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 227,873 acres of land (excluding roads and water). Of this total, 33,457 acres (14.7 percent) are in parks and recreation as of January 2013. Another 15,361 acres (6.7 percent) were 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 6.1 percent as of January 2013.

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

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

guidelines that hopefully will be followed in future planning and zoning activities in Fairfax County.

Second, as also reported in the 2004 Annual Report on the Environment, the Park Authority approved the Natural Resource Management Plan for park properties. Park Authority staff began revision of this agency 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, the Park Authority needs additional funding to implement 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 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. 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.

B. PROGRAMS, PROJECTS AND ANALYSES

1. The Fairfax County Board of Supervisors

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

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

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

Some recommendations in this document that impact ecological resources include:

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

The document can be viewed at:
http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf

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

2. Department of Public Works and Environmental Services

In past years, this chapter of the Annual Report included a section on 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 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 http://www.fairfaxcounty.gov/parks/.

a. Acquisition of Park Land by FCPA

Between July 2013 and June 2014, the Park Authority added 49.44 acres to its parkland inventory. This brings the parkland inventory to a total of 24,775 acres as of June 2014.

FCPA purchased the following properties:

- On August 22, 2013, the Park Authority acquired the .4743 acre Zamin property within the Sully District. The property is located in the Mt. Gilead historic area of old Centreville.

- On January 8, 2014, the Park Authority acquired 25.6 acres immediately adjacent to Lincoln Lewis-Vannoy Park, close to the intersection of Braddock Road and the Fairfax County Parkway. The property was acquired from the Buckley Family and lies within the Springfield District. This acquisition will increase the land area of the existing Lincoln Lewis-Vannoy Park to 67 acres.

- On January 15, 2014, the Park Authority acquired the 5.44 acre Byrd property located within the Hunter Mill District and fronting on Hunter Mill Road. The acquisition provides additional acreage to Lake Fairfax Park.

FCPA acquired the following property through dedications:

- On December 12, 2013, Winchester Homes donated .81 acres to the Park Authority in the Hunter Mill District. This donation was a result of a subdivision of adjacent property.

- On May 23, 2014, the Park Authority took possession of 17.12 acres of land and an improved park which will be known as Sully Highlands Park. The property which consists of multiple baseball diamonds and a simulated turf multi-sport field is the result of a proffer commitment associated with an adjacent rezoning.

FCPA did not acquire any properties during this period through donations, land transfers or 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 for Park Authority property. The NRMP contains 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. The next steps for the plan include working with partners such as EQAC to educate stakeholders and build support for the plan as well as to develop an implementation plan that enables the agency to work towards manageable projects and outcomes on an annual basis and a reporting structure for accountability.

The newly adopted Natural Resources Management Plan can be viewed at http://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. It is estimated that, under the 2004 Natural Resource Management Plan, it would cost $8 million per year and require dozens of staff to fully manage natural areas on parkland. This includes $3.5 million for

natural resource management as well as $4.5 million per year for an invasive plant removal program. The 2014 plan will likely require similar amounts and staffing. The Fairfax County Park Authority staff lacks a number of functions and capabilities in regard to the NRMP: natural land managers; ecologists; restoration specialists; water resource specialists; wildlife specialists; planners; and project managers. 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

FCPA began the initial work on the creation of a natural resource protection zone model. Current work continues to focus on implementing more robust field data collection techniques, along with the digitizing of previously collected data to build a geodatabase of spatial natural resource information. New data collection efforts include the use of iPads equipped with GIS software to quickly and easily map natural resources data in the field and sync this data with a remote server. A project to digitize previously collected data is almost complete and will be used to direct future data collection efforts as well as providing useful information for day-to-day projects.

d. Invasive Plant Control Efforts

Invasive plant control projects occur at over 60 park sites throughout the county. Resource Management Division's nature centers such as Ellanor C. Lawrence Park, Huntley Meadows Park and Riverbend Park also work collaboratively with the invasive plant management program to remove invasive plant species from selected areas of parkland.

The partnership with Earth Sangha, a local non-profit organization, continues to be a highlight of invasive plant control efforts at both the Marie Butler Leven Preserve and Wilburdale Park. In addition, in 2013, Earth Sangha donated native plants to restore areas previously controlled for invasive plants throughout the Park Authority. Overall, Earth Sangha contributed thousands of volunteer hours to park projects.

The Invasive Management Area program began the eighth year by celebrating Take Back the Forest in April and May 2013. During those two months, over 850 volunteers logged 2,200 hours. A new Take Back the Forest t-shirt design contest was held over the winter, with the winning design being drawn by a Junior student from Centreville High School. The winning design was featured on t-shirts given out to all Take Back the Forest volunteers. Take Back the Forest was funded for a third year with a $10,000 grant from REI. Take Back the Forest encompassed other

special events such as Global Youth Service Day, Virginia's Annual Invasive Plant Removal Day, Earth Day and Arbor Day.

The IMA program continues to capture the enthusiasm of volunteers for unstaffed parks; there are currently 37 sites with 40 active volunteer leaders. Nearly 35,000 volunteer hours have been contributed to the IMA program since its inception in 2005. In 2013, nearly 2,000 volunteers spent 5,665 hours restoring habitat through the removal of invasive plants and the planting of native species. The Invasive Management Area program works on plots of parkland, typically less than one acre in size, to remove priority invasive species and restore native vegetation where needed. Program staff has documented significant reductions of non-native invasive species within its sites, with a goal of eventual natural regeneration. Extensive training of volunteer leaders, careful selection of sites and species and a coordinated plan of environmental monitoring will allow FCPA to continue to learn from this project. At a minimum, invasive species removal should be planned on three year cycles, with the first three years including aggressive removal and pesticide use if necessary so that following years' management can be at a maintenance level. A short summary is available at http://www.fairfaxcounty.gov/parks/resource-management/ima/ima-annualrpt.htm.

The Early Detection Rapid Response volunteer program, a program to detect new non-native invasive plant populations, surveyed over 300 acres at 20 parks.

FCPA staff contracted with Invasive Plant Control, Inc. to apply selected and careful herbicide treatments for the removal of invasive plants. Over 1,000 acres of parkland were treated by IPC from January to December 2013. This includes acres that overlap with areas where volunteers provided the manual removal of priority species as well as retreating parkland from last year.

The Non-native Invasive Plant Assessment and Prioritization project was completed in 2009. This project took a hands-on approach to non-native invasive species issues as they occur in Fairfax County. Products of the plan include an assessment and prioritization tool kit, 12 best management practice recommendations and an operations plan for how to continue to make progress managing non-native invasive species. This plan is fully benchmarked and annotated, creating a defensible strategic plan which will allow FCPA to prioritize where and the type of invasive plant management that will occur in Fairfax County. The Park Authority's natural resource management staff has shared the assessment and prioritization tool kit with other natural resource managers from Anne Arundel County (Maryland), Arlington County (Virginia), City of Bowie (Maryland) and Loudon County (Virginia) at several trainings. During summer 2013, two interns were hired and surveyed over 5,000 acres of parkland using the Non-Native Invasive Assessment Protocol. To date, approximately 9,764 acres have been surveyed, which represents roughly 40 percent of the total amount of land under FCPA stewardship.

A critical component of any invasive control effort will always be outreach and education. A field guide, *Non-Native Identification and Control*, was published in 2008 and is available for sale. Over 700 copies of the book have been sold or provided to partners free of charge. The full color, 150+ photographs publication helps the reader determine if they have a non-native invasive plant and what to do about it. The book was recognized with the highest honors by the Communicator Awards and the MarCom Awards.

Staff continues to work with partner organizations: Earth Sangha, 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, Patowmack 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 '80s, 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 '80s, silt from surrounding neighborhoods, storm water 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 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 will now monitor, manage and maintain the restored 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 http://www.fairfaxcounty.gov/parks/volunteer/. More information about FCPA and its programs is available at: http://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. In FY13, volunteers contributed over 26,000 hours to natural resource stewardship activities on parkland.

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/or 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 stream 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 youth to get involved in their local parks to include as permanent volunteers, as students for their community service hours and scouts for Eagle and Gold Award projects. 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
http://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 30 regional parks on 11,265 acres of land that it owns and 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.

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

The single use mountain bike trail at Fountainhead Regional Park experienced significant erosion and trail widening in many locations as a result of unsustainable alignments, steep grades, poor flow, overuse and riders going off the trail to find less challenging routes. In order for the Fountainhead mountain bike trail to maintain value as a recreational trail system, it became imperative to address design flaws and ongoing erosion. Working in partnership with a local mountain biking club (Mid-Atlantic Off Road Enthusiasts), in 2013 NOVA Parks constructed improvements to the Advanced Loop on its mountain bike trail system at Fountainhead Regional Park, funded by a Virginia Recreational Trails Program grant. This was the second phase of the mountain bike trail renovation project to close eroded trail sections and replace them with sustainably designed alternatives to protect the watershed along the Occoquan Reservoir. The new trail is designed using the International Mountain Bicycling Association sustainable trail building standards to route segments along contours with appropriate switchbacks, rather than running straight down slope without proper drainage controls. All new trail tread is out-sloped five percent, or when water flows down the trail for short lengths it is directed to a water diversion facility. The project includes filter strips, which are vegetated areas downslope of the trail corridor intended to treat sheet flows coming off the tread. Filter strips function by slowing down flow velocities, filtering out sediments and providing an opportunity for infiltration into the underlying soils. The project design includes grade reversals, in-sloped turns, armored fords, stone pitching, turf block pavers and terraces, and these techniques help keep water off the trail and riders on the trail to reduce erosion and enhance sustainability.

