

Lake Accotink Park

Fairfax County, Virginia

WSSI #22647.01

Rough Aves (*Geum laciniatum*) Habitat Evaluation and Search

September 8, 2015

Prepared for:

Burgess & Niple
12700 Black Forest Lane
Woodbridge, VA 22192

Prepared by:



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Rough Avens (*Geum laciniatum*) Habitat Evaluation and Search

Lake Accotink Park Fairfax County, Virginia WSSI #22647.01

Executive Summary

Wetland Studies and Solutions, Inc. (WSSI) has conducted a habitat evaluation and search for the rough avens (*Geum laciniatum*) in Lake Accotink Park in Fairfax County, Virginia. This habitat evaluation and search was undertaken at the request of Fairfax County, because the rough avens had been recorded in the vicinity of Lake Accotink in the past. This report discusses the distribution and habitat associations of the rough avens, details the methodology of our habitat evaluation and search, and presents our findings and conclusions.

Although habitat for this species is present within the study area, no rough avens were found during this search.

General Distribution and Habitat Associations of the Rough Avens

The rough avens is considered a rare species and is typically found in wet areas such as fens and meadows in the northern Piedmont and mountains of Virginia. It is usually found growing in calcareous or mafic soils, which are found in these regions of Virginia. In Virginia, it is known from six counties, including Augusta, Bath, Bland, Fairfax, Fauquier, and Tazewell (Harvill, et al, 1992; Virginia Botanical Associates, 2015).

The rough avens has been recorded in 27 eastern and Midwestern states, and in Ontario, Quebec, New Brunswick, and Nova Scotia, Canada. Although the species is not considered threatened or endangered, it is listed as a special concern species in Tennessee and as a historical species in Rhode Island (U.S. Department of Agriculture Plants Database). According to the Department of Conservation and Recreation, the rough avens is a rare plant in Virginia (Townsend, 2014).



Fig. 1: Rough Avens¹

Lake Accotink Park Site Description

Lake Accotink Park is located in southeastern Fairfax County, Virginia, at the terminus of Accotink Park Road. The study area consists of the area within 100 feet of the shoreline of Lake Accotink and its adjacent wetlands. Exhibit 1 is a vicinity map that depicts

¹ Image courtesy of Illinois Wildflowers (http://www.illinoiswildflowers.info/savanna/plants/rough_avens.htm)

the approximate location of the study area. The topography of the study area is depicted on the Annandale, VA 1994 USGS Topographic Map in [Exhibit 2](#), as well as in the background topo in [Attachment I](#). The majority of the study area is dominated by open water, however large areas of wetlands are present in the northern portion of study area. The lake edge is mostly dominated by forested cover. General vegetative cover can be seen in the aerial photographs in [Exhibit 3](#) (a March 2013 color infrared aerial photograph from VBMP), and [Exhibit 4](#) (a 2013 natural color aerial photograph from the Virginia Base Mapping Program (VBMP)).

Lake Accotink Park Soils

The soils within the study area are mapped as Barkers Crossroads loam, Codorus-Hatboro complex, Glenelg silt loam, Nathalie gravelly loam, Rhodhiss sandy loam, Urban Land and Wheaton-Glenelg complex ([Exhibit 5](#)). Based on soil data and supplemental soil data in the *Description & Interpretive Guide to Soils in Fairfax County* (Fairfax County Department of Public Works and Environmental Services, 2008, revised through 2013)², none of the soils within the study area are considered calcareous or mafic. Most of the soils within the study area are considered felsic, being derived from granite.

Habitat Evaluation & Search Methodology

The habitat evaluation and search for rough avens were conducted between July 10 and 14, 2015 by Benjamin N. Rosner, PWS, PWD, CE, CT³ and Jessica Campo, WPIT, CT⁴. Based on the literature consulted, the date of the survey was appropriately timed for observing rough avens, if present within the study area.

Before beginning intensive searches for the rough avens within the study area, WSSI conducted an evaluation of habitat suitability throughout the study area using scaled topographic mapping. This was accomplished by initially assessing the entire study area's vegetation, slope, and soil variability through qualitative data compilation using available aerial imagery, topography and soils surveys and preliminarily mapping habitat areas that could potentially support the rough avens within the study area.

