ELLANOR C. LAWRENCE PARK
PARK MASTER PLAN

2017 REVISION – APPROVED SEPTEMBER 27, 2017

Fairfax County Park Authority

Fairfax County Park Authority

Established in 1950, the Fairfax County Park Authority is charged by the Board of Supervisors with a dual mission to set aside public spaces for and assist citizens in the protection and enhancement of environmental values, diversity of natural habitats and cultural heritage to guarantee that these resources will be available to both present and future generations; and to create and sustain quality facilities and services which offer citizens opportunities for recreation, improvement of their physical and mental wellbeing, and enhancement of their quality of life. For more information, visit www.fairfaxcounty.gov/parks.

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Cover Image: Walney Pond, Ellanor C. Lawrence Park

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Introduction

Fairfax County, Virginia is a thriving community that is home to more than one million residents and the base for over two hundred million square feet of commercial, industrial and retail space within the Washington, DC metropolitan region. The county's residents and work force all uniquely benefit from the more than 23,000 acres of parkland and the myriad of recreational opportunities provided throughout the county.

The Fairfax County Park Authority was established in 1950 with the charge of developing and maintaining the viability and sustainability of this expansive system of parkland and facilities. Through the provision of quality facilities and services, as well as the protection of the county's cultural and natural resources, the Park Authority seeks to improve the quality of life for the county's residents today and well into the future.

Why Master Plan Parks?

To achieve its long-range goals and objectives, the Park Authority has established a process for the planning of park property and facilities, framed to be consistent and equitable. A key part of this process includes development of park master plans, specific to each park and intended to establish a long-range vision towards future park uses and site development. During the planning process, the site is evaluated to assess its context within the surrounding neighborhood as well as within the framework of the entire Fairfax County Park Authority park system. Potential and desired uses are considered with the ability to establish them sensitively and sustainably on the subject property with public input as a key component in the decision-making process.

When completed, the individual park master plan will serve as a long-term, decision making tool to guide all aspects of development related to planning, design, construction, resource management, and programming within that given park. To maintain the viability of the park master plan as an effective tool, periodic updates may occur so that the plan accurately reflects the park and its surroundings, addressing changes that occur over time. Physical site development ultimately will require additional study and detailed engineering that exceeds the scope of a park master plan; however, it is the framework established through the park master plan process that assures cohesive, efficient and balanced development and usage of Park Authority assets.

Figure 1: Park Master Planning Process

The Planning Process and Public Involvement

Using this Park Master Plan

This park master plan for Ellanor C. Lawrence Park is provided to Park Authority officials and stakeholders to guide the future development and use of the park. The plan is conceptual in nature and subject to further engineering. The development of facilities will depend on public need, funding, and feasibility at the time such features are considered.
The master plan incorporates Park Authority policy, regulation, management planning, and public involvement and provides a generalized, long-term vision for the park. It should not be considered the sole source to guide the management of natural and cultural resources, interpretation, maintenance, or the usage of facilities. Decision makers should consult the specific recommendations in the park's individual management plans which are updated periodically.

Public input is a cornerstone of the Park Authority's development of a Park Master Plan. Accordingly, the project team held a public information meeting at the Sully Government Center on June 28, 2016. The meeting was an opportunity for members of the public to speak directly with the team, lean more about the planning process, request specific considerations at Ellanor C. Lawrence Park, and to provide feedback and visioning for the master plan. While public engagement is ongoing throughout the master plan's development, initial feedback focused on maintaining the park's high level of natural and cultural resource management, the potential impacts from ongoing transportation improvements, trail and pedestrian connectivity, and ensuring access to active recreation and parking.

Once the draft master plan was reviewed by the Park Authority Board, it was posted to the project's website for public review and comment. The project team held a second public meeting on June 8, 2017 to present the recommendations in the draft plan.

The Park Authority Board approved this revised Master Plan for Ellanor C. Lawrence Park at its regular meeting on September 27, 2017.

Figure 2: Public Information Meeting
Photo: Fairfax County Park Authority, June 28, 2016

Park Background

Location and General Description

Ellanor C. Lawrence Park (ECLP) is one of the Fairfax County Park Authority's largest parks and is prized for its rich natural resources and the land's historic role in the county. Located in the Sully Supervisory District at 5040 Walney Road in Chantilly, ECLP occupies over a square mile along the Route 28 corridor. The park's nearly 650 acres offer the region's residents opportunities to relax, recreate and recharge in a natural setting, pursue individual and team sports, learn about the county's agricultural past, and partake in the park's many interpretive programs and events.

Figure 3: Ellanor C. Lawrence Park and Fairfax County Supervisory Districts

ECLP was first established in 1972 through a generous donation of land from David Lawrence in honor of his late wife, Ellanor. Since that time, the park boundaries have expanded to its present size due to a series of land dedications associated with adjacent development; these areas are detailed below.

Sully Woodlands

ECLP is part of the **Sully Woodlands** region, an assemblage of over 4,000 acres of parkland in the western portion of the county. The Park Authority acquired these lands through a variety of mechanisms such as direct purchases, grant assistance, developer dedications, donations, and land transfers. The rural and suburban character of this landscape is reflected across this diverse collection of parks. In addition to active and passive recreational opportunities, the Sully Woodlands contains some of the richest natural, cultural, and scenic resources in the county. It is envisioned that ECLP will serve as a public gateway for visitors to the Sully Woodlands region.

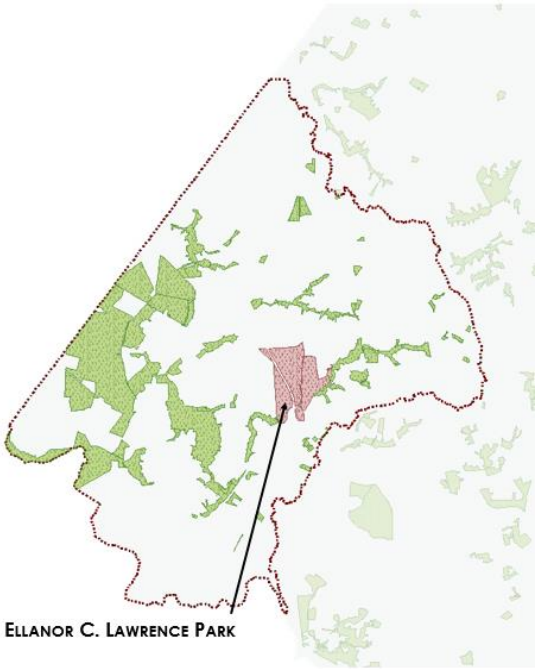


Figure 4: Ellanor C. Lawrence and Sully Woodlands Parkland

Property and Park History

The land within ECLP has a rich history dating from prehistoric times to the present. The Park Authority's archives contain extensive documentation on the cultural heritage of the park, which is partially reproduced herein.

Human occupation in the area likely extends over 10,000 years into the past, as evidenced by Clovis points found nearby at Dulles International Airport. Within the park itself, an 8,000-year-old spear point has been found.

Figure 5: Map of the 1862 Battle of Chantilly, c.1862-1865, Library of Congress

The land of ECLP was farmland for more than 230 years. During this time, ownership remained with three families: Brown/Lewis, Machen, and Lawrence. It is the story of these three families during the years 1742 to 1973 that is most significant to the park and which is the focus of the park's cultural resource management and interpretive efforts.

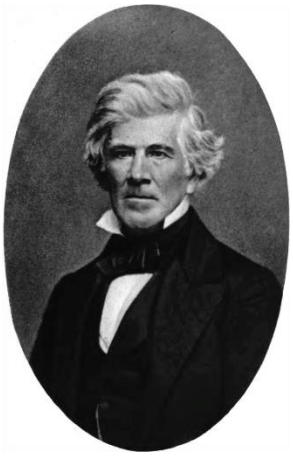


Figure 7: Lewis H. Machen

The core of the park is the 18th-century farm, known today as Walney. Like other area farms, tobacco was the primary crop prior to the Revolutionary War. Wheat replaced tobacco in the latter half of the 18th century. Alexandria began trading in wheat and flour in the 1760s, and Fairfax County's farming community sought to meet the new market demand. In addition, wheat did not deplete the soils as the previous tobacco crop. Prior to the American Civil War, early scientific farming methods diversified the crops and livestock at Walney, concentrating in wheat, corn, oats, cattle, sheep, and hogs.

Figure 6: Walney, Present Day

The farms within the present-day park suffered during the American Civil War. Nearby Centreville became a key strategic location, and in 1861-1862 more than 40,000 troops camped in the area, cutting most of the available trees for firewood, shelter, and

fortifications. Today, the park still bears the evidence of erosion caused during this period. Property destruction was also common; The Walney house was looted in August 1862 and the frame house built for James P. Machen was reportedly burned by Federal troops. The September 1862 Battle of Chantilly (Ox Hill) was fought on a portion of the Machen's farm.[1]

Walney followed the trend of other Fairfax County farms following the Civil War and expanded to dairy production once railway service to the Washington, DC market became readily available. Daily operations were halted in 1890 for unknown reasons. The land was rented out to area farmers in subsequent years; but, by the time the Lawrences purchased Walney in 1935, the farmland was abandoned.

Figure 8: Middlegate, Present Day

David and Ellanor Lawrence used Walney as a welcome retreat from Washington, DC and in 1942 purchased 20 acres nearby containing Cabell's Mill and the Middlegate House. Many supporting structures and tenant buildings were removed during a series of renovations to the Walney and Middlegate properties, and features such as gardens and landscaping enhanced the grounds at Middlegate. Over the years, former pastures and croplands have reverted to forests. These features – Walney, Middlegate, and the forests – are the focus of recommendations in this master plan.

Ellanor's will to her husband David indicated that the property should be given to a public agency and, honoring this wish, David donated the land to the Park Authority in 1971 in her memory.

Park Acquisition

The 1971 donation from David Lawrence to the Park Authority consisted of 585 acres that forms the core of the park (Parcel 44-4 ((1)) 3). As part of this transfer, the Lawrence family, Park Authority, and Trustees of St. John's Episcopal Church, Centreville, agreed to certain conditions. Among them, the Park Authority agreed that the land would remain in use as a park and it would "contest [eminent domain] proceedings in every

[1] Mauro, Charles V. (2002). The Battle of Chantilly (Ox Hill): A Monumental Storm. Fairfax, VA: Fairfax County History Commission. p. 62-63.

fashion reasonably possible." Failure to do so would result in the Park Authority forfeiting its ownership of the property to the Trustees of St. John's Church.

Additional developer dedications of land to the Park Authority have expanded the boundaries of ECLP to the east. Land acquired after the Lawrence's original gift is not subject to the same deed restrictions. One acquisition, Parcel 54-2 ((1)) 3A, contains a residence and other associated structures which were built in 1988 after the Park Authority took ownership of the Lawrence Property. The house is located over one-quarter of a mile from both the Walney and Middlegate complexes and does not detract from the character of either site. Unlike other home sites within the park, this site does not contribute to area's cultural narrative; it currently serves in an administrative capacity and may continue to do so.

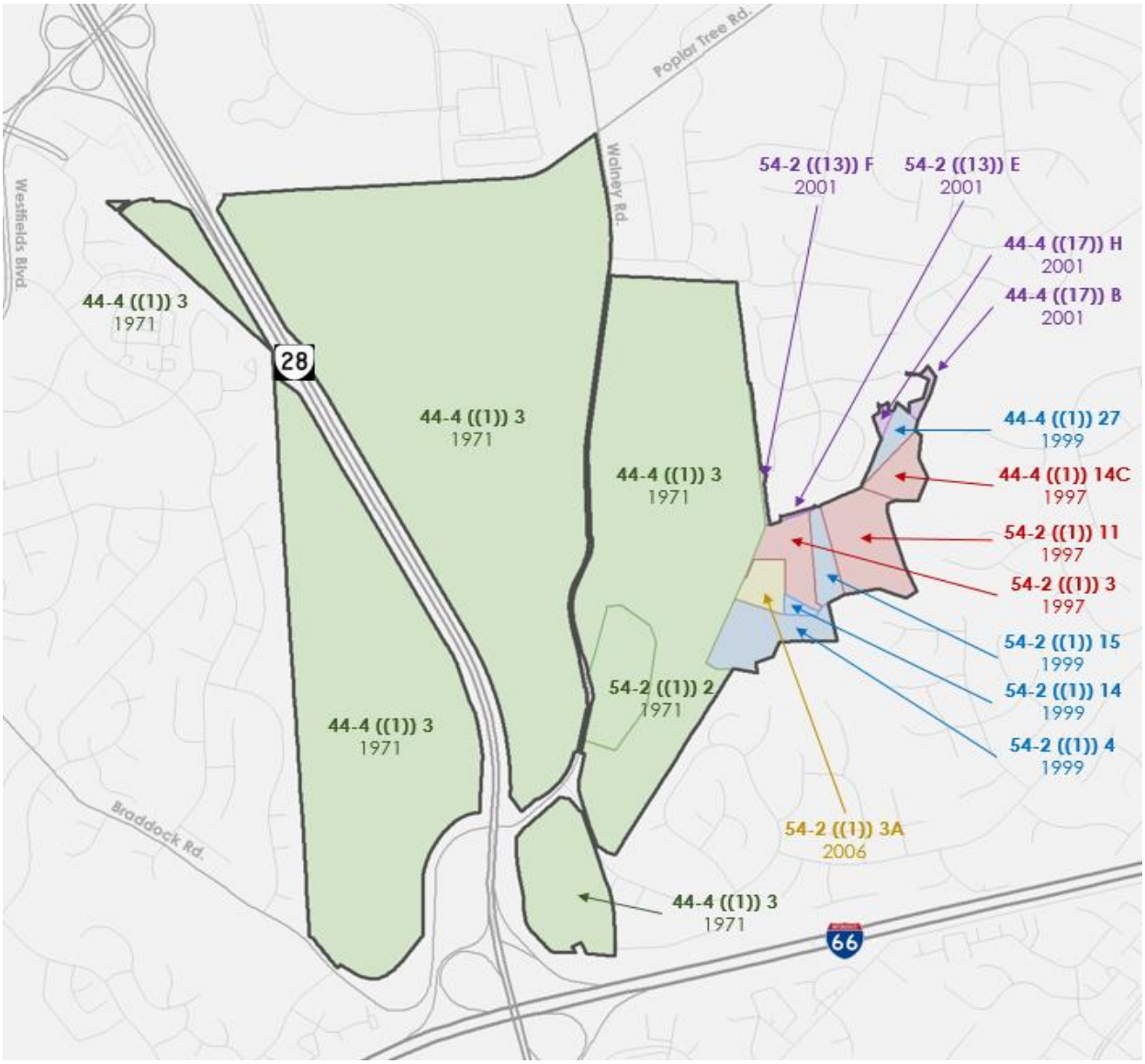


Figure 9: Parkland Acquisition, 1971-Present

Parcel Inventory (2016)		
Parcel	Acres	Year Acquired
44-4 ((1)) 3	584.79	1971
54-2 ((1)) 2	14.74	1971
44-4 ((1)) 14C	5.00	1997
44-4 ((1)) 27	3.16	1999
44-4 ((17)) B	1.07	2001
44-4 ((17)) H	0.78	2001
54-2 ((1)) 3	7.00	1997
54-2 ((1)) 11	13.33	1997
54-2 ((1)) 4	9.90	1999
54-2 ((1)) 14	0.85	1999
54-2 ((1)) 15	4.28	1999
54-2 ((13)) E	0.23	2001
54-2 ((13)) F	0.68	2001
54-2 ((1)) 3A	4.15	2006
Total Acreage	**649.96**	

Table 1: Parcel Inventory and Acquisition History

Prior Park Planning Efforts

Aside from existing roads, structures, and amenities built by prior occupants, much of ECLP remained in a natural state until approximately 1980 when park development commenced. As early as 1974, the Park Authority conducted open meetings to understand public needs and preferences as they related to future park development. Although public input was minimal, many participants expressed a desire to preserve the park's natural environment. That desire, also expressed in Ellanor C. Lawrence's will, continues to this day and is a driving factor in the park's management and visitor experience. Conceptual plans detailing the park's future development were completed in 1976 with a significant update in 1978, and minor revisions and updates in 1980, 1990, and 1991.

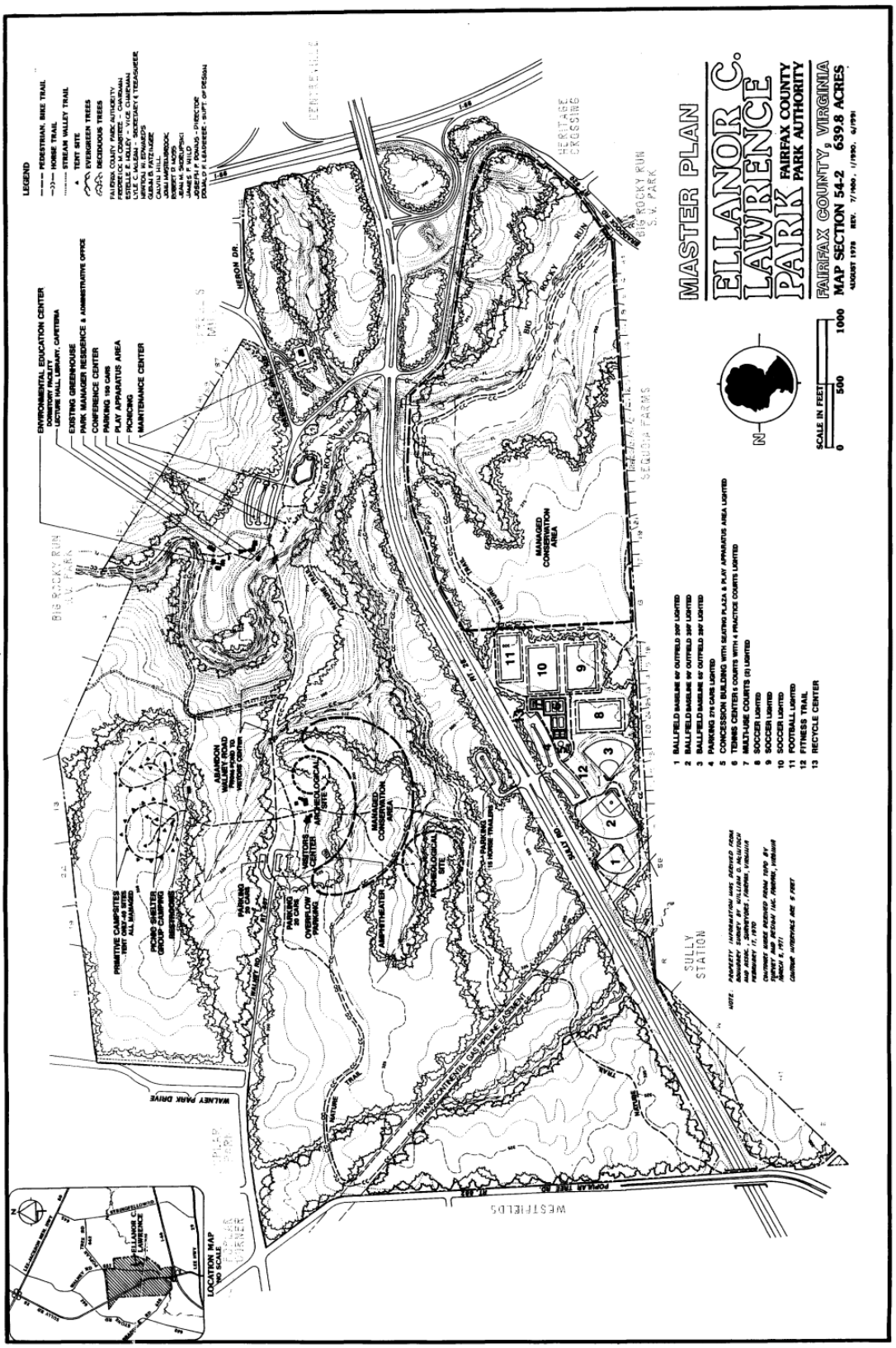


Figure 10: ECLP Master Plan, revised June 1991

Park Classification

The Fairfax County Comprehensive Plan establishes a framework intended to guide long-term planning for the county with respect to both the built and natural environments. As a component of the Comprehensive Plan, the Policy Plan addresses goals and objectives for various planning elements, including parks and recreation, and establishes a Park Classification System to guide the planning of open space and facilities.

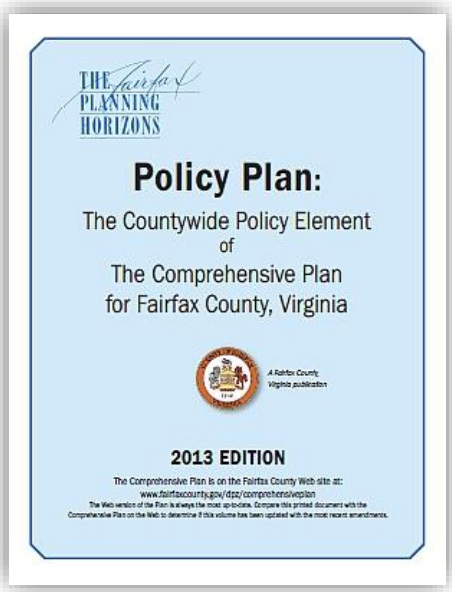


Figure 11: Fairfax County Comprehensive Plan, Policy Plan

Within the Park Classification System, ECLP is classified as a Resource-Based Park. Resource-Based Parks are intended primarily to preserve, protect, and interpret natural and/or cultural resources, although portions may be designated for recreation purposes. Location and size is determined by the specific resources and may vary greatly between individual Resource-Based Parks.

Locations for Resource-Based Parks within the county are determined by the location of specific resources. Size and access can take many forms depending on the setting of type of resources. Management plans should consider the resources and allow public use only as it is compatible with resource protection.

Resource-Based Parks are selected for inclusion in the park system because of their exemplary natural and/or cultural features. Such parks are identified, acquired, and preserved for stewardship of these resources, which provide a variety of public benefits. The lands may offer opportunities to restore degraded areas with the intent to protect, increase, and restore biodiversity of species that may inhabit these areas and provide interpretive opportunities relative to environmental and cultural resources.

In addition, recreational opportunities and facilities may also be appropriate at these parks. Development which does not adversely affect resources and which enhances awareness of the resource values or serves community leisure needs, is appropriate. Development should include opportunities to support education as well as outdoor enjoyment, and may include features such as interpretive (educational) facilities, visitor centers, nature centers, orientation kiosks, nature watching stations, demonstration areas, preserved specialty or historic structures, or gardens. Trails and connections are significant features at these parks, especially along stream valleys, which may be designated for hiking, biking, and equestrian uses. To the extent that they do not adversely impact the resources themselves, support amenities may also be developed such as picnic areas, restrooms, signs, benches, waterfront access areas, and parking.

Planning and Zoning Context

Fairfax County Comprehensive Plan Guidance

Within the framework of the Fairfax County Comprehensive Plan, ECLP is in the Bull Run Planning District and wholly within the BR3/Flatlick Community Planning Sector. The Flatlick Community Planning Sector encompasses a diverse mix of land uses. The southern portion consists primarily of single-family detached residences; the eastern edge of the planning sector is developed with townhomes.

The Bull Run Planning District also includes portions of defined Supplementary Planning Areas. The Dulles Suburban Center Area encompasses much of the park west of Walney Road; The Centreville, Centreville Farms, and Fairfax Center Areas are near but outside the ECLP boundaries. The Comprehensive Plan indicates that the development around the park will remain relatively unchanged for the foreseeable future; the low density residential uses are part of a transition area between the higher density development planned for Centreville and Fairfax Center.