Pohick Bay Regional Golf Course adopted 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 Pohick Bay golf course also re-certified its designations with Audubon International and with Groundwater Guardian Greensite. The course is in the development planning stage for a new pump station that will reduce groundwater withdrawals for irrigation.

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. After a year-long planning process, implementation of the Pohick trail system rehabilitation began in 2012, with nearly 8,000 feet of trail being relocated to ecologically sound alignments. In 2013, 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. In 2013, 1.5 miles of trails at Pohick were relocated to ecologically-sound alignments. 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 removal as a scout project option, along with the planting of butterfly gardens. In 2013, Eagle Scouts removed kudzu along the trail at the Gallows Road intersection in Dunn Loring and removed mile-a-minute vine at Old Reston Avenue station. 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 natives to have less competition.

Invasive plant control efforts also continued at Occoquan Regional Park, Bull Run Regional Park/Bull Run Shooting Center and 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 controls invasive autumn olive by cutting. At Upton Hill Regional Park, volunteers work weekly on invasive removal. During the Earth Day event at Upton Hill Regional Park, NOVA Parks' roving naturalist presented a program about invasive plants and management techniques. At Pohick Bay Regional Park, an Eagle Scout performed a project to remove invasive bamboo from the property.

Tree planting efforts that are part of implementing NOVA Parks' 2012 Strategic Plan initiatives include the following activities: Bull Run Regional Park planted 400 trees in riparian areas along Bull Run and Cub Run; more than 30 new tree saplings were planted at Sandy Run Regional Park; and 14 new trees were planted at Occoquan Regional Park as part of Clean Fairfax's Springfest celebration. Sandy Run sponsored a Girl Scout Gold Award project to install protective fencing around young trees to prevent browsing by deer.

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. The Bluebird Society worked with Meadowlark Gardens to create a poster depicting the lifecycle of the bluebird that will be displayed in the visitor center at Meadowlark

f. Environmental Education and Outreach

NOVA Parks continues to have a roving park naturalist regularly visit the high-attendance parks such as pools, campgrounds and golf courses, bringing live wildlife and other exhibits and providing programming about nature and the environment. The naturalist also attends events and functions such as the Dominion W&OD Trail Mix, the Walter Mess 5K race and the Friends of the W&OD 10K race.

In 2013, the Northern Virginia Regional Park Foundation gave grants through its Nature Nuts Program to a dozen Fairfax County public schools for children to attend environmental education camps at Hemlock Overlook Regional Park. Adventure Links at Hemlock Overlook Regional Park in Clifton offers a variety of outdoor and environmental education, team development programs for public and private schools, religious and community groups, sports teams, corporations and professional organizations, as well as local, state and federal government and military agencies.

The Park Authority 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 give environmental information to the public.

Occoquan Regional Park hosted the Occoquan River Festival, bringing together 20 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 Biology department. In addition, the park partnered 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 clean up 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 clean-up days, removing trash from the Occoquan Reservoir around Sandy Run. New trash cans were installed at Fountainhead and the W&OD Trail to prevent tipping and foraging by wildlife.

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 youth 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 http://www.nvrpa.org/park/main_site/content/volunteer. For current information about the Northern Virginia Regional Park Authority, visit its website, http://www.NVRPA.org/.

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 5,219 trees in calendar year 2013. More than 1,000 volunteers spent over 2,400 hours planting tree seedlings, removing invasive species and maintaining planting sites. Highlights of the organization's 2013 plantings were:

- The planting of over 500 trees in riparian area.
- The planting of 1,151 trees on homeowner association and private property.
- The planting of 1,707 trees in parks, including private, county and national parks.
- The removal of nearly 900 pounds of invasive mile-a-minute from a reclaimed RPA site

Fairfax ReLeaf provided many opportunities for community groups to serve Fairfax County in 2013. These included five plantings by school groups, three Girl Scout and Brownie projects, a Boy Scout project and an Eagle Scout project. ReLeaf led five corporate workdays, where employees from workplaces such as Level Three, Deloitte, CGI, AlterEcho, and Winchester Homes gave their time to improve Fairfax County. Fairfax ReLeaf also conducted two workshops to prepare individuals to lead plantings.

In 2014, Fairfax ReLeaf will continue its planting efforts in parks and homeowner associations plantings while increasing partnerships with agencies such as the Northern Virginia Soil and Water Conservation District and Fairfax County's Stormwater Planning Division.

Fairfax ReLeaf offers a number of opportunities for stewardship. For further information on Fairfax ReLeaf, visit its website at http://www.fairfaxreleaf.org. The organization can be reached at:

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

6. Northern Virginia Conservation Trust

Past EQAC reports recommended that the Fairfax County Board of Supervisors form public-private partnerships for the purpose of obtaining easements on environmentally sensitive land. EQAC pointed out that entities such as The Nature Conservancy use easements very successfully as a way of protecting environmentally sensitive properties. With the signing of a Memorandum of Understanding on June 20, 2001 between the Fairfax County Board of Supervisors and the Northern Virginia Conservation Trust, such a public-private partnership now exists. The partnership is now in its 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 partnership with Arlington County and the City of Alexandria and owns properties or easements in Arlington, Fairfax, Loudoun, Prince William and Stafford counties and in the cities of Alexandria and Fairfax. NVCT was one of a handful of the first land trusts accredited throughout the country by the Land Trust Accreditation Commission.

NVCT began a restructuring of its staff in late 2012 in order to better use its resources to accomplish its goals of implementing its Strategic Plan, protecting land with conservation value and connecting existing green spaces to the extent possible. Subsequent to hiring Peggy Stevens as NVCT's Executive Director in 2013, NVCT hired six additional staff, all of whom have a role in promoting NVCT's mission in Fairfax County.

From the time NVCT accepted its first easement in 1999 through the end of 2013, NVCT has preserved nearly 700 acres of open space in Fairfax County through easements, fee simple ownership and partnerships. NVCT added a 15-acre easement to its portfolio at the end of 2013. 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 continues to seek new opportunities as well. Working with the Department of Planning and Zoning, the Park Authority, the Board of Supervisors and other conservation organizations, NVCT is committed to finding and working with conservation-minded landowners to increase the long-term "green footprint" in Fairfax County.

NVCT has enforcement responsibility for the conservation easement held by the Fairfax County Park Authority on the 42 acre historic Salona property in McLean. The easement was executed in 2006 and a conceptual plan for permitted public uses of the property commissioned by the Park Authority has been under discussion for the past two years. A task force to make recommendations on the future of the property was appointed in 2011 by Dranesville Supervisor John Foust. NVCT is represented on the

task force and has been active in considering all use options and their potential impact on the conservation and historic values of the property. In early 2014, the task force recommended 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, VII-2 and VII-3 provide details through June 2011 on NVCT properties. Figure VII-1 presents a map of these properties.

Table VII-1. Fee Simple Properties Owned by the Northern Virginia Conservation Trust

Property/District	Location	Acreage	Recordation
Clifton Property/Dranesville	Clifton	8.66	Gift 6/2003
Davenport/Pimmit Run/ Dranesville	McLean	1	Gift 8/2000
Mason	Springfield	0.001	Gift 3/2005
Little Hunting Creek/ Mt. Vernon	Alexandria	2.01	Gift 2002
	Total	**11.671**	

EQAC AR, E-mail from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, May 23, 2011.

Table VII-2. Land Turned Over to Local Government and Associated Acreage

Property/District	Location	Acreage	Recordation
Bannister Outlots/Springfield	Springfield	0.6	12/2001
Pimmit Run Trail off Brookhaven		1.0	6/2008
	Total	**1.6**	
Assisted Acreage			
Property/District	**Location**	**Acreage**	**Recordation**
Turner Farm/Dranesville	Great Falls	17	1998/99
FCPA Elklick/Sully	South Riding	157	12/2003
	Total	**175.2**	

EQAC AR, E-mail from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, May 23, 2011.