In the field, the study area was transected and observers compiled field data, including: the presence of potential wetlands, relative soil moisture and soil type, and the presence of canopy coverage. These data were compared to the preliminarily mapped data, and, in addition to using landmarks, pacing and slope distance estimates, were used to further refine the approximate boundaries of habitat that appeared to be suitable for rough avens habitat searches.

After this initial assessment, all potentially suitable habitat areas on the study area were thoroughly and carefully searched for individual rough avens. Parallel search transects spaced at approximately 20 feet apart (or less) were walked through wetland areas while

² http://www.fairfaxcounty.gov/dpwes/environmental/soils_map_guide.pdf

³ Professional Wetland Scientist #1766, Society of Wetland Scientists Certification Program, Inc.; Virginia Certified Professional Wetland Delineator #3402-000080; Certified Level 1 Taxonomist: All Phyla, Society for Freshwater Science (SFS); Certified Ecologist, Ecological Society of America.

⁴ Wetland Professional In Training, Society of Wetlands Scientists Certification Program, Inc. and North American Benthological Society (NABS) Certified Level 1 Taxonomist: All Taxa.

observers inspect areas closely for rough avens. Observers walked along these transects, looking both for rough avens and for patches of better microhabitat.

The investigators also search for rough avens in areas considered to be lower-quality habitat (i.e., wetland edges and adjacent upland areas) using transects spaced no less than 20 feet apart to ensure adequate survey coverage, and to reduce sampling bias.

To provide a visual description of the study areas, photographs of representative habitats within the study area are taken and are included in Exhibit 6. The approximate locations of these photographs are depicted on Attachment I. A list of vascular plant species observed within the study area is provided in Exhibit 7.

Habitat Evaluation & Search Findings

Habitat for the rough avens is present along the edge of Lake Accotink and in the wetlands in and around the edge of Lake Accotink. These areas contain wetlands that appear to be seasonally wet, with relatively open to very open (i.e., zero) canopy coverage. Some wetland areas are of lower quality habitat, being dominated by invasive species, such as common reed (*Phragmites australis*), or by dense areas of native grasses such as rice-cut grass (*Leersia oryzoides*).

Within these areas, and the adjacent upland areas, two species of avens were detected: *Geum canadense*, and *Geum virginianum*. Despite a thorough search of these areas, individuals of rough avens were not found within the study area. This is likely due to the presence of invasive species and of dense stands of native vegetation which may be out-competing the rough avens within the study area.

Conclusions

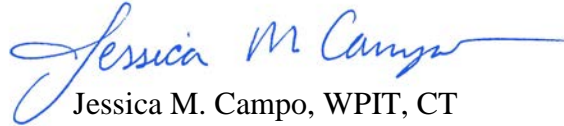
No rough avens were found during the survey of the study area. Suitable habitat for this species is present within the study area, but a thorough search of the study area detected no individuals. Given the intensity with which the study area was searched and the systematic nature of the search for this species, it is WSSI's opinion that there is a low probability that this species occurs within the study area, based on the negative search results.

Limitations

This study is based on examination of the habitat conditions on the study site at the time of our review and does not address conditions at a given time in the future. Such habitat conditions change over time. Therefore, our conclusions may vary from future observations.

Our habitat evaluation, rough avens search, and report have been prepared in accordance with generally accepted guidelines for the conduct of such surveys. We make no other warranties, either expressed or implied, and our report is not a recommendation to buy, sell or develop the property.

WETLAND STUDIES AND SOLUTIONS, INC.



