/2005 |
| Dranesville | McLean | 62.78 | 11/20/2006 |
| Dranesville | McLean | 7.77 | 11/20/2006 |
| Dranesville | McLean | 5.03 | 12/21/2006 |
| Dranesville | Great Falls | 23.81 | 12/28/2010 |
| Dranesville | McLean | 5.08 | 3/8/2011 |
| Dranesville | McLean | 15.34 | 12/19/2013 |
| Hunter Mill | Vienna | 0.39 | 3/28/2003 |
| Lee | Springfield | 0.87 | 10/30/2002 |
| Lee | Springfield | 0.78 | 11/26/2002 |
| Mason | Alexandria | 1.59 | 12/27/2002 |
| Mason | Falls Church | 0.69 | 4/14/2004 |
| Mason | Alexandria | 5.54 | 7/17/2014 |
| Mt. Vernon | Lorton | 33.73 | 5/18/2002 |
| Mt. Vernon | Alexandria | 0.92 | 6/20/2003 |
| Mt. Vernon | Lorton | 8.94 | 12/19/2003 |
| Mt. Vernon | Alexandria | 0.34 | 6/6/2005 |
| Mt. Vernon | Alexandria | 3.98 | 1/8/2008 |
| Mt. Vernon | Alexandria | 0.83 | 11/19/2008 |
| Providence | Falls Church | 7.24 | 5/11/2000 |
| Providence | Oakton | 0.87 | 7/14/2011 |
| Springfield | Clifton | 5.3 | 5/27/2003 |
| Sully | Fairfax | 1.52 | 4/17/2003 |
| Sully | Centreville | 226.36 | 12/19/2003 |
| | **Total** | **520.44** | |

*NVCT Submission for EQAC Annual Report 2015*, Attachment to email, from Shannon O'Neil, Land Stewardship Specialist, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 12, 2015.

**Figure VII-1. NVCT Properties in Fairfax County as of FY 2011**




*NVCT Fairfax County Properties by District*, Attachment to email, from Shannon O'Neil, Land Stewardship Specialist, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 12, 2015.

## 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 ecologically 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 www.nature.org.

## 8. The Potomac Conservancy

Other organizations also hold easements in Fairfax County. One of these is 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 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.

### a. Easements held by the Potomac Conservancy

The Potomac Conservancy currently holds easements on four properties in Fairfax County. These properties total 13.46 acres with 0.14 of that being river frontage. Three of these properties are described below.

**(FOSTER 09) McLean, VA 2.57 acres 12/2000**
This property contains significant woodland and vegetation, steep slopes and floodplain leading down to the west bank of the Potomac River. The mature woodland consists of mixed hardwoods, including red oak, black oak, white oak, chestnut oak, tulip poplar, American beech, black locust and hickory. The understory consists of smaller trees and native shrubs, such as spicebush, mountain laurel, leaf viburnum and arrowwood. The riverbank is undeveloped and contains some low growing vegetation and several larger trees that extend out from the bank across the water. Public visual access is from several significant and widely traveled locations, including the Potomac River, Chesapeake and Ohio Canal t National Historical Park and towpath, George Washington Memorial Parkway and the Potomac Heritage National Scenic Trail. Turkey Run Park is adjacent to the northwest boundary. This property is strikingly natural in character, considering its proximity to highly urbanized Washington, D.C. and Northern Virginia. The existing residential dwelling and associated structures are not imposing or inconsistent with the natural beauty of the Potomac River Gorge.

**(HOROWITZ 14) McLean, VA 1.02 acres 12/2001**
The property contains one acre of mostly mature woodlands that consists of mixed hardwood trees, including red, black, white and chestnut oak, tulip poplar, American beech, black locust and hickory. Many trees are 30 to 45 inches in diameter. The forest understory consists of smaller trees including paw paw, American holly, witchhazel and others. Wildlife such as woodpeckers, warblers, wood ducks, great blue herons, migratory birds and deer use the forest. The property also contains steep slopes and ravines that are a part of a contiguous block of forest along the Potomac Gorge. It is adjacent to National Park Service land and is located within close proximity to other parcels that are protected by conservation easements held by the Potomac Conservancy and the National Park Service. The property is visible from the George Washington Memorial Parkway, Crest Lane and the Potomac National Heritage Scenic Trail.

**(MARDIROSIAN 10) McLean, VA 2.1 acres 12/2000**
This property contains two acres of mostly mature mixed hardwood forest, steep slopes and ravines. It is a part of a contiguous block of forest that connects to National Park Service land on the southwest boundary and forest protected by conservation easements held by the Potomac Conservancy on the southeast and northeast boundaries. The woodland contains red, black, white and chestnut oaks, tulip poplar, American Beech, black locust and hickory. Many trees are 30-45 inches in diameter. The forest understory consist of smaller trees including paw paw, witchhazel, red maple, chestnut and redbud, along with native shrubs such as arrowwood and spicebush. The forest is relatively undisturbed and the riverbank is undeveloped. There is low growing vegetation, including ferns and other native cover species, along the forest floor. Various animal species utilize the mixed hardwood forest for shelter and food.

### b. Seed Collections Program

The reproductive cycle of trees varies from one year to the next. It was noted in 2012 that trees across the region produced a bumper crop of seeds. This was not true in 2013, when it was noted that trees were not dropping as many seeds. There is no official scientific explanation for this fluctuation in seed production.

A lack of funding for Growing Native in 2013 and 2014 prompted the Conservancy to scale back the program by limiting the number of collection sites, while focusing on those which had provided best results in years past.

In 2014, thirty-three volunteers, spending 100 hours, collected 132 pounds of seeds. These included: Black Walnut, Shagbark Hickory, Chestnut Oak and Black Oak.

### c. Stewardship Opportunities

The Potomac Conservancy stewardship department creates and maintains positive, working relationships with landowners who have voluntarily protected their land

from development with a conservation easement. When a landowner grants an easement to the Potomac Conservancy, he/she perpetually preserves environmentally sensitive lands, such as wetlands and forests, various wildlife species and important agricultural soils. Qualifying conservation easements may result in financial benefits, such as being considered a federal tax-deductible charitable donation, being able to use a portion of the gift's value as a Virginia state income tax credit and/or reducing real estate taxes if the easement lowers the property's market value. After the easement is finalized, the Potomac Conservancy is responsible for stewardship of the property by performing annual monitoring visits. These visits safeguard a property's conservation values by ensuring terms of the conservation easement are upheld. They also provide landowners with the opportunity to seek assistance with easement and land management related issues. For more information about land conservation and stewardship with the Potomac Conservancy, please visit www.potomac.org.

Potomac Conservancy no longer pursues conservation easements in Fairfax County, Virginia. However, whenever the Conservancy receives an easement inquiry, it provides information about private land protection and forwards the information to the best organization to help with the needs of the person or group.

## 9. 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. No additional easements were acquired in 2014.

## 10. The Virginia Outdoors Foundation

The Virginia Outdoors Foundation (VOF) was created by an Act of the Virginia General Assembly (Chapter 18 of Title 10.1) in 1966 and is both a state agency and an independent instrumentality. VOF is also a public foundation and can "…accept, hold, and administer gifts and bequests of money, securities, or other property, absolutely or in trust, for the purposes for which the Foundation is created." A good summation of the VOF legislative charge may be that it is steward of the natural and cultural heritage land resources of Virginia on behalf of present and future residents.

The primary mechanism for accomplishing VOF's mission is the perpetual open space easement. As of May 27, 2014, VOF holds easements on nearly 730,000 acres in 106 local jurisdictions across the commonwealth. These easements protect a wide variety of natural resources, including farm and forest land, natural areas, watershed areas, rural historic districts and the settings for historic homes, scenic views, lands adjacent to public parks and game preserves.

The Virginia Outdoors Foundation currently holds seven easements in Fairfax County as shown in Table VII-3.

| Table VII-3. Easements Held by the Virginia Outdoors Foundation in Fairfax County | | |
|---|---|---|
| **Original Donor*** | **Acreage** | **Date Recorded** |
| Thayer | 59.33 | 10/30/1969 |
| American Horticultural Society | 8.15 | 10/03/1978 |
| McCormick-Goodhart | 26.67 | 06/13/1988 |
| McCormick-Goodhart | 5.25 | 06/13/1988 |
| McCormick-Goodhart | n/a | 02/29/2000 |
| McKee-Bennett | 20.47 | 12/28/1990 |
| Ridder and Andrews, Jr., trustees | 7.86 | 12/23/1998 |
| **Total Acreage under Easement** | **127.73** | |

Source: *Virginia Outdoors Foundation*, Attachment to e-mail, Virginia Outdoors Foundation, from Erika Richardson, Stewardship Specialist, Virginia Outdoors Foundation, Warrenton, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, May 22, 2013, as confirmed in an attachment to an e-mail from Jason McGarvey on April, 23, 2015.
***** 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.

Additional information about VOF can be seen at its website: www.vofonline.org/.

## 11. Northern Virginia Soil and Water Conservation District (NVSWCD)

NVSWCD continues to focus its programs in ways to support Fairfax County efforts in meeting stormwater and Chesapeake Bay Total Maximum Daily Load (TMDL) requirements through homeowner outreach, education and engagement. In addition, NVSWCD works to promote beneficial management practices and good stewardship of our land and water resources.

With DPWES – Land Development Services, NVSWCD co-hosted the 2014 Land Conservation Awards (LCAs) in January 2015. Proclaimed as the Oscar Awards for the development community, the LCAs are given to projects that exemplify the use and management of erosion and sediment controls during the site development process. Sites are nominated by site inspectors with DPWES – Site Development and Inspection Division and are judged by a panel of representatives from NVSWCD and the Virginia Department of Environmental Quality. During two onsite visits in May and October 2014, a total of eight nominated sites were evaluated for their excellence in implementing erosion and sediment control measures. The 2014 categories and award winners include:

- Large Commercial — Cinder Bed Road Bus Division.
- Large Single Family Residential — Gambrill Pointe.
- Small Single Family Residential — 7309 Hayfield Road, Alexandria.
- Infill Lots — 9022 Falls Run Road, McLean.
- Outstanding Engineering Firm — Wendel Companies (Cinder Bed Road Bus Division).

| | |
|---|---|
| • Outstanding Superintendent | Clarke Newbill and Billy Huff (Gambrill Pointe). |
| • Outstanding Contractor | Strittmatter (Cinder Bed Road Bus Division). |
| • Outstanding Developer/Owner | Washington Metropolitan Area Transit Authority (Cinder Bed Road Bus Division). |
| • Best Protected Environmentally Sensitive Sites: | Washington Metropolitan Area Transit Authority (Cinder Bed Road Bus Division) |

In addition, Jackson Ayers, a member of Boy Scouts of America, Troop 1539 received a *Certificate of Voluntary Merit* for his efforts in managing a drainage and erosion problem at the Unitarian-Universalist Congregation of Fairfax.