Table VII-3. Easements Obtained by the Northern Virginia Conservation Trust

District	Location	Acreage	Recordation
Braddock	Annandale	2.6	5/28/2004
Dranesville	Great Falls	5.6	12/1/2000
Dranesville	Great Falls	5	12/22/2005
Dranesville	Great Falls	14.07	7/3/2003
Dranesville	Great Falls	4.2	12/22/1999
Dranesville	Great Falls	5.1	8/14/2001
Dranesville	Great Falls	5	12/28/2000
Dranesville	Great Falls	5	7/18/2001
Dranesville	Great Falls	5	8/14/2001
Dranesville	Great Falls	24	12/28/2011
Dranesville	Clifton	5.3	5/27/2003
Dranesville	McLean	62.7783	11/20/2006
Dranesville	McLean	7.7717	11/20/2006
Dranesville	McLean	1.9	12/14/2005
Dranesville	McLean	41	12/27/2005
Dranesville	McLean	6	8/1/2002
Dranesville	McLean	5.03	12/18/2006
Dranesville	McLean	5.0	3/8/2011
Hunter Mill	Vienna	0.39	3/28/2003
Lee	Alexandria	3.98	1/8/2008
Mason	Alexandria	1.58	12/27/2002
Mt. Vernon	Lorton	33.73	5/18/2002
Mt. Vernon	Alexandria	0.4	
Mt. Vernon	Alexandria	0.92	6/20/2003
Mt. Vernon	Mason Neck	9	12/19/2003
Mt. Vernon	Alexandria	0.34	6/6/2005
Mt. Vernon	Alexandria	0.83	11/19/2008
Providence	Falls Church	1	4/14/2004
Providence	Falls Church	2.5797	3/10/2003
Providence	Falls Church	1.98	3/10/2003
Providence	Falls Church	1.56	3/10/2003
Providence	Falls Church	1.12	3/10/2003
Springfield	Springfield	0.87	10/30/2002
Springfield	Springfield	0.77	11/26/2002
Sully	South Riding	226	12/19/2003
Sully	Fairfax	1.51	7/17/2003
	Total	**4990**	

EQAC AR, E-mail from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 23, 2011.

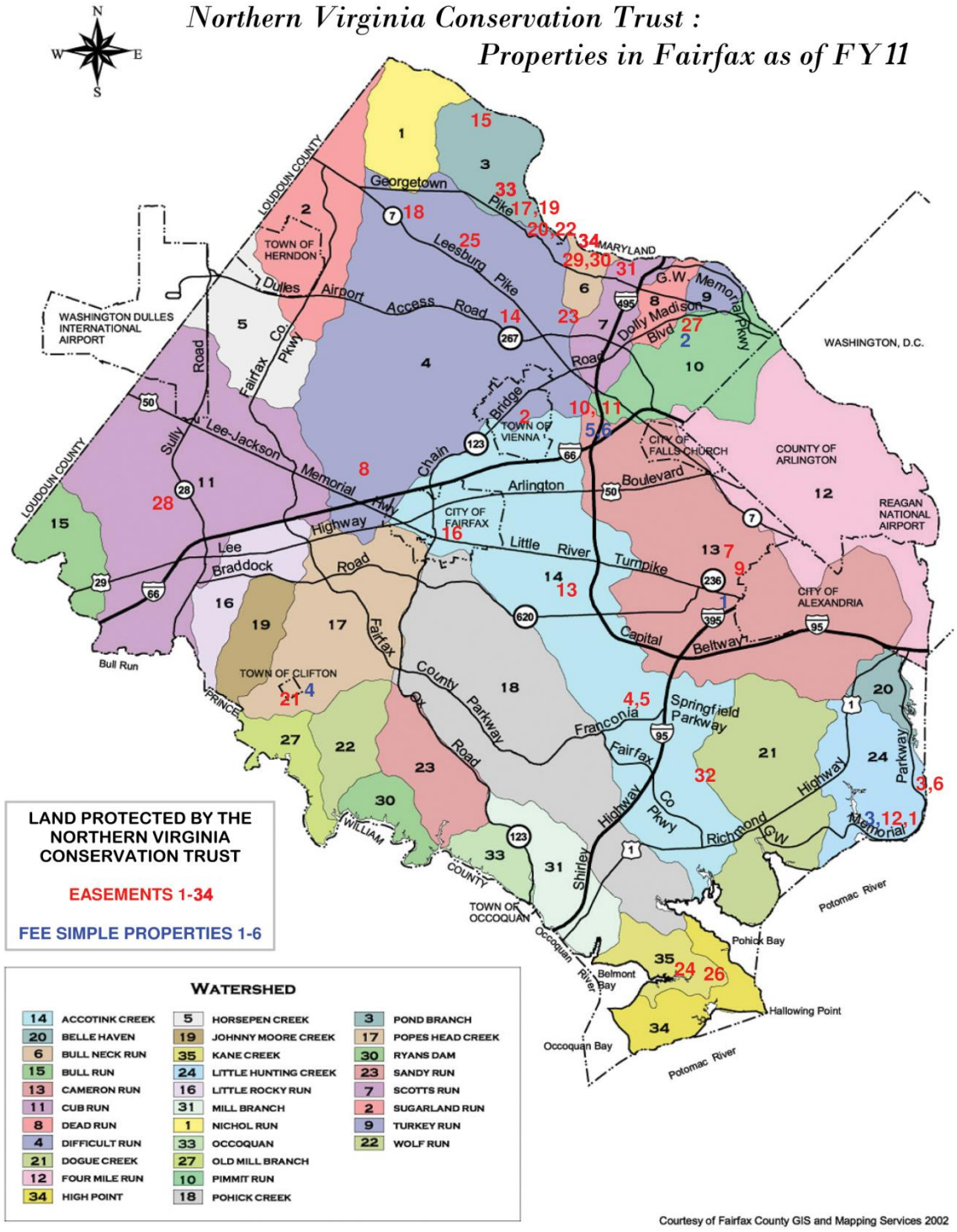


Figure VII-1. NVCT Properties in Fairfax County as of FY 2011

EQAC AR, E-mail from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, May 23, 2011.

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 community, NVCT participated in several local festival events throughout the county in 2014 and attended the Fairfax County Earth Day in Lorton. Through a partnership with the Fairfax County Restoration Project, NVCT showed the environmental documentary *Green Fire* during the first annual Green Inspirations Environmental Film Festival at the Cinema Arts Theater in Fairfax. NVCT has also continued to conduct restoration activities in the county, including invasive species removals and cleanups on NVCT and partner properties.

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, http://www.nvct.org.

7. The Nature Conservancy

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

8. The Potomac Conservancy

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

i. Easements held by the Potomac Conservancy

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

(FOSTER 09) McLean, VA 2.57 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 towpath and National Park, 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, DC 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 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 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.

ii. 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 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.

Twenty-five volunteers, spending 100 hours, collected 377 pounds of seeds. These included: Black Walnut, Shagbark Hickory, Chestnut Oak and Black Oak.

iii. 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 http://www.potomac.org.

9. The McLean Land Conservancy

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

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

MLC is a 501(c)(3) land trust organization that was incorporated in the Commonwealth of Virginia in January 2000 and recently became a "full-fledged" land trust in Virginia, with the ability to hold conservation easements. As a result, the conservation easements MLC identified and negotiated before July 2004 were deeded to Fairfax County, but with MLC assigned as the easement monitor.
MLC has concentrated on the preservation of riparian buffers on privately owned land. Successful projects include the protection of one acre adjacent to the headwaters of Four Mile Run, important because the health of the headwaters is critical to the health of a stream, and 2.77 acres on Pimmit Run in a pristine wooded area. These two easements are held by Fairfax County but monitored by MLC.

MLC holds a 16-acre conservation easement on Scotts Run in McLean. This important property is vital for the health of Scotts Run, which provides stormwater drainage for Tysons Corner.

MLC has transferred the Scotts Run easement to the Northern Virginia Conservation Trust. After MLC closes its books and donates any remaining funds to NVCT, it will cease to exist. Future EQAC reports will not include MLC since it will no longer be in existence.

10. The National Park Service

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

11. The Virginia Outdoors Foundation

The Virginia Outdoors Foundation was created by an Act of the Virginia General Assembly (Chapter 18 of Title 10.1) in 1966 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-4.

Table VII-4. 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 May 27, 2014.

***** 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: http://www.vofonline.org/.

12. Northern Virginia Soil and Water Conservation District

The Northern Virginia Soil and Water Conservation District continues to provide leadership in the area of bioengineering techniques in streambank stabilization and in the general area of erosion and stormwater control. The district focuses its programs in ways to support Fairfax County efforts in meeting stormwater and Chesapeake Bay Total Maximum Daily Load requirements through homeowner outreach, education and engagement. NVSWCD works in partnerships with other agencies and organizations. For example, it has partnered with the Fairfax County Park Authority, Virginia Department of Forestry, the Fairfax County Department of Public Works, the Reston Association and the Friends of Accotink Creek.