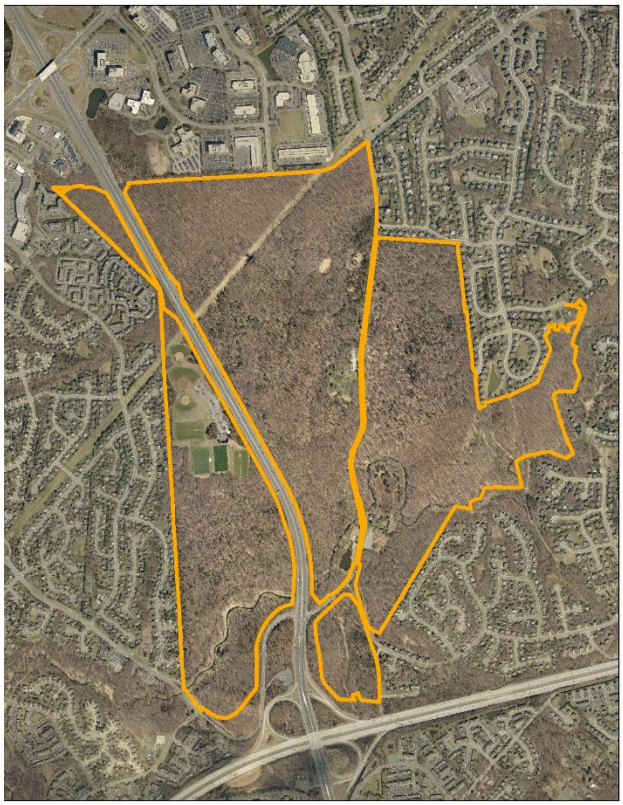


Figure 12: Current Park Boundaries (2015 Aerial Imagery)

The Comprehensive Plan provides guidance specific to ECLP's context within the Planning District and wider park system. Among the recommendations is that ECLP should "complete development in accordance with approved master plan. This park contains environmentally sensitive natural and cultural resources and park uses are subject to deed covenants; therefore, any intrusion of non-recreational development should be restricted and impacts of off-site development mitigated. The park should not be allowed to be used to fulfill private development requirements." (Fairfax County Comprehensive Plan, Area III Plan, Bull Run Planning Sector, Page 60, amended through September 20, 2016).

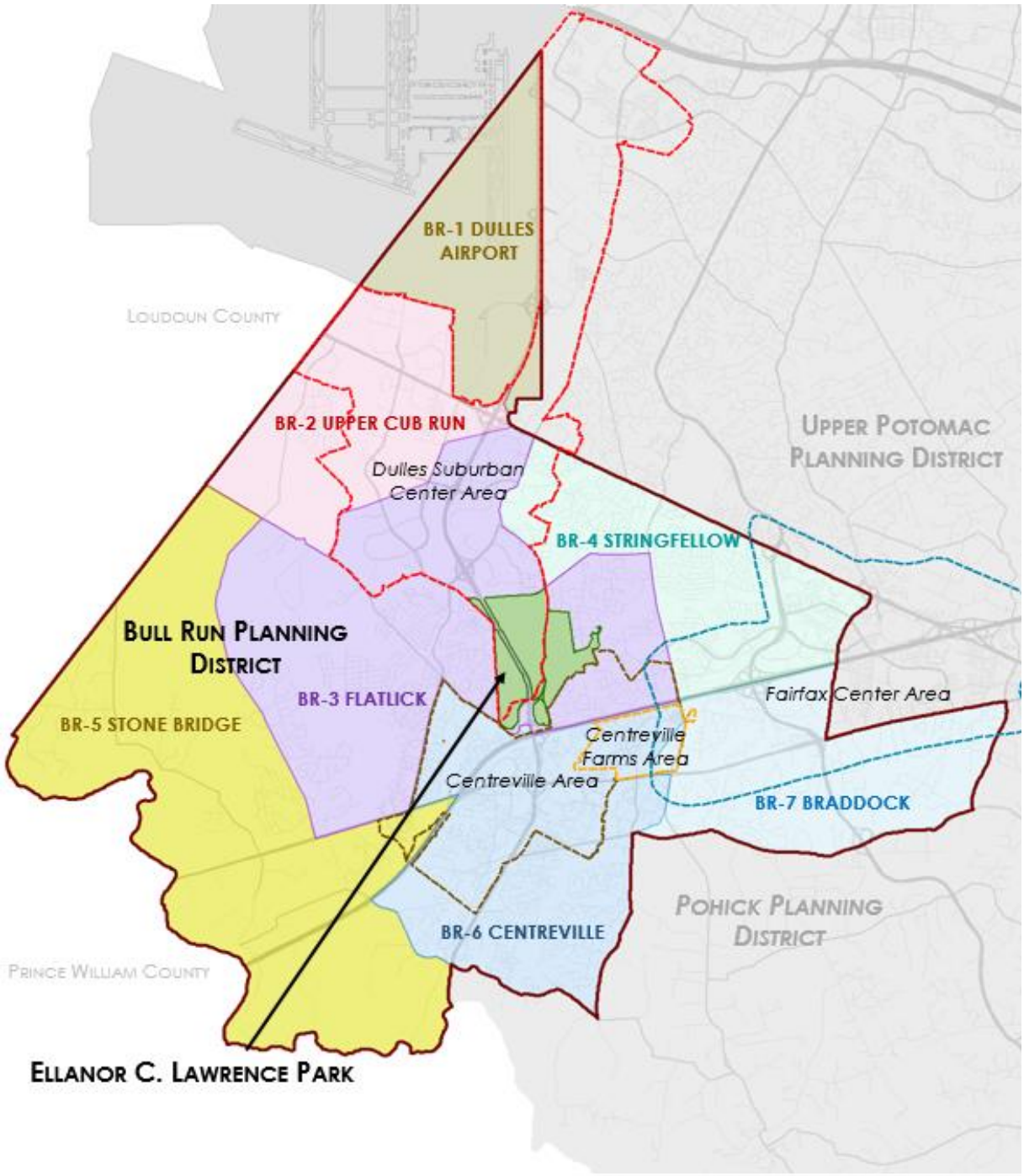


Figure 13: Comprehensive Planning Context: Bull Run Planning District, Community Planning Sectors, and Supplementary Planning Areas

The Dulles Suburban Center Plan provides further park-specific guidance. It notes that athletic fields are available at only two locations within the Suburban Center: ECLP and Floris Elementary School. The Plan indicates that these two sites are insufficient to meet the demand for athletic facilities from the community. Since the Plan language was adopted, new fields at Sully Highlands Park have been constructed and will help to

meet the athletic field need within the Dulles Suburban Center. In addition, the Plan recommends considering pedestrian/bicycle access across Route 28 to ECLP in northwestern corner of the park ((Fairfax County Comprehensive Plan, Area III Plan, Dulles Suburban Center Area-Wide Recommendations, Pages 45, 142, amended through September 20, 2016).

Fairfax County Zoning

ECLP is wholly within a residential (R-1) zoning district, with an allowed density of one dwelling unit per acre. Park uses are permitted by-right in this district. The park is not presently within an overlay district.

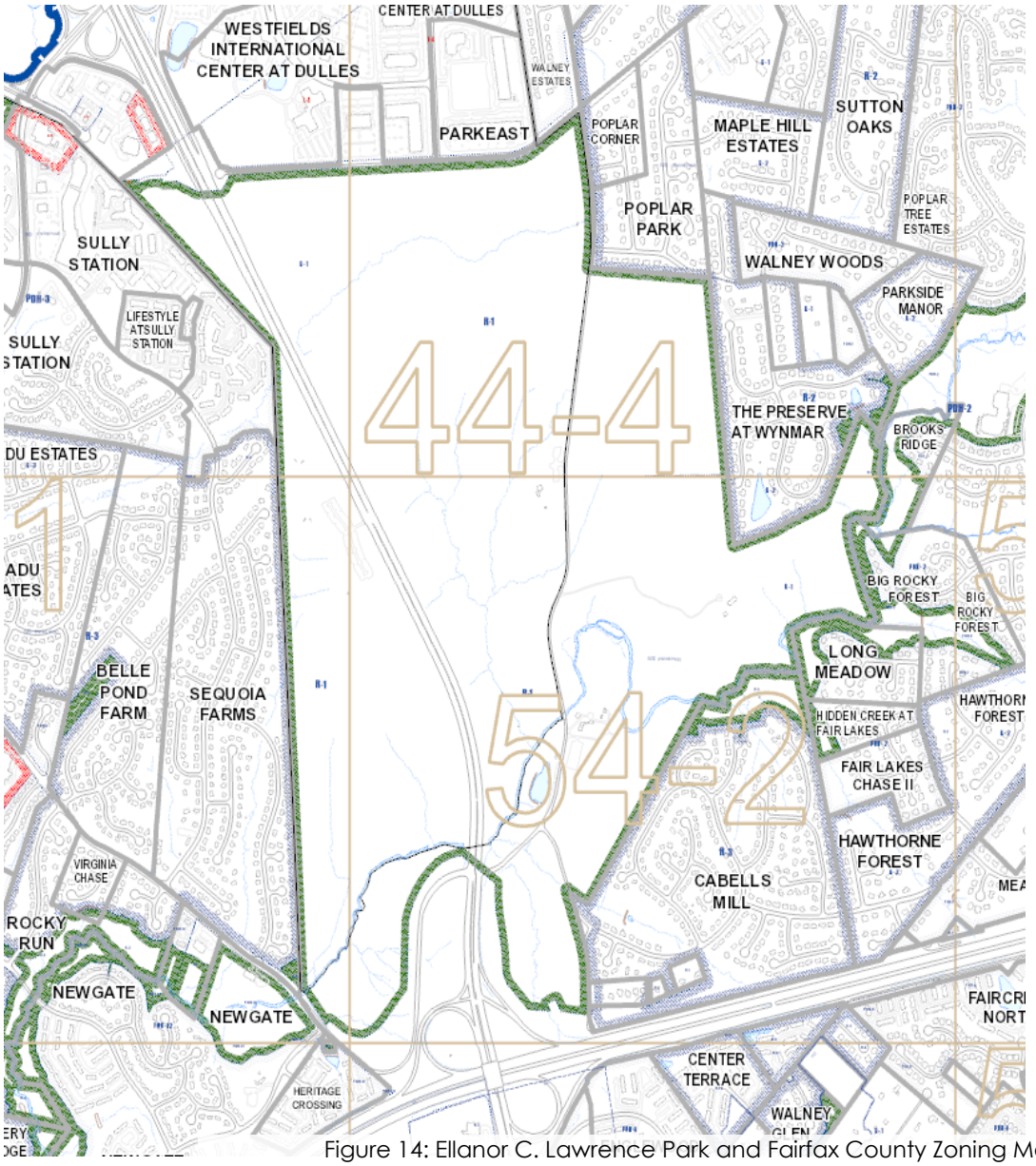


Figure 14: Ellanor C. Lawrence Park and Fairfax County Zoning Map, with neighborhoods (November 2016)

Great Parks, Great Communities

The 2011 Great Parks, Great Communities Plan (GPGC), serves as the Park Authority's long-term development plan and provides planning guidance for the park system. Incorporating the recommendations of needs assessments and other management plans, GPGC addresses the agency's physical land, natural and cultural capital, and facilities. The plan is organized by the central themes of Connectivity, Community Building, Service Delivery, Facility Reinvestment, Land Acquisition, and Resource Interpretation. Recommendations to strengthen the park system in the Bull Run Planning District and at ECLP are detailed below. Additional countywide recommendations may be found in the GPGC Plan.

Figure 15: Themes in the Great Parks, Great Communities Plan

Great Parks, Great Communities Recommendations for ECLP and Sully Woodlands	
Connectivity	
BR-C-6	Add Cabell's Mill and Sully Historic Site to an interpretive trail that links these sites to other historic structures within Fairfax County that illustrate changing architectural styles through the county's development
BR-C-7	Include Ellanor C. Lawrence, Cub Run Stream Valley, Elklick Preserve, Poplar Ford, and Hickory Forest Parks as significant nodes along a natural areas interpretive trail within the county
Community Building	
BR-CB-1	Consider the development of picnic pavilions, garden plots, and community gathering spaces in Bull Run as parks are planned, developed, and redeveloped
BR-CB-3	Plan for the future Stewardship Education Center at Sully Woodlands to serve a community building function in addition to education and interpretation
Service Delivery	
BR-SD-2	Convert athletic fields to synthetic turf and add lights where appropriate to expand capacity on existing fields
BR-SD-4	Explore opportunities to include new facility types at Sully Woodlands to the extent that the facility operations are feasible and mission appropriate

BR-SD-5	Explore opportunities to provide unique facilities that highlight or relate to the resources in this district. Such opportunities may relate to the highly significant and abundant natural and cultural resources, large amount of contiguous parkland, shoreline parkland and convergence with other jurisdictions and park providers
BR-SD-9	Initiate a Master Plan Revision process for Ellanor C. Lawrence Park to update obsolete elements of the existing plan and ensure a long-range plan that is consistent with resource stewardship, programs and community needs
Facility Reinvestment	
BR-FR-2	Renovate the Nature Center at Ellanor C. Lawrence Park including upgrades to restrooms, visitor services areas and office and storage space
BR-FR-3	Build a new picnic shelter and visitor center at Ellanor C. Lawrence Park
BR-FR-4	Improve signage at Arrowhead and Ellanor C. Lawrence Parks to clearly direct users to established, overflow and shared parking facilities
BR-FR-5	Improve parking lots, roads, and trails at Ellanor C. Lawrence Park; Improvements should include Low Impact Development (LID) and environmentally sensitive pervious treatments
BR-FR-6	Explore opportunities to create new areas for parking to support athletic field use at Ellanor C. Lawrence Park
Land Acquisition	
There are no specific land acquisition recommendations for ECLP; however, staff will consider additions to the park as opportunities arise.	
Resource Interpretation	
BR-RI-1	Improve the pond at Ellanor C. Lawrence Park to enhance the visitor experience and interpretive opportunities
BR-RI-2	Develop new and improve existing interpretive exhibits at Ellanor C. Lawrence Park including waysides, signs, and kiosks.
BR-RI-3	Complete furnishing plans for historic buildings at Ellanor C. Lawrence Park
BR-RI-4	Develop the Stewardship Education Center, a new regional-scale, permanently staffed interpretive center facility proximate to the large natural areas west of Route 28 and south of Route 50 in the Sully Woodlands region
BR-RI-5	Use natural and cultural resources in parks as the foundation for interpretation at the Stewardship Education Center in Sully Woodlands
BR-RI-6	Incorporate natural and cultural themes into wayfinding and interpretive signage to be developed within Sully Woodlands and Historic Centreville Park

BR-RI-7	Complete an overall interpretive plan to develop landscape-wide themes derived from the Sully Woodlands consultant report. Develop subsequent site-specific or thematic interpretive plans as needed
BR-RI-8	Develop hubs for interpretive experiences at designated gateways to the trail network and at existing facilities, such as Sully Historic Site, Cub Run RECenter and Historic Centreville, Poplar Ford, and Ellanor C. Lawrence Parks
BR-RI-9	Use recreation facilities as opportunities for interpretation through signage and exhibits (e.g. displays at Cub Run RECenter)
BR-RI-10	Provide adequate access and visitor amenities at key interpretive sites, such as trails and parking

Sully Woodlands Regional Master Plan

In 2006, the Park Authority Board approved a regional, watershed-based master plan for the Sully Woodlands Region. It is the intent that this master plan for ECLP incorporate and build upon its recommendations. Intended outcomes of the Sully Woodlands Regional Master Plan include several key themes:

- Establishing the Sully Woodlands as a premiere resource-based assemblage of parkland and an educational destination
- The development of a stewardship education center to facilitate visitorship and serve as a gateway to the region
- Natural and cultural resource stewardship
- Water resources and stormwater mitigation
- Recreational development, where appropriate
- Community-serving park development

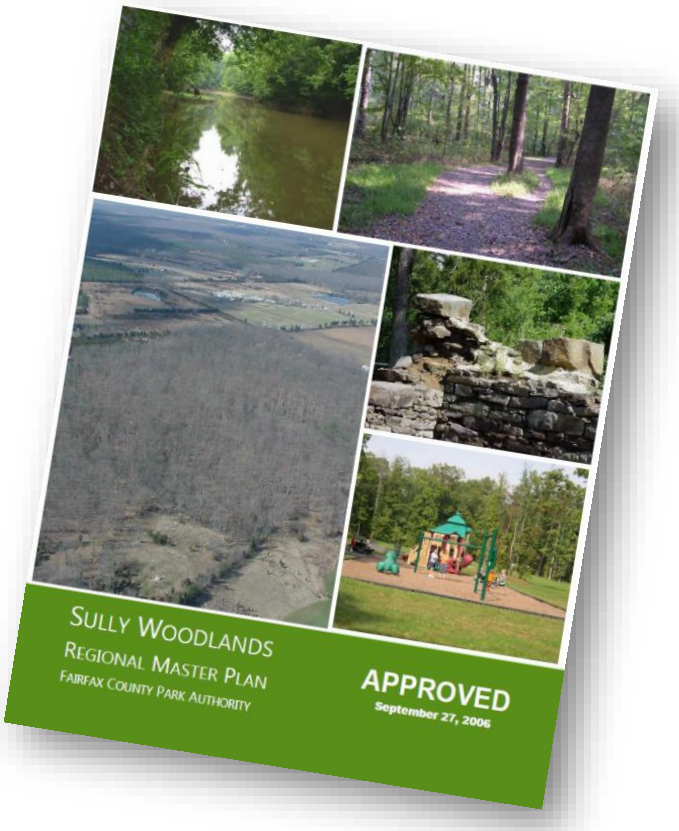


Figure 16: Sully Woodlands Regional Master Plan, 2006

Parks and Recreation Needs

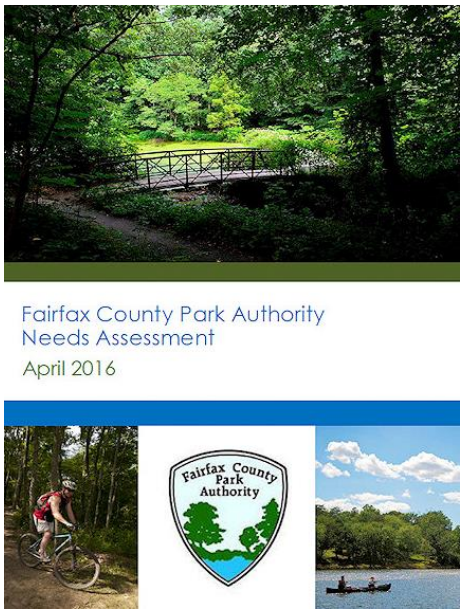


Figure 17: Fairfax County Park Authority Needs Assessment, 2016

The Park Authority assesses the need for parkland and recreation facilities through its long-range planning efforts. Needs are established through a variety of measures including community outreach, surveys to assess county citizen recreation demand, and benchmarking with peer jurisdictions both locally and nationwide. Demand is then compared to a detailed inventory of available facilities and projected population growth to identify the current and projected need for parkland and facilities.

As part of the Needs Assessment process, the Park Authority Board adopted countywide service level standards for parkland and park facilities. The recommended service level standards consider all publicly provided parks and facilities, of which the Park Authority is one of many countywide providers. Therefore, it is generally assumed that that the Park Authority will provide less than 100 percent of the total public inventory.

Park System Element	2016 Recommended Service Levels		
Local Parks	5	acres per	1,000
Playgrounds	1	site per	2800
Outdoor Sport Courts (basketball/tennis)	1	court per	2800
Skate Parks, Neighborhood	1	site per	50000
Dog Parks, Neighborhood	1	site per	86000
District & Countywide Parks	13	acres per	1000
Indoor Gyms	0.25	SF per	person
Diamond, Baseball 60 ft Fields (Youth)	1	field per	7200
Diamond, Baseball, 90 ft Fields (Youth & Adult)	1	field per	24000
Diamond, Softball 60 ft Fields (Youth)	1	field per	8800
Diamond, Softball, 65 ft Fields (Adult)	1	field per	22000
Rectangle Fields (All)	1	field per	2700

The Needs Assessment purposely excluded resource-based parks and ECLP from its analysis as they are based on resource location and connected networks rather than the county's resident population. However, the park's active recreation area is heavily used and provides little opportunity for expansion to meet additional recreational needs within the area.

Existing Conditions

Park Context

In addition to assessing area-wide needs, park planning efforts must also evaluate proposed park development within the context of the existing community. An understanding of the surrounding neighborhood helps provide a framework to visualize potential development within the park.

Adjacent Development

Figure 18: Residential and Commercial Development around Ellanor C. Lawrence Park with 2017 traffic signals along Route 28.

ECLP is located at a key transportation and suburban center within the county. Apart from office development to the north, the park is surrounded by single family residential development built in the 1970s and 1980s. The Westfield Village Apartments abut the northwestern corner of the park.

The transportation corridors along Interstate 66 and Route 28 play a key role in how the public accesses ECLP and how staff manages its resources. A defining feature of the park's geography is the north-south Route 28 corridor which bisects the park. Interstate 66, while not directly adjacent to parkland, intersects with Route 28 along ECLP's southern boundary. Signalized, at-grade intersections are located on northbound Route 28 at Walney Road, and at southbound Route 28 at the park entrance to the active recreation complex.

Pending improvements along these corridors will impact access to ECLP and its management practices. Accordingly, Fairfax County Department of Transportation (FCDOT) and Virginia Department of Transportation (VDOT) worked closely with the Park

Authority during the master planning process. Proposed changes to park access are reflected in the ECLP Conceptual Development Plan and are designed to minimize impacts to the park's resources to the greatest degree possible. These transportation changes include the closure of the entrance to the active recreation area from Route 28; the extension of Poplar Tree Road across Route 28; and the creation of a new park entrance from the new Poplar Tree Road extension. This new entrance road would allow park patrons to enter the active recreation area from the north and provide bicycle and pedestrian access and new parking.

Nearby Schools and Park Network

Typical master plan analysis includes an evaluation of other parks and recreational facilities near the park being planned. Any given individual park is not expected to provide all types of park services and facilities; but, rather, be evaluated as a component of the surrounding park network. Within five miles of ECLP, over 70 Fairfax County parks help address the area demand for open space, athletic facilities, programming, natural and cultural resource protection and interpretation. Two locations, Rock Hill and Mountain Road District Parks, both approximately two miles from ECLP, will be the recipients of significant new recreational facilities. Nearby Loudoun and Prince William County Parks, and the Northern Virginia Regional Park Authority, also provide park experiences for area residents. While not maintained by the Park Authority, school and third-party athletic fields, playgrounds, and other recreational amenities help to address the same needs as the Park Authority.

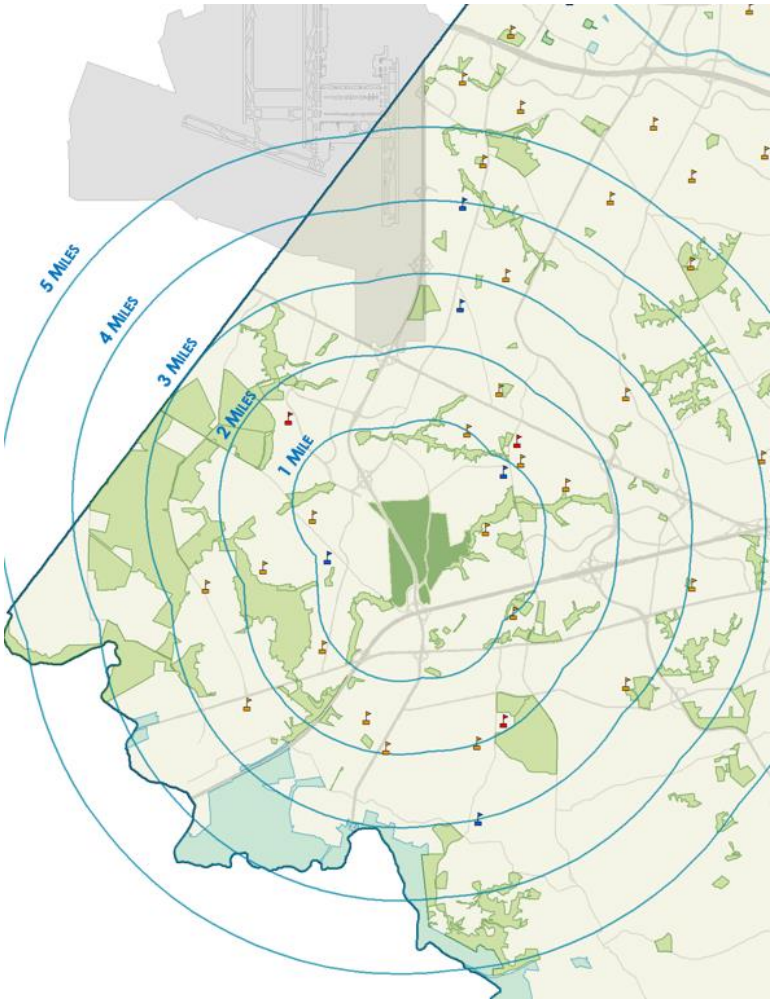


Figure 19: Parks and Schools in proximity to Ellanor C. Lawrence Park

Natural Resources

Geography, Topography and Soils

ECLP falls within the Culpeper Basin, a geographic depression underlain by Triassic to Jurassic age sedimentary and igneous rock that is distinctively younger than the surrounding Piedmont Physiographic Province. The two major bedrock substrates of the Culpeper Basin are diabase and siltstone/sandstone, which weather to soils that can support unique vegetation and rare species of plants. Diabase is an intrusive, basic metavolcanic rock that occurs in irregular dikes, stocks and sills throughout the basin. Diabase-derived soils are present in one small area of the park (Sycoline-Kelly Complex). Much of the park contains siltstone/sandstone-derived soils of numerous types.