NVSWCD performs site investigations and conservation planning for land owners interested in creating and renewing Agricultural and Forestal Districts and administers the Virginia Agricultural Best Management Practices Cost-Share and Tax Credit program in Fairfax County. To support these efforts, NVSWCD provides soil and water quality conservation planning to suburban horse farms, small farmettes, plant nurseries and golf courses. In 2014, NVSWCD prepared plans covering 31 parcels, totaling 491 acres and providing recommendations for the protection of approximately 33,556 linear feet of Resource Protection Areas.

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 residents a package of native tree and shrub seedlings for a small cost. The 2015 "Naturally Beautiful – Plant NoVA Natives" themed seedling sale highlighted the regional partnership between the Northern Virginia Regional Commission, Virginia Native Plant Society, Northern Virginia Soil and Water Conservation District and others to increase awareness of native varieties and improve the presence of native choices in the market. This year's plants included River Birch, Willow Oak, Shortleaf Pine, Winterberry, Silky Dogwood, Eastern Redbud, American Witchhazel and Arrowwood Viburnum. The theme was well-received and resulted in over 380 customers purchasing a total of 6,080 seedlings, which were planted across Fairfax County and surrounding areas. In addition to the benefits of the trees and shrubs in enhancing the region's native habitat, the plants are selected for their adaptability across the Piedmont and Coastal Plain provinces, and for many different growing conditions.

Six teams participated in this year's Envirothon Competition: Langley 1, Langley 2, Thomas Jefferson, James Madison and Fairfax High Schools and Hidden Pond Nature Center. The local competition was held at Hidden Oaks Nature Center. Hidden Pond came in first place and Thomas Jefferson placed second. Both teams advanced to the

Area II Competition in Fauquier County. There, Hidden Pond placed first and Thomas Jefferson placed third. Hidden Pond advanced to the State Competition at Longwood University on May 17-18. There, they placed first and represented Virginia at the North American Competition at Missouri State University in Springfield, MO from July 27– August 2.

Each year, NVSWCD has the opportunity to send high school students to Youth Conservation Camp, a week of natural resources career exploration held at Virginia Tech. Seven students from Fairfax County attended the program in July 2014.

District directors, staff and friends judge conservation-related projects at the Fairfax County Regional Science and Engineering Fair held annually at Robinson High School. In 2014, NVSWCD awarded first, second, third and honorable mention prizes to natural resource projects.

Annually, NVSWCD nominates a Fairfax County senior or first year undergraduate for a college scholarship offered by the Education Foundation of the Virginia Association of Soil and Water Conservation Districts. In 2014, Owen Mulvey-McFerron, a rising sophomore double majoring in Marine Biology and Environmental Studies at Richard Stockton College of New Jersey, was awarded one of four $1,000 scholarships.

NVSWCD continues to administer the Northern Virginia Rain Barrel Partnership in collaboration with Arlington County and the cities of Alexandria and Falls Church. Throughout the last year, over 258 participants built or purchased 348 55-gallon rain barrels at 12 workshops and distribution events. Since the program began in 2008, the partners have educated over 3,000 individuals, who built or purchased over 3,800 rain barrels, which have the opportunity to retain at least 200,000 gallons of water annually.

Additionally, NVSWCD hosted two Build-Your-Own Composter events, both of which sold out. The events resulted in the creation of 30 55-gallon composters that will reduce organic waste from reaching landfills and re-purpose organic matter to improve the soil health of gardens.

At the bi-monthly Saturday morning Green Breakfasts, interested residents, county officials and agency staff, state legislators, students, members of the business community and representatives of local nonprofits and environmental groups discuss environmental topics, share information and network. Each breakfast begins with a presentation.

*Conservation Currents*, the NVSWCD quarterly newsletter, includes many articles related to ecological resources. Conservation Currents included the following topics throughout FY 2014:

- Jean Packard's Legacy.
- Clover in Your Pasture?

- Wakefield Run Stream Restoration Project.
- Rain Barrel Art.
- 2014 Land Conservation Awards.
- Stewardship is a Focus for New NVSWCD Director – Jerry Peters.
- Trash Clean Ups.

## 12. 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 Center for Coastal Resources Management of the Virginia Institute of Marine Science estimates that Fairfax County's tidal shoreline is approximately 111.85 linear miles. The county's tidal shoreline within the Coastal Plain extends from Cameron Run on the north, traversing south along the Potomac River and extending to the Occoquan Reservoir on the south where the tidal influence terminates at the dam.

The Wetlands Board's jurisdiction is that area between mean low water and mean high water in non-vegetated wetland environment and between mean low water and the equivalent of 1 1/2 mean high water in a vegetated environment. Since 2010, after the Board of Supervisors adopted the beach ordinance, the Wetlands Board has also reviewed tidal projects which impact beach areas. Beach can extend beyond or it can be contiguous with non-vegetated tidal wetland area.

To assist localities in implementing the state policy which requires localities in Tidewater Virginia to incorporate coastal resource management guidance into the locality's comprehensive plan, the Virginia Institute of Marine Science (VIMS) has developed the Comprehensive Coastal Resource Management Portal. The portal is designed to provide guidance and resources to the public, especially shoreline property owners in Virginia, and to local governments. The website provides information on the current condition of the shoreline and information to help determine if shoreline stabilization is justified. VIMS also recommends the type of stabilization which would be most appropriate based on the shoreline conditions. The Comprehensive Coastal Resource Management Portal is available at http://ccrm.vims.edu/ccrmp/fairfax/index.html.
The Wetlands Board welcomes VIMS guidance and has adopted a living shorelines policy, available at www.fairfaxcounty.gov/dpz/environment/finallivingshoreline.pdf.

The Wetlands Board has also adopted a mitigation policy which can be found at www.fairfaxcounty.gov/dpz/environment/wetlands/mitigation_compensation_policy_adopted.pdf.

The Wetlands Board reviewed one permit application during the first half of 2015. The board approved the permit.

During 2015, the Virginia Marine Resources Commission staff, with guidance from a citizen advisory group, drafted the state's first general permit for living shorelines, to implement a 2011 state law (Senate Bill 964, now section 28.2-104.1). The general permit was approved by the Virginia Marine Resources Commission on July 28, 2015 following a public hearing; it became effective on September 1, 2015. The permit includes all criteria and procedures for proposing and evaluating living shoreline projects in tidal waterways and describes the purpose of the law as follows:.

> "The purpose of this general permit is to provide a streamlined permitting process as an incentive to encourage property owners to utilize a living shoreline approach as appropriate, to manage shoreline erosion and promote the planting and growth of tidal wetland vegetation to restore or enhance ecosystem services. The techniques and conditions contained in this general permit are designed to limit the applicability of the permit to situations where the projects are most likely to be successful, and so as to limit the potential for adverse impacts on the environment and adjoining or nearby properties."

The guidance describes three essential elements that the application must include to be approved under the general permit process:

- The application is sufficiently complete to allow evaluation.
- The project satisfactorily meets the general permit criteria, including the following:
  - Maximum fetch never exceeds ½ mile at any shoreline angle.
  - Appropriate wetland plants, as currently identified in the tidal wetlands ordinance, are proposed within the intertidal area.
  - Use of fiber logs and other biodegradable material, as appropriate and as long as the final elevation does not exceed mean high water and as long as no existing wetland vegetation is covered with the use of such materials.
- The general permit process should be used.

Carl Hershner, Jr., the Director of the Center for Coastal Resources Management and Associate Professor of Marine Science at the Virginia Institute of Marine Science, has noted the following to the Chairman of Fairfax County's Wetlands Board:

> "Fairfax County was one of the first localities to formally adopt a wetlands mitigation policy and the first locality in Virginia to establish a living shorelines policy. The mitigation policy requires that first and foremost all reasonable measures to avoid wetlands impacts be taken before consideration of creating new wetlands. Fairfax County's groundbreaking Living Shoreline Policy was included in the Virginia Institute of Marine Science Shoreline Management and Wetland

Sustainability Study submitted to the General Assembly, leading to the passage of Virginia's Living Shorelines legislation in 2011."

"The Fairfax County Wetlands Board has been in the forefront of natural resource conservation by incorporating the latest scientific information in both their living shoreline and mitigation policies. We routinely point to their practices as a model for other wetlands boards in Virginia."

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
www.co.fairfax.va.us/dpz/environment/wetlands.htm

## 13. Virginia Department of Forestry

The Virginia Department of Forestry (VDOF) has provided forestry-related services in Fairfax County for over 60 years. VDOF is also participating in several efforts aimed at improving riparian areas. In these efforts, VDOF partnered with the Northern Virginia Soil and Water Conservation District, the Department of Public Works and Environmental Services, the Fairfax County Park Authority and Fairfax ReLeaf.

Despite continued difficulties with the commonwealth's budget, VDOF will continue to be able to provide technical assistance to Fairfax County in its environmental initiatives, but little in the way of direct material or funding support. Reduced competitive funding will be available through Water Quality Improvement Fund grants to support riparian plantings and tree-related storm water management projects. VDOF may also be able to support tree planting with donated seedlings.

The Virginia Department of Forestry is the lead state agency in meeting Virginia's riparian buffer commitments to the Chesapeake Bay Program. In 2006, urban tree canopy goals were added to the Bay Program's buffer strategy, recognizing the diminished water quality value of riparian forests in urban areas where upland storm water is conveyed directly to streams and bypasses the riparian forest. One way to view it is that street gutters and storm drains are manmade extensions of the natural stream network, so all trees are effectively riparian trees. In 2014, the Virginia Department of Forestry provided project leadership and technical support to tree planting efforts in partnership with elementary school children, private landowners and Fairfax ReLeaf.