The Wakefield Run Stream restoration effort was completed in May 2014. The project was initiated when the Fairfax County Park Authority approached the Northern Virginia Soil and Water Conservation District to design and install a natural channel restoration project for a small unnamed stream in Wakefield Park that had become highly degraded. It emerged from under I-495 and its bed and banks were eroding and sediment flowed into Accotink Creek. Using $75,000 the Park Authority had received from the I-495 Express Lanes Project, this project was originally designed for only the first 340 feet of the stream, starting from where it entered the park from a culvert under the Beltway. Subsequently, the Department of Public Works and Environmental Services provided an additional $300,000 to extend the project another 400 feet to where a Cross-County Trail bridge crosses the stream, just before it joins Accotink Creek.

Dominion Virginia Power has also joined this partnership and provided $35,000 in support of the restoration project, helping to extend it all the way to Accotink Creek. Dominion underwrote the cost of the multi-use stream crossing within its easement. The newly stabilized crossing is used by hikers, runners, mountain bikers and service vehicles.

The natural stream channel design created meanders and gentle slopes, stabilized and planted the banks, replaced a large rip-rapped culvert outfall with a shorter, more effective outfall and reconstructed the stream crossing. The project restored the stream to a stable condition and contributes to improved water quality in Accotink Creek.

Over the summer 2012, county residents were invited to suggest a name for this "unnamed tributary." Two additional partners, the Friends of Accotink Creek and the Braddock District Supervisor's office, worked to help get the word out about this initiative. The Friends ultimately selected the name Wakefield Run, out of twenty-seven suggestions.

Throughout 2013, final designs were prepared, permits acquired and contract agreements secured for construction. The project broke ground in October 2013 and the project was substantially completed in April 2014.

District staff served as overall project administrators as well as the onsite design engineer throughout construction. While this was a significant obligation of time, it provided an opportunity to respond quickly to questions and concerns during construction.

The Wakefield Run Stream Restoration Project leveraged funding from public and private sources and highlights the importance of partnerships in ensuring the long-term success of projects.

With DPWES – Land Development Services, NVSWCD co-hosted the 2013 Land Conservation Awards in January 2014. 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 2013, a total of eight nominated sites were evaluated for their excellence in implementing erosion and sediment control measures.

The 2013 categories and award winners include:

- Large Commercial — Jennings Toyota
- Small Commercial — NTPD District II Substation & Training Facility
- Large Single Family Residential — The Reserve at Timber Lake

- Small Single Family Residential — Leatherhead Property
- Special Project — Timber Ridge at ESD Park Facility
- Linear Project — Timber Ridge at ESD Park Facility Collector Road
- Outstanding Engineering Firm — Walter L. Phillip, INC (Jennings Toyota)
- Outstanding Superintendent — Garen Khoranian (Huntley Meadows Wetland Restoration)
- Outstanding Contractor — S.W. Rogers (Jennings Toyota)
- Outstanding Developer/Owner — Michael Jennings (Jennings Toyota)
- Best Protected Environmentally Sensitive Sites:
  Michael Jennings (Jennings Toyota)
  Fairfax County Park Authority (Huntley Meadows Park Wetland Restoration Project)

The district performs site investigations and conservation planning for land owners interested in creating and renewing Agricultural and Forestal Districts. The district also 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 provided recommendations for the protection of approximately 33,556 linear feet of Resource Protection Area.

The district's annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy and decreasing and filtering stormwater runoff. Seedlings planted in riparian areas also help to protect stream channel stability and stream water quality and to improve the surrounding habitat. This seedling program offered residents a package of native tree and shrub seedlings for a small cost. The 2014 "Bee Friendly"-themed seedling sale featured native tree and shrub varieties that provide food and refuge for honeybees and other native bees; these plants included American Plum, Black Gum, Persimmon, Buttonbush, Elderberry, Indigobush, Serviceberry and Winterberry. The theme was a great success and the packages quickly sold out. This resulted in over 380 customers purchasing a total of 6,220 seedlings, who in turn planted them across Fairfax County and surrounding areas. In addition to the benefits the trees and shrubs provide to bees, the plants were selected for their adaptability across the Piedmont and Coastal Plain provinces and for many different growing conditions.

The district is the local sponsor of Envirothon, a hands-on competition among high school teams to demonstrate their knowledge of natural resources (forestry, soils, wildlife, aquatic ecology) and special issue topics, such as urban-rural interface and recreational stress on natural resources. In August 2013, the state champion Hidden Pond Nature Center Envirothon team traveled to Bozeman, Montana to compete for the national title. After a valiant effort, they placed fifteenth overall and first in the Range and Pasturelands special topic area. In 2014, eight teams comprised of 57 students and coaches competed in the spring Envirothon program. Throughout the school year,

NVSWCD hosted training events with presentations by local and regional experts on a variety of topics. Once again, the Hidden Pond Nature Center team won first place in the local and regional competitions and third at the state competition.

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. Five students from Fairfax County attended the program in July 2013. Another seven participated in 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.

The district continues to administer the Northern Virginia Rain Barrel Partnership in collaboration with Arlington County and the cities of Alexandria and Falls Church. Throughout 2013, over 254 participants built or purchased 299 55-gallon rain barrels at 12 workshops and distribution events. Since the program began in 2008, the partners have educated over 2,800 individuals, who built or purchased over 3,500 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:

- Envirothon.
- Solving Drainage and Erosion Issues.
- Fairfax County's Soils.
- Rain Gardens.

- Regional Science Fair Award Winners.
- Dredging of Lakes in the Pohick Creek Watershed.
- Resources for Native Plants.
- Drinking Water.

13. Fairfax County Wetlands Board

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

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

The 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 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 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 Virginia Institute of Marine Science provided a public training session for the Wetlands Board members and interested members of the public on April 17, 2014 at the Mount Vernon Government Center.

Glenda Booth, Wetlands Board Chair, was appointed to the VIMS Council.

The Wetlands Board welcomes VIMS guidance and has adopted a living shorelines policy, available at http://www.fairfaxcounty.gov/dpz/environment/finallivingshoreline.pdf. The Wetlands Board has also adopted a mitigation policy which can be found at http://www.fairfaxcounty.gov/dpz/environment/wetlands/mitigation_compensation_policy_adopted.pdf.

The Board of Supervisors appointed the following new members to the Wetlands Board: Anita Van Breda, Mount Vernon District; and Deana Crumbling, Lee District. Deana is serving as alternate member. On July 30, 2014, the Wetlands Board re-elected Glenda Booth as Chair and David Geneson as Vice-Chair.

The Wetlands Board has reviewed two permit requests so far this year. One permit request was granted and the other request was withdrawn by the applicant after the Wetlands Board held a public hearing. The Wetlands Board continues to work on several wetlands ordinance violations.

Wetlands Board members have attended training workshops at the Virginia Institute of Marine Science in Gloucester, Virginia, have attended other meetings and had a canoeing field trip in Little Hunting Creek in June. The Chair is organizing an ethics briefing and training for members of the Wetlands Board.

The Virginia Marine Resource staff is continuing to develop the living shoreline general permit. The Chair continues to participate on a committee established by the Virginia Marine Resources Commission to develop guidance for local wetlands boards to implement the living shoreline general permit until the general permit is finalized.

For further information, contact the Wetlands Board at:

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

14. Virginia Department of Forestry

The Virginia Department of Forestry has provided forestry-related services in Fairfax County for over 60 years. VDOF is also participating in several efforts aimed at improving riparian zones. In these efforts, VDOF partnered with the Northern Virginia Soil and Water Conservation District, the Department of Public Works and Environmental Services, 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 2013 the Virginia Department of Forestry provided project leadership and technical support to tree planting efforts in partnership with Elementary School Children, private landowners, Fairfax ReLeaf, and the Potomac Conservancy.

The Virginia Department of Forestry participates in the Fairfax County Arbor Day on the last Saturday in April each year. The county earned again, for the 31st year, the Tree City USA award. This award is given for having a planting plan, having a management plan, having a Tree Board/Commission and sponsoring an Arbor Day Celebration. The award is applied for by the Fairfax County Urban Forest Management Division and is given through the State Department of Forestry. Tree seedlings are distributed by VDOF to people attending the Arbor Day celebration. In 2013, 400 donated short leaf pine 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 2013, approximately 600 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 District applications. A&F District forest management plans are prepared by VDOF; these efforts support the management of forested land for conservation purposes. One new A&F plan covering 47 acres was prepared in 2013 and five A&F plans covering 610 acres were reviewed and updated. VDOF also wrote a Stewardship Management Plan and 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 68 applications and plans in 2013. 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 2013, VDOF conducted 63 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 third class of Tree Stewards was trained in 2013. Twenty-six Tree Stewards reported 811 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 three burns in the county in 2013 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.

15. Virginia Department of Transportation

As required by federal and state laws and regulations, the Virginia Department of Transportation mitigates unavoidable impacts to water resources within Fairfax County that occur during highway construction projects. Highway construction projects can potentially impact wetlands and streams. These resources are identified early in the project development process so avoidance and minimization measures can be considered. Given the linear nature of highway projects, some impacts are often inevitable. Federal/state water quality laws and regulations may require compensatory mitigation for permanent impacts to these resources. Wetlands creation is one form of compensatory mitigation for wetland impacts. For stream impacts, stream restoration is a compensatory mitigation; natural stream channel design principles are used to the extent possible.