The Culpeper Basin is characterized by relatively low relief and gently rolling to nearly level topography, with upland plateaus and slow-moving streams. ECLP contains features like these, particularly in the northern half of the park. The southern half of the park is dominated by Big Rocky Run, and the forests running along this stream are steeply sloped in some areas. The high point of the park is at 370 ft. elevation in the northeast corner at Walney Park Drive. The low point of the park is at 224 ft. elevation in the southwest corner of the park along Big Rocky Run, just before the stream exits the park and flows west under Braddock Road. Slopes in the park vary from 0% to more than 25% grade.

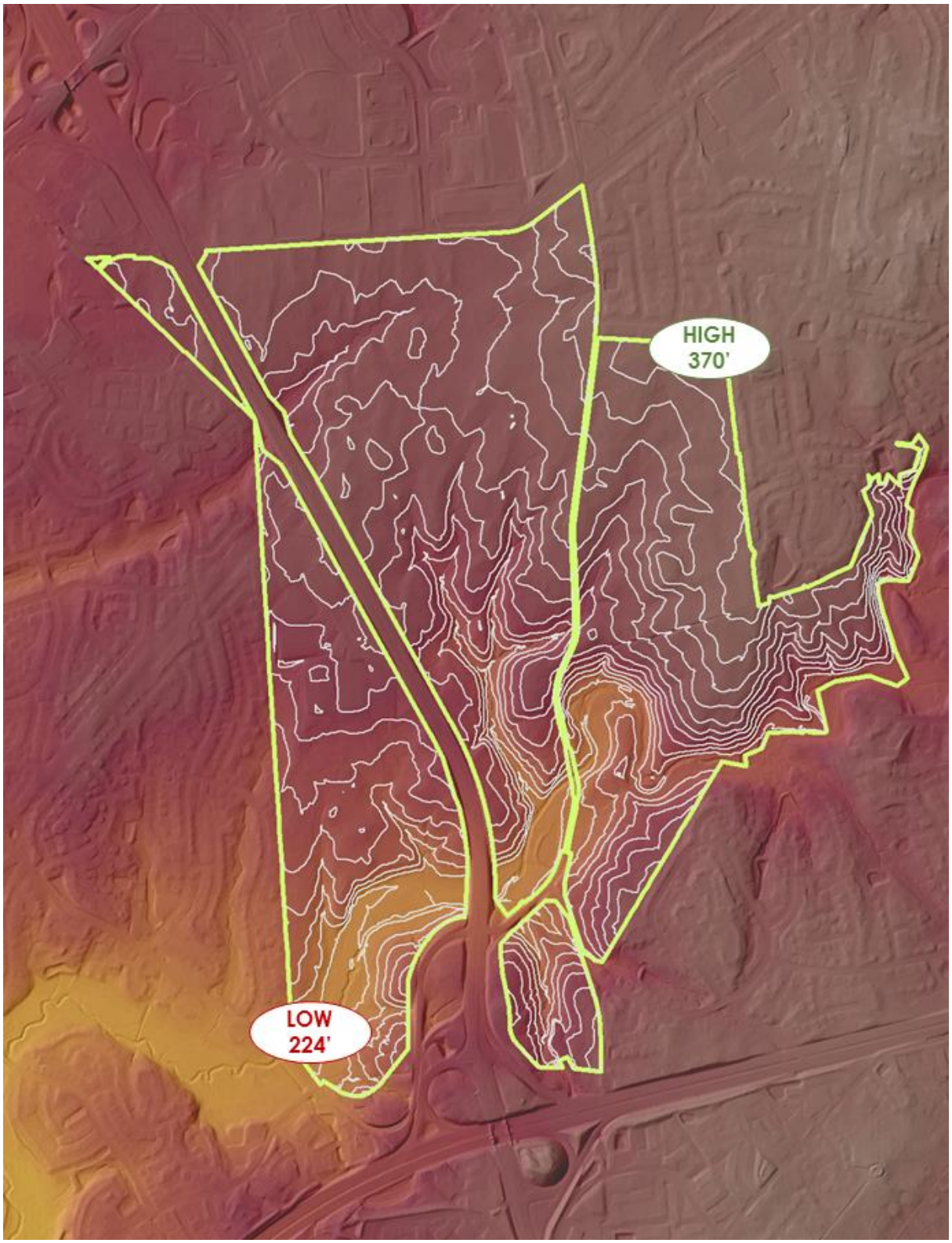


Figure 20: Elevation Contours

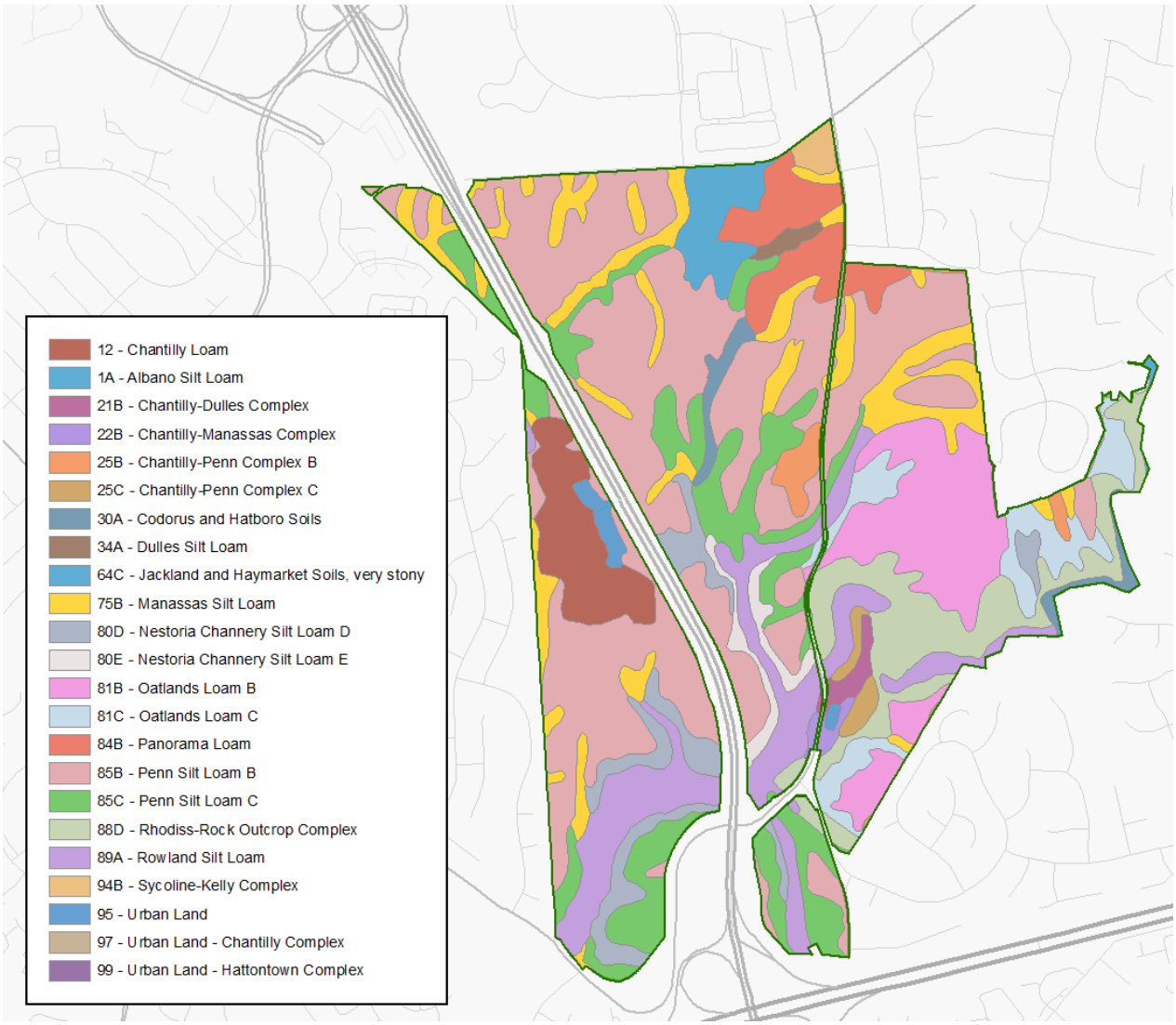


Figure 21: Soils at Ellanor C. Lawrence Park

Hydrology

ECLP lies within the Cub Run watershed, which discharges to the Occoquan Reservoir and then to the Chesapeake Bay. The Occoquan Reservoir supplies drinking water to areas of Fairfax County and other local jurisdictions.

There are several major water features within the park, most notably Big Rocky Run. Big Rocky Run originates near Fair Oaks Mall and the Fairfax County Government Center and flows southwest through the developed suburban areas of Fair Lakes and Centerville before entering the park. Big Rocky Run flows westward through the southern half of the park. Significant stormwater runoff from development impacts Big Rocky Run leading to bank erosion, channel widening, silt deposition,

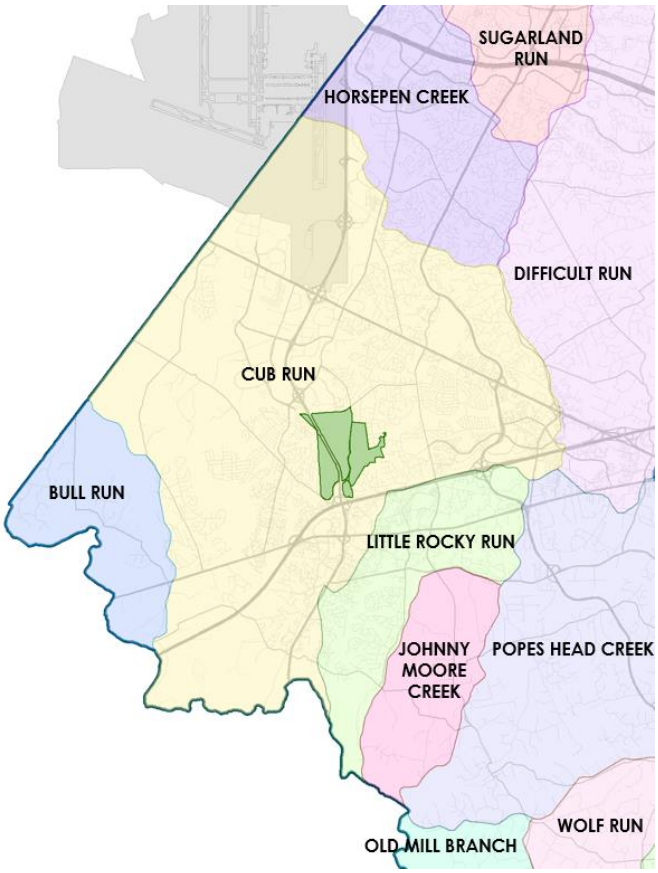


Figure 23: Watersheds in proximity to ECLP

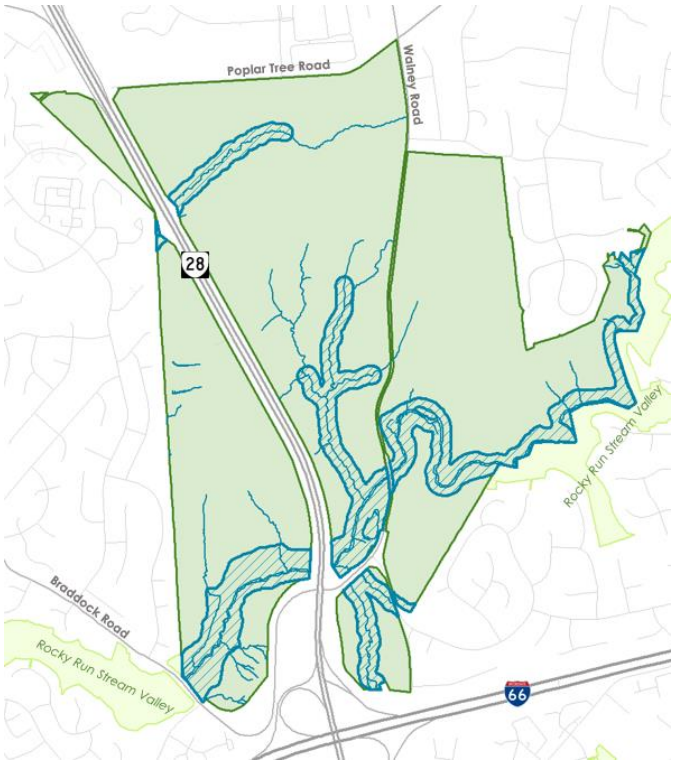


Figure 22: Chesapeake Bay Resource Protection Areas (RPA)

non-point source pollution and temperature change. A variety of citizen water quality monitoring events take place along Big Rocky Run throughout the year, focusing on the assessment of benthic macroinvertebrates. Although the creek supports a high number of fish species, the variety and quantity of benthic macroinvertebrate organisms are few, and the aquatic community is considered impaired by the United States Environmental Protection Agency (USEPA). Additionally, the stream has shown bacterial impairment, resulting in an impaired classification for recreational use. The portion of the stream in the southwest corner of the

park between Virginia Route 28 and Braddock Road was restored by the Department of Public Works and Environmental Services in 2014.

Walney Creek, in contrast, is contained entirely within the park and is characterized by forested headwaters that are relatively free from development and human disturbance; accordingly, it has a generally high water quality. Walney Creek is an ecologically healthy aquatic system that supports a variety of sensitive species at different trophic levels, including benthic macroinvertebrates rarely found in Fairfax County.

Roundlick Run flows westward across the northern section of the park, entering the park from a stormwater management pond adjacent to Walney Road in the Poplar Park neighborhood. The stream flows through a culvert under Walney Road and there is erosion along the banks at various points as it passes through the Transcontinental Gas Pipeline easement. At lower elevations, the stream forms braided depressions. This area was identified for minor repair during 2014. The planned restoration elements could be built within the stream at a later date.

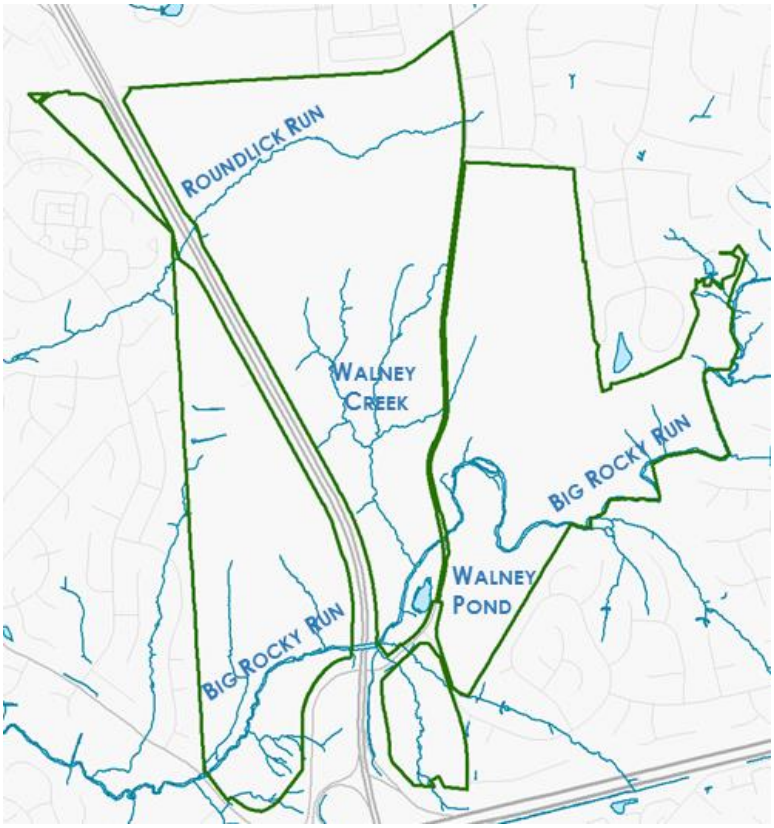


Figure 24: Primary Water Features at Ellanor C. Lawrence Park

Walney Pond is a one-acre man-made containment pond that was first excavated in the 1950s. As part of the rural landscape, for many years it was used as a local fishing hole and sometimes for ice skating. By the early 1990s, the pond had filled in with sediment from the surrounding developments. The pond was drained in conjunction with a sewer line replacement project in 1995. The Park Authority took advantage of this opportunity to remove accumulated sediments and re-grade and reshape the features. A variety of native aquatic and emergent plants, shrubs, and trees were planted. Largemouth bass, channel catfish, and sunfish are stocked as needed. Additional special features include a picnic shelter, a boardwalk, two deck platforms, nest boxes, and informational and interpretive signs. A marsh-like setting exists in the shallow end of the pond. With periodic renovations, Walney Pond should continue to serve the community through provision of wildlife habitat, surface runoff control, environmental education and recreation, adding to the overall landscape of the park.

Vegetation and Natural Communities

The vegetation of ECLP has been well-studied through various inventories and special projects over the years. In 2013 a Forest Stewardship Plan was prepared by the Virginia Department of Forestry which included a forest stand delineation based on *Forest Cover Types of the United States and Canada*. A Natural Vegetation Community Classification was conducted by a vegetation ecologist of the Park Authority's Natural Resources Branch (NRB) in 2016, using the *Natural Communities of Virginia, 2nd Approximation* standard. These studies informed the creation of Resource Protection Zones further described in this document's Conceptual Development Plan.

Approximately 592 acres of the 650-acre park is forested. Most of the forest is relatively young, dating from the late 1940s to early 1950s. On the 1937 historic aerial imagery of Fairfax County, much of the park is visibly utilized as cropland, with some forested stands located along the northern and southern borders.

Figure 25: Typical Forested Area of ECLP

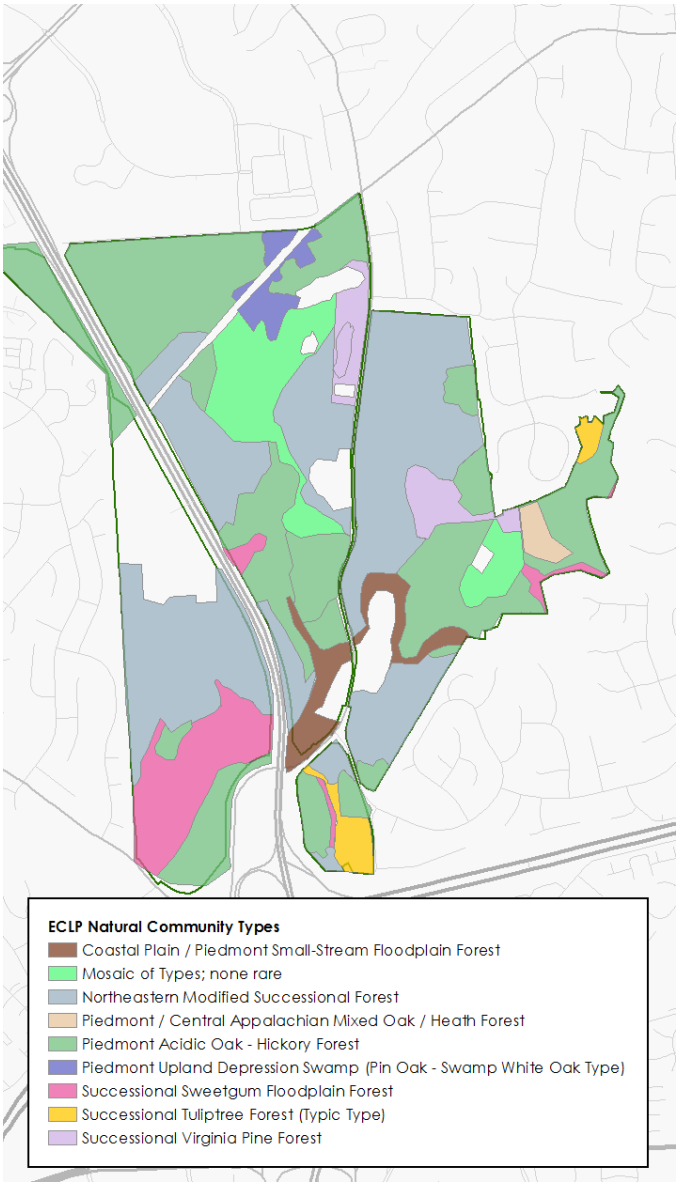


Figure 26: Natural Community Types

The primary forested natural community within the park is Piedmont Acidic Oak-Hickory Forest. Acidic Oak-Hickory Forests are widely distributed throughout the Piedmont of Virginia, occurring over well-drained acidic upland soils deriving from siltstone. Dominant tree species include white oak (*Quercus alba*), black oak (*Quercus velutina*), northern red oak (*Quercus rubra*), southern red oak (*Quercus falcata*), mockernut hickory (*Carya tomentosa*) and pignut hickory (*Carya glabra*). In the Forest Stewardship Plan, these forests are classified as type 52 – White Oak – Black Oak – Northern Red Oak or type 53 – White Oak, and include stands A, C, H, I, J, K and O. Much of the rest of the forest in the park is classified as Northeastern Modified Successional Forest. These modified stands typically contain more non-native invasive species than other areas of the park, resulting in lower overall habitat quality. These areas contain portions of the Acidic Oak-Hickory natural communities but are dominated by, or have a strong component of, red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), Virginia pine (*Pinus virginiana*), sweetgum (*Liquidambar styraciflua*), black cherry (*Prunus serotina*) and dead or dying white ash (*Fraxinus pennsylvanica*). In the Forest Stewardship Plan, these forests are mainly classified as type 108 – Red Maple, and include stands B, F and L.

One natural community type occurring within the park is considered rare and of conservation concern: Piedmont Upland Depression Swamp (Pin Oak – Swamp White Oak Type). This community typically forms over clay hardpan, with shallow, seasonal flooding induced by perched water tables during the winter and spring months. This community type is located along Roundlick Run at the northern end of the park. The Transcontinental Gas pipeline easement bisects the natural community.

Figure 27: A controlled burn at ECLP

Other natural community types found within the park include: Coastal Plain/Piedmont Small-Stream Floodplain Forest, Piedmont/Central Appalachian Mixed Oak/Heath Forest, Successional Sweetgum Floodplain Forest, Successional Tuliptree Forest (Typic Type) and Successional Virginia Pine Forest. There are also several managed meadows in the park that are kept open through prescribed burning and mowing on a semi-annual basis. Such actions are prescribed to reduce woody vegetation (both native and invasive) and promote native warm season grasses and forbs.