Each year, the Virginia Department of Forestry participates in the Fairfax County Arbor Day on the last Saturday in April. The county earned again, for the 32nd 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 Virginia Department of Forestry. Tree seedlings are distributed by VDOF to people attending the Arbor Day celebration. In 2014, 400 donated hardwood and shrub seedlings were distributed for planting by volunteers 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 2014, approximately 1,200 pounds of seeds (mostly acorns) were collected. Each year 500-700 seedlings are given to volunteers 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 Fairfax County Department of Planning and Zoning to review Agricultural and Forestal (A&F) District applications. A&F District forest management plans are prepared by VDOF; these efforts support the management of forested land for conservation purposes. Six A&F plans covering 236.2 acres were reviewed and updated. VDOF also wrote a Neighborhood Forest Management Plan for a homeowner association of some 250 homes and a fire management plan for another homeowner association. In addition, VDOF provided less formal advice to a number of home owners associations, civic groups and residents. All plans and advice provided by the VDOF are informed by the water quality and conservation benefits of protecting and maintaining forests and street trees.

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 45 applications and plans in 2014. 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 outreach 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 2014, VDOF conducted 62 talks on the general benefits of urban forests and riparian buffers.

In an attempt to expand outreach and education and planting efforts, the Department of Forestry initiated a Tree Stewards program in 2011. The Tree Stewards program is designed to create a cadre of trained volunteers to lead community tree plantings and provide information on the benefits and care of trees. A fourth class of Tree Stewards was trained in 2014. Thirty Tree Stewards reported 715.5 hours of volunteer service, including invasive plant removal, tree planting and education and outreach activities. In addition to outreach and education and writing plans, the Virginia Department of Forestry provides technical assistance to land owners in managing trees, forests and other natural resources. This ranges from care and diagnosis of landscape trees to

assisting with prescribed burns to improve native habitat. The department assisted with or conducted one burn in the county in 2014 with the Fairfax County Park Authority.

The Virginia Department of Forestry website (www.dof.virginia.gov) contains many pages on forest management and urban forestry. Topics range from tree identification to proper planting under power lines. The pages contain information developed by VDOF and links to many other sources of information on urban forestry and tree care.

## 14. Virginia Department of Transportation

Potential impacts to stream and wetland resources from the Virginia Department of Transportation (VDOT) projects and activities are avoided and minimized to the greatest extent feasible. Avoidance of such impacts involves a balance with avoiding and minimizing technical, logistical, socio-economic as well as other environmental resource factors to find the most practical and least environmentally-damaging solution.

For unavoidable impacts to aquatic resources, federal and state water quality laws and regulations may require compensatory mitigation in order to obtain water quality permit authorizations from the permit regulators. To comply with compensatory mitigation requirements, VDOT designed and constructed several on/off-site mitigation areas as a part of a highway construction project. Within Fairfax County, several mitigation sites were created on state right-of-way totaling approximately eight acres of wetlands (seven acres non-tidal and one acre tidal) and approximately 2,635 linear feet of restored streams associated with unavoidable impacts from VDOT highway improvement projects. These compensatory mitigation sites have satisfied the success establishment criteria set by the regulatory permitting agencies and now exist in perpetuity as protected conservation easements. The last remaining on-site mitigation sites under active post-construction permit monitoring are associated with the I-95/Telegraph Road interchange improvement project (opened to traffic last year). The compensatory mitigation requirements for the unavoidable impacts included wetland enhancement or creation of 1.71 acres of tidal wetlands and 0.63 acre of non-tidal wetlands near the confluence of Taylor Run and Cameron Run, plus 0.36 acre of stream restoration to a relocated tributary to Cameron Run. These areas are in the third year of a five year monitoring period.

Beginning in 2008, the Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE) and the Virginia Department of Environmental Quality (DEQ) jointly supported an order of preference for compensatory mitigation: first through purchase of stream and wetland credits from approved commercial mitigation banks; second by payment of in-lieu funds; and third by permittee responsible mitigation (i.e., preservation, enhancement and creation) for compensation of unavoidable impacts to aquatic resources. As a result, VDOT now purchases wetland and stream credits from approved mitigation banks to fulfill compensatory requirements. While compensatory mitigation is ultimately subject to approval of the regulatory permitting agencies, VDOT is open to suggestions for exploring mitigation opportunities within the Fairfax County geographical area.

VDOT developed the Environmental Commitments and Compliance Assistance Program pursuant to VDOT's FY 15 Business Plan, which consists of eight Action Items/Goals. Action Item/Goal 4 of the Business Plan is dedicated to environmental stewardship, which requires VDOT "to protect the environment and improve the quality of life for Virginians" in its mission to build, operate and maintains highways. The primary objectives of this program are to establish a consistent process to communicate the environmental commitments (regulations, legislation and other legal requirements) at the beginning of a project's construction, followed by active monitoring throughout the life of a project to ensure not only compliance but proper implementation. The formal rollout of this program occurred on July 1, 2015.

Landscaping contributes much more than just visual aesthetics; trees support filtering of air and stormwater pollutants/sediments, slowing the erosive acceleration of stormwater runoff, lowering stormwater runoff temperatures from heated impervious surfaces and screening of headlight glare and street light trespass onto residential properties at night. Many of these benefits are consistent with discussion topics elsewhere in the Annual Report.

VDOT has included landscaping on several road construction projects to enhance context sensitive road design. Recent or current projects with landscaping include:

- Completion of the I-495 corridor-wide landscaping/reforestation project from Braddock Road to the Dulles Toll Road (14 miles along the inner and outer loops).
- Stringfellow Road widening between Fair Lakes Blvd. and U.S. Route 50.
- Jeff Todd Way between Telegraph Rd. and Richmond Highway.

Ongoing coordination continues among VDOT, the Fairfax County Restoration Project, Fairfax Re-Leaf and DPWES Stormwater Planning on reforestation and stormwater management/water quality issues.

VDOT has multiple waste load allocation limitations derived from Total Maximum Daily Loads in multiple streams across the county. It is expected that these requirements will be met through best management practices required in the next DEQ Stormwater Discharge Permit issued to VDOT. Coordination with Fairfax County will be needed.

VDOT's Wildflower Program is funded through revenue fees paid for wildflower license plates at the Virginia Department of Motor Vehicles; approximately 3.5 acres of right-of-way at four locations in Fairfax County are managed as wildflower meadows. Warm season, native grass species are seeded on construction projects for which opportunities exist to take advantage of low maintenance requirements. Targeted control of invasive and nuisance vegetation is a large part of VDOT's Roadside Vegetation Management Program to promote the growth of more desirable species. Problematic roadside locations are prioritized for treatment and follow-up monitoring to reduce the population to a manageable level.

## 15. Virginia Department of Environmental Quality

In 2014 the Northern Regional Office of the Virginia Department of Environmental Quality received 19 applications to impact surface waters in Fairfax County. A total of 15 new Virginia Water Protection Wetland Permits were issued. Compensation for impacts to surface waters was proposed to be provided through the purchase of bank credits and on-site stream restoration or riparian buffer enhancement.

## 16. Urban Forestry

Fairfax County's urban forest is critical to enhancing the livability and sustainability of our community. Management of the trees within our urban forests to maximize the multitude of benefits they provide to residents is an essential step in successfully reaching the commitments and goals of the Board of Supervisor's Environmental Agenda, the Tree Action Plan, the Cool Counties Climate Stabilization Initiative and other county public health, livability and sustainability initiatives and programs.

In 2014, the Urban Forest Management Division (UFMD) continued to coordinate and implement the county's efforts to manage our urban forest resources including advancing the board's Environmental Agenda to:

- Increase tree conservation in land development.
- Improve air quality through tree conservation policies and practices.
- Improve water quality and stormwater management through tree conservation.
- Foster an appreciation for our urban forest and inspire county residents to protect, plant and manage trees and forest stands on public and private lands.

In 2014, a new Urban Forester III position was created and filled in UFMD to move the Tree Action Plan forward and work with the Tree Commission to review the plan for possible updating. This urban forester is also working to establish and cultivate inter- and intra-agency and public-private partnerships to advance the Tree Action Plan and urban forest management in the county.

Current data on the structure, function and value of the social, economic and environmental benefits of the county's trees and forests are being used to influence urban forest management decisions to reach these goals. The benefits of the urban forest are also being used to incorporate urban forest management into regulatory requirements and processes such as Total Maximum Daily Load water quality planning and the Municipal Separate Storm Sewer System (MS4) permit process.

The Director of UFMD has been appointed to the Environmental Protection Agency Chesapeake Bay Program Urban Tree Canopy Expert Panel that will be making recommendations for the development of Best Management Practices and models for calculating urban tree pollutant load reduction credits for the Chesapeake Bay Watershed Model. The panel is expected to have a final approved report with its recommendations in December 2015.

Below is a summary of UFMD efforts in 2014 and into 2015, and how these efforts address the county's overall Tree Action Plan.

**a. Tree Canopy**

The 2012 Urban Tree Canopy Analysis (UTC) conducted by the University of Vermont Spatial Analysis Laboratory indicated that 53 percent of the county's land mass was covered by tree canopy in fall 2011. This figure is higher than those produced by previous imagery. (However, EQAC notes that the new data are at a higher resolution than the old. At this time, we cannot say what the actual difference, if any, there is in the tree canopy since the two datasets cannot be compared directly.) In addition to canopy coverage, the study delineated the percent coverage for impervious surfaces, water, grass/shrub, bare soil, roads and buildings. The analysis was used to develop canopy coverage for all 30 major watersheds found within Fairfax County. The high resolution satellite imagery and UTC analysis for the county is being updated in 2015.

This information on existing tree canopy in the county is being used to also calculate the environmental benefits, such as carbon sequestration, stormwater management, air and water quality benefits and energy conservation, of the urban forest based on science and Web-based tools (*i-Tree*) developed by the USDA Forest Service. These efforts are in support of Tree Action Plan Core Recommendations #5, to Improve Water Quality and Stormwater Management through Tree Conservation, and #6, to Use Ecosystem Management to Improve and Sustain the Health and Diversity of the Urban Forest.

i. Tree Canopy and Watersheds

In 2013 and 2014, the Urban Forest Management Division, in cooperation with the county GIS office, continued modeling on county watersheds to simulate the effects of changes in tree and impervious cover on stream flow and water quality. The selected modeling software is i-Tree Hydro, a part of the i-Tree suite of tools developed by the USDA Forest Service which analyzes urban and community forest benefits. The tree canopy analysis, along with field-collected inventory data, hourly stream flow and weather data, is used to quantify the value of trees on the watershed level. Theoretical gains or losses in tree canopy and/or impervious surfaces can be modeled to demonstrate the effects on water quality and stream flow.