Jessica M. Campo, WPIT, CT
Project Environmental Scientist

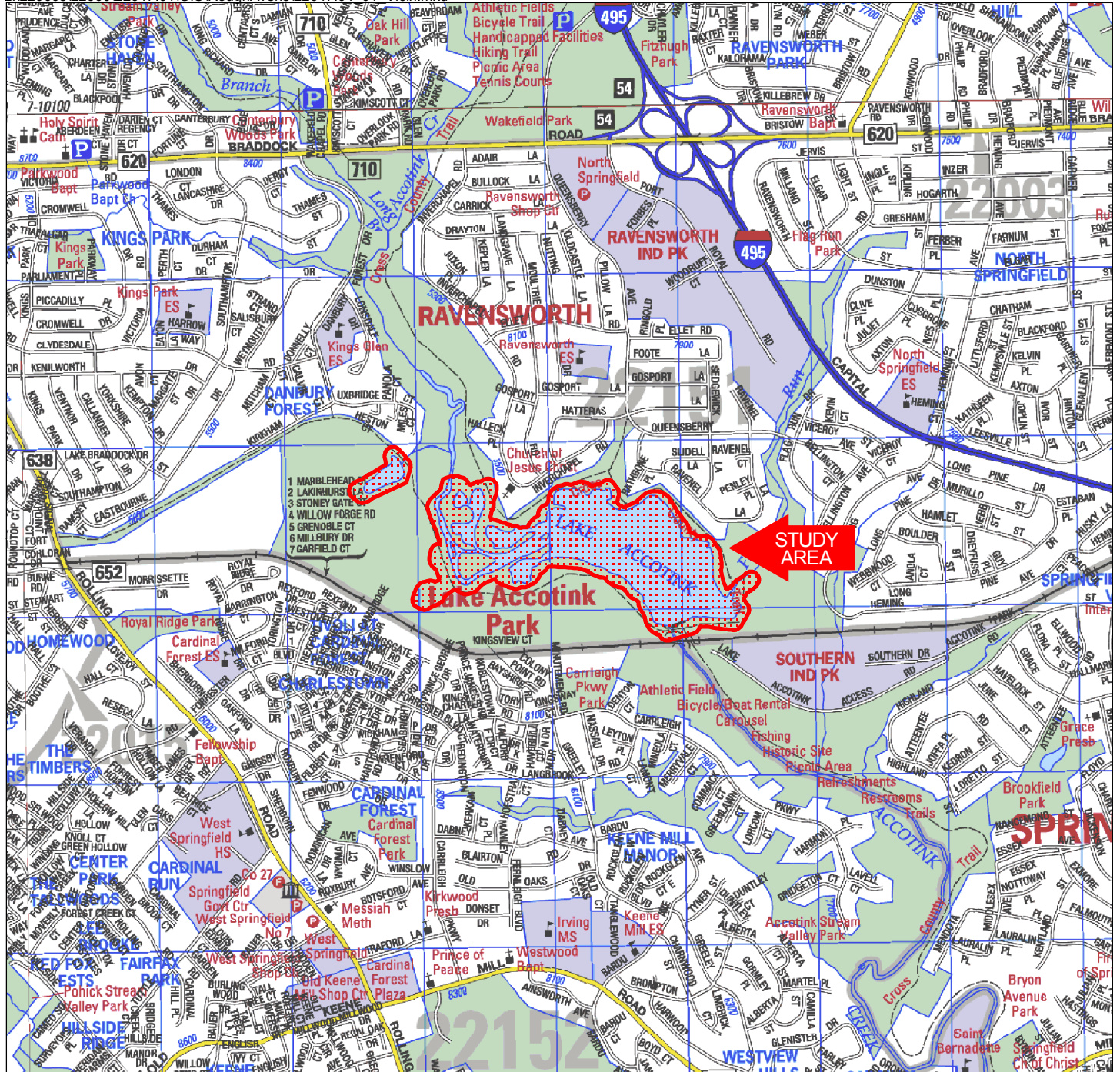


Benjamin N. Rosner, PWS, PWD, CE, CT
Manger – Environmental Science

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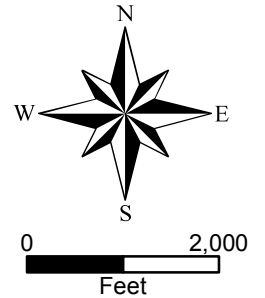
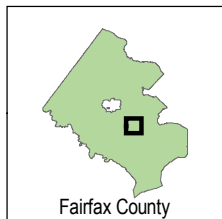
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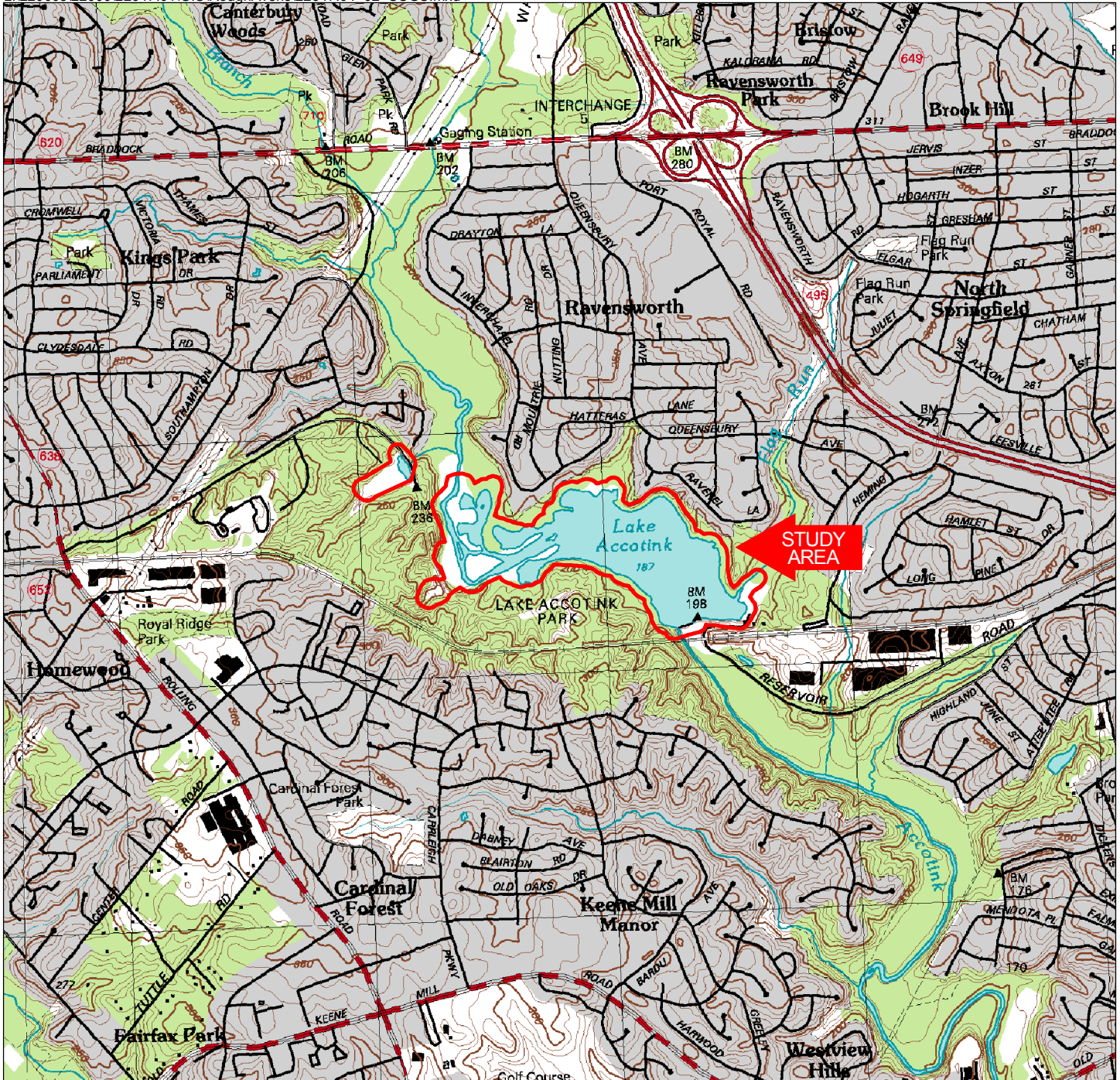
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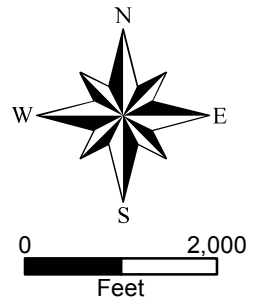
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Vicinity Map
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 2000'





USGS Quad Map
 Annandale, VA 1994
 Lake Accotink
 WSSI #22647.01
 Original Scale: 1" = 2000'