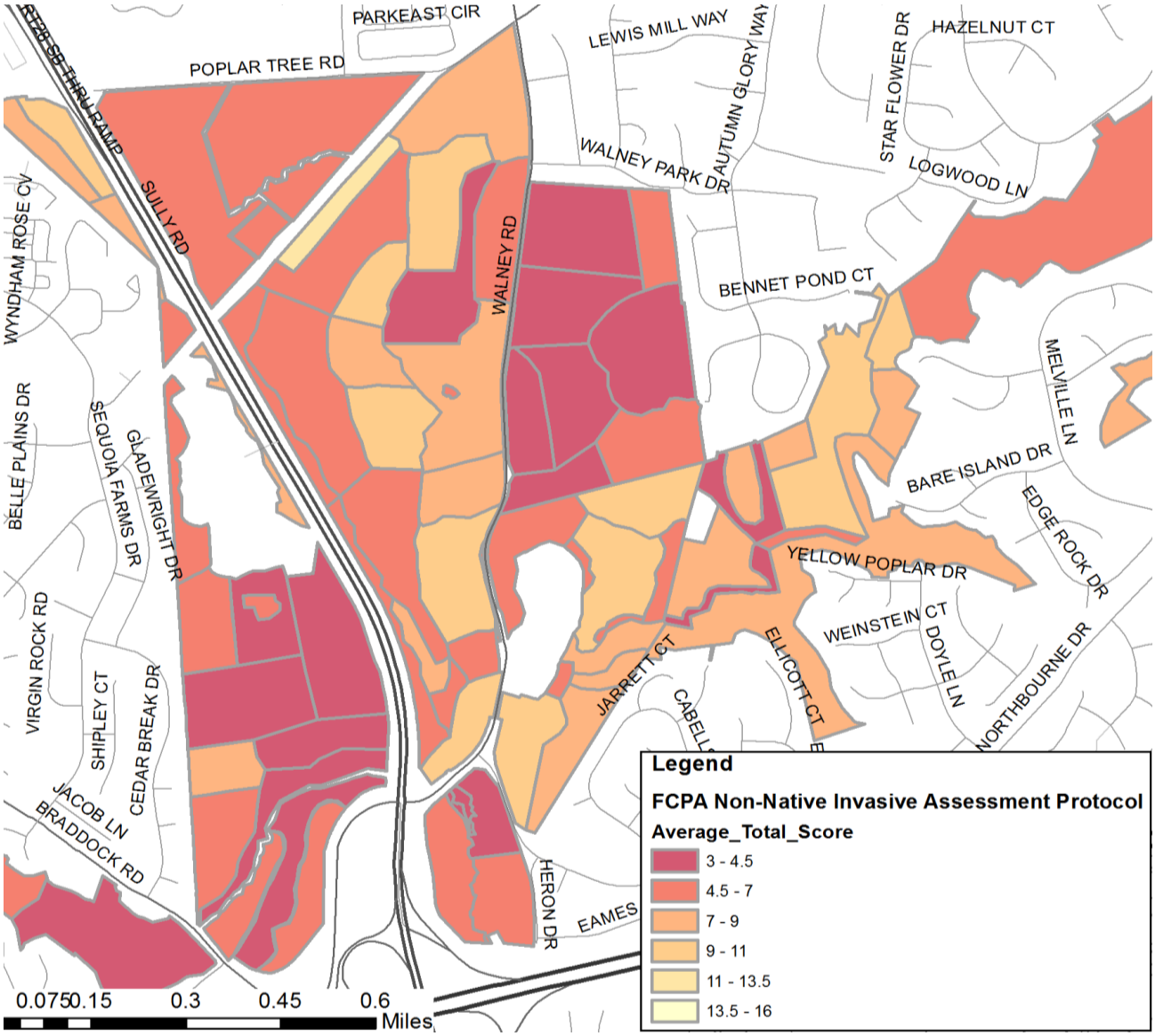


Figure 28: Non-Native Invasive Plant Assessment, 2012

The condition of the park's natural communities ranges from good to poor, with non-native invasive plants and overbrowse by white-tailed deer posing two major threats to long-term forest health. The park was assessed for non-native invasive plant impacts in 2012 using a multifaceted scoring system developed for the Park Authority in 2009 (see Biohabitats ISM, 2009, *Fairfax County Non-Native Invasive Plant Assessment (NNIAP)*). Higher scores represent areas that are less impacted by non-native invasive plants and have a higher likelihood of restoration and improvement with regular treatment.

Twenty-seven permanent survey plots have been established within the park to measure browse by white-tailed deer and analyze change over time. Five browse plots were initially established in 2010, with 22 more added in 2013 as part of the Helping Our Land Heal pilot study. In 2015 and 2016, all 27 plots were re-surveyed.

Figure 29: Browse Impact Survey, 2016

Analysis (Wilcoxon Signed Rank Test for non-parametric paired data) showed a statistically significant improvement in browse levels at the 27 plots between 2013 and 2015, when an intensive sharpshooting operation was implemented at the park. Of the 27 plots, 15 percent had the same levels of browse in both years and 85 percent showed decreased levels of browse from 2013 to 2015. No plots demonstrated higher browse levels in 2015 than in 2013.

Between the dates of these two browse surveys, 147 deer were removed from ECLP via sharpshooting and archery. The 2016 survey data has not yet been analyzed.

"Helping Our Land Heal" Pilot Forest Restoration Study

From 2012-2015, ecological restoration and natural resource management work was carried out at ECLP using capital improvement funds and other funding sources. The project goals were to 1) promote the natural regeneration of native species, 2) to limit the negative impacts of humans, white-tailed deer and non-native invasive species in the park, and 3) to develop practices and processes that can be replicated by other land managers. Over twenty hands-on restoration practices were implemented at the park to meet project goals, including forestry treatments, invasive plant control, targeted deer management, soil treatments, and natural disturbance regime reintroduction (see Williams, Owen, 2015, *Helping Our Land Heal Final Progress Report*, prepared for the Fairfax County Park Authority).

Wildlife

ECLP exists as a natural refuge within a highly-developed region of northern Virginia, providing stopover and breeding habitat for numerous species of birds, mammals, reptiles, amphibians and insects. Species lists have been compiled for various groups of animals observed within the park and are kept on file with the Natural Resource Management and Protection Branch.

Birding is a popular pastime at the park, as well as an interpretive focus for park programs. Avian biodiversity at the park is high due to the numerous habitat types, the overall size of the park and the availability of food and shelter. The national e-Bird database compiled by recreational birders lists 128 bird species for the park, while park staff have compiled a list of 136 species. Wild turkey is a common sight

Figure 30: Bluebird boxes near Walney

for park visitors, including flocks of young. Ten birds of prey and twenty-six wood warblers have been observed.

Figure 31: Coyote seen on an infrared game camera, 2013

Mammal diversity is high within the park. Common species include white-tailed deer, coyote, beaver, eastern gray squirrel, chipmunk, raccoon, meadow vole, woodland vole, short-tailed shrew, southern flying squirrel, woodchuck, muskrat, white-footed mouse, eastern mole, eastern cottontail rabbit, gray fox, red fox, big brown bat, eastern red bat, little brown bat, and tricolored bat (see section below on Rare, Threatened and Endangered Species). Coyote are frequently observed on infrared game cameras placed in the park for long-term monitoring.

White-tailed deer are a common native species to northern Virginia, but have become overabundant due to increased food availability, low predation and low hunting pressure. A public safety risk from overabundant deer is increased deer-vehicle collisions. Park ecologists are also concerned about the long-term forest health, as deer consume most native woody plant species and can destroy the forest understory through overbrowse. The loss of understory plants results in trophic cascade effects including a loss of insects and birds. An adult deer typically consumes 3-5% of its body weight in plant matter each day.

At ECLP deer are managed for population reduction using two management methods: archery and sharpshooting. Sharpshooting was conducted by the Fairfax County Police Department nearly annually from 2000-2010. Vendor-contracted sharpshooting, using a slightly different strategy, was also implemented by the Park Authority from 2013-2015 as part of the Helping Our Land Heal pilot study. Archery hunting was first implemented in the fall of 2010, continued through 2013, and started again in the fall of 2015 through the present. The archery hunting season generally lasts from September to February in parks included in the Fairfax County Deer Management Program, which is overseen by the Fairfax County Police Department and Fairfax County Wildlife Biologist. Archery will likely be the preferred management method at this park in future years due to its rate of success in harvesting deer, its cost-effectiveness and excellent safety record. The park can also remain fully open during archery season, since hunting is considered a compatible park use with all the other planned activities including hiking. In contrast, sharpshooting can be more effective at lowering the deer population quickly, but it is more expensive, requires specially trained personnel and requires additional safety and notification measures.

Deer density estimates were completed at ECLP using camera trap surveys during 2014, 2015 and 2016. Each survey followed a standard protocol to capture pictures of deer using infrared triggered wildlife cameras, located over bait piles of corn during the month of August prior to the hunting season. Each survey repeated the method identically so that population estimates could be compared to one another. Additionally, a forward-looking infrared (FLIR) survey was conducted by aircraft in 2014 to count deer on a specific night in the park during winter.

Survey Type	Dates	Estimated # Deer in Park
FLIR aerial survey	February 6, 2014	46-58
Baited camera survey	August 7-25, 2014	34.43
Baited camera survey	August 17-31, 2015	53.86

Table 2: Deer Density Estimates, 2014-2015

Herpetologists have documented numerous species of reptiles and amphibians at ECLP. For amphibians, these include seven species of salamanders: spotted, marbled, northern dusky, northern two-lined, three-lined, northern red-backed, and slimy; American and Fowler's toads; and five species of frogs: gray tree frog, green frog, American bullfrog, wood, and Pickerel frogs. The diversity of amphibians speaks well to the health of the park. To support these species, there must be sufficient upland and seasonally inundated wetland habitat to support breeding and overwintering sites. Wetlands that support breeding amphibians should be a high priority for conservation and restoration.

Figure 32: Painted Turtle

For reptiles, twelve species of snakes and six species of native turtles have been confirmed in the park, with some of the most interesting being the Eastern hognose, Queen snake, and Eastern musk turtle. Sustained efforts by park staff have provided a long-term inventory of reptiles not typically available at other parks. There have been at least three introduced species of turtles found and removed. Major threats to these introduced species include harvesting turtles as a food source. Though clearly prohibited, this activity still occurs within the park. Snakes are also frequently killed out of fear, but are protected within the park, including the only venomous species in Fairfax County, the Northern copperhead.

Rare, Threatened and Endangered Species

The Virginia Natural Heritage Program (VANHP), within the Virginia Department of Conservation and Recreation, defines and maps the state's known locations of rare, threatened and endangered species and natural communities. Natural resources can be assigned multiple levels of rarity and endangerment, with designated status under the U.S. Endangered Species Act being the highest level of protection for a species. Other levels include VANHP's lists of rare species and natural communities in the commonwealth, which are updated every two years. Each species or community identified on these lists is provided a state and global rank of rarity. There are also species that are of more general conservation concern in the commonwealth, as identified by groups such as Partners in Flight (PIF) or Partners for Amphibian and Reptile Conservation (PARC).

Figure 33: Small-whorled pogonia (*Isotria medeoloides*)
Source: Wikimedia Commons

There are no species of designated status under the U.S. Endangered Species Act known to occur in ECLP. Suitable habitat for small-whorled pogonia (*Isotria medeoloides*) is present in the park, yet no formal surveys have been conducted for this species. However, the park has had many casual surveys by visitors and amateur botanists over the years, and no populations of this species have been identified. This species should be surveyed for prior to new land-disturbing activities in woodlands.

A population of purple milkweed (*Asclepias purpurascens*), ranked by the VANHP as state imperiled/globally secure (S2/G5), is found within the Transcontinental Gas Pipeline easement across the northern section of the park. The plant occurs at several locations within the mowed area of the easement and was last surveyed by staff in 2013. In December 2015, the Park Authority entered a Memorandum of Understanding with the Transcontinental Gas Pipe Line Company, LLC ("Transco") to provide for the mutually beneficial control of vegetative growth within this easement. The Park Authority agreed to mow the right-of-way at least once annually to promote and preserve the flora, fauna and animal habitat within the easement while Transco retains responsibility for trimming woody vegetation.

Figure 34: Purple milkweed (*Asclepias purpurascens*)
Source: Wikimedia Commons

The North American populations of numerous bat species are in sharp decline due to white-nose syndrome (WNS), a fungal skin infection first discovered in 2007 that is already responsible for

over 1 million bat deaths. Many bats that were formerly common in our region are now facing endangerment. Bats documented by staff within in the park include big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), little brown bat (*Myotis lucifugus*), and tricolored bat (*Perimyotis subflavus*). There are numerous other bat species likely to occur in the park and an inventory should be a focus of future survey efforts. Of the species known to occur, Little Brown Bat and Tricolored bat are both proposed as endangered in Virginia. Northern long-eared Myotis (*Myotis septentrionalis*) is listed as Threatened under the U.S. Endangered Species Act and is proposed as threatened in Virginia, but has not been identified in the park. As more and more bats are affected by white-nose syndrome, there is certainly the potential for federally- or state-listed bat species to occur within the park.

Cultural Resources

Connecting the community to the county's cultural resources is one of the core components to the mission of ECLP. Apart from the Transcontinental Gas Pipeline and the active recreation area, any areas of proposed ground disturbance within the park should first be evaluated for significance by professional archaeological staff. While the Walney and Middlegate complexes form the core of the park's historic context, numerous sites are present throughout the park, both identified and unidentified.

A brief description of the primary resources is provided below. Significantly greater detail can be found in the ECLP Cultural Landscape Report (CLR) prepared for the Park Authority in 2015 by Versar, Inc. and the various reports maintained by the Park Authority. These reports provide additional information regarding the management and treatment of the park's cultural resources and, in conjunction with park staff and Park Authority archaeologists and historic preservationists, forms the basis for the cultural resource recommendations in this master plan.

Figure 35: Archaeological Survey near Walney, July 2016.
Note Walney Road in the background.

Walney Area

Built in c. 1768 and enlarged in 1875, Walney House and its associated structures form this core area of the park. The Park Authority renovated the interior of Walney House in the early 1980s and the building currently serves as the park's visitor center and administrative headquarters. Farm outbuildings include the remains of a dairy, icehouse, ice pond, barn, burial plot, and possible slave cabins or other structures. Apart from the main house and a reconstructed smokehouse, all are in ruins and in various stages of preservation. The dairy is the best preserved while the foundations of the ice house are the worst. A Machen family burial site is reported in the vicinity; however, the known remains originally interred have been moved to the cemetery at St. John's Episcopal Church. Burial plots dating to the Browns' and Lewis' occupation of the property, as well as those enslaved people during these periods, may be present in the area; however, no cemeteries have been conclusively identified within the park. Outside of the Walney Complex, multiple remnant features are found within the park boundaries, such as the walls and fence lines associated with past agricultural activities.

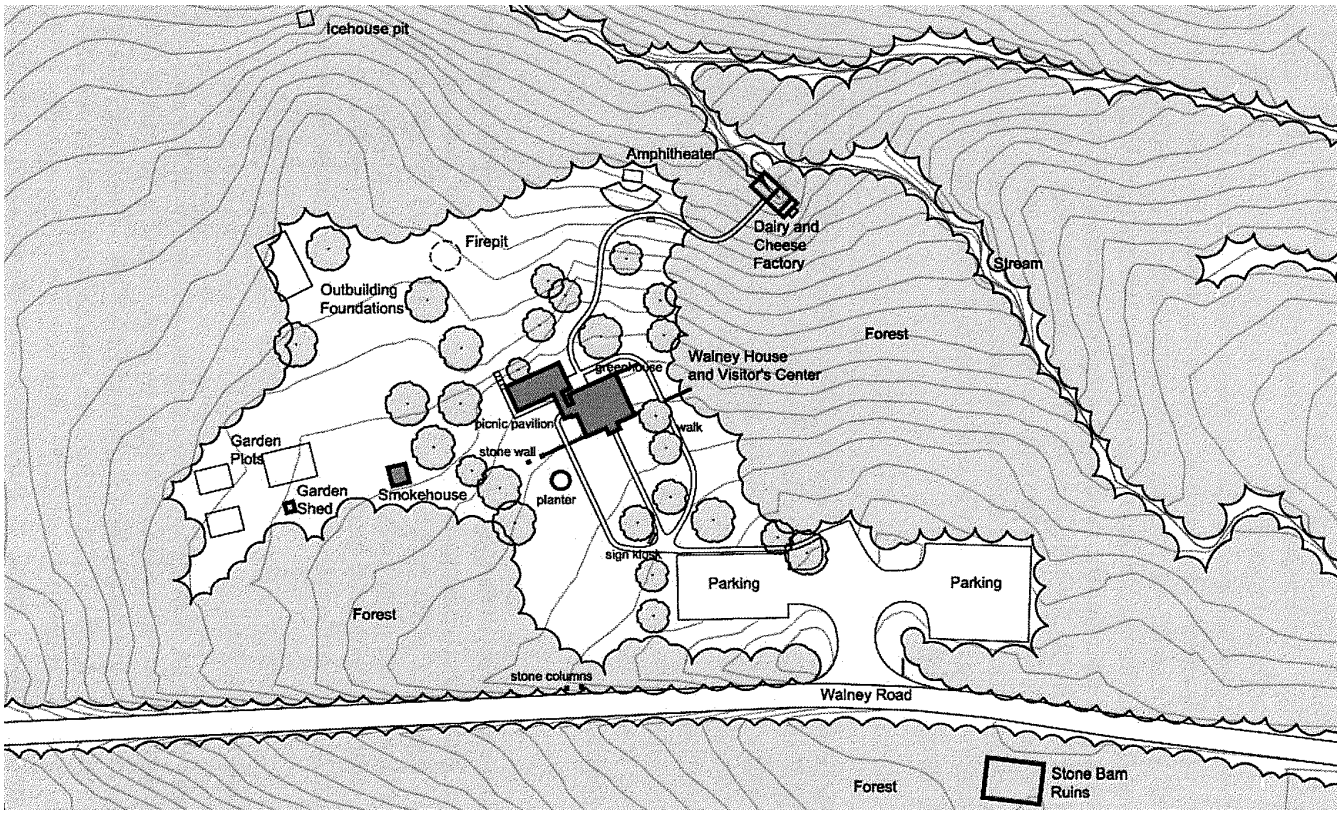


Figure 36: Walney/Visitor Complex as depicted in the park's 2015 Cultural Landscape Report

Middlegate Area

This complex consists primarily of the Middlegate House, Cabell's Mill, and the features associated with the house and mill. The house has undergone renovation over the years, most notably by the Lawrences who added a connected wing and stone breezeway in 1944. Associated frame buildings were refaced in stone, and stone retaining walls were added to the property.

Cabell's Mill has been the subject of renovation, although to a lesser degree than the Middlegate House. The basic structure remains an example of an early republic industrial building, common during the years 1790 to 1829. Supporting structures such as the wooden millrace connecting Big Rocky Run to the mill were removed during the Lawrence years. Some features remain, such as the 18th century bulkhead for a millrace along Rocky Run.

Figure 38: Learning about archaeology at ECLP, 2014

Walney Pond, originally created to serve the farm, is one of the more popular destinations within the park and provides a venue for recreation, natural resource interpretation, and relief from the suburban environment surrounding the park. The area has been

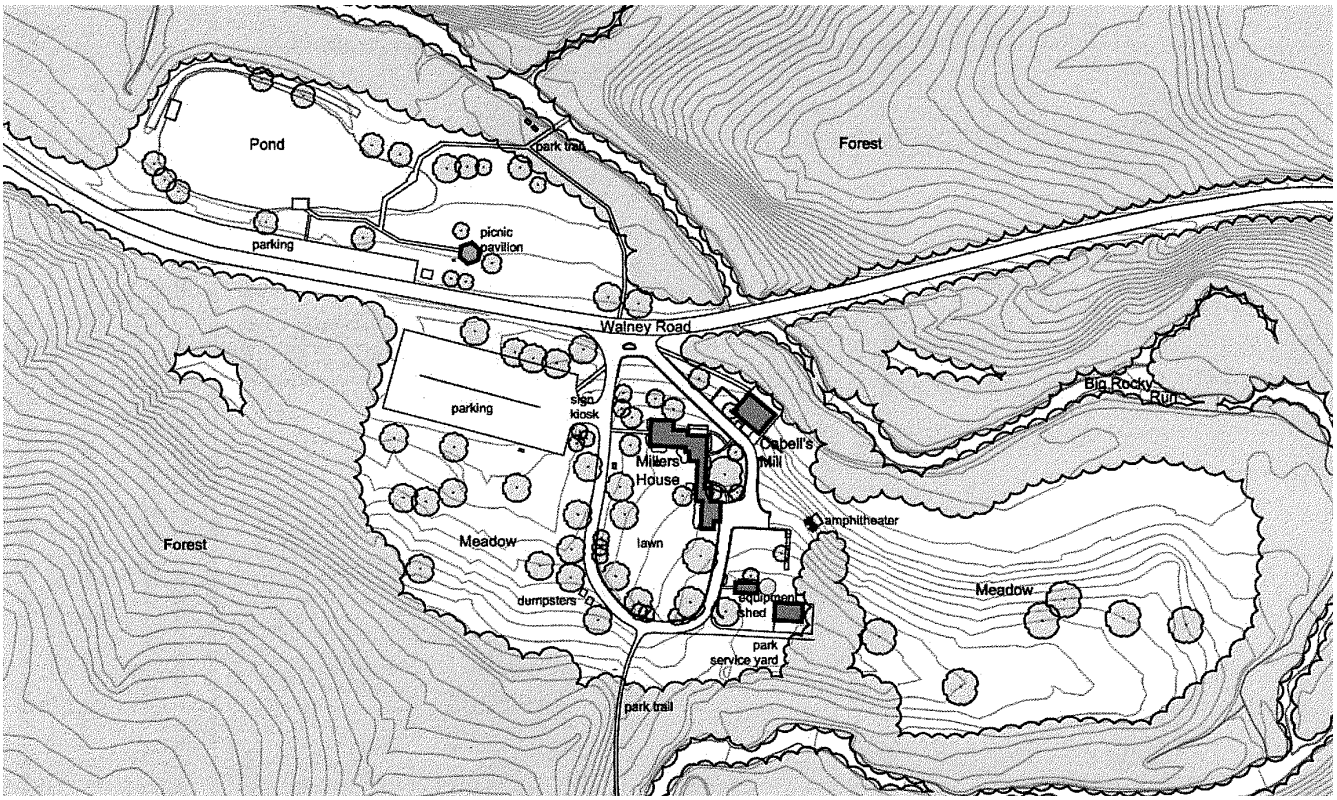


Figure 37: Middlegate area as depicted in the park's 2015 Cultural Landscape Report

improved with parking, a picnic pavilion, observation areas, and unpaved trails that connect to the broader park trail network.

Of note, the park contains numerous stacked stone walls, once used to delineate between properties and agricultural fields. One such stone wall along the park's eastern border on parcel 54-2 ((13)) F is adjacent to residential lots and, although the park boundary is marked with signage, regular monitoring is necessary to avoid encroachment and inadvertent alteration of this resource.

Archaeological Resources

As detailed in the ECLP management plans, the park contains many known and unknown archaeological resources. An inventory of known resources, cataloged with the Virginia Department of Historic Resources (VDHR) as of 2015 is provided below. Multiple other sites exist as documented by Park Authority staff. The park also contains multiple sites documented on the Fairfax County Civil War Sites Inventory.