The Urban Tree Canopy Analysis and i-Tree Hydro will provide useful input toward achieving many goals set forth by the Tree Action Plan. The benefits of these analyses include:

- Developing benchmark tree canopy levels for the major watersheds in Fairfax County from Urban Tree Canopy Analysis data.

- Using i-Tree Hydro software to model effects of gains and/or losses of tree canopy and impervious surface on water quality and stormwater flow.
- Cooperating with Stormwater Planning to incorporate tree canopy analysis with MS4 Permit and Chesapeake Bay TMDL regulatory requirements.
- Adjusting watershed canopy goals to reflect available planting space, demographics, comprehensive plan potential for land use change, etc. if needed.
- Embedding reforestation and related best management practices in MS4 Permit and Watershed Improvement Plans as credited measures.

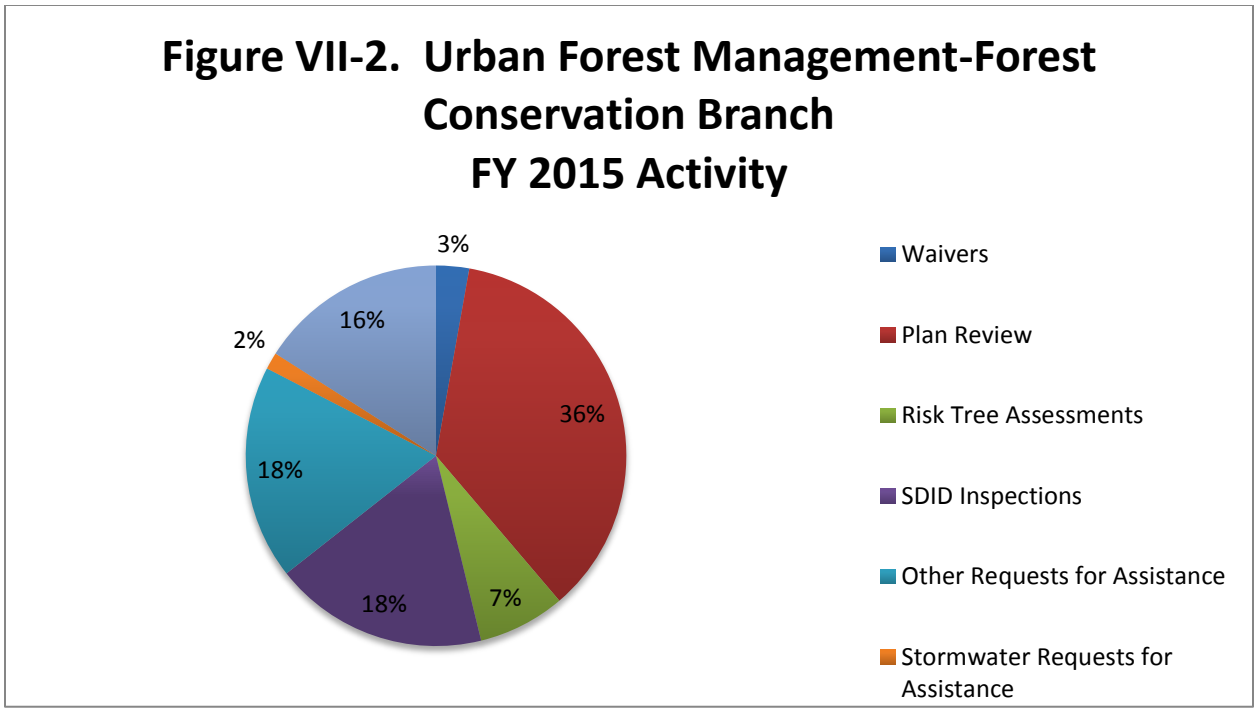
ii. Implications of Tree Canopy Analysis

The 53 percent tree canopy level analyzed in 2012 exceeded the 45 percent goal adopted by the Board of Supervisors in 2007. This figure is higher than those produced by previous imagery. (However, EQAC notes that the new data are at a higher resolution than the old. At this time, we cannot say what the actual difference, if any, there is in the tree canopy since the two datasets cannot be compared directly.) UFMD presented this information to the board's Environmental Committee in October 2013. In light of the environmental, ecological and socio-economic pressures that currently threaten the county's tree and forest resources, UFMD is likely to recommend a shift away from solely quantitative canopy goals and more toward development and implementation of qualitative forest management goals and metrics, including watershed management goals and green infrastructure planning. These efforts will be critical to ensuring the long-term health and sustainability of our urban forest.

**b. Forest Conservation Branch Activities**

The Forest Conservation Branch staff currently consists of seven full-time and two part-time urban foresters who work with a wide range of partners on a variety of urban forest management issues. One of the core responsibilities of the Forest Conservation Branch is to promote the Tree Action Plan's Core Recommendation #10, to Optimize Tree Conservation in Land Development. UFMD is unique in its "cradle to grave" participation and responsibilities in the land development process in the county. Urban Foresters provide expertise and comments on Comprehensive Plan Amendments, rezoning case reviews, special permit applications, special exceptions, site plan and other development plan reviews, site inspections and final bond release of development projects. In addition, the Urban Forest Management Division provides consultations to various county agencies.

Figure VII-2 illustrates the types of requests for assistance handled and percentage of time spent by the Forest Conservation Branch in Fiscal Year 2015. Below is a brief explanation of each of the categories of assistance tracked in the charts. This includes the type of customers and partners assisted within the process. A total of




Source: *EQAC 2015 UF Chapter Draft*, attachment to email from Keith Cline, Director Urban Forest Management Division, Department of Public Works and Environmental Services, Fairfax County, Virginia to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 1, 2015.

1,228 requests for assistance by customers and partners were fulfilled by the Forest Conservation Branch in FY 2015.

i. Waivers (39)

Waivers include several types of modification requests, including Transitional Screening and Barrier waiver/modifications, 10-year Tree Canopy modifications and Interior Parking Lot Landscaping waiver/modifications.

ii. Plan Reviews (500)

The vast majority of plan review requests are in direct response to the Land Development Services, Site Development and Inspections Division's (SDID) workload during its reviews. The plan review process include; Site Plans, Minor Site Plans, Rough Grading Plans, Public Improvement Plans, Preliminary Plans, Subdivision Plans, Infill Lot Grading Plans, Demolition Plans, Plan Revisions and Water Quality Impact Assessments.

This year the Urban Forest Management Division, in consultation with leadership teams from SDID and the Engineers and Surveyors Institute (ESI), are now considered an "Outside Review Agency" to better accommodate the

Second Submission Designated Plans Examiner (DPE), expedited plan review process. Thus far, UFMD has processed 53 Second Submission DPE plans.

iii. Tree Risk Assessments (103)

A primary focus of tree risk assessments is the evaluation of risks that any tree may pose to the public, including a determination of a public safety hazard as defined in Chapter 46 of the Code of Fairfax County. Trees on public or private property that may affect the safety of the public are evaluated and follow-up mitigation is prescribed. Tree risk assessments are provided on a complaint basis by stakeholders and as requested by homeowners associations and county and outside agencies, such as the Facilities Management Department, Maintenance and Stormwater Management Division and VDOT.

iv. Stormwater Requests (20)

Stormwater requests come primarily from the Stormwater Planning Division, Utilities Design and Construction Division, contractors and stakeholders as part of planning and implementation teams. UFMD contributions to the process include project scoping, plan review, pre-construction meetings and consultation during construction of stream restoration, stream stabilization and stormwater facilities projects.

v. Zoning Cases (222)

Zoning cases consist of a variety of requests from the Department of Planning and Zoning. These requests include Conceptual and Final Development Plans, Planned Residential Community Plans, Special Permits, Special Exceptions, Variances and Rezoning cases.

vi. Site Inspections (253)

Site Inspections require a physical inspection of a site for compliance with approved plans, including landscaping inspections, bond release inspections, pre-construction meetings and site inspections for tree conservation compliance.

vii. Other Requests for Assistance (91)

The remainder of activities comprise a collection of both internal and external customer requests from the following agencies, organizations and the public:

- Facilities Maintenance Division.
- Capital Facilities.
- Park Authority.
- Public Schools.
- Wastewater.

- Stormwater.
- Code Compliance.
- Board of Supervisors.
- Homeowner Associations.
- Virginia Department of Transportation.
- Fairfax County Department of Transportation.

**c. Forest Pests**

In the early 1980s, the Board of Supervisors directed urban forest management staff to address the emerging issue of the gypsy moth caterpillar. In response, the Gypsy Moth Program was formed in the Department of Extension and Continuing Education (DECE). The mission of this program was to reduce gypsy moth populations to below defoliating levels and to minimize the environmental and economic impacts of the pest by limiting the amount of tree mortality and use of pesticides in the environment. Other forest insects and diseases have emerged and have been added the program's mission since its inception. The name was changed to the Forest Pest Program to reflect this diversification of management. In the mid-1990s, the program was moved from the DECE to DPWES.

Currently there are five full-time and three part-time urban foresters working in the Forest Pest Management Branch. The core work of the branch addresses Tree Action Plan Recommendation #6, to Use Ecosystem Management to Improve and Sustain the Health and Diversity of our Urban Forest. The staff works not only on forest pest management projects but provides support for the wide range of UFMD projects and partnerships, notably outreach and education (Core Recommendation #1).

i. Gypsy Moth Caterpillar

In the Fiscal Year 2015, gypsy moth (*Lymantria dispar*) caterpillar populations remained very low. There was no measurable defoliation reported in Fairfax County or elsewhere in the Commonwealth of Virginia. Successful management programs in conjunction with the naturally occurring fungal pathogen *Entomophaga maimaiga* may explain the extremely low gypsy moth populations in Fairfax County and other areas. Forest Pest Management staff continues to monitor the gypsy moth, but no control treatments were applied in 2014 or 2015. However, gypsy moth populations are cyclical and it is not uncommon for outbreaks to occur following dormant phases like what is most likely occurring in Fairfax County.

ii. Fall Cankerworm

The fall cankerworm (*Alsophila pometaria*) is an insect native to the eastern United States that feeds on a broader variety of hardwood trees than the gypsy moth. Periodic outbreaks of this pest are common, especially in older declining

forest stands. The Mount Vernon, Mason and Lee magisterial districts have, in recent years, experienced the most severe infestations and associated defoliation. Forest Pest Management staff observed population outbreak levels in the winters of 2012 and 2013 and declining populations in 2014. As a result of monitoring efforts in winter 2014, staff treated 66 acres by ground application of the biological control pesticide *Bacillus thuriengiensis* (Bt) in spring 2015.