Latitude: 38°47'46" N
 Longitude: 77°13'24" W
 Hydrologic Unit Code (HUC): 020700100402
 Stream Class: III
 Name of Watershed: Accotink Creek
 COE Region: Eastern Mountains and Piedmont



**March 2013 Color Infrared Imagery
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'**

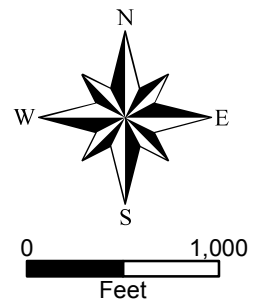


Photo Source: Virginia Base Mapping Program (VBMP)



**March 2013 Natural Color Imagery
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'**

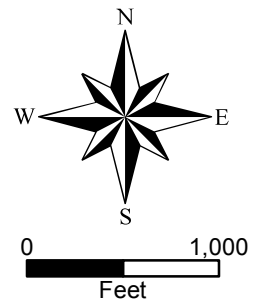
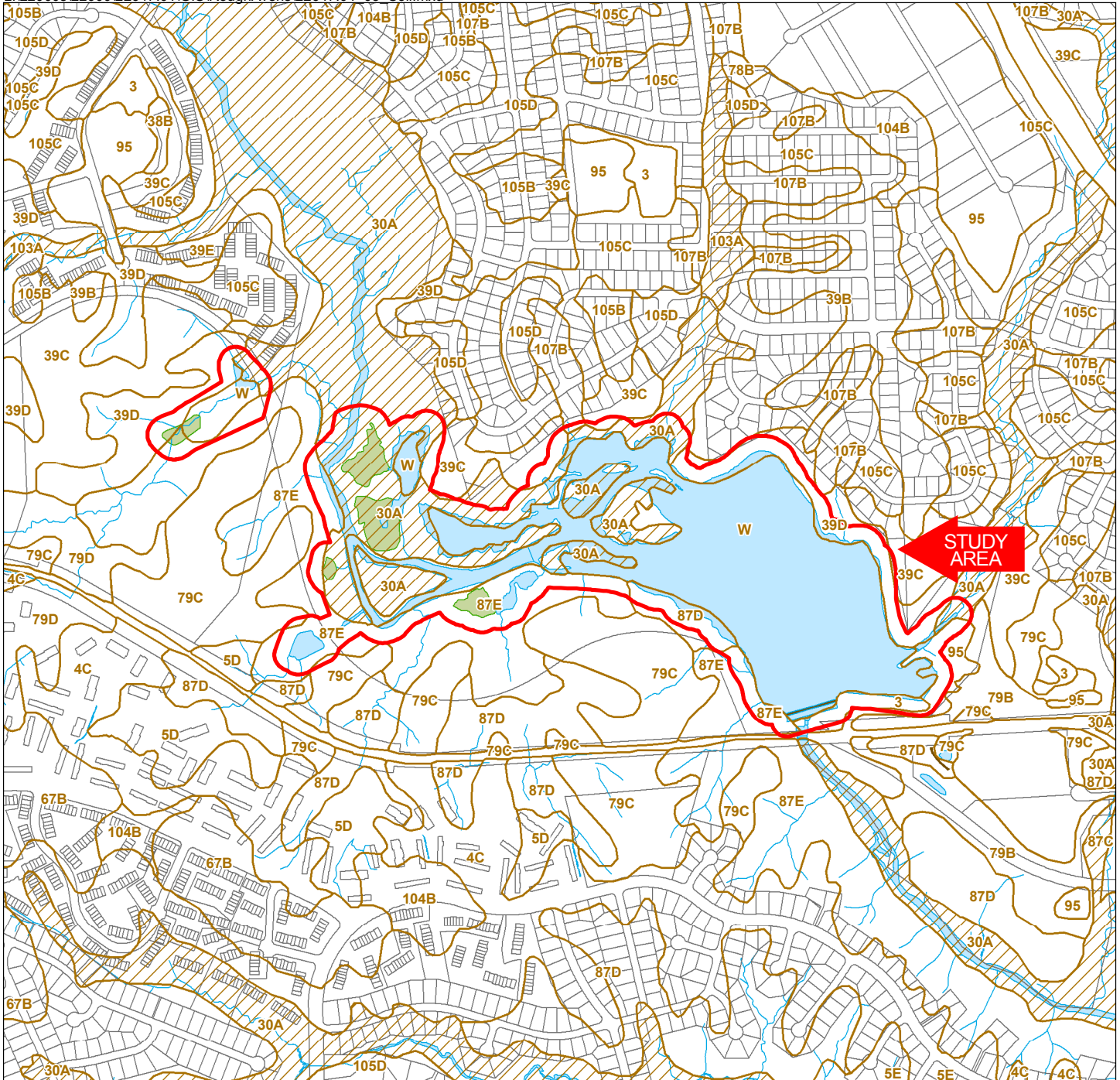