The Virginia Department of Transportation acknowledges the county's preference to compensate for wetland and stream impacts within its watersheds; however, on April 10, 2008, the Environmental Protection Agency and U.S. Army Corps of Engineers jointly issued a Federal Mitigation Rule giving preference first to mitigation banks, second to in-lieu funds and third to permittee-responsible mitigation as compensatory mitigation for minor impacts to aquatic resources. Subsequent to this rulemaking, the Virginia Department of Environmental Quality directed staff to recognize the preference hierarchy presented in the rule. As a result, VDOT purchases wetland and stream credits from approved mitigation banks to compensate for unavoidable impacts to wetlands and streams instead of creating on-site and off-site mitigation sites near its construction projects. To date, VDOT has purchased slightly more than 30 wetland mitigation credits and 2,085 linear feet of stream credits. For the 2013/2014 fiscal year, VDOT purchased one-tenth of a wetland mitigation credit as required compensation for unavoidable wetland impacts associated with VDOT projects within Fairfax County.

Prior to the 2008 Ruling, VDOT was required to design and construct on-site mitigation areas during construction of its projects. VDOT created approximately eight acres of wetlands (seven acres non-tidal and one acre tidal) and restored 2,635 linear feet of streams in Fairfax County's watersheds as compensatory mitigation for unavoidable impacts from highway construction projects including the Fairfax County Parkway, the Route 28 widening, the Roberts Parkway bridge overpass, the Springfield Interchange improvements, the Route 29 bridge replacement over Big Rocky Run, the Richmond Highway widening and the Woodrow Wilson Bridge Replacement. The wetland and stream mitigation on the I-95/Telegraph Road interchange improvement project is one of the last remaining on-site mitigation sites under active permit required success monitoring by VDOT staff over the next five years. The compensatory mitigation requirements included wetland enhancement/creation of 1.71 acres of tidal wetlands, 0.63 acre of non-tidal wetlands near the confluence of Taylor Run and Cameron Run and 0.36 acre of stream restoration to relocated tributary to Cameron Run.

Since 1990, VDOT has been meeting its stormwater requirements by treating 858.55 acres of impervious road surface area through a system of 190 stormwater basins throughout the county. This acreage for treatment is expected to increase now that new stormwater regulations have become effective.

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* and VDOT has included landscaping on several road construction projects to enhance context-sensitive road design.

Recent or current projects with landscaping and/or architectural treatments include:

- Completion of the I-495 Corridor-wide Landscaping/Reforestation Project from Braddock Rd to Dulles Toll Road (14 miles along the inner and outer loops).
- Working with Tysons Corner on landscaping and bio-retention development plans.
- Planned reforestation project at the I-66 Spot Improvement #2 Project.
- Landscaping along I-395 near Landmark Mews and Overlook Terrace.
- Continuation of work with the Fairfax County Restoration Project, Fairfax Re-Leaf and Fairfax County Stormwater Planning Section on re-forestation and stormwater management/water quality issues.

The department's Wildflower Program is funded through revenue fees paid for wildflower license plates at the Virginia Department of Motor Vehicles. In Fairfax County, there are approximately 3.5 acres of right-of-way in four locations maintained as perennial wildflower meadows. Warm season, native grass species are also used in VDOT's roadside seed mix specifications on its construction projects where opportunity exists to take advantage of low maintenance requirements. Targeted control of invasive vegetation is a large part of VDOT's roadside vegetation management program to promote the growth of more desirable species.

The department actively participates on the Board of Directors for the Community Appearance Alliance of Northern Virginia--an organization dedicated to improving the visual quality between created and natural environments in northern Virginia.

16. Virginia Department of Environmental Quality

In 2013, the Northern Regional Office of the Virginia Department of Environmental Quality received nine applications to impact surface waters in Fairfax County. A total of nine 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.

17. 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 2013, the Urban Forest Management Division 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.

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 permit process.

Below is a summary of UFMD efforts in 2013 and into 2014, and how these efforts address the county's overall Tree Action Plan.

a. Tree Canopy

The 2012 Tree Canopy Analysis conducted by the University of Vermont Spatial Analysis Laboratory indicated that 53 percent of the county's land mass is covered by tree canopy. In addition to canopy coverage, the analysis 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. These data will demonstrate the value of trees in regards to water quality, watershed health and quality of life in general. 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, the Urban Forest Management Division, in cooperation with the county GIS office, began running modeling software on the Difficult Run Watershed to simulate the effects of changes in tree and impervious cover within a defined watershed 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, are 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. Preliminary findings for the Difficult Run Watershed show that, with decreasing tree cover, the amount of total suspended solids within streams compared to the base flow concentration increased on average when measured over a monthly timeframe for each month of the year. In contrast to this, an increase in tree

cover within the Difficult Run Watershed resulted in concentration decreases in the amount of total suspended solids within streams compared to the base flow on average when measured over a monthly timeframe for each month of the year. This model has already been demonstrated as a valuable tool in setting realistic tree canopy goals for the 30 major watersheds in the future. See Table VII-5 below for watershed-specific data.

The UFMD staff will continue to work closely with GIS and stormwater staff to refine the i-Tree Hydro processes and to run analyses on all the major watersheds within Fairfax County.

The 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 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 MS4 Permit and Chesapeake Bay TMDL regulatory requirements with i-Tree Hydro output hydrographs that represent hourly flow and pollutant loads.

- Adjusting watershed canopy goals to reflect available planting space, demographics, comprehensive plan potential for land use change, etc. if needed.

- The ability to target specific property owners for reforestation and conservation engagement and partnership efforts.

- The possibility of embedding reforestation and related best management practices as credited measures in the MS4 Permit and Watershed Improvement Plans.

Table VII-5. Tree Canopy Watershed-Specific Data

Watershed	Percent of Existing Tree Canopy Coverage	Potential Canopy Gain in Acres	Percent Gain over Exiting Canopy Coverage
ACCOTINK CREEK	49.8	11134	34.2%
BELLE HAVEN	42.9	741	42.2%
BULL NECK RUN	71.1	345	23.1%
BULL RUN	59.3	1508	39.3%
CAMERON RUN	42.8	10586	37.3%
CUB RUN	43.1	11320	42.9%
DEAD RUN	54.9	612	31.3%
DIFFICULT RUN	57.9	11755	31.8%
DOGUE CREEK	52.9	4476	36.3%
FOUR MILE RUN	34.6	7719	39.6%
HIGH POINT	86.8	480	12.3%
HORSEPEN CREEK	33.7	2968	46.3%
JOHNNY MOORE CREEK	65.7	1076	32.0%
KANE CREEK	84.1	455	14.9%
LITTLE HUNTING CREEK	53.0	2334	32.6%
LITTLE ROCKY RUN	45.1	1879	40.1%
MILL BRANCH	44.1	2652	47.5%
NICHOL RUN	72.7	1206	24.6%
OCCOQUAN	62.4	691	32.9%
OLD MILL BRANCH	87.6	308	11.2%
PIMMIT RUN	51.6	2645	32.7%
POHICK CREEK	58.1	6570	28.6%
POND BRANCH	71.5	1375	25.8%
POPES HEAD CREEK	68.8	3068	25.4%
RYANS DAM	92.5	155	6.7%
SANDY RUN	74.9	1096	21.1%
SCOTTS RUN	50.8	1168	30.6%
SUGARLAND RUN	43.2	3631	40.9%
TURKEY RUN	67.6	342	26.6%
WOLF RUN	76.3	807	21.4%

Source: *Urban Forestry*, attachment to email from Michael Knapp, Director Urban Forest Management Division, Land Development Services Department of Public Works and Environmental Services, Fairfax County, Virginia to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, September 23, 2013.

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. UFMD presented this information to the board's Environmental Committee in October 2013. Recommendations for a revised canopy goal are likely to feature a "no-net-loss" approach or a modest canopy gain over a 10 to 20 year period. Both paths would still require funding for tree planting programs and a continuation of robust tree conservation efforts during the land development process.