In 2014, staff received input from civic groups in regard to the strategies that are used to implement this control program. Staff has worked diligently to explore ways to refine and improve this program so that these concerns can be addressed.

- Larval Study – The purpose of this study was to corroborate the results of fall cankerworm sticky band surveys in the fall and bolster overall monitoring efforts. Forest Pest Management staff used a technique developed by researchers at the University of North Carolina which related larval density to predict defoliation. This method involved using trays of soapy water to monitor for fall cankerworm larvae. In spring 2015, greenhouse flat trays filled with soapy water were placed under cankerworm host trees. The soapy tray traps were used to count the number of caterpillars ballooning during peak emergence and/or before pupation. These data will be used to predict defoliation in the following year. The initial survey point was randomly generated using ArcGIS to focus within parks which corresponded to areas of either high fall cankerworm banding counts (>70) or low fall cankerworm banding counts (<30). The overall results of the high (top) and low (bottom) banding count areas are presented in Table VII-4. The scope of the project was small and its goal was to determine if this would be a feasible monitoring effort for the future. Future efforts will continue with guidance from university researchers to further develop the technique.

- Parasite Study – Fall cankerworms have natural predators that can be influential in their population levels. One explanation for outbreak populations in these areas is a lack of predator controls like *Telenomus alsophilae,* an egg parasitoid. The purpose of this survey was to determine the population level of *T. alsophilae* in Fairfax County.

  Collection sites were located in cankerworm banding sites that amounted to 100 or more female moths over the course of the monitoring season. Staff collected eggs from survey bands that had eggs on them as well as from small branches of trees located near the bands. Cankerworm eggs were reared indoors and the number of viable eggs was counted to determine the level of parasitism.

**Table VII-4. Fall Cankerworm Larval Study**

| Plot Number | Total Observed FCW | Average Observed FCW | Park |
|---|---|---|---|
| High Banding Sites | | | |
| 1 | 2 | 0.4 | Mason District |
| 3 | 1 | 0.2 | Joseph F. Barnes Battery |
| 5 | 12 | 2.4 | Lower Potomac |
| 8 | 10 | 2 | Pohick Estates |
| Low Banding Sites | | | |
| 4 | 0 | 0 | Lee District Park |
| 6 | 1 | 0.2 | Mason Neck State Park |
| 7 | 0 | 0 | Pohick Bay Regional Park |
| (Site 2 was not monitored) | | | |

Source: *EQAC 2015 UF Chapter Draft*, attachment to email from Keith Cline, Director Urban Forest Management Division, Department of Public Works and Environmental Services, Fairfax County, Virginia to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 1, 2015.

The data acquired from this survey should prove useful in obtaining a better understanding of overall cankerworm population dynamics in Fairfax County as well as locating areas of concern to be targeted in the ensuing year's fall cankerworm banding survey. At the time that this report was drafted, there were no results to publish.

- Resident Feedback Survey – At the conclusion of the 2015 treatment, staff conducted a survey to gauge how the public felt about the limited fall cankerworm ground suppression program. All residents in the treatment areas (130) were mailed a questionnaire. Thirty-one residents responded. The majority of those that replied (30) were very satisfied or satisfied. The lone "very dissatisfied" response was the result of foot traffic which disturbed a flower bed

- Fall Cankerworm Community Banding Campaign – The Fairfax County Urban Forest Management Division implemented a fall cankerworm community banding program in early December 2014. The goal for the pilot program was to mobilize and engage residents who were most affected by fall cankerworm, focusing on the Mount Vernon District. Efforts by volunteers would then be used to assist in Forest Pest Management's annual monitoring. Homeowner associations that fell within the historical areas for high cankerworm populations were targeted for participation. For any HOA that requested to participate, "kits "were provided based on the size of the organization

Each kit included a roll of tar paper banding material (approximately 15 feet in length), two cans of aerosol Tanglefoot® glue, gloves, instructions and a postcard to send back to UFMD with the data recorded from their sticky bands. Each kit was estimated to monitor 4-6 trees in the ideal diameter of 6-8 inches.

Out of over 100 total kits that were disseminated, a total of nine postcards were received by UFMD following the pilot program. The greatest return rate successes were for groups that attended UFMD's live demonstration and those which were spearheaded by Master Gardeners. In future years, a more robust outreach program should accompany the kits, including active involvement of Master Gardeners and Tree Stewards. Many residents assumed that the kits would provide good preventative control for fall cankerworm defoliation. As a result, most residents did not make the connection to record and reply with the number of females observed on the bands.

- Defoliation Survey – This year, the Fairfax County Forest Pest Management Program conducted an extensive defoliation survey to measure the damage caused by fall cankerworm. The purpose of this survey is to determine those areas of Fairfax County where fall cankerworm larvae have impacted the county's urban forest resources through foliar feeding and to quantify this feeding damage as a percentage of canopy defoliated. The data acquired from this survey should prove useful in gauging a better understanding of overall cankerworm population dynamics in Fairfax County as well as locating areas of concern to be targeted in the ensuing year's fall cankerworm banding survey.

  The defoliation survey for fall cankerworm consisted of two phases. The first phase of the survey consisted of a gridded ground. A 1,500 foot grid was established in the known area of fall cankerworm activity in the southeastern portion of the county. Defoliation was quantified at each grid point. Nearly 1,000 ground based surveys were conducted. The second phase of the defoliation survey was an aerial survey. The aerial survey was conducted to identify large areas of defoliation, as well as target large wooded tracts, such as those found on Mason Neck and in Huntley Meadows where a ground survey is impractical. The results of this survey indicated that there was no heavy defoliation from fall cankerworm in 2015; moderate feeding was, however, apparent.

- Fall Cankerworm Taskforce – Due to the growing concern over fall cankerworm and the lack of science regarding cankerworm population dynamics and population monitoring, a multi-state cankerworm task force was established in spring 2015. Fairfax County Urban Forest Management was instrumental in creating this task force. The group, consisting of local and state agencies as well us representation from universities, hopes to

establish standardized monitoring and treatment strategies for the future control and management of fall cankerworm.

On January 21, 2015 (as clarified on March 11, 2015), EQAC passed a resolution to the Board of Supervisors expressing agreement with the county's program for controlling the fall cankerworm. See Appendix B for the correspondence to the Board of Supervisors.

iii. Emerald Ash Borer

The emerald ash borer (EAB), *Agrilus planipennis*, is an exotic beetle introduced from Asia and was first discovered in the state of Michigan in the early 2000s. This beetle only attacks ash trees and can cause mortality in native ash species in as little as two years. In 2014, researchers in Ohio also observed EAB attacking white fringetree (*Chionanthus virginicus*), a close relative of ash. In July 2008, two infestations of emerald ash borer (EAB) were discovered in Fairfax County in the town of Herndon and the Newington area. The U.S. Department of Agriculture's Science Advisory Council recommended that no eradication was advised in Fairfax County. The recommendation was based on the consistent lack of success of eradication programs in other eastern states. On July 11, 2008, the county was put under federal quarantine for emerald ash borer. This meant that all interstate movement of ash wood and ash wood products from Fairfax County was regulated, including all ash firewood, nursery stock, green lumber, waste, compost and chips. During summer 2012, the Virginia Department of Agriculture and Consumer Services (VDACS) found EAB in many other areas of the state. All of Virginia is now subject to state and federal quarantines. Movement of ash wood and products is now permitted only within the contiguous multi-state, federal quarantine area.

Control options are being considered for publicly owned trees of high value that are susceptible to EAB. Prior to conducting treatment, approval will be sought from the Board of Supervisors.
Trapping efforts since 2008 revealed that beetle populations extend to all areas of Fairfax County. Staff is responsible for educating the public on how to manage the impending mortality and replacement of many thousands of ash trees. Education efforts emphasize hiring a private contractor to remove dead and dying trees and options for effective pesticides that may conserve ash trees in the landscape.

In March 2015, the Board of Supervisors authorized staff to begin a control program for EAB on trees on publicly owned land, including fire stations, parks, schools and libraries. Forest Pest Management staff conducted a survey to locate trees on county property for possible candidates for treatment. The results of this survey found 80 trees that qualify as candidates for control. Emerald ash borer control was accomplished using tree injection techniques which delivered the insecticide directly to the tree's vascular system. Once

injected, the insecticide was transported throughout the tree and has the potential to provide control for up to three years. The insecticide which was used contains the active ingredient of emamectin benzoate and is sold under the trade name TreeÄge®, which is highly recommended by industry and academic professionals.

iv. Hemlock Woolly Adelgid

Hemlock woolly adelgid (HWA) (*Adelges tsugae*) is a sap-feeding insect that infests and eventually kills hemlock trees. Forest Pest Management staff employs various control options for this pest including injected pesticide treatments and releasing predatory insects that feed on HWA. In 2014, staff recommended that the Board Of Supervisors approve a limited pilot treatment program for HWA. Plans to conduct small scale treatment efforts on naturally occurring hemlock stands found on public property are under way.

Native eastern hemlock is relatively rare in Fairfax County. The rarity of this species and the natural beauty that it imparts make it worthy of protection. Staff will continue to inventory the county in order to identify the natural stands of eastern hemlock. For this year's program, staff identified two native stands, in Dranesville and Springfield districts, for control.