VDHR Site	Description	VDHR Date Range	VDHR Survey Date
44FX0296	Farmstead	1800-1825	Sept. 26, 1980
44FX0297	Farmstead	1825-1874	Sept. 26, 1980
44FX0298	Farmstead	1875-1899	Sept. 26, 1980
44FX0350	Walney: dairy, dwelling, farmstead, military camp, military field hospital, other	1700-1799, 1775-1799, 1850-1874, 1876	Not entered
44FX0392	Stone-lined ice house	1850-1899	Oct. 3, 1981
44FX0393	Log shed (standing in 1981)	Not entered	June 10, 1981
44FX0396	Prehistoric lithic scatter	15,000 B.C. – 1606 A.D.	Feb. 20, 1981
44FX0536	Outbuilding	Not entered	May 10, 1982
44FX0537	Prehistoric lithic scatter/historical artifact scatter, and stone foundation	Not entered	April 16, 1982
44FX0543	Outbuilding/barn	1750-1799, 1800-1849	July 8, 1982
44FX0962	Informant-reported Civil War campsite (Union Army)	1850-1874	Sept. 1, 1985
44FX1018	Artifact scatter with Civil War component	1850-1899	March 1, 1986
44FX1019	Artifact scatter and informant-reported Civil War camp	1850-1899	March 1, 1986

44FX1556	Prehistoric lithic scatter	15,000 B.C. – 1606 A.D.	March 24, 1989
44FX1965	Late 18th-early 19th century dwelling, kitchen, and outbuildings; formerly within ECLP, now in VDOT right-of-way	15,000 B.C. – 1606 A.D., 1800-1899	June 23, 1992
44FX2039	Prehistoric fish dam, linear arrangement of stacked stone	15,000 B.C. – 1606 A.D.	Sept. 17, 1993
44FX3457	Prehistoric lithic scatter	15,000 B.C. – 1606 A.D.	Sept. 11, 2009
44FX3459	Demolished barn remains	1775-1799	Sept. 11, 2009

Table 3: VDHR-documented archaeological sites within the park

Athletic Fields and Active Recreation Area

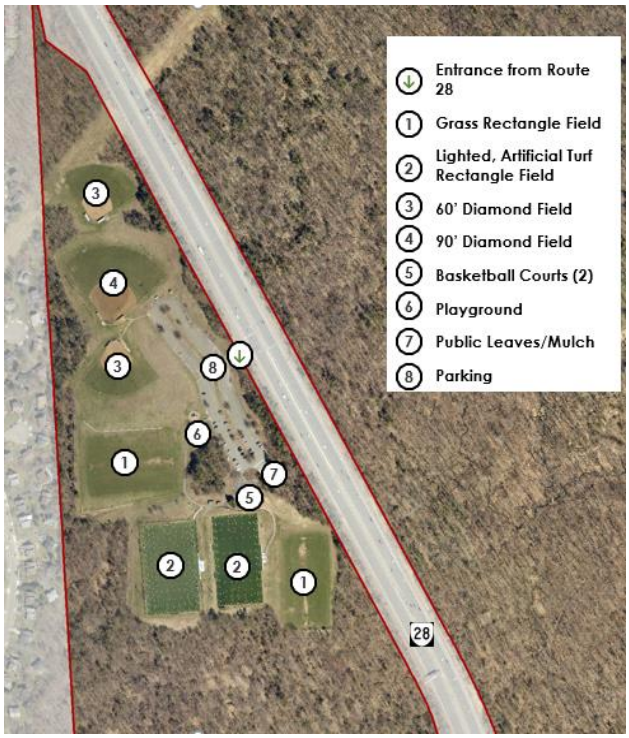


Figure 39: Active Recreation Area, Existing Conditions, 2017

ECLP contains active and passive recreational features. The active recreational features are clustered in the west-northwestern section of the park separated from the larger park area by Route 28. The active recreation area currently is developed with the following amenities:

- Two grass rectangular fields
- Two lighted artificial turf rectangular fields
- Three diamond fields (1 – 90' & 2 – 60'), of which two are lighted, including the 90'
- Playground with two structures
- Public leaf and woodchip mulch bins
- Two basketball courts
- Exercise station course
- Four open play areas

Resource-based and Interpretive Amenities

In addition to the athletic field complex, park visitors may recreate at specific locations within a natural setting. Existing amenities include:

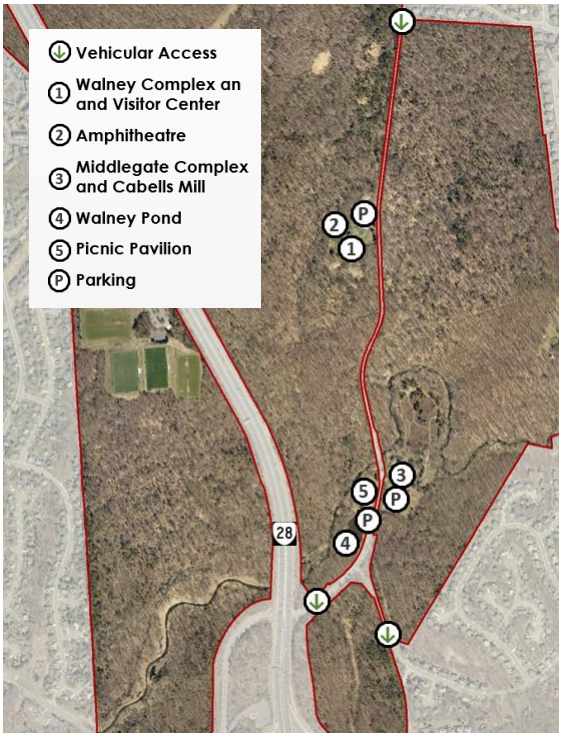


Figure 40: Walney and Middlegate Complexes and Existing Amenities

Picnic Pavilion: Picnic facilities are located at Walney, and a rentable 26' diameter pavilion with capacity for 30 is located adjacent to Walney Pond.

Outdoor Amphitheater: The 16' x 20' electrified stage includes bench seating for 125+. This rentable facility is located behind Walney House.

Small Amphitheater: A second amphitheater with a 10' x 14' wide wooden stage and basic seating on stone for 35 and wooden benches for an additional 16 for a seating total of approximately 46 people. There is an accessible pad as well. This is used by site staff for interpretive programming, including camps.

Trails: Trails of mixed surface types cover over 4.9 miles with 14 bridges and 21 benches. Biking is only permitted on the Walney Road trail which is 0.6 miles long and the trail leading from the Middlegate area to the Big Rocky Run trail toward Stringfellow Road to the east.

Park Benches/Memorials: Multiple park benches provided throughout the park and along the trail network provide resting areas for the park's patrons. Many of the benches have been dedicated in honor of loved ones by members of the community. These benches vary in construction material and appearance.

Walney Pond: Constructed as a farm pond in the 1950s, Walney Pond is 1.3 acres with two 20'x12' platforms and a 95' boardwalk consisting of Terex. A fully accessible asphalt trail surrounds the pond with a few benches along the trail. Parking at the pond includes two accessible parking spaces and (based on a total of 410 linear feet), an estimated total of 46 additional parking spaces: 16 on asphalt, 21 on gravel, and approximately nine on dirt. These spots are all used by the public daily.

Figure 41: A typical interpretive sign

Waysides and Kiosks: Interpretive waysides are a primary feature of the park's educational and resource interpretation mission. Located at key points of interest, these kiosks are an opportunity to share the park's rich natural and historical narrative with the public.

Utilities

Typical of most areas within Centreville, the park is served by various public utilities.

Gas/Heating: Propane provides the primary heating source at the park. Middlegate House has radiator heat that is fueled by a propane gas boiler. The propane tank is buried in the east lawn. Walney House is heated by a propane fueled furnace. The tank in buried in the northeast lawn.

Electric: All buildings are supplied by Dominion Electric through an above ground line that originates in the southeast section of the park and runs north to a terminus at Walney. The electric right-of-way follows Walney Road.

Water/Sewer: The potable water line for the Middlegate area originates in the neighborhood to the east, which is where the meter is located. A line of approximately 600 feet travels into the buildings from the east along the Big Rocky Run Trail and across the lawn. The waste water falls into the county sewer line that has a right-of-way that runs through the small meadow, across Walney Road through the pond parking lot, then below the pond dam and across Big Rocky Run and continues southwest along Big Rocky Run through the park until it reaches Braddock Road.

Fresh water reaches Walney from the north along Walney Road and the building has a sewage tank and grinder that moves waste water upgrade to Walney Road to join the gravity feed sewer system.

Transcontinental (Transco) Gas Pipeline: Williams Gas Pipeline maintains the major east coast gas feeder line that travels through the park. This right-of-way travels in an east/west orientation through the northern section of the park. In 2016, the Park Authority entered a Memorandum of Understanding (Attachment A) with Transco for the maintenance of the right-of way.

Communications: All buildings have serviced lines for phones and alarm/monitoring systems. All phone lines are above ground using the same poles as the electric service. The Middlegate offices have a cable line to service computers and telecommunication. It travels along the pole line from the southeast section of the park.

Access and Circulation

Vehicular Access and Public Transportation

Figure 42: Parking lot at Walney

Vehicular Travel: Most visitors to the park arrive by private automobiles. The entrance to the Walney Visitor Center is located off Walney Road. The access to Walney Road from Route 28 was restricted to only north-bound traffic in 2007; however, at the time of this writing, the configuration of that intersection is expected to change with VDOT's planned improvements to the Route 28/Interstate 66 interchange. Patrons traveling south-bound on Route 28 must exit at the Westfields Boulevard overpass, make a right turn on Walney Road and continue to the park. Route 28 is a major limited-access highway off Route 66 and is the connector between Route 66 and Dulles Airport. Continued work to improve and maintain traffic flow on Route 28 may change the way visitors access the park within the next several years.

Parking lots are located at Walney Visitor Center, the Middlegate/Cabell's Mill complex, at Walney Pond, and at the active recreation complex. Walney has two gravel parking lots with spaces for 50 and 40 cars each. Overflow parking can be found on the lawn to the east and south of the house. Middlegate has a gravel lot that can hold around 70 cars. The lot next to the pond can hold a total of 46 cars. The active recreation complex contains paved parking for 271 cars.

Public Transportation: No bus routes pass directly by the Visitor Center. The closest Metrobus / Fairfax Connector bus routes are 632 & 640 that touch the northeast corner of the park at or near the Walney Road/Poplar Tree Road intersection. Route 640 requires a rider to walk from the stop on the opposite corner of the intersection across from the park and continue along the Walney Road Trail through the park to the Visitor Center, which is a 0.6-mile trip. Route 632 stops at Walney Road and Eagle Chase Road which is an additional 0.6 miles north on Walney Road. Both routes provide service daily, but times vary from weekday to weekend service.

A Metrorail station (Washington Metropolitan Area Transit Administration, WMATA) is scheduled to open to passengers in the median of the Dulles Airport Access Road just east of Route 28 in the future. This station will be along the route extending the Metrorail's Silver Line to the airport. It is assumed that Metrobus routes will connect to

this rail station, but the distance to the park will probably not make Metrorail an attractive way for people to access the park on its own.

Pedestrian Access and Trails

There are no sidewalks or trails along Walney Road or Route 28 to provide access to the park. Pedestrian access is through neighborhood sidewalks that lead to multiple trailheads and allow the public to walk along natural surface trails to the Walney Visitor Center and to the athletic field complex. There is a bluestone and gravel trail along Walney Road that provides access for cyclists to the Visitor Center via the intersection of Walney Road and Poplar Tree Road. At present, Walney Road is not safe for walking or cycling.

Figure 43: Trail near Bennet Pond Court

There is a possibility that VDOT roadway changes to the Route 28 and Route 66 corridors will require the addition of pedestrian and cycle access. In addition, VDOT plans to extend Poplar Tree Road as an overpass across Route 28 to the west of the park along its northern edge. Once realized, it would allow access to both the east and west sides of the park from the surrounding neighborhoods.

The County's plan for the West County Trail includes a route along the west, north, and eastern edges of the park. With VDOT's planned changes to the Route 28 corridor, there may be an opportunity to change the trail route to direct its traffic along Walney Road or through the Big Rocky Run stream valley as it connects to the Big Rocky Run Trail and continues out of the park to the east.

Administrative Area

Acquired by the Park Authority in 2006, a residential property is located at the end of the historic Hackley's Road on Parcel 54-2 ((1)) 3A. The contemporary-styled house was built in 1988. The 2015 Cultural Landscape Report recommends that, although current circulation and road conditions prevent park administrative use requiring heavy traffic, storing park collections or similar adaptive reuse should be considered to free space utilized in more visible areas of the park. Its condition makes it a viable option for a future support role.

Existing Easements

ECLP is encumbered by numerous easements that allow for ingress and egress, stormwater and major utilities maintenance, and natural and cultural resources protection, as indicated on the graphic below.

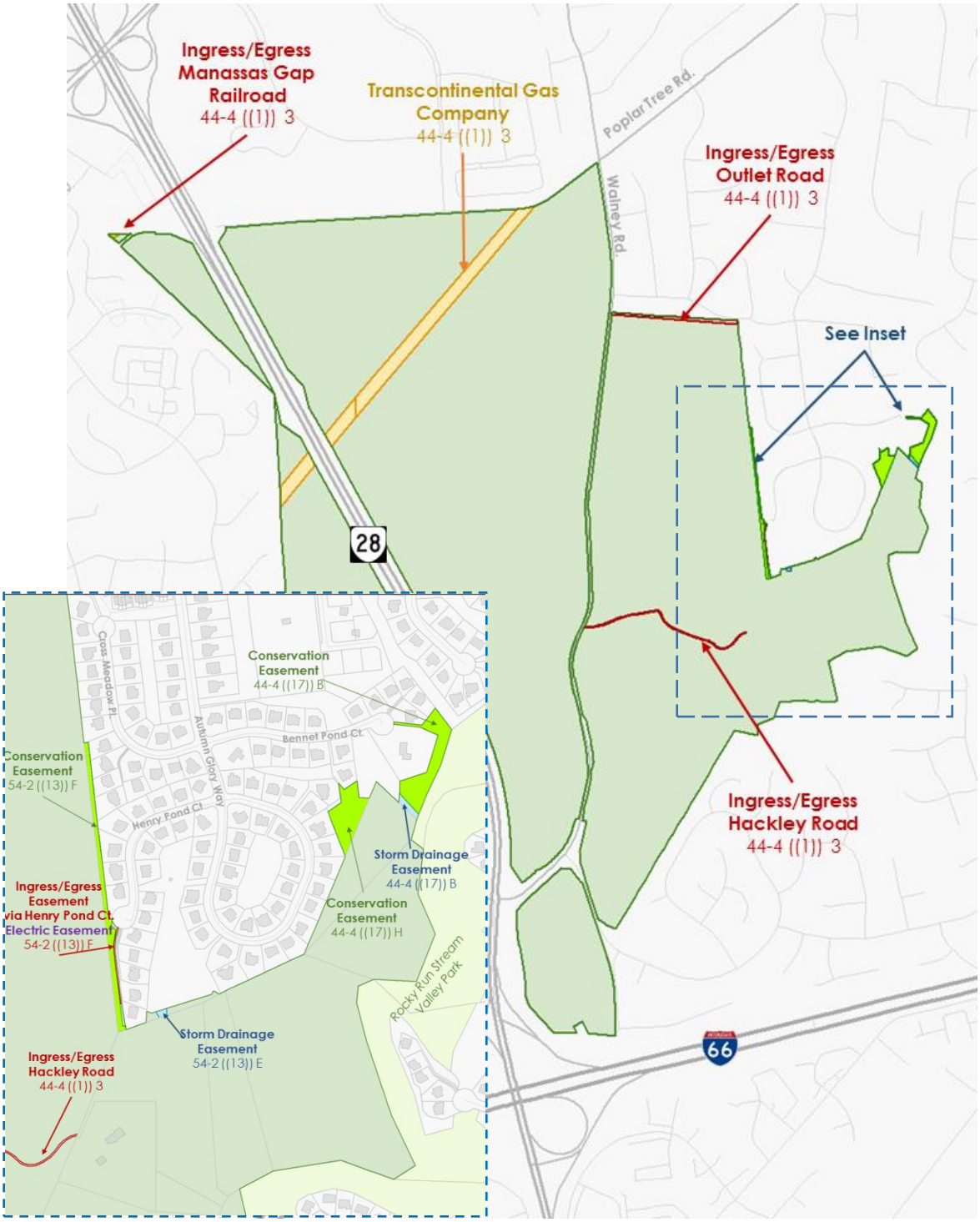


Figure 44: Existing easements at ECLP

Management Framework

Park Purpose and Management Objectives

To achieve the park's purpose and to preserve, protect, and interpret its unique resources, the following objectives should guide the operational and resource management of the site:

- Provide access to the natural and cultural resources as appropriate for the enrichment and education of the public.
- To preserve and enhance the natural and cultural resources of the park through active management following industry best practices.
- Preserve, protect, and interpret the site's historic features at Walney to include; the stone house, dairy, springhouse, smokehouse, barn yard, outbuildings, icehouse, dry ice pond, and surrounding landscape.
- Preserve, protect, and interpret the site's historic features at the Middlegate complex to include; the miller's residence, Cabell's Mill, stone walls and buildings, Walney pond, and the mill head race, swimming pool features, and fish weirs found along Big Rocky Run.
- Actively manage the forests, streams, pond, and meadows to optimize these habitats for native wildlife and migrant species.
- Preserve, protect, enhance, and interpret the site's archaeological resources.
- Preserve, protect, enhance, and interpret the site's natural resources within a regional context.
- Minimize the impacts from encroachments and the effects from transportation systems.
- Respect and enforce the deed restriction that stipulates the property shall be held open and preserved for public use and that the Park Authority as property owner must fight all attempts to take any part of the property as stipulated in David Lawrence's will.

Desired Visitor Experience

ECLP has a variety of historic structures and cultural history features set within a rich and diverse natural area, surrounded by suburban residential and business development and trisected by roadways. Despite being surrounded by development the park is connected to other parks within Sully District through stream valley corridors. The park contains stone buildings dating from the middle 1700s through the 1800s. This mix of dwelling features provides a unique opportunity to interpret the growth and expansion of western Fairfax County from both a residential and commercial view point. The following statements outline the desired visitor experience.

- Provide opportunities for visitors to enjoy the relaxation and health benefits from walking woodland trails and along streams.

- Provide trails that offer a respite from the built environment.
- Enable visitors to choose from a wide variety of interpretive programs and media.
- Provide interaction with the park's resources in a user-guided experience.
- Promote a safe and inviting events venue suitable for all ages.
- Encourage fishing and wildlife observation in multiple habitats.

At Walney, preservation, resource management, and interpretation efforts seek to create an authentic period experience that supports interpretation of the Machen Family's 1840 – 1900 period of ownership.

- Provide opportunities for visitors to experience cultural hands-on activities such as campfires, wagon rides, farm animal exhibitions, or historical reenactments.
- Promote interaction with interpretive staff for visitors to explore a natural or cultural history topic in a meaningful and memorable way.

At the Middlegate complex, preservation, resource management, and interpretation efforts seek to maintain the historic buildings and surrounding landscape within the context of the mid-20th century alterations made to the mid 1700's buildings by Ellanor & David Lawrence.

- Foster understanding of the resources held within parkland in the Sully District.
- Provide a unique setting for weddings, parties, and events that supports the event services expected from a county agency.
- Promote understanding of the Lawrence family and how they developed the Middlegate house and landscape, including the pond and meadows.

Active recreational use of the park is concentrated within the active recreation zone in the western portion of the park.

- Provide self-directed recreation and fitness activities.
- Enable participation in organized sports activities in safe and appropriately maintained facilities.

Current Management Areas

To aid in overall park management, staff has defined several areas that subdivide the park with respect to current land uses, management practices, and intended visitor experience.

Where current management practices are expected to continue for the foreseeable future, these areas have been refined and incorporated into the Conceptual Development Plan.

Visitor Orientation Area

This zone is currently centered around and within Walney house. Ideally this zone would move to the area near Middlegate to adhere to the recommendations of the park's Cultural Landscape Report, to coincide with the Sully Woodlands Stewardship Education Center planning and the Park Authority's long-term planning goals. This zone provides face to face contact with staff members, restrooms, a sales shop, and exhibits to orient visitors to the site's unique resources. This zone also is used as the primary first contact location for school groups, programs, and camps conducted at the park.

Active Recreation Area

This area is in the western section of the park, bounded by Route 28 to the east. This zone is actively managed by the Park Operations Division through the Area 5 Maintenance crew.

Natural Resource Features

The park's natural resource types are detailed in the park's various management plans that guide how specific resources are to be managed. The geographic locations of the features noted below were considered in the creation of the Conceptual Development Plan and informed the delineation of Resource Protection Zones. For simplicity, not all names have been retained, and in many cases, an RPZ encompasses multiple features.

- Middlegate Large and Small Meadows
- North Loop Meadow
- Transcontinental Gas Pipeline Linear Meadow
- Walney Pond
- Upland Forests
- Big Rocky Run Stream and Riparian Zone
- Walney Creek and Riparian Zone
- Roundlick Run and Riparian Zone

Cultural Resource Protection Zones

The Park Authority is charged with protecting and interpreting the multiple home and light industrial use sites scattered throughout the park. Management practices and site details are described in the park's Cultural Landscape Report, incorporated by reference. Key cultural resources include:

- Walney House and associated out-buildings and landscape features

As a general guide, all areas of the park, apart from the Transco gas pipeline easement area and the Active Recreation Area, are to be treated as cultural resource-sensitive areas until future survey concludes otherwise.

- Cabell's Mill and associated walls and race works along Big Rocky Run
- Middlegate Miller's House and associated additions and landscape features.
- Hackley's Road and associated house foundations and landscape features to include; terracing, outbuilding ruins, and stoned springhead
- Civil War era fortifications, earthworks, and campsites
- At least two possible cemeteries located in separate locations within the park.
- The Britton House site
- The landscape features and associated outbuildings that were connected to the Brown Home site.
- The original route of Chantilly Road that runs through the park near or adjacent to Walney Road.
- Approximately 4,500 linear feet of historic stacked stone wall along the eastern boundary of the park.

Programming and Interpretive Management

Programming and interpretation of the park's resources and history are primary objectives of the management framework. To that end, staff conducts a robust interpretive program through exhibits, publications, waysides and signage, electronic media, and personal interaction with visitors. These opportunities provide a way to connect the public to the park and create memorable experiences.

Figure 45: Learning about wildlife at one of the park's many interpretive programs

Interpretive Goals

ECLP's Interpretive Plan, updated periodically, provides a basis for the park master plan and serves to integrate the park into the Sully Woodlands Region. The Interpretive Plan is a staff-developed document that guides the park's education and programming efforts. Specific interpretive goals incorporated into the master plan include:

- To promote stewardship of cultural and natural resources within ECLP and the region;

- To preserve and interpret Walney house and grounds, Cabell's Mill, the Middlegate complex, and all other park historic cultural features;
- To conserve and interpret the park's diverse communities of native animals and plants;
- To highlight the park's unique natural landscape and the changes caused by the last 270+ years of human activity; and
- To promote and expand community connectedness through park activities by connecting patrons, volunteers, partnership groups, advocacy groups, and other decision makers and stakeholders to the park's resources and interpreting their role in enriching the community.

Themes and Messages

To convey the importance of the park's history and its natural environment, the Interpretive Plan establishes multiple themes upon which to base the park's programming and interpretive efforts. These themes are reviewed and revised every five years. The master plan acknowledges these themes and generally identifies the most appropriate areas for public engagement on these topics. Specific themes include:

- Stewardship of natural resources preserves our natural assets and benefits everyone's community;
- Ellanor and David Lawrence took actions to allow the public to enjoy this unique place they were passionate about;
- The Machens left us a unique record of their lives on this land;
- Working with this land gave people a chance to define their own American Dream.

Measurable Objectives

Staff has developed a series of measurable objectives across each theme to accomplish the goals of its programs. These objectives are adjusted over time and are included in the ECLP Interpretive Plan.

Figure 46: Demonstrating colonial-era carpentry at the park

Figure 47: Campers sampling the water at Walney Pond

Conceptual Development Plan

Introduction

The Conceptual Development Plan (CDP) provides recommendations for future park uses, Resource Protection Zones, and facilities. The CDP contains descriptions of the proposed plan elements and design concerns and is accompanied by a graphic that shows the general location of the planned elements. A CDP for ECLP was approved with the 1978 master plan and updated with the 1991 master plan revision. This master plan again takes a comprehensive look at the park considering changing demographics, use patterns, and expectations, as well as the park's relationship to neighboring uses and how to best incorporate the property acquired since 1991.