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. These efforts will be critical to ensuring the long-term health and perpetuity of our urban forest.

b. Forest Conservation Branch Activities

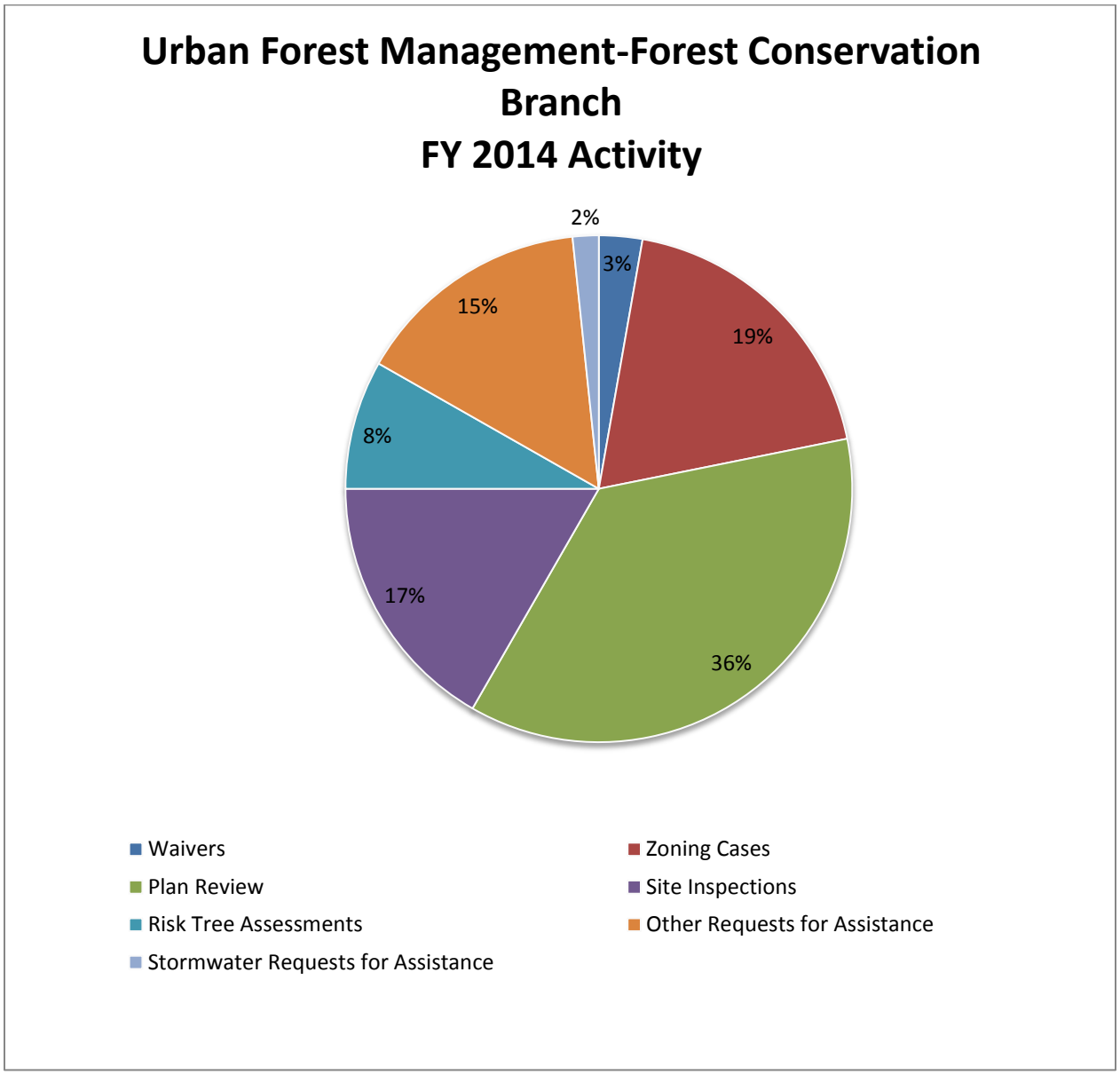
The Forest Conservation Branch staff consists of seven full-time and two part-time urban foresters who work with a wide range of partners on a variety of urban forest management issues. One of the core responsibilities of the Forest Conservation Branch is to promote the Tree Action Plan's core recommendation #10, to "optimize tree conservation in land development." UFMD is unique in the county 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, site plan and other development plan reviews, site inspections and final bond release of development projects.

Figure VII-2 below illustrates the types of requests for assistance handled by the Forest Conservation Branch in Fiscal Year 2014. Below is a brief explanation of each of the categories of assistance tracked in the chart. This includes the type of customers and partners assisted within the process.

i. Waivers (three percent)

Waivers include several types of modification requests including Transitional Screening and Barrier modifications and waivers, Tree Cover modifications and Interior Parking Lot Landscaping modifications.

Figure VII-2. Urban Forest Management-Forest Conservation Branch Fiscal Year 2014 Activity



Source: *Urban Forestry*, 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 25, 2014.

ii. Plan Reviews (36 percent)

The vast majority of plan review requests are in direct response to Site Development and Inspections Division's workload during its reviews. The review process may include Site Plans, Subdivision Plans, Grading Plans, Infill Lot Plans, Public Improvement Plans and Water Quality Impact Assessments.

iii. Tree Risk Assessments (eight percent)

A primary focus of Tree Risk Assessments is the evaluation of risk that any tree may pose to the public at large, including a determination of a public safety hazard as defined in Chapter 46 of the Code of the County of Fairfax. 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 as requested to other county and outside agencies, such as the Facilities Maintenance Division, Maintenance and Stormwater Management Division, Virginia Department of Transportation and homeowner associations.

iv. Stormwater Requests (two percent)

Stormwater requests come primarily from Stormwater Planning Division, Utilities Design and Construction Division, contractors and stakeholders as part of the 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 (19 percent)

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 Rezonings.

vi. Site Inspections (17 percent)

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 (15 percent)

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.
- 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. 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 the Department of Public Works and Environmental Services.

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

In calendar year 2013, 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. Active control 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 gypsy moth populations, but no control treatments were applied in 2013 or 2014. 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 and 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. Fairfax County is currently experiencing a cankerworm outbreak. The Mount Vernon and Lee magisterial districts have in recent years experienced the most severe infestations and associated defoliation. Forest pest

staff observed similar population outbreak levels in the winters of 2012 and 2013. Two-thousand acres within these magisterial districts were treated by aerial application of the biological control pesticide *Bacillus thuriengiensis* in spring 2013 and spring 2014.

iii. Emerald Ash Borer

The emerald ash borer, *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 July 2008, two infestations of emerald ash borer 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 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. Trapping efforts since 2008 revealed that beetle populations extend to all areas of Fairfax County. The Forest Pest Branch has appointed an Urban Forester as its emerald ash borer outreach coordinator. This staff member 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.

Control options are being considered for publically owned trees of high value that are susceptible to EAB. Prior to conducting treatment, approval will be sought from the Board of Supervisors.

iv. Hemlock Woolly Adelgid

Hemlock woolly adelgid (*Adelges tsugae*) is an insect that infests and eventually kills hemlock trees. Forest Pest Management Branch staff is considering various control options for this pest, including injection of pesticide treatments and release of predatory insects that feed on HWA. In 2014, staff recommended that the BOS 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.

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, 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. The Forest Pest Management Branch 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

The Urban Forest Management Division 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, inspiring residents, county agencies and the development industry to protect, plant and manage greenscape resources. Targeted audiences for education and training included Fairfax County Public Schools, 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 the discussion below of Tree Commission activities).

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 2012-2013, 1,248 students participated in the program. In 2013-2014, this number increased to 2,777.

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 teach 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.

- **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.

A Field Guide to Fairfax County's Plants and Wildlife: In 2013, "A Field Guide to Fairfax County's Plants and Wildlife" was developed by staff from the Stormwater Planning Division and UFMD. The field guide was developed for use by Fairfax County Public School as a tool for the 5th grade Fields of Science curriculum. In this curriculum, students are encouraged to attain a better understanding of the natural sciences and the environment by exploring areas outside the classroom. The field guide describes plants and wildlife that students may find on school property. It also introduces activities related to understanding adaptations, ecosystems, ecology, food webs, habitats, dichotomous keys and watersheds. There are plans to make the content of the field guide available on the county website.

Tree Planting: Urban Forest Management Division staff worked with Stacey Evers, Environmental Coordinator at Belvedere Elementary School, to plan and plant twelve 1 to 1.5-in. caliper trees on the school grounds. The planting project was incorporated into an educational section on stormwater for 3rd

graders and was completed on Arbor Day 2014. FCPS Maintenance and Grounds staff prepared the planting sites and Maintenance and Stormwater Management staff delivered trees from an area nursery. Five groups of about 15 students each visited the planting sites and received instruction on proper planting and mulching. They were also introduced to trees' effect on stormwater runoff and improving water quality by controlling erosion and keeping sediment out of our streams, rivers and the Chesapeake Bay.

The division will continue and expand this partnership with FCPS. Stacey Evers has provided a list of contacts for 18 additional schools to pursue tree planting opportunities.

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.
- Fairfax Springfest.
- Celebrate Fairfax.
- Fairfax County 4H Fair.
- Fall for Fairfax.

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

Fall for Fairfax: A collaborative effort between UFMD, Facilities Management Division and Celebrate Fairfax planned and implemented a planting project on the Government Center grounds for Fall for Fairfax 2013. The planting consisted of 26 understory tree species (Appalachian spring dogwood, eastern redbud, serviceberry and fringetree) and was designed to complement an earlier planting of ten white oak trees along the entrance drive to the Government Center. As the white oaks and understory trees become established, they will replace a declining landscape planting that is being phased out. County employees from the Department of Planning and Zoning and DPWES volunteered and joined UFMD staff in planting the trees. Instruction was

provided to volunteers on proper planting procedure, tree identification and the benefits the trees would provide.