Trunk injection of the insect growth regulating pesticide, azadirachtin or TreeAzin® is an effective method providing control to the target trees. Once injected, the insecticide is transported throughout the tree and provides control for up to two years.

v. Thousand Cankers Disease

In August 2010, a new disease was detected in black walnut trees (*Juglans nigra*) in Tennessee. During spring 2011, the same disease was observed near Richmond, Virginia. The disease complex called thousand cankers disease (TCD) is the result of an association of a fungus (*Geosmithia morbida*) and the walnut twig beetle (*Pityophthorus juglandis*), native to the southwestern United States. This disease complex causes only minor damage to western walnut species. Eastern walnut trees, however, are very susceptible and infested trees usually die within a few years. Urban foresters established monitoring sites for the walnut twig beetle during summer 2012. Walnut twig beetle and disease symptoms were found in the county and VDACS was petitioned to include TCD to the list of organisms that can be controlled by service districts in Virginia. Following disease discovery, VDACS listed Fairfax County under quarantine that prohibited the transportation of walnut wood and its products. Forest Pest Management staff will continue to monitor walnut tree health and educate homeowners on this condition.

vi. Other Pests

The Forest Pest Management Branch, in cooperation with VDACS, is monitoring for pests that are not yet known to exist in Virginia but would be problematic should they become established. Current trapping efforts include Asian longhorned beetle (*Anoplophora glabripennis*), oak ambrosia beetle (*Platypus quercivorus*) and sudden oak death disease (*Phytophthora ramorum*). Ongoing monitoring is conducted by strategically placing traps throughout the county that contain lures that are unique to each pest.

**d. Outreach and Education**

UFMD conducted and participated in multiple outreach and education efforts in support of Core Recommendation #1 of the Tree Action Plan, to Engage and Educate. UFMD staff fostered appreciation for trees and the urban forest, inspired citizens, county agencies and the development industry to protect, plant and manage greenscapes. Targeted audiences for education and training included Fairfax County Public Schools (FCPS), DPWES staff, the Engineers and Surveyors Institute, and volunteer groups through Fairfax ReLeaf, Fairfax SpringFest and Fall for Fairfax. Outreach efforts also included awards and recognition programs, specifically Tree City USA, Friends of Trees Awards and Tree Conservation Awards (also see Tree Commission Activities below).

i. Fairfax County Public Schools

School Programs: Urban Forest Management Division staff reached out to students in the county through various school programs that promote tree stewardship as well as the benefits that trees provide to our environment. Students are also encouraged to advocate for protection and support of the county's urban forest. In School Year 2013-2014, 2,777 students participated in the program. In 2014-2015, this number was 2,175.

UFMD education participation programs for students include:

- **Alien Invaders**- Staff introduces and defines native and invasive species. Students learn what qualities make invasive species destructive and how to reduce their impacts on the landscape.

- **Career Day**- Staff explains to students what an urban forester is and the importance of protecting the county's urban forest.

- **Forestry Badge**- UFMD staff teaches Boy Scouts about what urban foresters do, along with the importance of protecting the county's urban forest.

- **Meaningful Watershed Experience**- Staff explains the importance of an urban forest and how it impacts stormwater runoff at Hidden Oaks Nature Center.

- **Science Fair**- Urban foresters judge high school science fairs and discuss the students' projects with them and/or make presentations about the contributions of science to urban forest management and the quality of the forest resource.

- **Tree Planting**- Students learn about the values of trees and how to properly plant them.

- **Trees Please**- UFMD staff explains the value of trees in our community and simple measures students can take to protect trees.

- **Tree-ting Your Water: How Trees Act as Nature's Water Filtration and Storage System**- UFMD staff developed an interactive activity to engage fifth grade students on how water is filtered through various substrates: sand; gravel; clayey topsoil; turf; and a simulated forest. Students were asked to make predictions (hypotheses) and tested them by pouring water through prepared trays for each material. The goal of the activity was to foster appreciation for trees as natural flood and erosion mitigation.

ii. Public Meetings and Community Events

The Urban Forest Management Division makes a great effort to reach the residents of the county using a variety of public venues. Examples of those venues include:

- Providing educational programs to homeowners associations, scouting groups and Fairfax County Tree Stewards.
- Mount Vernon District Town Hall Meeting.
- Fall Cankerworm public notification meetings.
- Lake Barcroft Earth Day.
- SpringFest Fairfax.
- Celebrate Fairfax.
- Fairfax County 4H Fair.
- Fall for Fairfax.
- Emerald Ash Borer Educational Seminars.
- District Tree Forums.

At these public events, UFMD staff educates the public about the county's urban forest resources and programs. Urban foresters also develop and maintain hands-on activities and displays that help convey the importance of the stewardship of our natural resources.

iii. Tree Plantings at Festivals

A second tree planting project was orchestrated for SpringFest Fairfax (Earth Day/Arbor Day), April 25 and 26, 2015 at Occoquan Regional Park. UFMD collaborated with park staff to select a planting site and suitable tree species based on local environmental conditions and how the trees would function to provide needed services for the planting area. Seven UFMD staff members participated in the planting and enlisted the help of local service fraternity volunteers from Alpha Phi Omega to plant 15 trees (1.5-in. caliper dogwood and black gum; 6-ft tall Eastern red cedar and Norway spruce). Volunteers received instruction on proper tree planting, mulching and how the project was designed to provide both shade for the area and screening between the maintenance building and park athletic and open space uses. UFMD provided irrigation bags to facilitate tree establishment and success through regular watering

iv. Training

Engineers and Surveyors Institute (ESI): In December 2014, in coordination with ESI, UFMD staff provided training to a group of 25 civil engineers representing various engineering firms and government agencies. Topics discussed included the different components of the required Tree Conservation Ordinance and the ordinance as it relates to conservation plans submitted to the county for review. Similar training on the components of the Tree Conservation Ordinance was provided to site review engineers and site inspectors with the county's Site Development and Inspections Division.

Project Learning Tree: Project Learning Tree (PLT) is an environmental education curriculum designed for all educators. PLT is designed to help educators weave the environment into their lesson plans. This is especially relevant to county teachers, since all activities in the curriculum are correlated to the Virginia Standards of Learning. In August 2014, UFMD staff trained educators at Belvedere Elementary to use PLT curriculum.

Northern Virginia Urban Forestry Roundtable: UFMD regularly participates in the planning of the quarterly Northern Virginia Urban Forestry Roundtable meetings to present and discuss urban forest management issues of concern to all jurisdictions in northern Virginia and throughout the Washington metropolitan area. Two staff members from UFMD gave presentations at the quarterly roundtable meetings in 2014-2015. Hugh Whitehead joined a panel discussion of local experts to provide "Local Perspective on Landscape Diversity" in the context of climate change in November 2014. In May 2015, Jay Banks presented on the quality of landscape material titled: "Examining Trees for Your Project: What to Look for Above and Below to Ensure Quality."

v. Tree City USA

At the close of 2014, Fairfax County was recognized, for the 32nd consecutive year, for its excellence in urban forest management by the Arbor Day Foundation's Tree City USA Program. This milestone was followed in April 2015, when the county was again recognized for its efforts and awarded, for the sixth time, the Tree City USA Growth Award for the 6th time.

To be eligible for the Tree City USA designation, a community must meet four standards: to have 1) a tree board or department; 2) a tree care ordinance; 3) a community forestry program with an annual budget of at least $2.00 per capita; and 4) an Arbor Day observance and proclamation. The Growth Award recognizes work that goes above and beyond the four standards of the Tree City USA Program. Eligibility for the Growth Award included demonstrating increases in community forestry program expenditures and completion of activities such as tree plantings, revising ordinances, creating new educational materials and providing training for staff and members of the community.

Fairfax County not only met each standard, but it did so in impressive fashion. Most notably the Arbor Day observance and proclamation was, for the third year in a row, incorporated into a daylong event, SpringFest Fairfax. As part of the celebration, county staff, along with volunteers planted 15 trees at Occoquan Regional Park.

vi. Outreach Media

UFMD uses a variety of media to ensure that multiple audiences and demographics of the county are reached. Staff continues to improve messaging and communication with county residents by using various types of media including:

- Fact Sheets/Brochures.
- Television and YouTube Interviews.
- Podcasts.
- Videos.
- Facebook postings.
- Slideshare presentations.
- Updating UFMD web content.
- Newspaper articles and radio interviews.

Urban Forest Management created and distributed a number of fact sheets to the public. Topics included: summer watering tips for new trees; safe sidewalks and salty trees; hazardous trees; emerald ash borer; and beech bark disease.

In December 2014, UFMD staff participated in a County Conversation podcast in cooperation with Channel 16 to discuss and advertise the Fall Cankerworm

Community Sticky Banding Campaign. As part of the promotion of Fairfax County as a Tree City USA and the Tree Commission, UFMD staff also participated in two television interviews for *16 Around Fairfax*, the *Fairfax Magazine* and an associated YouTube video.

In March 2015, urban foresters participated in the first Fairfax Live Chat for the department, answering user-submitted questions online about the fall cankerworm. This information was archived and linked on the Forest Pest Web page.

In 2014-2015, UFMD applied several updates to the Forest Pest Web page in cooperation with Fairfax County Department of Information Technology. Following the initiation of the Fall Cankerworm Community Sticky Banding Campaign, a website was created to give information and instructions exclusively to residents participating in the pilot program through the following link: www.fairfaxcounty.gov/dpwes/environmental/fallcankerworm/mount-vernon-cankerworm.htm.

This website was used as the basis for a much-needed update to the fall cankerworm main page, which included historic sticky banding information, frequently asked questions about the cankerworm and the suppression program and links on how to install a sticky band.

The gypsy moth webpage was also updated following the inception of a volunteer gypsy moth egg mass reporting pilot program in summer 2015. The website now includes a link to a volunteer reporting form and a SlideShare with information about the gypsy moth These updates will be put toward a greater outreach effort to coordinate volunteers to monitor for gypsy moth eggs to include a press release, information and fact sheets supplied to county libraries and distribution centers and dissemination through various social media outlets (Facebook, Flickr).