Past CDPs have detailed specific facility types, quantities, and locations; in many cases, such as the location of historic buildings, this approach remains valid. Overall, the current CDP defines areas delineating compatible park uses and management practices. This broad approach allows for a greater level of flexibility in meeting the public's need in the future, and facilitates the use of the park's specific management plans to adapt to emerging trends and practices.

The Ellanor C. Lawrence Park Conceptual Development Plan combines both cultural and natural resource protection with management of the built environment: facilities, historic structures, and planned amenities. This combined approach provides a single, streamlined source that provides staff and the public with an overview of the park's intended activities.

Development of the CDP is based on an assessment of area-wide needs and stakeholder preferences in balance with the existing site conditions and operational requirements. The scope of the master plan process does not include detailed site engineering; therefore, the CDP is conceptual in nature. Although reasonable engineering practices have contributed to the basis of the design, final facility location for the recommended elements will be determined through more detailed site analysis and engineering design that will be conducted when funding becomes available for the further development of the park. Final design will be influenced by site conditions such as topography, natural resources, tree preservation efforts, and stormwater and drainage concerns as well as the requirement to adhere to all pertinent state and county codes and permitting requirements.

Management and development elements included in the plan are as follows:

- Active Recreation Area
- Core Interpretive Areas
- Stewardship Education/Visitor Center
- Ellanor's Garden, Walney Pond, signage, and other interpretive features
- Trails and Connectivity
- Forest and Meadow Resource Protection Zones (RPZs)Managed Meadow RPZs

Conceptual Development Plan

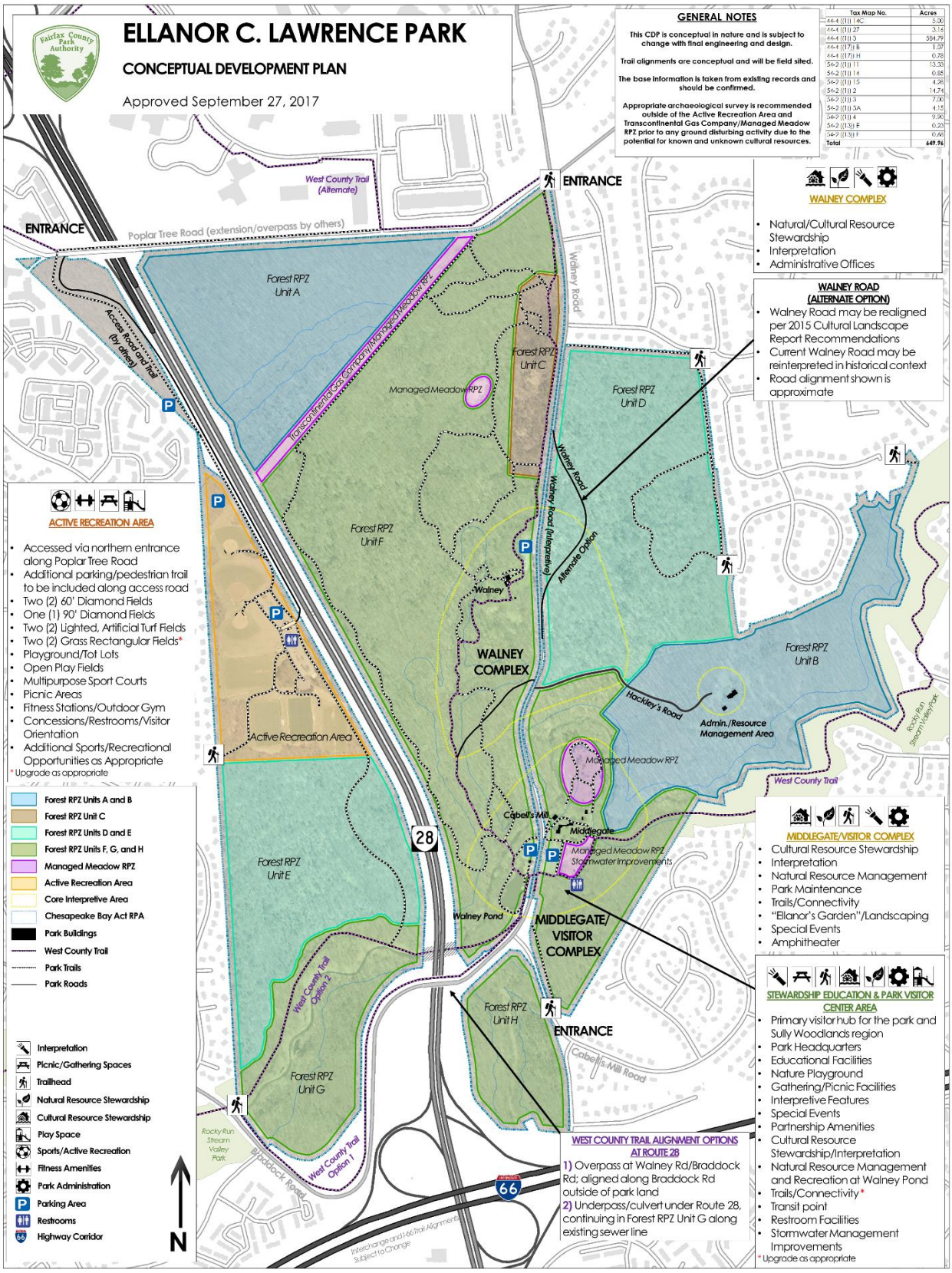


Figure 48: ECLP Conceptual Development Plan

Planned Management and Development Elements

Active Recreation Area

The Active Recreation Area, located west of Route 28, is reserved for active uses where athletic fields, sport courts, playgrounds, picnic areas, fitness stations, skating facilities, restrooms, and similar intensive recreational uses are most appropriate. This area faces challenges in terms of its lack of available land for expansion, and its limited access to pedestrian and vehicular traffic. The area is currently at capacity with little potential for future expansion. Accordingly, the Park Authority should consider meeting the need within the Dulles Suburban Center for additional athletic fields and facilities by placing such amenities at other parks in the vicinity. Additional parking, field upgrades, and traffic management should be considered without encroaching on the residential areas to the west and the environmental and cultural resources to the south.

Concurrent with the planned improvements to the Routes 66/28 corridor, VDOT has proposed to relocate the entrance to the Active Recreation Area. As Poplar Tree Road is extended to the north, a new park entrance would be constructed at the northwestern corner of the park and a road built to access the Active Recreation Area from the north. Parking along the access road, particularly approaching the Active Recreation Area, and an additional parking lot, should be considered and would serve to alleviate the demand for parking in the area's main lot. Pedestrian trails between the access road, parking areas, and recreational facilities, consistent with plans for the West County Trail, are appropriate.

Core Interpretive Areas

A key feature of the CDP, three Core Interpretive Areas are defined. A Core Interpretive Area, as used herein, is an area with a loosely-defined boundary whose key features include the park's built structures, known archaeological resources, interpretive elements, and areas where a high level of visitor traffic and overall activity is planned and promoted.

The 2015 Cultural Landscape Report recommended core areas at the Walney and Middlegate sites be developed as focal points for interpretation and restoration of the historic landscape. The boundaries of these areas as shown on the CDP are based on the CLR's recommendations, the presence of known cultural and natural resources, desired management activities, and expected visitor patterns within the context of this master plan as a whole.

In each Core Interpretive Area, the CDP proposes a variety of park uses that would be considered appropriate. This approach is intentional and is meant to provide park staff with flexibility in meeting the park's future needs. At the time of implementation, park staff should evaluate each option within the context of the core area, its impact on

cultural and environmental resource management, available access, desired visitor experience, and other such factors as determined by staff.

It is expected that the management objectives of the RPZs and Core Interpretive Areas complement each other. New facilities and activities are planned within the Core Interpretive Areas, and therefore also within the RPZs. Where conflicts arise, the Park Authority should seek innovative solutions in providing for the new uses while maintaining the overall objectives of the underlying RPZ.

Walney Complex


Figure 49: Walney

WaThe Walney Complex is centrally located around the historic Walney homestead and its outbuildings and is bisected by Walney Road. Walney itself currently serves as the park's visitor, education, and administrative center. Due to the heavy visitor traffic in this area and its toll on the historic structure and grounds, the CDP envisions moving the most intensive uses to a new structure within the Middlegate/Visitor Complex to the south. Walney's focus on cultural and natural resource interpretation, historic preservation, and limited park administration activities will continue. The existing parking lot should be retained to serve these uses, and park staff may consider its reconfiguration to ensure that it is sized appropriately for the site's future traffic volume.

As described above, the 2015 Cultural Landscape Report recommended multiple treatment options for the Walney Complex. One option is to realign Walney Road to consolidate the known resources east of the current Walney Road alignment. If realized, the Walney Complex's boundary may require adjustment to encompass this new area and provide for new interpretive opportunities.

Middlegate/Visitor Complex


Figure 50: Middlegate

The Middlegate/Visitor Complex is envisioned as the core visitor, education, and interpretive area for ECLP. Cultural and natural resource interpretation and stewardship will remain the focus of the complex, centered around the historic agricultural economy and life at Middlegate. Cabell's Mill is to continue its role in historic interpretation, preservation, and as an events venue. The Middlegate house will continue its administrative functions. As a primary activity

center, the complex is also suited for park maintenance storage or similar operational activities.

Administrative/Resource Management Area

The residential structure and its outbuildings at the terminus of Hackley's Road are the basis of the third core area. Per the recommendations of the 2015 Cultural Landscape Report, this area is not suitable for heavy traffic and use by the public, nor do these late 20th century structures contribute to the park's historical context. Storing park collections or similar adaptive reuse should be considered to free space utilized in more visible areas of the park.

Sully Woodlands Stewardship Education/Park Visitor Center

The June 1991 revision of the ECLP master plan proposed an environmental education center, conference center, and administrative offices to be located east of the Middlegate house. In addition, the adopted Sully Woodlands Regional Master Plan recommended the construction of a new, regional-scale stewardship education center that would serve as a gateway feature and an interpretation hub for the Sully Woodlands in western Fairfax County.

Considering these recommendations, the CDP recommends a Stewardship Education and Visitor Center to be located at ECLP. The new center would ideally be located within the vicinity of Middlegate to utilize the existing parking and amenities while supporting traffic management and pedestrian flow. In addition, the Middlegate area was chosen for its natural setting and views which complement center's mission and enhance the visitor experience. The proposed facility is to serve as a state-of-the-art interpretive center and will:

- Educate the public on the Park Authority's efforts to steward its natural and cultural resources;
- Enable research and resource management activities within Sully Woodlands;
- Serve as the Sully Woodlands and ECLP's visitor center, providing the first point of contact for many park visitors;
- Host special events, particularly those that advance environmental stewardship;
- Serve as ECLP's headquarters and administrative center; and
- Provide opportunities to work with professionals from educational institutions, specialty organizations, and others in a regional research facility and outdoor laboratory setting.

To further the goals for this facility, the CDP proposes ancillary, co-located uses such as outdoor, nature-themed play spaces, picnic and gathering areas, outdoor education spaces, connections to the park's trail network, visitor amenities, restrooms, and appropriate partnership support structures.

Figure 51: Nature-Inspired Playground Concept

Access to the Stewardship Center will accommodate vehicular, pedestrian, and other forms of transit. For example, a bus stop should be considered to encourage public transit use. If needed, the Park Authority may consider expanding the existing parking at Middlegate to accommodate visitor volume. Connectivity to the park and regional trail networks should be an integral component of the site's access.

Ellanor's Garden

As a tribute to Ellanor C. Lawrence's love of gardening, landscaping around Middlegate would interpret the site as maintained during the Lawrence's ownership. "Ellanor's Garden" would provide park visitors with a quiet respite from the surrounding development and may be suitable for partnerships with gardening organizations or similar groups.

Walney Pond

WAnecdotal evidence and community survey describe Walney Pond as one of the most visited, relaxing, and memorable features of the park. As such, the tranquil setting should be maintained, and its environmental benefits enhanced as opportunities arise. Walney Pond provides a venue for outdoor education and interpretation, recreational fishing, and reflection; the CDP supports these activities within the context of the Middlegate/Visitor Complex. Picnic and gathering areas and access to the park's trail network are appropriate for the site, as are other activities that enhance visitors' appreciation of the outdoors.

Figure 52: Walney Pond

Signage and Interpretive Features

ECLP's valued natural and cultural resources offer opportunities to enhance the user experience through educational and interpretive signage. Such features are in common use within the park and are further described in the park's interpretive planning documents. While the CDP does not show the specific locations or contents of interpretive sites, appropriate locations include at key points of interest within the Walney and Middlegate/Visitor Complexes, along trails, at trailheads, and at other suitable locations as determined by staff.

Figure 53: Interpretive Signage describing the Walney barnyard

Trails/Connectivity

ECLP's trail network has been planned to protect sensitive environmental and known cultural resources; provide an enjoyable recreational experience; connect the park's core areas, accommodate the landscape's varied topography; and provide access for maintenance and stewardship.

The park's trail network is best suited for hiking; however, the Park Authority may consider bicycle or equestrian use in limited areas at its discretion. If constructing new trails, the planned corridor should be surveyed for cultural and environmental resources, and aligned to minimize any impacts. Trail surfaces should be selected for use and sustainability, and should vary throughout the park.

A major planned feature of the ECLP trail network is the West County Trail, ultimately linking Reston to the east and Bull Run Regional Park to the west. As planned near ECLP, the West County Trail runs primarily within the Big Rocky Run Stream Valley. A future crossing of Route 28, facilitated through the Route 28/Interstate 66 interchange improvements, would allow the trail to continue along its east-west corridor.

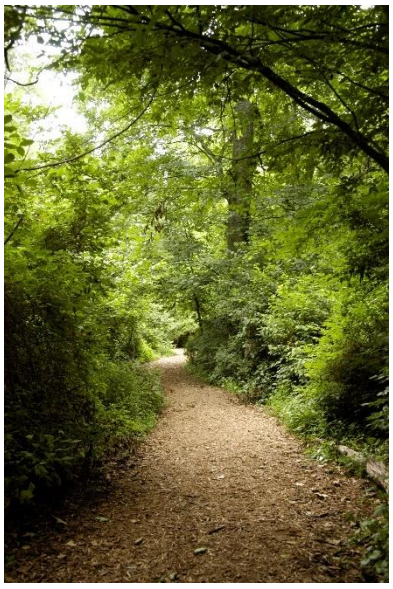


Figure 54: A forested trail at ECLP

The CDP allows for two possible crossings across Route 28 at the Walney Road/Braddock Road intersection:

- As of the date of this master plan's approval, VDOT's plan for the intersection includes a bridge over Route 28. This overpass would incorporate a separate multimodal crossing and would follow the existing alignment of Braddock Road west of Route 28. This option would result in a trail segment outside of ECLP but it would provide a critical linkage in the overall West County Trail. Trail connections to the park's trail network should be pursued. In addition, the overpass could provide an option to include a wildlife corridor, an example of which is shown in Figure 53. Trail and transportation improvements along Braddock Road may impact known cultural resources; the Park Authority should continue to advocate for these impacts to be minimized and the resources appropriately surveyed and treated.

Figure 55: An overpass wildlife corridor, Banff National Park, Canada

- A secondary option considers replacing the existing Rocky Run culvert under Route 28 with a pedestrian-friendly tunnel. A trail could then be constructed along Rocky Run, linking the tunnel with points west and, eventually, the West County Trail. If this option is to be implemented, a trail alignment along the existing sewer line easement should be considered to minimize the impacts to natural and cultural resources. The cost to the Park Authority to construct this option and obtain the necessary real property rights from VDOT should be considered in any feasibility study for this option.

Forest Resource Protection Zones

Forest RPZs include high-quality forest stands of Piedmont Acidic Oak-Hickory Forest, Piedmont/Central Appalachian Mixed Oak/Heath Forest, Coastal Plain/Piedmont Small-Stream Floodplain Forest and Piedmont Upland Depression Swamp Forest, amongst other community types. Use within all Forest Resource Protection Zones should be restricted to foot traffic on park-maintained trails, with horses and bicycles allowed only on designated trails, at the discretion of Park Authority staff. Off-trail use is prohibited for all visitors and their pets due to the sensitivity of the plant communities and wildlife species. Additionally, the significance of Ellanor C. Lawrence Park's cultural/historic

Figure 56: ECLP Forests

resources highlights the importance of preserving these areas as much as possible in a natural state without disturbance.

The CDP defines Forest RPZ Units A through H. Each unit has been delineated based on forest resource type (as defined by the Virginia Department of Forestry and the Park Authority's Natural Resources Branch), the presence of known cultural resources, management techniques required for stewardship, desired visitor experience, or public feedback.

Forest RPZ Units A and B

Forest RPZ Units A and B contain some of the park's highest quality forest ecosystems. These areas should be managed primarily to protect and enhance the natural environment and wildlife habitat. Human and vehicular traffic should be kept to a minimum; accordingly, trails, roads, and built facilities are not appropriate in Units A and B. The exception is the historic Hackley's Road and late 20th century residential structure which was built prior to the Park Authority's ownership. This site may continue to be used in support of park operations. Future expansion around the structure, if any, should carefully consider and minimize adverse impacts to the surrounding natural and cultural resources. The site's location within Unit B and its limited access make it unsuitable for intensive public use.

Forest RPZ Unit C

Forest RPZ Unit C is an approximately 13.2-acre stand composed almost entirely of Eastern red cedar (*Juniperus virginiana)*. The stand was maintained as turf grass or pasture until the early 1970s when it began to convert to cedar. Per the park's Forest Stewardship Management Plan (Virginia Department of Forestry, 2013), the stand contains high quality wildlife habitat, providing food and shelter for numerous species. Invasive plant species should be regularly monitored and managed. Staff will continue to maintain the stand in a successional state, both for its ecology and educational value in demonstrating forest succession.

Forest RPZ Units D and E

Forest RPZ Units D and E are representative of many forested areas within a suburban setting. Both areas are designated as Ecological Restoration Areas and provide opportunities to improve the ecological health of ECLP. Ecological Restoration Areas have been impacted by prior land disturbance or non-native invasive species, and, per Virginia Department of Forestry and staff assessment, are of a lesser habitat quality than other forested areas of the park, such as Units A, B, and C. It is recognized, however, that these areas do provide some ecosystem services and could be restored to a higher quality with future investment and rehabilitation. Specific ecological goals for these areas should be identified prior to the start of any restoration work. Restoration work may involve heavy equipment and tree removal, but these impacts shall be temporary with the goal of rehabilitating the native system.

Of note, two potential projects, the realignment of Walney Road in Unit D, and the construction of trails and multimodal pathways in Unit E, may impact the forest with tree removal and land disturbance. The park's 2015 Cultural Landscape Report recommended conversion of the land between the realigned Walney Road and the historic road to managed meadow to restore the Walney homestead's historic setting. The Park Authority should consider this option if the road realignment occurs. Where feasible, opportunities to enhance and restore the ecosystem value should be pursued through these projects.

Forest RPZ Units F, G, and H

Forest RPZ Units F, G, and H represent the largest tracts of forest ecosystem within the park. Apart from clearing and construction to support ecosystem enhancement, natural and cultural resources interpretation, recreation, and other activities intended within the Walney and Middlegate/Visitor Complexes, these areas should remain in their natural, wooded state. While not targeted for specific management activities, staff should consider ecosystem enhancement, restoration, and similar stewardship or interpretive activities. Within Unit F, staff maintains two large exclosures that protect the forest habitat from deer browse. These features demonstrate regrowth in the absence of deer. It is expected that the exclosures and similar types of natural resource interpretation will continue. Units G and H are defined due to the presence of natural and cultural resources.

Managed Meadow Resource Protection Zones

Figure 57: Managed Meadow at ECLP

Managed meadow RPZs are comprised of managed meadows that require periodic disturbance such as mowing or prescribed fire to maintain their successional ecological state. These areas should be managed as native grasslands, with small native shrubs and tree seedlings scattered throughout. Non-native invasive species, such as Autumn olive, should be removed within these areas as they can serve as seed sources for other areas of the park. The specific maintenance regime that is ideal for each meadow shall be determined by a natural resource manager, in consultation with site staff and the natural resource management plan if available. Several of the meadows contain rare, threatened or regionally rare species, such as Purple Milkweed and Woodcock. Both the management method and timing of management may affect the desired species.

The managed meadow RPZ southeast of the Middlegate House will continue to be maintained as open space, with the goal of improving the water quality of the runoff feeding Walney Pond. Opportunities should be sought to restore its ecosystem functions. Water features, rain gardens, and similar elements that may provide both

environmental benefits and educational opportunities are appropriate for the site. Such improvements might be accomplished through the construction of the Stewardship Education Center or similar capital project and partnership with other County agencies or community partners. Future development should consider the stormwater management challenges in the Middlegate area and the role of this managed meadow in filtering runoff.

Figure 58: Transcontinental Gas Company Managed Meadow RPZ

The Transcontinental Gas Company Managed Meadow RPZ should continue to be maintained under the Park Authority's MOU with Transco, which ensures this area's compatibility with the gas line and provides for joint management of the linear area in conformance with Natural Resources Branch policies. Absent an MOU, this RPZ should be managed in a manner compatible with the existing easement, guided by the recommendations in the park's natural resource management planning documentation or other guidance in use at the time.

Design Concerns and Recommendations

Coordination with Resource Management Staff

The management of the park's extensive natural and cultural resources, both known and unknown, and the creation of the features detailed in the CDP may present unintended conflicts as management and development needs coexist. Therefore, it is necessary that all decisions regarding ECLP, its management, and its development activities involve careful coordination with resource management staff.

Transit Corridor Improvements and Coordination with Transportation Agencies

ECLP's location along two of the County's primary highway corridors, Interstate 66 and Route 28, make its land area and resources particularly susceptible to encroachment pressures from surrounding development. VDOT's efforts to improve these corridors will

change the traffic patterns in the area, potentially conflicting with park access, its pedestrians, and internal vehicular traffic. Noise, visual impacts, and environmental factors may alter the park's visitor experience. Additionally, the Route 28/Interstate 66 interchange improvements, widening of Route 28, and the extension of Poplar Tree Road will potentially require additional right-of-way from the bordering parkland. Park staff should work in partnership with VDOT throughout the design and construction of these improvements to ensure that any negative impacts to parkland are avoided or properly mitigated, and that the terms of any deed restrictions are upheld.

The Middlegate Complex, Walney Pond, Cabell's Mill, and ancillary features are at particular risk of encroachment from the improvements to the Walney Road/Braddock Road intersection. The proposed overpass across Route 28 generates a need for ramps to accommodate the change in elevation; these structures will likely extend into the park along Walney Road. The current plans are unclear whether VDOT will require additional right-of-way along Walney Road and Cabell's Mill Road. These transportation improvements may damage the unique, valued, natural character of the park and its historic setting.

The Master Plan envisions the Middlegate Complex as the primary center of natural and cultural resource-based interpretation and visitor activity at the park. Public comments received during the planning process demonstrated the high value the public places on Walney Pond, Middlegate, and their natural setting. These unique features define the park's character and provide an ideal location for the planned Stewardship Education and Visitor Center.

The Park Authority should continue to work with VDOT, FCDOT, the Board of Supervisors, and its stakeholders to minimize the impacts of any road improvement projects to ECLP, the Middlegate Complex, and Walney Pond. The construction of major transportation improvements near Walney Pond and Middlegate should be avoided. If avoidance is not possible, the new development should be sited, designed, and constructed to minimize the ambient noise, visual, environmental, stormwater, cultural, and similar impacts to the visitor experience.

Problem Soils/Slopes

There is a high potential for radon to occur within ECLP which is a concern for occupied dwellings (Radon potential = 4, Rock Type = A). The park contains numerous soil types, of which soil problem classes III, IVA, IVB require geotechnical investigation prior to development activity.