Springfest: A second tree planting project was orchestrated for Springfest (Earth Day/Arbor Day), April 2014 at Occoquan Regional Park. The Urban Forest Management Division 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. Division staff also enlisted the help of local service fraternity volunteers, Alpha Phi Omega, to plant 12 trees (1.5-in. caliper river birch and black gum; 6-feet tall Eastern red cedar and Norway spruce). Volunteers received instruction on proper tree planting, mulching and how the project was designed to provide 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: In 2013, in coordination with the Engineers and Surveyors Institute, UFMD staff provided training to a group of 24 civil engineers representing various engineering firms and government agencies. Topics discussed included the different components of the Tree Conservation Ordinance and conservation plans that are 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 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 2013, UFMD staff trained 120 educators to use PLT curriculum.

Northern Virginia Urban Forestry Roundtable: The division 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. In February 2013, the UFMD director made a presentation on "Watersheds as Urban Forest Management Tracts." At the May 2014 meeting, the director presented "A National Perspective on the Use of i-Tree in Urban Forestry," which described the modeling tools now used extensively in the metropolitan region and in municipalities across the nation to quantify urban forest benefits.

v. Tree City USA

At the close of 2013, Fairfax County reached a milestone with its involvement with the Arbor Day Foundation's Tree City USA Program. For the 30th consecutive year, the county was recognized for its excellence in urban forest management. This milestone was followed in April 2014, when the county was again recognized for its efforts and awarded the Tree City USA Growth Award for the fifth time.

To be eligible for the Tree City USA designation, a community must have each of the following: 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 in 2013 and 2014, the Arbor Day observance and proclamation were incorporated into a daylong event, Springfest. As part of the celebration, county staff also supervised volunteers who planted trees at both the Workhouse Arts Center in Lorton and Occoquan Regional Park. As part of the celebration, the Fairfax County Tree Commission also presented its Friends of Trees Awards, recognizing individuals and groups who volunteered their time and effort to preserve, protect or plant trees.

vi. Outreach Media

Urban Forest Management Division staff continues to improve messaging and communication with county residents by using various types of media including:

- Fact Sheets/Brochures.
- Podcasts.
- Videos.
- Facebook postings.
- Slideshare presentations.
- Web content.
- Newspaper articles and radio interviews.

UFMD uses a variety of media to ensure that multiple audiences and demographics of the county are reached.

e. Strengthening Partnerships

In 2013, UFMD 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. The following partnership efforts and advancements are of particular note.

i. Stormwater Planning Division

Urban Forest Management Division staff worked with the Stormwater Planning Division, the 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. Throughout the year, urban foresters provided valuable input on 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. Urban Forest Strike Team

The Urban Forest Strike Team consists of a group of certified arborists who have received extensive training in urban forest disaster response. Strike Team arborists provide disaster response and recovery planning assistance to communities, including tree risk assessments and debris estimation following storms using industry and Federal Emergency Management Agency standards and protocols. Risk assessment helps communities identify trees that are an unacceptable risk and those suitable for retention and management during disaster recovery. The UFST was created by the U.S. Forest Service and state forestry agencies, including the Virginia Department of Forestry.

- UFMD staff currently has seven trained members of the UFST available to assist in disasters that impact urban and community forests throughout the U.S.

- Two trained members participated in mock deployment for the UFST to Virginia Beach, Virginia to obtain supplemental training in tree risk assessment protocol and to test deployment through the Virginia Department of Emergency Management.

iii. Fairfax ReLeaf, Inc.

Staff from UFMD holds a position on the board of this community nonprofit organization. In 2013, the major projects with Fairfax ReLeaf involved coordinating tree planting on FCPS property. Urban foresters assisted in identifying planting sites and gaining approval for planting. UFMD also provided support for Geographic Information System analysis of homeowner association-managed open space potential for Fairfax ReLeaf planting activities. Fairfax County Tree Stewards were approached to act as project managers for Fairfax ReLeaf planting projects.

iv. Virginia Department of Transportation

In 2013, UFMD continued to work closely with VDOT to assess tree risk for trees located in the state rights-of-way and to provide abatement recommendations. Staff reviewed construction plans associated with right-of-way improvements and provided recommendations on tree preservation and landscaping. In June 2014, the director of UFMD and staff from Stormwater Planning provided input to VDOT in the review of proposed changes in VDOT's scoping process for road improvement projects that address landscape plantings, tree preservation and the mitigation of project impacts on existing trees and tree canopy area.

v. Department of Planning and Zoning

UFMD staff continued to participate on the Tysons Core Team and reviewed all proposed rezoning applications associated with the Planned Tysons Corner Zoning District. Staff has now also begun participation as a member of the Reston Core Team and reviewing land use issues and rezoning cases in the Reston Urban Core.

vi. Professional Organizations

In 2013, UFMD urban foresters continued to provide leadership and strengthen partnerships with professionals and professional organizations working in the urban forest. Staff served on the board of the Mid-Atlantic chapter of the International Society of Arboriculture and as a member of the steering committee of the Virginia Association of Forest Health Professionals.

f. Tree Commission Activities

The Fairfax County Tree Commission had an active year in 2013. The Tree Commission participated in Springfest at the Lorton Workhouse for Earth Day/Arbor Day in April, 2013 and the TREEmendous Forest Festival at Ellanor C. Lawrence Park in September 2013. Both of these events were geared towards families, with the goal of helping to educate residents about the role of the Tree

Commission and good tree stewardship. Individual members of the Tree Commission have remained heavily involved in tree preservation and conservation efforts in the districts and organizations that they represent.

In November 2013, Board of Supervisor's Chairman Sharon Bulova attended the Tree Commission monthly meeting and discussed her perspective on Tree Commission priorities for the coming year. These included examining the potential impact of the newly drafted Stormwater Ordinance on tree preservation and considering VDOT's new urban streetscapes plan for Tysons Corner. She also gave strong support to the commission's proposed update of the Tree Action Plan, which focused on studying the long-term threats to the county's mature urban forests.

In addition to following up on these priorities, the Tree Commission has undertaken a number of new initiatives. Efforts to update the commission's website are ongoing to add more content, including past meeting minutes and Tree Preservation and Friends of Tree awards. A digitized database for the Celebrated Trees program is also being developed, with an initial focus to update and refine the Big Trees category of the program. As a result, the Tree Commission has provided the Virginia Big Trees program with detailed information on all 21 State Champion Trees located in Fairfax County as well as updates on the other 53 Fairfax County trees currently in the state database. These include two former National Champions, a chestnut oak and a pawpaw.

As a result of this effort, the former National Champion Virginia pine tree in Reston was discovered to have been downed by a storm. With the support of the Fairfax County Park Authority, several cross sections of the dead tree trunk were cut to present to the Reston Association, the Board of Supervisors, the Park Authority and UFMD. These can be displayed to promote greater awareness of Fairfax County's champion trees.

i. Tree Conservation Awards

The Tree Commission and UFMD continued the Tree Conservation Award program to recognize outstanding tree preservation and planting implemented in development projects throughout the county. The basis of the award involves raising awareness of the importance of trees, conservation of the urban forest and the socio-economic and environmental benefits that the urban forest resource provides. For 2013, the Tree Commission and UFMD staff initiated changes to the program designed to increase the interest and participation of the development community. The commission is also considering a separate award category for county sponsored projects.

An awards ceremony was held on January 14, 2014 that, in addition to recognizing these 2013 award-winning projects, also emphasized the benefits of trees and their contributions to quality of life. The 2013 awards were presented to developers, designers and contractors of the following projects:

Tree Preservation category
- Huntley Meadows, Lee District.
- Roseglen, Springfield District.
- The Reserve at Stonehill, Hunter Mill District.

Tree Planting category
- Clemyjontri Park, Dranesville District.
- Oakton Library, Providence District.
- Lee Highway and Nutley Street Shopping Center, Providence District.

ii. Friends of Trees Awards

The Tree Commission presents Friends of Trees Awards annually to individuals and organizations demonstrating superior actions to preserve, protect or plant trees. The awards for 2013 were given to the following at the April 2014 Springfest and Arbor Day celebration:

- David Swan, for his tree preservation efforts in the Town of Herndon, Dranesville District.
- Willie Woode of the Soil and Water Conservation District, for tree planting efforts along Little Difficult Run in Oakton, Providence District.
- Lake Braddock Community Association, for beginning a five year tree preservation plan in their common areas, Braddock District.