**e. Strengthening Partnerships**

In 2014, the Urban Forest Management Division formalized, maintained and strengthened partnerships with various county, state, federal and non-governmental agencies, as well as industry, professional and public-based organizations, in accordance with the Build Strong Partnerships and Alliances Core Recommendation #2 of the Tree Action Plan. Specifically, Fairfax County urban foresters sought to establish a framework for collaboration on tree preservation and planting efforts. Some partnership efforts include:

i. Stormwater Planning Division

UFMD staff continued to work with staff members from both the Stormwater Planning Division and Utilities Design and Construction Division, contractors and other stakeholders as part of the planning and implementation teams for stormwater projects. Contributions included project scoping, plan review, pre-construction meetings and consultation during construction of various projects, including stream restoration, stream stabilization and stormwater facilities. In addition, UFMD staff participated in outreach efforts to property owners impacted by proposed stormwater projects to help explain the scope of work and anticipated impacts to trees, as well as proposed planting. Throughout the year, urban foresters provided valuable input on the health and condition of existing trees, preservation potential of trees based on anticipated impacts, mitigating construction impacts to trees designated for preservation and proposed landscape planting. UFMD staff also had an integral role in pre-construction meetings and assessed impacts prior to full completion of projects by walk-throughs of sites to identify potential problems to be addressed.

ii. Northern VA Regional Park Authority (NVRPA)

UFMD staff continued to foster a strong partnership with NVRPA through tree planting efforts at Occoquan Regional Park during SpringFest 2015. Urban foresters worked along with volunteers from George Mason University to plant 15 additional trees and to help maintain trees planted during previous SpringFest events in 2013 and 2014.

iii. Nonprofit Organizations

A UFMD urban forester holds a position on the board of Fairfax ReLeaf, Inc. In 2014, the major projects of this community nonprofit organization involved coordinating tree planting on Fairfax County Public School property. Urban foresters assisted in identifying planting sites and gaining approval for planting. UFMD also provided Geographic Information System analysis of homeowner association-managed open space and its potential for Fairfax ReLeaf planting activities. UFMD staff reached out to Fairfax County Tree Stewards to provide volunteer opportunities as project managers and follow-up maintenance for Fairfax ReLeaf planting projects.

A UFMD urban forester serves as President of Trees Virginia, a nonprofit organization that strives to expand public awareness of the role trees and forests play in the urban environment. UFMD staff members present and participate in quarterly Northern Virginia Urban Forestry Roundtables, sponsored by Trees Virginia in partnership with the Virginia Department of Forestry, that include presentations and panel discussions on various topics regarding the management of trees and urban forests throughout Virginia and Washington Metropolitan Area.

iv. Professional Organizations

UFMD Urban Foresters continued to provide leadership and strengthen partnerships with professionals and professional organizations working in the urban forestry community. A staff member served on the board of the Mid-Atlantic Chapter of the International Society of Arboriculture (MAC-ISA) as Director of Professional Development, and a staff member also supported the chapter and regional tree care industry as a judge at the MAC-ISA Tree Climbing Championship. UFMD staff also serves on the Steering Committee of the Virginia Association of Forest Health Professionals, helping plan the annual conference that provides updates on pests and diseases that threaten trees and the urban forest in the region. The conference also provides information on techniques for management and efforts to control these threats, as well as continuing education opportunities for forestry practitioners in the Mid-Atlantic region.

In September 2014, the UFMD Director presented the Keynote Address, "Our Trees, Our Future: Growing Leaders, Growing Our Profession," at the 35th Annual Training Conference of the Pacific Northwest Chapter of the International Society of Arboriculture in Vancouver Washington. The director also participated on the teaching cadre for the Municipal Forestry Institute in Silverton, Oregon in February 2015. This week-long leadership training is sponsored by the Society of Municipal Arborists and trains municipal, nonprofit, utility and other community leaders involved in managing the urban forest.

**f. Tree Commission Activities**

The Fairfax County Tree Commission had a very productive 2014 through the beginning of 2015. Its major accomplishments include a complete update of its website, an improvement in the process for selecting annual Tree Preservation and Planting award winners and the creation of an on-line database of Virginia State Big Tree Champions located in Fairfax County. The commission again participated in the annual SpringFest Fairfax celebration by hosting an exhibit at the Lorton Workhouse in both April 2014 and 2015. Selected winners of the 2014 Friends of Trees awards were also presented at SpringFest Fairfax in 2015.

The Tree Commission began the year by saying goodbye to incumbent Urban Forest Management Division (UFMD) Director, Michael Knapp, and welcoming new Director, Keith Cline, to its monthly meeting. Several new Tree Commission representatives, including commissioners for the Providence and Hunter Mill Districts and for the Virginia Cooperative Extension Service (Extension), were also welcomed in 2014. In early 2015, a new representative for the Environmental Quality Advisory Commission (EQAC) was also appointed to the Tree Commission.

In 2014, the Tree Commission reviewed and commented upon several issues pertaining to urban forest conservation. These issues included the impact of the new Stormwater Management Ordinance on tree preservation during individual lot development, deer overbrowse and its effects on the future forest canopy and environmental impacts of the county's fall cankerworm suppression program.

As a result of concerns raised by various environmental groups, at the end of 2014, the commission spent a considerable amount of time and effort examining the impact of the county's annual fall cankerworm suppression program. Specific questions were raised on the effects of the suppression program on the environment, particularly other insect and bird populations. As a result, the Tree Commission sent a resolution to the Board of Supervisors on January 23, 2015 supporting the continuation of the use of Btk (*Bacillus thuringiensis* var. *kurstaki*) on a limited basis and only when warranted to prevent a severe defoliation and potential tree loss. Tree Commissioners also recommended expanded studies of fall cankerworm biology and defoliation effects in areas that were treated in comparison to untreated areas.

In 2014, the Tree Commission began working closely with Extension to organize a series of community meetings to discuss tree preservation issues throughout the county ("Tree Forums"). The first Tree Forum, titled "Protecting Neighborhood Tree Cover," was held on March 24, 2015 at the McLean Community Center (Dranesville District). Approximately 80 people attended the forum and it was very well received. The second forum, "How to Protect Trees in Our Yards and Neighborhoods," was held on April 22, 2015 at Braddock Hall in the Braddock District. Approximately 50 people attended the forum. In addition to the Tree Commission and Extension, the UFMD, Board of Supervisors' District Offices, Virginia Department of Forestry and citizen and civic associations all participated as sponsors and participants in the forums.

The Tree Commission continued to update and improve its website, which now contains a link to nearly 20 State Champion Trees located in Fairfax County. Although there are currently no National Champion trees in Fairfax County, the Commission presented cross sections of the former National Champion Virginia pine (*Pinus virginiana*) (blown down in a storm) to the Board of Supervisors, the Park Authority, the Hunter Mill District Supervisor, the Reston Association and UFMD. A cross section, or "tree cookie," is now on display in the main lobby of the Herrity building of the Fairfax County Government Center complex.

i. Tree Conservation Awards

The Tree Commission worked closely with UFMD to improve the annual Tree Preservation and Tree Planting Awards nomination process. The commission now provides a greater marketing incentive to developers by allowing nominations earlier in the site development phase, thus encouraging more participation in the awards process. Tree Commissioners selected the 2014

award winners for developers, designers and contractors of the following land development projects:

- Tree Planting category
  - Capital One, Providence District.
  - East Market at Fair Lakes, Phase III, Springfield District.
  - Jennings Toyota, Lee District.
  - Newington Department of Vehicle Services Maintenance Facility, Mount Vernon District.

- Tree Preservation category
  - National Library for the Study of George Washington, Mount Vernon District.
  - The Preserve at Scotts Run, Dranesville District.
  - Unitarian Universalist Congregation of Fairfax, Providence District.

ii. Friends of Trees Awards

In addition, the commission selected the following individuals and organizations for annual Friends of Trees Awards for 2014. These awards were presented before the Board of Supervisors on June 2 during the 2015 Celebrate Fairfax Week:

- Merrily Pierce of McLean for outstanding efforts on behalf of tree preservation on infill lots in established residential neighborhoods.
- The Master Gardeners of Fairfax County, Fairfax and Green Spring programs, for extensive community outreach on behalf of trees.
- The Fairfax County Tree Stewards, for continued efforts on behalf of tree care and planting.
- The Alpha Delta Delta Chapter of Alpha Phi Omega Fraternity at George Mason University for volunteer tree planting at Occoquan Park during the 2014 SpringFest Fairfax event.

In the coming year, the Tree Commission will be looking closely at the involvement of UFMD in the site development review process. Commissioners are particularly interested in what further steps might be taken to minimize tree loss during infill developments in established residential neighborhoods. Community outreach efforts will continue through participation in SpringFest and co-sponsorship of additional tree forums. Finally, the commission will review the Tree Action Plan's purpose and process in order to develop a more focused plan and implementation strategy during the coming year.

## 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, protect and 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.

During 2014, there has been one change to the A&F Program as shown in Table VII-5.

**Table VII-5: Change in Local and Statewide A&F Districts from January 1, 2014 to December 31, 2014**

| Magisterial District | No. of Local Districts | | No. of Statewide Districts | |
|---|---|---|---|---|
| | 2013 | 2014 | 2013 | 2014 |
| Dranesville | 12 | 12 | 1 | 1 |
| Hunter Mill | 1 | 1 | 0 | 0 |
| Mt. Vernon | 3 | 3 | 1 | 1 |
| Springfield | 18 | 18 | 2 | 2 |
| Sully | 6 | 5 | 0 | 0 |
| Total | 40 | 39 | 2 | 4 |

Source: *Fairfax County 2014 Agricultural & Forestal District Annual Statistical Report, June 1, 2015*, Attachment to email, from Michael Lynskey, Zoning Evaluation Division, Department of Planning and Zoning, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 2015

As can be seen in the above figure, there was one change in the Sully District--the withdrawal of the Fink-Butler Local District. This reduced the acreage in local districts from 1,695.01 to 1,666.35 – a loss of 28.66 acres. Statewide districts remained constant at 1,337.06 acres.

## 18. Fairfax Chapter of the Virginia Master Naturalist Program

Formed in 2006, the Fairfax chapter of the Virginia Master Naturalist Program provides local residents with naturalist training and then connects them with volunteer stewardship, citizen science and outreach opportunities in parks and natural areas. The

process for becoming a certified Virginia Master Naturalist takes from six to 12 months. Two times a year, approximately twenty candidates are selected for a class. They begin with a 60-hour basic training course, which is a combination of classroom lectures and field work that grounds them in natural history and forest and aquatic ecology. Subject matter experts from the Northern Virginia Regional Park Authority, Fairfax County Park Authority, Virginia Department of Forestry, Virginia Tech, Northern Virginia Soil and Water Conservation District, EPA and National Academy of Sciences make up the faculty. Master Naturalists are expected to provide much-needed support to the many environmental organizations striving to protect natural resources in Fairfax County. To be certified, graduates must provide 40 hours of volunteer service and receive eight hours of advanced training each year.