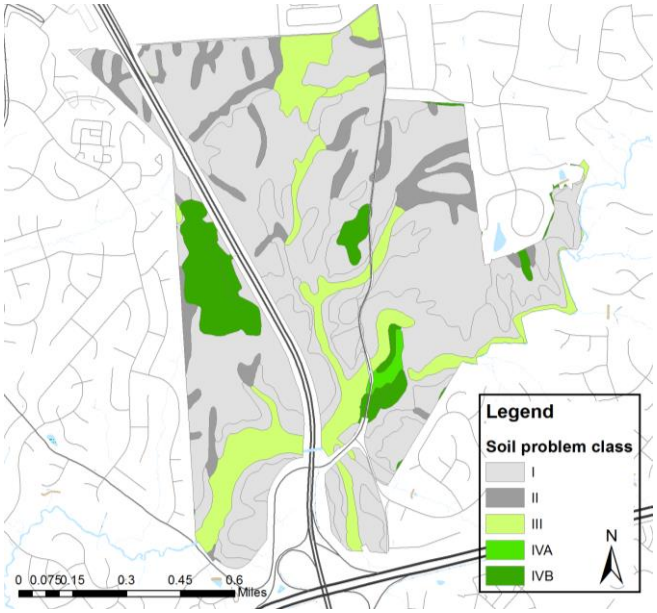


Figure 59: Problem soils at ECLP

ADA Access

The Park Authority is committed to providing all citizens with equal access to the facilities and recreation features within its parks to the greatest extent possible. Sometimes, the ability to provide physical access to all locations within a park may be at odds with the simultaneous mission to protect the county's natural and cultural resources. With any development at ECLP, it is a goal to provide access to all areas of the park to the greatest extent feasible. Should conditions, such as significant topographic change or protection of historical resources, preclude full physical access, interpretive opportunities should be pursued so that the value of the inaccessible locations may be made available to all.

Parking

As a destination park, the ability to provide and expand on programming and services at ECLP is directly tied to the ability to provide sufficient parking and access. Significant expansion of on-site parking would have considerable impacts on the character of the park as well as to cultural and natural resources. Alternately, parking should be limited to those areas already disturbed or expanded only after specific evaluation for natural and cultural resources. The option of providing additional bus parking for groups should be considered and pursued where reasonable to minimize impacts within the park.

ECLP would also benefit from improved access to public bus transportation. Increased emphasis on the availability of public transportation, noted on the park's web page and other means of advertisement, could help reduce the increasing demand for on-site parking.

Pedestrian Amenities


Figure 60: Enjoying a wooded trail at ECLP

Given the prevalence of sensitive natural and cultural resources on site, the existing trail alignments should be maintained or realigned only after careful consideration of resource impacts. The trailheads noted in the CDP promote pedestrian connectivity into the park from surrounding communities. Trail connections along Walney Road and the existing pedestrian connection at Poplar Tree Road should carefully contemplate the safety of encouraging pedestrian crossings. Development plans should be coordinated with the Fairfax County Department of Transportation and the Virginia Department of Transportation to evaluate locations for safe crossings as well as elements to enhance pedestrian safety, for example, crosswalks, pedestrian lighting/signalization.

Any adjustments or additions of trails within the park should be field located to provide the least amount of site disturbance and tree loss possible.

Another consideration is the crossing of Walney Road near Walney Pond and Middlegate. The location lacks an adequate and safe means for pedestrians to cross from the Middlegate parking lot to Walney Pond and the trail connections to the north. Staff has coordinated with VDOT on providing a suitable crosswalk; however, maintaining an adequate line-of-sight for vehicular traffic remains a challenge. The introduction of the new stewardship education and visitor center, combined with the proposed transportation improvements to Walney Road, underscores the need for pedestrian safety in this well-visited area.

Bicycle Accommodations

Several comments received during the planning process indicated a desire to expand bicycle access to the park. By policy and action, the Park Authority seeks to enhance non-motorized access to parkland. The availability of secure bike storage as well as wayfinding signage directing cyclists to bike parking would be options that could be achieved within the context of the Sully Woodlands Stewardship Education Center to promote bicycle access.

Low Impact Development

Final engineering design of this site will be required to adequately address runoff generated by further development within the park, such as the Sully Woodlands Stewardship Education Center. Opportunities to address drainage and stormwater design using Low Impact Development techniques should be considered wherever feasible. The inclusion of porous pavement should also be considered wherever

underlying soils permit. Final material selection should ultimately balance the intended usage of the surfacing and maintenance requirements.

Fiscal Sustainability

Economic realities require that funding for public parks be supplemented by revenue generated by park offerings, sponsorships, donations, and volunteerism. Fiscal sustainability, as outlined in the agency Fiscal Sustainability Plan, is essential to be incorporated into the implementation of the master plan. Successful implementation of the Fiscal Sustainability Plan and master plan will allow the agency to address community needs, as well as critical maintenance, operational and stewardship programs by providing latitude in funding options and decision making. Together these plans will serve the public, park partners, and the Park Authority by providing a greater opportunity for fiscal sustainability.

Appendices

Appendix A: 2014 Natural Resource Management Action Plan and Species Lists

Natural Resource Action Plan for

Ellanor C. Lawrence Park

Jim Dewing, Natural Resource Manager, Jan. 2014

Location: Tax Map 54-2 & 44-4

5040 Walney Road

Chantilly, Virginia 20151-2306

Area: 54-2 ((1)) 2 - 14.7350 acres

54-2 ((1)) 3 - 7.0000 acres

54-2 ((1)) 3A - 4.1461 acres

54-2 ((1)) 4 - 9.9000 acres

54-2 ((1)) 11 - 13.3310 acres

54-2 ((1)) 14 - 0.8539 acre

54-2 ((1)) 15 - 4.2765 acres

54-2 ((13)) E - 0.2288 acre

54-2 ((13)) F - 0.6874 acre

44-4 ((1)) 3 - 584.7953 acres

44-4 ((1)) 14C - 5.0000 acres

44-4 ((1)) 27 - 3.1649 acres

44-4 ((17)) B - 1.0702 acres

44-4 ((17)) H - 0.7792 acres

649.9683 Total Acres

Master Plan: Yes. Approved: August, 1978. Revised: July, 1980; January, 1990; June, 1991. See: http://www.fairfaxcounty.gov/parks/MasterPlans/eclawrence.gif.

Classification: Resource-based Park

Other Reports/Plans: VaDoF Forest Treatment Plan completed May 2013. *Helping Our Land Heal,* Forestry Management Project Plan 2013-2017. White Buffalo, Inc. Deer Management Plan 2014-2016. Sully Woodlands Regional Master Plan 2006. Cub Run and Bull Run Watershed Management Plan February, 2007. Wild Turkey Management within Lawrence Park, NVCC, 1984. Deer Management Sharpshooting Plans, FCPD, 2007-2011. Flora Management & Protection Plan for E.C.L.P., Reid Folsom, 1996. Herps Survey Report, Tony Bulmer, 2004. Small Mammal Survey Report, Tony Bulmer, 2002. White-tailed Deer Population Assessments, FCPA, 1999-2002. Road Kill Wildlife One Year Survey for Eastern Side of Park, FCPA, 1992.

Protected Status: David Lawrence Trust Restrictions. Sites listed on the National and State Historic Registries.

Resource Protection Zone Category:

Summary

Ellanor C. Lawrence Park (ECLP) is primarily a natural and cultural resource interpretive programming site. The variety of habitats located within the park support a diversity of flora and fauna. Fifty-eight acres of the park that are not covered by this plan are ball fields and attendant parking lots. In keeping with the park's primary mission, the objective of the Fairfax County Park Authority (FCPA) is to protect and enhance forest health and biodiversity. We wish to protect rare habitats and enhance wildlife habitat for songbirds, turkey, and other vertebrate and invertebrate taxa. Ground water is a prominent feature of the park with seeps and springs throughout the property. Efforts will be made to protect the water quality within the park.

Objective

ECLP's long term goal of improved habitat requires tools and methods that have not been used before or modifications of actions to fit the site that can then be transferred to other sites in the future. Woodland prescribed burns, soil treatments to suppress non-native invasive plants (NNI's) and enhance growth of native plants and exclusion fencing to allow habitat to respond with reduced impact are examples. As part of the *Helping Our Land Heal* - Forestry Management Plan (HOLH-FMP) the emphasis early will be to test low cost techniques that are effective and transferrable.

Priority projects in the upcoming year include:

- HOLH-FMP: Monitor effects of previous prescribed burn and thinning in Oak-Hickory stand below Walney Visitor Center. Coordinate resource management activities with interpretive staff to provide educational opportunities.

- Deer Management: Work with Resource Protection Branch (RPB) and contactor removing deer from ECLP to assess methods and effectiveness. Continue browse assessments and maintenance of fenced exclosures.
- Cedar-Pine Area: Monitor plantings (Dec. 2013) and work with RPB on NNI suppression. Additional clearing may be required.
- Stream Restoration: Work with Northern Virginia Soil and Water Conservation District (NVSWCD) to install stream blockages along sections of Roundlick Run. Ideally once the technique is refined this will be an excellent Eagle Scout project opportunity.
- Meadow Management: ECLP's three meadows vary in size and type. Prescribed burning has been and will be used on the two meadows near the Middlegate complex along with woody plant removal. The newer woodland meadow along the North Loop trail was cleared and seeded in summer 2013. NNI control and additional seeding will be the main activities.
- Trails: The heavily used trail system suffers from a lack of maintenance. Work with RPB and Area 5 to determine methods and funding to stabilize trail system. Evaluate the trails to determine redundancy and possible removal of some sections.
- NNI: Working with RPB and contractor to monitor previously treated areas to identify, prioritize, and treat NNI's in ECLP and in the Big Rocky Run stream corridor. Evaluate and implement techniques for clearing larger stands of invasives and degraded forest.

Resource Assessment

ECLP is located on the eastern edge of the Culpeper Triassic Basin. The southern part of the park is dominated by the Big Rocky Run flood plain, while the northern part is rolling uplands with a few steep slopes. The forest cover is predominantly upland oak-hickory and lowland mixed hardwood populated with species typical to Northern Virginia. Most of the forest is relatively young, dating from the late 1940s or early 1950s, but some is older, probably dating from the early twentieth century. One other significant feature of the park is that it encompasses most of the forested watershed of Walney Creek. It is uncommon to find a named creek with such a lightly disturbed watershed in Fairfax County and Walney Creek supports sensitive benthic macroinvertebrates rarely found in the county. The park also contains Resource Protection Areas (RPA) along the perennial streams that might restrict management activities.

ECLP is almost completely surrounded by developed land. It is however connected to stream valley parks along Big Rocky Run owned and managed by FCPA. Upstream, the natural area corridor ends in the headwaters area of Big Rocky Run. Downstream, this corridor connects the park to a series of parks and preservation areas that stretches from the western head waters of Cub Run down the Occoquan River almost to the US Fish and Wildlife sanctuaries and Mason Neck State Park around Occoquan Bay and the Potomac River. The park is therefore an outlying node of one of the larger high value core areas identified by the Northern Virginia Regional Commission in their January 2012 report Conservation Corridor Planning. These corridors mean that there is the potential for the movement of plants and animals into and out of Ellanor C. Lawrence Park from these other natural resource cores.

Penn silt loam is the dominant soil in the park. Along with Manassas, Nestoria, Oatlands, Panorama, and Rowland loams, Penn silt loam formed over the shale, siltstone and sandstone of the Triassic basin. Although the Rhodiss soil, found between Walney Road and the eastern edge of the park just north of Big Rocky Run, derives from the igneous rock of the Piedmont upland, it has similar chemical and hydrologic properties to the sedimentary soils

listed above. These soils are all deep, well drained, acidic soils that are moderately well suited to growing hardwoods and conifers.

In contrast, the sedimentary Albano soil at the head waters of Walney Creek and Round Lick Branch is a deep, poorly drained soil that is frequently saturated and may have standing water. Codorus soil is 'new' alluvium found in riparian areas and is frequently saturated. Albano and Codorus support hardwoods that can withstand the low oxygen environment of saturated soils.

An examination of the forests in the park finds deficiencies in both the stand structure and composition. The shrub and herbaceous layers of the park are generally sparse or non-existent; and where they do exist are dominated by non-native invasive plants. The trees are not regenerating, so as the existing mature trees succumb to old age, disease, pests and competition with invasive plants, the forest will eventually die. In order to correct these deficiencies and improve the bio-diversity of the park, active forest management is needed.

Excessive deer browse and absence of fire contribute the expansion of non-native invasive species. At best these plants use up space and resources that native vegetation needs and prevent trees from regenerating; at worst the invasive vines kill mature trees, hastening the death of the forest. In general, our vertebrate and invertebrate plant grazers will not eat these non-native plants. So, as the invasive plant populations expand to occupy more of the forest they reduce habitat for the animals that live there. Controlling these plants, particularly the vines, is a critical part of restoring bio-diversity to the park. As bio-diversity increases, the plant communities in the park will become more resistant to invasion.

Natural features include:

- Animals – Species lists are contained in the appendixes.
- Plants – Species lists are contained in the appendixes.
- Meadows – A large meadow is located behind the Middlegate complex and Cabell's Mill and bordered by Big Rocky Run. There is a smaller meadow and rain garden in front of the Middlegate complex east and up-slope of the gravel parking lot. The meadows are maintained through mechanical mowing and prescribed burns. The meadows contain a bluebird box trail and mowed walking paths. Non-native plants are controlled through manual removal and herbicides. A woodland meadow was added to an area off the North Loop trail in summer 2013.
- Pond - Constructed in the 1950's, it was dredged and expanded during the period 1993-95. A boardwalk and two fishing platforms were installed at that time. The reconstruction included a landscape plan and installed plantings. A few tree swallow boxes are maintained here. A maintenance project was completed in July of 2012 to dredge the northern end of the pond surrounding the board walk. The project installed stone weirs to slow runoff discharge into the pond to settle out sediment in a more focused way for future clean out.
- Walney Spring and Creek – This spring provides water for the dairy complex at Walney. Due to its steady flow and clean source, Walney Creek has continually

received an acceptable rating (around 8) when monitored by Northern Virginia Soil & Water Conservation District.

- Big Rocky Run – This medium sized stream runs through the southern edge of the property from an east to west direction before joining Cub Run and then Bull Run. It was in good shape when monitored by the Va. Master Naturalist Program in 2009, but is at a lower quality level than Walney Creek. It was given a biological monitoring rating of very poor in 1999 according to the 2007 Annual Report on Fairfax County's Streams prepared by the Fx. Co. Dept. of Public Works and Environmental Services. They have not published any more recent data for a spot within the park. The section between Braddock Road and Route 28 is part of a stream restoration starting in 2010.
- Roundlick Run – This small spring and run-off fed, seasonally variable water course, begins just east of Walney Road fed by a storm water retention pond for The Preserve at Wynmar housing development. It runs through the northern edge of the park from east to west crossing the gas pipe line right-of-way being additionally feed by surface runoff and small natural seeps. It flows under Route 28 and continues west out of the park where it empties into Cub Run.
- Vernal Pools – A number of natural pools exist in the park near springs and where surface runoff collects on the property. A vernal pool was constructed in a spring fed runoff channel along the north loop trail in 2008.
- Transcontinental Gas Pipeline Easement – This easement transects the park, east to west, along the northern edge. It is mowed at least once annually, which maintains it as warm season grassland habitat. A bluebird trail is maintained along the easement edge. The easement has one spring providing water that runs across its surface before forming a small creek that travels west under Route 28. Due to soil compaction, the water persists on the surface of the gas line and forms a number of active vernal pools each spring within the easement right of way and along its southern edge. A fire road is maintained by regular mowing along the full length of the easement's southern edge to join the fire road through the woods along Route 28 to Popular Tree Road.

Top Threats

- VDOT continues to plan and survey for major road developments that will impact the park.
- Deer browse continues to effect forest regeneration.
- Invasive plants continue their inexorable march into and throughout the park.
- Encroachment by adjoining landowners and visitors removing fauna (i.e. turtles).
- Water runoff and quality issues including velocity.
- Low amounts of funding and staffing dedicated to natural resource management.

Resource Protection Zones

Triangle Forest Stand

Cedar Forest Stand

Meadows / Gas line Meadows

Walney Pond

Walney Creek Watershed Drainage

Roundlick Drainage

Management Strategies

- During spring of 2014, complete the Cub Run Watershed Pro Rata Share Project (CU 9207). The project within the park between Route 28 and Braddock Road is Big Rocky Run Phase II project numbers CU8001-CU003. This project is being handled by Department of Public Works and Environmental Services. Staff will need to follow up one-year out (summer 2015) from completion to assess installed plant survival and other components as part of the contractor's warranty.
- Mobile crew with will work with a contractor to install a V-ditch to complete the run-off corrective measures for the Walney Pond Restoration Project. (Spring 2014) This is one of the last steps to try and control the surface run-off into this surface fed feature in the park. The final step will be to install a formal path and berm system around the pond to protect it from the Walney Road and Parking lot run-off.
- Work with NVSWCD to develop a plan for corrective measures like installing stream blockages along Roundlick Run to address neighborhood surface run-off and stream channel erosion within the park. Develop a template for volunteer groups like Scouts to install March – June 2014.
- Continue implementing HOLH-FMP with an emphasis on NNI plant control in stands previously thinned, burned, or planted in 2013. Use test plots to survey vegetation effects in response to the forestry management actions. CY 2014.
- Develop memo of understanding with Williams for a work plan to outline standards for maintaining the Transco Gas Line easement meadow by FCPA. Summer 2014.
- Implement the forest treatment plan (primarily in resource protection zone) to include: a) controlling human activities and b) controlling NNIs (see Implementation Plan below for timing).
- Monitor site resources to assess status of native plant communities, levels of human disturbance and impact, percent coverage by NNIs and browse impact by deer. Develop annual implementation measures based on observations.
- Consult with other agency staff as well as outside groups to include schools to recruit advocates for the site and develop programs to promote stewardship and appreciation for the site natural resources.

Implementation Plan

- Site staff will work with NRMPS and P&D staff to inspect B.R.R. Restoration Project work to ensure contract compliance by Vanasse Hangen Brustlin, Inc. (Contract # CN 10316077).
- Site staff will monitor the B.R.R. project at the six month and one year out points after completion to ensure that all plantings and other work are proceeding within the specifications of the contract. Site staff will notify NRMPS, P&D, and DPWES staff if the contractor needs to make corrective actions based on the warranty stipulations of the contract.
- Use of central invasive plant removal funding to protect BRR Stream Restoration zone from threats moving into the newly restored zone.
- ESA is monitoring plots for White Buffalo.

- Owen Williams and Jim Dewing will monitor deer exclosures and vegetation plots in HOLH areas including burn plots. Twenty browse plots from NRMPS.
- Deer feeding stations that are maintained by site staff from December 2013 to February 2014 during first year of the three year deer management contract period.
- FLIR survey in winter of 2014 to survey for white-tailed deer population numbers.

Cost estimates for Full Implementation

- Costs for the v-ditch install at Walney Pond are for around $4,700 and come from the Lawrence Trust Fund.
- The *Helping Our Land Heal* Forestry Management Plan has a total budget cost of $340,000. The cost is broken into three main areas: Information Gathering, Field Investigation, and Management Plan - $125,000; Management Plan Implementation - $175,000; Interpretation, Education and Outreach - $40,000. Funding is available in the amount of $150,000 in Project 004503, Cub Run Stream Valley, $15,000 in Project 004158, Sully District Parks, District-wide, Sully District Parks Telecommunications; $25,000 in Project 004750, Park Proffers, all in Fund 371, Park Capital Improvement Fund, and $150,000 in Project 475008, Stewardship, Sully Woodlands Stewardship, Fund 370, Park Bond Construction Fund.

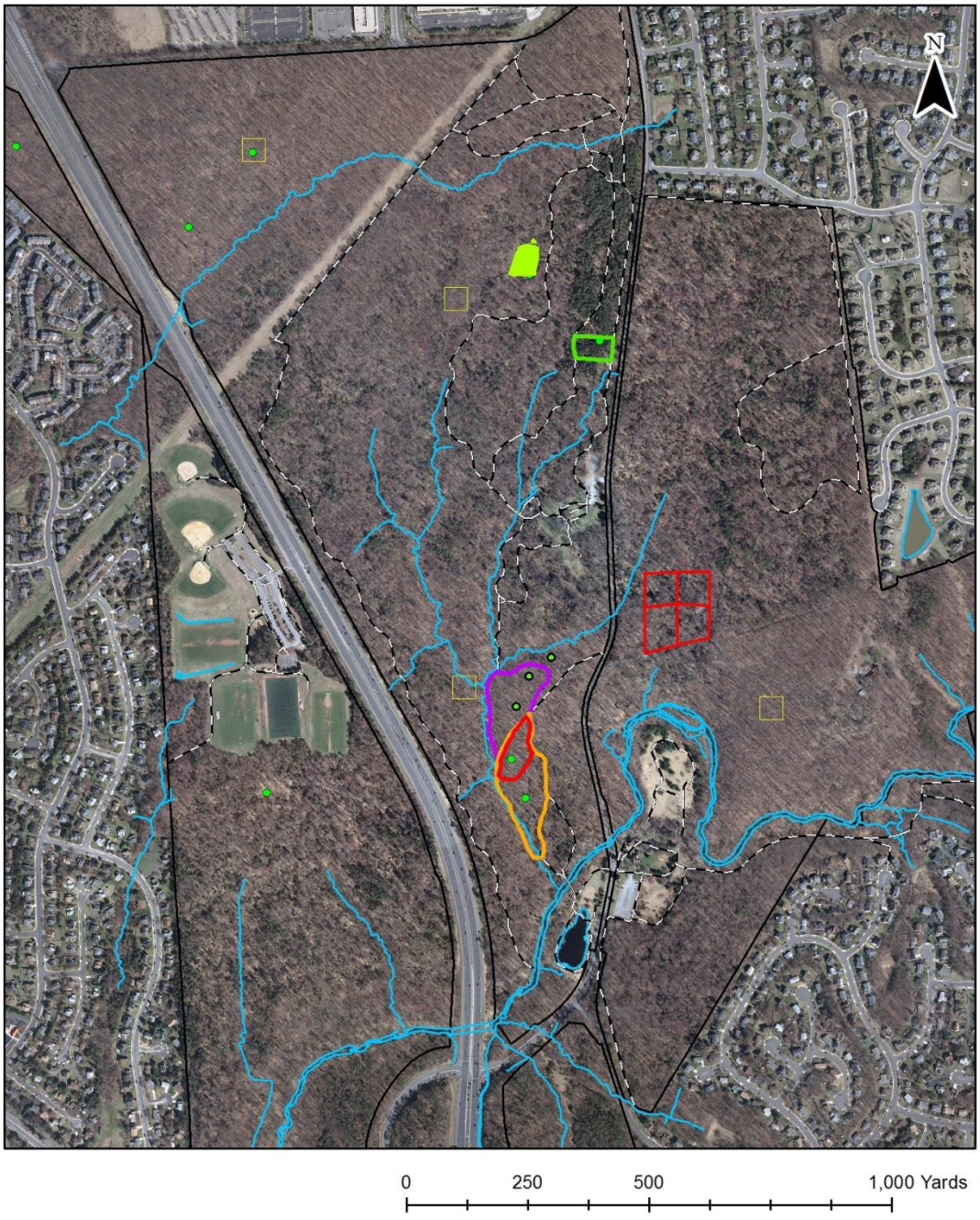
Appendixes

A. Helping Our Land Heal Management Action Areas 2013-2014
B. Fauna Species Lists from Interpretive Plan
C. Vascular Plant Species Lists for ECLP
D. Executive Summary from VaDoF Plan for ECLP
E. Ten year time line of actions from VaDoF Study and Plan

Note: The following species lists have been updated through September 2017.