Finally, the Tree Commission strongly supports a greater effort by the Board of Supervisors to promote increased awareness of the damage that deer cause to the environment and to public safety, and urges the county to put more resources into deer control efforts. For the coming year, several Tree Commission members are supporting an initiative by the Great Falls Citizens Association to intensify efforts to cull the deer herd in Great Falls. The overabundance of deer (see the "Wildlife and the Environment" chapter of this report) causes significant environmental damage and cascading ecosystem effects which threaten the future tree canopy. The focus is to increase bow hunting on both Fairfax County and private property in Great Falls during bow hunting season, using registered bow hunters. These Tree Commissioners hope to make Great Falls a pilot test case for deer control that could be applied to other areas of the county.

18. 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.

Since the 2010 EQAC Annual Report on the Environment, there have been some changes to the A&F Program as shown in Table VII-6.

Table VII-6: Change in Local and Statewide A&F Districts from January 1, 2010 to December 31, 2013

Magisterial District	No. of Local Districts		No. of Statewide Districts	
	2010	2013	2010	2013
Dranesville	13	12	1	1
Hunter Mill	0	1	0	0
Mt. Vernon	3	3	1	1
Springfield	21	18	0	2
Sully	4	6	0	0
Total	42	40	2	4

Fairfax County, 2013: Agricultural & Forestal District Annual Statistical Report, June 1, 2014.

As can be seen in the above figure, there was a change in Dranesville District, resulting in a loss of one Local District through the re-districting of Newcomb to Hunter Mill. Hunter Mill had a gain of one Local District through this re-districting. In Springfield, technically a loss of one Local District (due to the consolidation of Podolnick and Kincheloe Local Districts to the Kincheloe Statewide District (no loss of acreage, however). Additionally, the conversion of the Whitehall District to Statewide status resulted in a second gain of Statewide Districts in Springfield. Sully gained two districts with the establishment of Hickox (Bull Run Winery) and Kulbok Districts.

19. 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.

The Fairfax Master Naturalist chapter successfully ran two basic training classes in 2013, recruiting 40 new members. This brought the number of trained volunteers to 245. With 169 current members, FMN provided over 4,200 hours of volunteer service in 2013, of which 1,371 hours were in education and outreach, 2,556 in citizen science projects and 2,018 in stewardship efforts. Through this volunteer service, FMN members played a significant role in the Fairfax County Park Authority's Invasive Management Areas program, Early Detection and Rapid Response efforts, nature center programs and wildlife surveys. They also made significant contributions to the school system through the development of discovery gardens and support of teachers in developing outdoor activities tied to Standards of Learning examinations.

For more information see the program's website:
http://vmnfairfax.org/SitePages/Home.aspx

20. Fairfax County Restoration Project

With the help and guidance of the Fairfax County Office of Public/Private Partnerships, The Fairfax County Restoration Project 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. 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 http://www.fcrpp3.org/reforestfairfax/. In 2013, the total reached 56 gifts purchased and 280 trees planted.

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.

FCRP facilitated discussion among Virginia Megaproject partners, Fluor-Transurban and VDOT, Supervisor Foust and Fairfax County staff to develop more environmentally comprehensive strategies for some of the stormwater ponds being constructed as part of the 495 Express Lanes. Discussions focused on the grading design within the ponds and a mixture of compost and seed that will create habitat for native species. There was agreement that five of the twenty-six planned ponds will be upgraded with the recommended compost and seed mix while the remaining nineteen ponds will receive only the seed mix as far as the supply lasts. In June 2013, there were excessive rains washing some of the seed away. Reseeding the impacted areas has been ongoing.

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 http://www.fairfaxcounty.gov/parks/volunteer/. More information about FCPA and its programs is available at: http://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 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. 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
http://www.fairfaxparkfoundation.org/

Environmental Stewardship opportunities for volunteers are available at Northern Virginia Regional Park Authority sites, including Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park and Pohick Bay Regional Park More information can be found at http://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 http://www.fairfaxreleaf.org. The organization can be reached at:

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

The Northern Virginia Conservation Trust offers many opportunities in stewardship for Fairfax County residents. Additional information on NVCT can be found on its website, http://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 NVCT, they will not only protect sensitive land, but can realize some financial benefits. A perpetual easement donation that provides public benefit by permanently protecting important natural, scenic and historic resources may qualify as a federal tax-deductible charitable donation. Under the Virginia Land Conservation Act of 1999, qualifying perpetual easements donated after January 1, 2000 may enable the owner to use a portion of the value of that gift as a state income tax credit. Fairfax County real estate taxes could also be reduced if the easement lowers the market value of the property.

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

D. COMMENTS

1. The Fairfax County Board of Supervisors has endorsed the goals and actions within the Tree Action Plan, adopted a new tree canopy cover goal for the county of 45 percent coverage by the year 2037 and adopted a tree conservation ordinance to strengthen tree preservation policies and procedures. In addition, trees were identified as a special area of interest in the FY 2008 Environmental Improvement Program. 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 remote sensing and also exceeds the 45 percent goal. Some of the unexpected gain may be attributable to an explosion in the number of invasive trees (such as Callery pear and Tree of Heaven) along transportation and utility corridors--this has contributed large areas of canopy in areas once occupied by other vegetation types. Such invasive trees should not count toward the tree canopy cover goal.

   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 complete a countywide Baseline Natural Resource Inventory. EQAC notes that slow 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, these efforts must be supplemented by an inventory of the county that accounts for 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. The Park Authority continues to be successful in obtaining project specific funding for 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.

E. RECOMMENDATION

1. 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. For the 2004 plan, FCPA staff estimated that full implementation would require approximately $8 million per year and dozens of staff positions. This included 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 have allowed 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 have required $650,000 and six positions. Implementation of the new plan will require similar funding and 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.

LIST OF REFERENCES

Fairfax County Land Use Data, http://www.fairfaxcounty.gov/demogrph/find_by_topic.htm.

Fairfax County Board of Supervisors, *Environmental Excellence for Fairfax County: a 20-Year Vision*, http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf.

Information for 2014 EQAC Annual Report, Fairfax County Park Authority, Attachment to email from Sandra Stallman, Manager, Park Planning Branch, Fairfax County Park Authority, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 24, 2014.

2014 EQAC Annual Report, Northern Virginia Regional Park Authority, Attachment to email, Environmental Quality Advisory Council's Annual Report on the Environment: Information Requests for the 2014 Report, from Kate Rudacille, Northern Virginia Regional Park Authority, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 20, 2014.

Fairfax ReLeaf, Attachment to email, EQAC Information, from Taylor Beach, Executive Director, Fairfax ReLeaf, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 16, 2014.

2012 EQAC Update, Email from Whit Field, Vice President and General Counsel, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 12, 2012.

Information for 2013 Fairfax EQAC Annual Report, Attachment to email, Northern Virginia Conservation Trust, EQAC Annual Report, from Phil Hartger, Stewardship Specialist, Northern Virginia Conservation Trust, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 11, 2014.

Suggested Information for 2014 EQAC Annual Report, Potomac Conservancy, Attachment to email, PC info for Fairfax EQAC report, from Melissa Diemand, Potomac Conservancy, to Noel Kaplan, Department of Planning and Zoning, Fairfax Count, Potomac Conservancy, to Noel Kaplan, Department of Planning and Zoning, Fairfax Count, Virginia, July 24, 2014.

Virginia Outdoors Foundation, Attachment to email, Virginia Outdoors Foundation, from Jason McGarvey Communications and Outreach Manager, Virginia Outdoors Foundation, Richmond, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, May 27, 2014.

Ecological Resources Input from NVSWCD , Attachment to email, ARE Ecological Resources & Hazardous Materials Input from NVSWCD, from Laura Grape, Executive Director, Northern Virginia Soil and Water Conservation District, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, August 13, 2014.

Wetlands Board Progress Report 2014, Email from Mary Ann Welton, Wetlands Board, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, August 6, 2014.
Virginia Department of Forestry Contributions to Fairfax County Annual Report on the Environment 2011, Attachment to email from James McGlone, Urban Forest Conservationist, Virginia Department of Forestry, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 10, 2014.

Letter from John C. Muse, District Environmental Manager, Commonwealth of Virginia Department of Transportation, to Fred Selden, Director, Department of Planning and Zoning, Fairfax, Virginia (containing VDOT's inputs for EQAC's 2013 Annual Report on the Environment), July 18, 2014.

Email from Rebecca Shoemaker, TMDL Coordinator, Virginia Department of Environmental Quality, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 20, 2014 (contains wetlands permitting information from VDEQ).

Urban Forestry, 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 25, 2014.

Fairfax County 2013 Agricultural & Forestal District Annual Statistical Report, June 1, 2014, Attachment to email, A&F Annual Report, from Brent Krasner, Senior Staff Coordinator, Zoning Evaluation Division, Department of Planning and Zoning, Fairfax County, Virginia, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, June 11, 2014.

Fairfax Master Naturalists, Attachment to email from James McGlone, Urban Forest Conservationist, Virginia Department of Forestry, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July, 2014.

Fairfax County Restoration Project, 2013, Attachment to email from Amy Gould, Fairfax County Restoration Project, to Noel Kaplan, Department of Planning and Zoning, Fairfax County, Virginia, July 14, 2014.