In 2014, the Fairfax Master Naturalist Program provided a total of: 1,575 hours of education/outreach; 1,988 hours of stewardship; 2,669 hours of citizen science; and 1,634 hours of administrative hours. The Fairfax Master Naturalist chapter worked with a variety of sponsoring agencies, including the Virginia Department of Forestry, Virginia State Parks and the Virginia Department of Game and Inland Fisheries. These efforts included seed and acorn collection, invasive plant management and deer management.

In addition to projects conducted in partnership with sponsoring agencies, the Fairfax Master Naturalist chapter provided substantial volunteer hours in partnership with a variety of Fairfax County Park Authority locations. One example is the *Meaningful Watershed Educational Experience* held at the Hidden Oaks Nature Center/Hidden Pond Nature Center, where volunteers gave 150 hours to over 1,150 students. For more information see the program's website at http://vmnfairfax.org/SitePages/Home.aspx.

## 19. Fairfax County Restoration Project

With the help and guidance of the Fairfax County Office of Public/Private Partnerships, The Fairfax County Restoration Project (FCRP) began in April 2008. Although the FCRP was formed in response to deforestation along the Capital Beltway/495 Express Lanes project, it quickly widened its scope to environmental issues throughout Fairfax County. As a core group of community organizations, businesses and government staff coalesced, it became evident that another environmental organization that would compete for funding and volunteer time was not needed. What was and is needed is a focal point for a community of practice where organizations and individuals interested in environmental restoration in Fairfax County can meet, share information and take collaborative action. FCRP was chartered to help foster a collaborative approach to environmental restoration in Fairfax County.

In 2011, FCRP began considering a media campaign to raise awareness of the relationship between runoff and pollution. A primary focus of the campaign was to be how replacing turf with trees and other plants could reduce runoff and improve water quality. FCRP became aware that the Chesapeake Club had already developed a similar campaign called www.plantmoreplants.com, which the organization felt was

very well done and extremely effective. Working with the club and Chairman Bulova's office, FCRP was able to bring the campaign to Fairfax County. Beginning in fall 2012, Cox Communications has placed the ads in its normal public service announcement schedule. FCRP is now streaming the video clips through its website to further promote the message. Supporting materials developed by the Chesapeake Club have been distributed at functions and are available to any of FCRP's partner organizations, and banners can be seen at retail & landscaping outlets. Ad buys are being done collectively throughout the state to further the message.

Reforest Fairfax was launched on October 13, 2011. FCRP developed partnerships with Xpedex, an International Paper Company, McCabe's Printing Group, the Northern Virginia Soil & Water Conservation District, Eze Solutions and Fairfax ReLeaf in order to create the Reforest Fairfax Program. Once again, Transurban provided a grant to support the program's initial development. Merchandising items to further support the program are currently being developed.

Reforest Fairfax is a tree-gifting program designed to help replenish the tree canopy and to help the county achieve its tree canopy goals. For each $35 gift purchased, five seedlings are planted by Fairfax ReLeaf during a spring or fall planting season. An on-line locator is available so that, once the trees are planted, the locations of the gifts can be identified. There is also an optional on-line registry for supporters of the program. The program can be accessed at www.fcrpp3.org/reforestfairfax/. In 2014, the total reached 95 gifts purchased and 475 trees planted. Native tree fact sheets can be found on the FCRP website at www.fcrpp3.org.

For Earth Week, 2014, FCRP developed an environmental film festival entitled The Green Inspirations Environmental Film Festival. The event was held at the Cinema Arts theatre on Main Street in the City of Fairfax.

In 2012 the 495 HOT Lanes project, the original impetus for FCRP, was renamed 495 Express Lanes. Spring 2015 represents the end of the planting along the corridor. The unfortunate occurrence of unauthorized mowing destroyed much of the growth that had taken place between Braddock Road and Gallows Road. However, VDOT responded rapidly and confirmed that the trees destroyed will be paid for by the errant contractor and those voluntary natives will be replaced if they fail to regenerate as they are expected to do. Nothing can be done about the eight years of growth that has been lost, but the area should ultimately recover. According to FCRP, VDOT has taken additional steps to prevent a recurrence of the mowing.

FCRP partners Asad Rouhi and Dan Schwartz of the Northern Virginia Soil and Water Conservation District, Ron Tuttle (while with DPWES) and Jim McGlone with the Virginia Department of Forestry have worked extensively with members of the Unitarian Universalist Congregation of Fairfax in Oakton to plan and design a retrofit of the parking lot on church property that would eliminate most, if not all, of the runoff from the average one year storm. This is accomplished by terracing the lot and incorporating Fairfax County standard stormwater management best management

practice facilities, including a bio-swale and infiltration trench. The existing parking lot is over an acre in size, with compacted impervious gravel; it is also steeply sloping. Work on the parking lot was to have been completed by Labor Day 2014.

## C. STEWARDSHIP OPPORTUNITIES

The Fairfax County Park Authority offers a number of opportunities for volunteers, and EQAC encourages county residents to take advantage of these opportunities. Information about these opportunities is available at www.fairfaxcounty.gov/parks/volunteer/. More information about FCPA and its programs is available at www.fairfaxcounty.gov/parks/resources.

Fairfax County residents and other interested parties can donate to the Fairfax County parks through the Fairfax County Park Foundation. The Fairfax County Park Foundation is a nonprofit 501 (c) (3) 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. Those interested in giving tax-deductible donations 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
www.fairfaxparkfoundation.org

NOVA Parks (the Northern Virginia Regional Park Authority) also has opportunities for volunteers. These environmental stewardship opportunities for volunteers are available at Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park, Pohick Bay Regional Park and various other parks on occasion. More information can be found at www.nvrpa.org/park/main_site/content/volunteer.

Fairfax ReLeaf offers a number of opportunities for stewardship. For further information on Fairfax ReLeaf, visit its website at 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

The Northern Virginia Conservation Trust offers many stewardship opportunities for Fairfax County residents. Additional information on NVCT can be found on its website, www.nvct.org. Landowners whose property contains environmentally sensitive land such as wetlands, stream valleys and forests can also participate in environmental stewardship. If these landowners grant easements to NCVT, they will not only protect sensitive land, but can realize some financial benefits. A perpetual easement donation that provides a 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.

For stewardship information on the Potomac Conservancy, see www.potomac.org.

# D. COMMENTS

1. The Fairfax County Board of Supervisors has endorsed the goals and actions within the Tree Action Plan 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. An analysis of high-resolution satellite imagery and LIDAR data indicates that 53 percent of the county's landmass was covered by tree canopy in fall 2011 (the date of this most recent imagery acquisition). This figure is much higher than those produced by previous imagery. (However, EQAC notes that the new data are at a higher resolution than the old. At this time, we cannot say what the actual difference, if any, there is in the tree canopy since the two datasets cannot be compared directly.)

   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 believes 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.

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 second, complete a countywide Baseline Natural Resource Inventory.

EQAC notes that progress is being made in this area by the Fairfax County Park Authority staff in its efforts to establish a natural resources baseline inventory. 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, FCPA must supplement these efforts with an inventory of the county that accounts for flora and fauna. The creation of a natural resource protection zone and geodatabase model is complete. A more robust field data collection technique was successfully tested and is being expanded to all applicable field datasets. The new data collection technique uses tablet computers and mobile GIS combined with rapid assessment protocols to quickly and easily map natural resources data in the field and sync this data with a remote server. Applicable field datasets include Non-native Invasive Assessment Protocol (NNIAP) data, white-tailed deer browse impact (deer) data, and community level vegetative classification (vegetative communities) data. In the future, the datasets should be expanded to include all flora and fauna.

EQAC also notes the accomplishment of the Park Authority in preparing and publishing a revised Natural Resources Plan (in January 2014) for management of the county's parks and urges the Park Authority to fully implement this plan. Additionally, EQAC notes that the Park Authority has taken some steps in implementing the plan, but much more needs to be done. 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.

4. While recurring funding to implement the Natural Resource Management Plan has not been secured, progress has been made in identifying positions within the Park Authority; however, one position is not yet funded. The Park Authority continues to be successful in obtaining project specific funding for some resource management. Some funding has been secured through the Environmental Improvement Program plus a combination of proffers, bonds, telecommunications fees and other sources. Much more needs to be added to the budget to fully fund the plan.

5. On January 21, 2015 (as clarified on March 11, 2015), EQAC passed a resolution to the Board of Supervisors expressing agreement with the county's program for controlling the fall cankerworm. See Appendix B for the correspondence to the Board of Supervisors.

# E. RECOMMENDATIONS

1. The Fairfax County Park Authority has an approved merit Ecologist position. However, this position is vacant and will remain vacant until funding is provided. EQAC recommends that the Board of Supervisors provide sufficient funding so that this position can be filled.

2. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. This partially fulfilled a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. In 2014, the Park Authority adopted a revised Natural Resource Management Plan that more closely focused on adaptive management of natural resources. However, full funding to implement the plan is not yet in the Park Authority budget. The Park Authority has managed to secure some funding from several sources but lacks most of the amount to implement fully the plan. FCPA staff estimates that full implementation would require approximately $8 million per year and dozens of staff positions. This includes about $3.5 million to focus on general natural resource management and $4.5 million for a non-native invasive plant control program. A more phased approach to funding would 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 $705,000 and five positions. EQAC strongly feels that the Natural Resource Management Plan needs to be fully implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement an initial phase for natural resource management efforts and that the Fairfax County Park Authority Board apply this funding accordingly. EQAC further recommends that, over time, the full plan be funded.

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Email from Rebecca Shoemaker, TMDL Coordinator, Virginia Department of Environmental Quality, Woodbridge, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 26, 2015 (contains wetlands permitting information from DEQ).

*EQAC 2015 UF Chapter Draft*, attachment to email from Keith Cline, Director Urban Forest Management Division, Department of Public Works and Environmental Services, Fairfax County, Virginia to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 1, 2015.

*Fairfax County 2014 Agricultural & Forestal District Annual Statistical Report, June 1, 2015*, Attachment to email, from Michael Lynskey, Zoning Evaluation Division, Department of

Planning and Zoning, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 2015.

*Master Naturalists – EQAC 2014*, Attachment to email, from James McGlone, Urban Forest Conservationist, Virginia Department of Forestry, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 15, 2015.

*FCRP 2014 Final Annual Report*, Attachment to email from Amy Gould, Fairfax County Restoration Project, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 19, 2015.