A. Helping Our Land Heal Management Action Areas 2013-2014

ECLP Helping Our Land Heal Project Areas



B. Fauna Species Lists for Ellanor C. Lawrence Park

Bird Species at Ellanor C. Lawrence Park

Seasons

Sp – Spring (March-May)
S – Summer (June-August)
F – Fall (September-November)
W – Winter (December-February)

Description of Codes

C – Common: Likely to be seen or heard in suitable habitat
U – Uncommon: Present, but not often seen
O – Occasional: Present infrequently during a season
R – Rare: May be present but not every year
* - **Species has nested in the park**

	Sp	S	F	W
Grebes				
Pied-billed Grebe	-	-	o	o
Herons				
Great Blue Heron	o	o	o	-
Green Heron	u	u	-	-
Waterfowl				
American Black Duck	r	-	-	-
Mallard	o	o	o	-
Wood Duck	o	-	-	-
Canada Goose*	c	c	c	c
Tundra Swan	r	-	r	-
Birds of Prey				
Black Vulture	o	o	o	o
Turkey Vulture	c	c	c	c
Osprey	o	-	o	-
Bald Eagle	r	r	r	r
Cooper's Hawk	u	u	u	u
Sharp-shinned Hawk	o	o	o	o
Broad-winged Hawk	o	o	o	-
Red-shouldered Hawk*	u	u	u	u
Red-tailed Hawk	u	u	u	u
American Kestrel	o	o	o	o
Quail - Turkey				
Northern Bobwhite	r	-	-	-
Wild Turkey*	u	u	u	u
Plovers - Sandpipers				
Killdeer	r	r	-	-
Common Snipe	r	-	-	-
Solitary Sandpiper	r	-	-	-
Spotted Sandpiper	o	-	-	-
American Woodcock	r	-	r	-
Yellow-billed Cuckoo*	r	r	-	-
Pigeons - Doves				
Mourning Dove*	c	c	c	c
Rock Pigeon	o	o	o	o
Gulls				
Ring-Billed Gull	-	-	-	o
Cuckoos				
Yellow-billed Cuckoo*	r	r	-	-
Owls				
Barred Owl*	u	u	u	u
Great Horned Owl*	u	u	u	u
Long-eared Owl	r	-	r	-
Saw-whet Owl	-	-	-	r
Nighthawks				
Common Nighthawk	o	o	-	-
Swifts - Hummingbirds				
Chimney Swift	c	c	-	-
Ruby-throated Hummingbird*	c	c	-	-
Kingfishers				
Belted Kingfisher	u	u	u	-

Woodpeckers				
Downy Woodpecker*	c	c	c	c
Hairy Woodpecker*	u	u	u	u
Northern Flicker*	c	c	c	c
Pileated Woodpecker*	u	u	u	u
Red-bellied Woodpecker*	c	c	c	c
Yellow-bellied Sapsucker	u	-	u	-
Flycatchers				
Eastern Kingbird*	c	c	-	-
Eastern Phoebe*	c	c	-	-
Eastern Wood-Pewee*	c	c	c	-
Great Crested Flycatcher*	c	c	c	-
Acadian Flycatcher*	u	u	-	-
Vireos				
Red-eyed Vireo*	c	c	c	-
Solitary Vireo	u	-	u	-
White-eyed Vireo	u	u	u	-
Yellow-throated Vireo	u	u	u	-
Jays – Crows				
Blue Jay*	c	c	c	c
Fish Crow*	c	c	c	c
American Crow*	c	c	c	c
Common Raven	o	r	r	o
Swallows				
Barn Swallow	o	o	o	-
Northern Rough-winged Swallow	u		u	-
Tree Swallow*	o	o	o	-
Chickadees - Titmice				
Carolina Chickadee*	c	c	c	c
Tufted Titmouse*	c	c	c	c
Creepers - Nuthatches				
Brown Creeper	u	u	u	u
Red-breasted Nuthatch	o	-	o	o
White-breasted Nuthatch*	c	c	c	c
Wrens				
Carolina Wren*	c	c	c	c
House Wren*	c	c	c	r
Winter Wren	-	-	-	r
Kinglets - Gnatcatchers				
Golden-crowned Kinglet	c	-	c	-
Ruby-crowned Kinglet	c	-	c	-
Blue-gray Gnatcatcher*	c	c	c	c
Thrushes				
American Robin*	c	c	c	u
Eastern Bluebird*	c	c	u	u
Gray-cheeked Thrush	r	-	r	-
Bicknell's Thrush	r	-	r	-
Hermit Thrush	o	-	o	u
Swainson's Thrush	o	-	o	-
Veery	o	-	o	-
Wood Thrush*	c	c	c	-
Gray Catbird*	c	c	c	-
Northern Mockingbird*	c	c	c	c
Brown Thrasher	o	-	o	-
Waxwings				
Cedar Waxwing	o	o	o	o
Starlings				
European Starling*	c	c	c	c
Wood-Warblers				
American Redstart*	c	c	c	-
Bay-breasted Warbler	r	-	r	-
Black-and-white Warbler	o	o	o	-
Blackburnian Warbler	o	-	o	-
Blackpoll Warbler	c	-	u	-
Black-throated Blue Warbler	c	-	c	-
Black-throated Green Warbler	c	-	c	-

Blue-winged Warbler	o	-	o	-
Canada Warbler	o	-	o	-
Cape May Warbler	o	-	o	-
Chestnut-sided Warbler	o	-	o	-
Common Yellowthroat*	c	c	c	-
Hooded Warbler	o	o	o	-
Kentucky Warbler	o	o	o	-
Magnolia Warbler	c	-	c	-
Nashville Warbler	c	-	c	-
Northern Parula*	c	c	c	-
Ovenbird*	o	o	o	-
Palm Warbler	u	-	u	-
Pine Warbler*	c	c	c	o
Prairie Warbler*	u	-	u	-
Tennessee Warbler	o	-	o	-
Worm-eating Warbler	o	-	o	-
Yellow-rumped Warbler	c	-	c	c
Louisiana Waterthrush*	c	c	c	-
Northern Waterthrush*	o	-	o	-
Tanagers				
Scarlet Tanager*	c	c	c	-
Grosbeaks - Buntings - Sparrows				
Blue Grosbeak*	o	o	o	-
Rose-breasted Grosbeak	c	-	c	-
Northern Cardinal*	c	c	c	c
Indigo Bunting*	c	c	c	-
Chipping Sparrow*	c	c	c	-
Dark-eyed Junco	c	-	c	u
Eastern Towhee*	c	c	c	o
Field Sparrow*	u	o	u	-
Fox Sparrow	r	-	r	-
Song Sparrow*	c	c	c	o
Swamp Sparrow	o	-	o	-
White-crowned Sparrow	r	-	r	-
White-throated Sparrow	c	-	c	c
Blackbirds - Orioles				
Baltimore Oriole*	c	c	c	-
Orchard Oriole*	c	c	c	-
Brown-headed Cowbird*	c	c	c	o
Common Grackle*	c	c	c	-
Red-winged Blackbird*	c	c	c	o
Rusty Blackbird	o	-	o	-
Finches				
American Goldfinch*	c	c	c	c
Evening Grosbeak	-	-	-	r
House Finch*	c	c	c	c
Purple Finch	o	-	o	-
Pine Siskin	-	-	-	r
Weavers				
House Sparrow*	u	u	u	u
Accidental (recorded only once at ECLP)				
Virginia Rail				
Mississippi Kite				

Mammal Species

This list has been compiled by park staff through field observations and lists of animals found in the region that could occur here.

Scientific Name	Common Name	Status at ECLP
Blarina brevicauda	Short-tailed Shrew	Confirmed
Canis latrans	Coyote	Confirmed
Castor canadensis	American Beaver	Confirmed
Condylura cristata	Star-nosed Mole	Possible
Cryptotis parva	Least Shrew	Confirmed
Eptesicus fuscus	Big Brown Bat	Probable
Glaucomys volans	Southern Flying Squirrel	Confirmed
Lasionyeteris noctivagans	Silver-haired Bat	Confirmed
Lasiurus borealis	Eastern Red Bat	Probable
Lasiurus cinereus	Hoary Bat	Confirmed
Lynx rufus	Bobcat	Probable
Marmota monax	Woodchuck	Possible
Mephitis	Striped Skunk	Confirmed
Microtus pennsylvanicus	Meadow Vole	Confirmed
Microtus pinetorum	Woodland Vole	Confirmed
Mus musculus	House Mouse	Confirmed
Mustela frenata	Long-tailed Weasel	Confirmed
Mustela vison	Mink	Probable
Myotis lucifugus	Little Brown Myotis Bat	Possible
Nycticeius humeralis	Evening Bat	Confirmed
Odocoileus virginianus	White-tailed Deer	Probable
Ondatra zibethicus	Muskrat	Confirmed
Peromyscus leucopus	White-footed Mouse	Confirmed
Peromyscus maniculatus	Deer Mouse	Confirmed
Pipistrellus suvflavus	Easter Pipistrelle Bat	Confirmed
Procyon lotor	Raccoon	Confirmed
Scalopus aquaticus	Eastern Mole	Confirmed
Sciurus carolimaensis	Eastern Gray Squirrel	Confirmed
Sorex longirostris	South Eastern Shrew	Confirmed
Sylvilagus floridanus	Eastern Cottontail Rabbit	Possible
Tamias striatus	Eastern Chipmunk	Confirmed
Tamiasciurus hudsonicus	Red Squirrel	Confirmed
Urocyon cineareargenteus	Common Gray Fox	Possible
Vulpes vulpes	Red Fox	Confirmed

Reptile and Amphibian Species

This list has been compiled by park staff from field observations and lists of animals found in the region that could occur here.

Amphibians

Scientific Name	Common Name	Status at ECLP
Ambystoma maculatum	Salamander, Spotted	Confirmed
Ambystoma opacum	Salamander, Marbled	Confirmed
Anaxyrus americanus	Toad, American	Confirmed
Anaxyrus fowleri	Toad, Fowler's	Confirmed
Desmognathus fuscus	Salamander, Northern dusky	Confirmed
Eurycea bislineata	Salamander, Northern two-lined	Confirmed
Eurycea guttolineata	Salamander, Three-lined	Confirmed
Hemidactylium scutatum	Salamander, Four-toed	Possible
Hyla chrysoscelis	Treefrog, Cope's gray	Possible
Hyla versicolor	Treefrog, Gray	Confirmed
Plethodon cinereus	Salamander, Northern red-backed	Confirmed
Plethodon cylindraceus	Salamander, Slimy	Confirmed
Pseudacris crucifer	Peeper, Northern spring	Confirmed
Pseudacris feriarum	Frog, Southeastern chorus	Probable
Pseudotriton montanus	Salamander, Mud	Probable
Pseudotriton ruber rubber	Salamander, Northern red	Probable
Lithobates catesbeianus	Bullfrog, American	Confirmed
Lithobates clamitans	Frog, Green	Confirmed
Lithobates palustris	Frog, Pickerel	Probable
Lithobates sphenocephalus	Frog, Southern leopard	Confirmed
Lithobates sylvaticus	Frog, Wood	Possible
Scaphiopus holbrooki	Toad, Eastern spadefoot	Confirmed

Reptiles

Scientific Name	Common Name	Status at ECLP
Agkistrodon contortrix mokasen	Copperhead, Northern	Confirmed
*Apalone spinifer spinifer**	Softshell, Eastern spiny	*Introduced / Removed
Carphophis amoenus	Snake, Eastern worm	Confirmed
Chelydra serpentina	Turtle, Common snapping	Confirmed
Chrysemys picta	Turtle, Eastern painted	Confirmed
Chrysemys picta dorsalis	Turtle, Southern painted	*Introduced / Removed
Coluber constrictor	Racer, Northern black	Confirmed
Diadophis punctatus edwardsii	Snake, Northern ringneck	Confirmed
Pantherophis alleghaniensis	Ratsnake, Eastern	Confirmed
Plestiodon fasciatus	Skink, Common five-lined	Confirmed
Plestiodon laticeps	Skink, Broad-headed	Confirmed
*Graptemys geographica**	Turtle, Northern map	*Introduced / Removed
Heterodon platirhinos	Snake, Eastern hognose	Confirmed
Lampropeltis calligaster	Kingsnake, Mole	Confirmed
Lampropeltis getula	Kingsnake, Eastern	Possible
Nerodia sipedon	Snake, Northern water	Confirmed
Opheodrys aestivus	Snake, Rough green	Confirmed
Pseudemys rubriventris	Slider, Northern red-bellied	Confirmed
Regina septemvittata	Snake, Queen	Confirmed
Sceloporus undulatus hyacinthinus	Lizard, Northern fence	Possible
Scincella lateralis	Skink, Ground	Possible
Sternotherus odoratus	Turtle, Eastern musk	Confirmed
Storeria occipitomaculata	Snake, Red-belly	Probable
Terrapene carolina	Turtle, Eastern box	Confirmed
Thamnophis sauritus	Snake, Eastern ribbon	Possible
Thamnophis sirtalis	Snake, Eastern garter	Confirmed
Trachemys scripta elegans	Slider, Red-eared	Confirmed
Trachemys scripta	Slider, Yellow-bellied	Confirmed
Virginia valeriae	Snake, Eastern smooth earth	Confirmed

Vascular Plant Species

The following list was compiled over several years from observations by park staff and local amateur botanists, while not exhaustive, it represents many of the vascular plant species found in ECLP. Current taxonomy was derived from the Flora of Virginia (2012) and the online Virginia Digital Plant Atlas (2017). * Indicates non-native species.

Scientific Name	Common Name	Habitat Type in ECLP
Aquatic Forbs		
*Hydrilla verticillata**	Hydrilla	Pond
*Iris pseudacorus**	Yellow Iris	Pond
Iris versicolor	Larger Blue Flag	Pond
Lemna sp.	Duckweed	Slow waterways
*Murdannia keisak**	Marsh Dewflower	Freshwater, disturbed wetlands
*Myriophyllum spicatum**	Eurasian Water-Milfoil	Pond
*Nasturtium officinale**	Watercress	Dairy, Walney Creek
Nymphaea odorata	Fragrant Water-Lily	Pond
Pontederia cordata var. *cordata*	Pickerelweed	Pond
Ranunculus pusillus	Low Spearwort	Vernal pools
Spirodela sp.	Duckweed	Ponds
Typha augustifola	Narrow-Leaved Cattail	Ponds,
Typha latifolia	Common Cattail	Pond, wet ditches
Ferns		
Asplenium platyneuron	Ebony Spleenwort	Moist to dry woods, meadow
Athyrium asplenioides	Southern Lady Fern	Moist woods
Botrypus virginianus	Rattlesnake Fern	Moist to dry woods
Dennstaedtia punctilobula	Hay-Scented Fern	Moist to dry woods, meadows
Onoclea sensibilis	Sensitive Fern	Wetlands
Parathelypteris noveboracensis	New York Fern	Moist to dry woods, transitional zones
Phegopteris hexagonoptera	Broad Beech Fern	Moist to dry upland woods
Polystichum acrostichoides	Christmas Fern	Moist to dry woods
Grasses		
Agrostis perennans	Autumn Bentgrass	Moist to dry woods
Andropogon virginicus	Broom Sedge	Meadow
*Arthraxon hispidus**	Joint-Head Grass	Moist meadow, disturbed areas
Brachyelytrum erectum	Bearded Shorthusk	Moist woods
Bromus pubescens	Common Eastern Brome Grass	Woods
Chasmanthium latifolium	River Oats	Moist woods and plains
Cinna arundinacea	Common Wood Reedgrass	Wetlands
*Dactylis glomerata**	Orchard Grass	Meadow
Danthonia spicata	Poverty Oatgrass	Rocky, dry soil
Dichanthelium boscii	Bosc's Panic Grass	Moist to dry woods
Dichanthelium clandestinum	Deer Tongue	Woods, meadow
Dichanthelium dichotomum	Small-Fruited Panic Grass	Moist woods, meadow, wetlands
Elymus canadensis	Canada Wild Rye	Moist wooded lowland
Elymus hystrix	Bottlebrush Grass	Moist to dry woods
Elymus virginicus	Virginia Wild Rye	Moist wooded lowland
Festuca rubra	Red Fescue	Lawn
Festuca subverticillata	Nodding Fescue	Moist to dry woods, meadow
Leersia virginica	Virginia Cutgrass	Moist forests, wetlands
*Lolium arundinaceum**	Tall Fescue	Meadow, lawn
*Microstegium vimineum**	Japanese Stilt Grass	Woods, meadow edges
Muhlenbergia sobolifera	Rock Muhly	Dry woods
*Oplismenus undulatifolius**	Wavyleaf Basketgrass	Moist woods, stream valleys
Panicum virgatum	Switch Grass	Meadow
Phalaris arundinacea	Reed Canary Grass	Wetlands
Piptochaetium avenaceum	Eastern Needlegrass	Dry forests, rocky soil
Schizachyrium scoparium	Little Bluestem	Meadow
Sorghastrum nutans	Indian Grass	Meadow
Tridens flavus	Purpletop	Meadow
Tripsacum dactyloides	Eastern Gama Grass	Meadow
Reeds		
Juncus effusus	Common Rush	Moist to wet meadow
Juncus tenuis	Path Rush	Open, disturbed areas

Scirpus atrovirens	Dark Green Bulrush	Wetlands
Sedges		
Carex albicans	White-Tinged Sedge	Dry woods
Carex cephalophora	Oval-Leaved Sedge	Moist to dry woods
Carex debilis	White-Edged Sedge	Wetlands
Carex digitalis	Slender Woodland Sedge	Moist to dry upland woods
Carex festucacea	Fescue Sedge	Wetlands
Carex glaucodea	Blue Sedge	Dry woods, meadow
Carex hirsutella	Fuzzy Sedge	Moist to dry woods, meadow
Carex intumescens	Bladder Sedge	Wetlands
Carex physorhyncha	Southern White-Tinged Sedge	Moist to dry woods, rocky soil
Carex radiata	Eastern Star Sedge	Wetlands
Carex squarrosa	Squarrose Sedge	Wetlands
Carex stipata	Tussock Sedge	Wetlands
Carex umbellata	Parasol Sedge	Ubiquitous
Carex willdenowii	Willdenow's Sedge	Moist to dry woods
Schoenoplectus tabernaemontani	Giant Bullrush	Pond

D. Executive Summary from VaDoF Plan for ECLP.

Ellanor C. Lawrence Forest Management Plan

Executive Summary

This plan is based on the management goal of supporting and improving bio-diversity in Ellanor C. Lawrence Park. An examination of the forests in the park found deficiencies in both the stand structure and composition to support this goal. The shrub and herbaceous layers of the park are generally sparse or non-existent; and where they do exist are dominated by non-native invasive plants. The trees are not regenerating, so as the existing mature trees succumb to old age, disease, pests and competition with invasive plants, the forest will eventually die. In order to correct these deficiencies and improve the bio-diversity of the park, active forest management is needed.

Doing nothing or 'letting nature take its course' is an option; however the do nothing option will not lead to a vibrant, diverse , well-functioning forest community. It must be understood that nature no longer includes key regulatory elements that lead to the well balanced communities of the past. In particular, apex predators and fire have been excluded from the landscape and non-native invasive species have been introduced.

Apex predators, those at the top of the food chain, control the flow of energy and distribution of bio-mass in all ecosystems. In eastern forests, the absence of wolves, mountain lions and human hunters allows the irruption of white tail deer populations and the concentration of energy and bio-mass in this one species; causing the local extinction of many plants and the animals that depend on them. Apex predators also control smaller predators, many of whom prey on birds, eggs and small mammals. Although eastern coyote may fill the predator control void left by wolves, they are unlikely to effectively control the deer population, so active deer management is needed to restore balance to the forest.

Fire controls the composition of the forest by excluding shade tolerant and fire intolerant climax species. Fire also controls the density of the forest by reducing the number of seedlings recruited to the adult tree population. It stimulates the growth of herbaceous plants and some shrubs, notably blueberries. Fire also speeds nutrient cycling. Removing fire from Ellanor C. Lawrence Park has left most of the forest overcrowded and in need of thinning.

Excessive deer browse and absence of fire also contribute the expansion of non-native invasive species. At best these plants use up space and resources that native vegetation needs and prevent trees from regenerating; at worst the invasive vines kill mature trees, hastening the death of the forest. In general, our vertebrate and invertebrate plant grazers will not eat these non-native plants. So, as the invasive plant populations expand to occupy more of the forest they reduce habitat for the animals that live there. Controlling these plants, particularly the vines, is a critical part of restoring bio-diversity to the park. As bio-diversity increases, the plant communities in the park will become more resistant to invasion.

An ideal landscape for bio-diversity is a mosaic of forest and meadow. The forest should be a mixture of nut and berry producing trees of all ages. This complex composition and age structure will evolve in a complete forest over centuries. It can also be imposed to a certain

degree, but only at great expense. The forests of ECLP are relatively young and grew from agricultural fields that were abandoned piecemeal over the period from about 1900 to 1950. The plan put forth here recognizes that most of the elements that support bio-diversity in old growth forests exist in the park, but in discrete stands rather mixed together. The plan proposes using the existing stand structure to provide discrete pockets of habitat across the landscape of the park; with the understanding that reducing and controlling the deer herd and invasive plant populations, and reintroducing fire or mimicking its effects over the next century, will lead the existing discrete stands to evolve into a more complex, bio-diverse forest.

The first part of the plan provides a history of the park, a description of the general current conditions of the park, an overview of forest management, and the general vision for the park. The second section describes the different forest stands of the park and gives specific management recommendations for each stand. The third section is a specific 10 year timeline of actions. The map section contains maps of the stands, soils, parent material, resource protection areas and aerial photographs. The appendices contain additional information on forest management techniques and habitat considerations for a variety of animals.

E. Ten Year Time Line of Actions from VaDoF Study and Plan

Ten Year Time Line of Actions

This timeline distills the specific management recommendations from the stand descriptions into a list of proposed actions. To an extent this time line reflects the urgency of actions and their expense. Because of their issues, stands F and L have been considered separately.

2013	Prepare deer management plan to reduce and control deer herd.
	Begin implementing deer management plan.
	Implement early detection rapid response to prevent invasion of stands not already heavily invaded by non-native invasive plants.
	Conduct an understory burn in stand J.
	Begin invasives control in Stand G using triclopyr based herbicide and late July cutting of stiltgrass.
	Perform a crop tree release on part of the eastern section of Stand A.
	Address erosion of old road bed in Stand B.
	Begin stilt grass eradication in Stand H.
	Girdle 5 large hickories in Stand K.
2014	Continue deer management and EDRR.
	Monitor results from release performed on stand A.
	Continue invasive management in Stands G and H
	Determine direction of Stand P and begin implementing management recommendations to achieve desired outcome.
	Install erosion control in Round Lick Run in conjunction with Northern Virginia Soil and Water conservation District.
	Burn Stand C.
2015	Continue deer management and EDRR.
	Monitor results from release performed on stand A.
	Mark stands A, B, C, D, H, J, N, O, P, and the riparian part of stand Q for thinning. Delineate boundaries of Stand E for clear cutting.
	Develop invasive management plan for thinned and cut over stands based on experience with Stand A.
	Continue invasive management in Stands G and H.
2016	Continue deer management and EDRR.
	Continue invasive management in Stands G and H.
	Monitor results from release performed on stand A.
	Sell marked timber in stands A, B, C, D, E, H, J, N, O, P, and Q.
	Conduct crop tree release and /or timber stand improvement in Stand G and begin introduction of native warm season grasses.
2017	Continue deer management and EDRR.
	Continue invasive management in Stands G and H.
	Implement invasive management plan for stands A, B, C, D, E, H, J, N, O, P, and Q.
	Plant Stand E with Short Leaf Pine
2018	Continue deer management.
	Continue invasive management.
2019	Continue deer management.

	Continue invasive management.
2020	Continue deer management.
	Continue invasive management.
	Conduct chemical release of shortleaf pine in Stand E at end of growing season.
2021	Continue deer management.
	Continue invasive management.
2022	Continue deer management.
	Continue invasive management.

Appendix B: Community Input and Survey Results