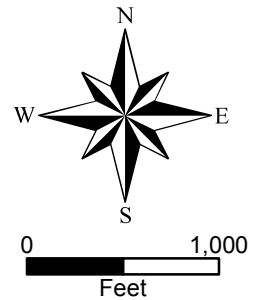


Photo Source: Virginia Base Mapping Program (VBMP)



Soils Map
Fairfax County Digital Data
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'

-  Hydric Soils
-  Soils with Hydric Inclusions
-  Non-hydric Soils



Mapped Soils Report for Lake Accotink Park

Project Number: 22647.01

Applicant / Owner: Burgess&Niple

County: Fairfax, VA

Map Symbol	Map Unit Name	Taxonomy	Drainage Class	Hydric National List	Hydric Local List	Hydric Inclusions
3	Barkers Crossroads loam, 0-45% slopes	Typic Udorthents	well	NO	NO	NO
30A	Codorus-Hatboro complex, 0-2% slopes	Fluvaquentic Dystrudepts	mod well-smwt poor	NO	NO	YES
39C	Glenelg silt loam, 7-15% slopes	Typic Hapludults	well	NO	NO	NO
39D	Glenelg silt loam, 15-25% slopes	Typic Hapludults	well	NO	NO	NO
79C	Nathalie gravelly loam, 7-15% slopes	Typic Kanhapludults	well	NO	NO	NO
87D	Rhodhiss sandy loam, 15-25% slopes	Typic Hapludults	well	NO	NO	NO
87E	Rhodhiss sandy loam, 25-45% slopes	Typic Hapludults	well	NO	NO	NO
95	Urban land	N/A	N/A	NO	NO	NO
105C	Wheaton-Glenelg complex, 7-15% slopes	Typic Udorthents	well	NO	NO	NO

**EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01**



1. **Looking east along the dam at the southern end of Lake Accotink. This area consists of a rip-rap stabilized shoreline that is actively maintained. Suitable habitat for the rough avens is not present in this portion of the study area.**



2. **Looking southeast along the shoreline of Lake Accotink in the north-central portion of the study area. Water levels tend to fluctuate in the areas immediately adjacent to the lake.**

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01



3. Looking northeast along the shoreline of Lake Accotink. Several invasive species were noted in this area, including purple loosestrife (*Lythrum salicaria*), which tend to out-compete native plants.



4. Looking west at a ponded area and a stand of common reed (*Phragmites australis*). Dense stands of non-native, invasive species such as this do not provide suitable habitat for the rough avens.

**EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01**



5. **Looking southwest at an emergent wetland at the western end of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**



6. **Looking north at a forested wetland at the western end of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**

**EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01**



7. Looking southwest at a forested wetland along the south side of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.



8. Looking northwest at a wetland and pond to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

**EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01**



9. **Looking southwest at a wetland adjacent to a pond to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**



10. **Looking west at an emergent wetland located west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**

**EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01**



11. Looking southwest at the upland forest adjacent to a wetland and stream to the west of Lake Accotink. Such areas are typically too dry to provide suitable habitat for the rough avens.



12. Looking northeast at a wetland to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

EXHIBIT 7
 Lake Accotink Park
 Rough Avens Habitat Evaluation
 WSSI #22647.01

Vascular Plants Observed in the Study Area
 (LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

Scientific Name	Common Name
<i>Acer negundo</i>	Boxelder
<i>Acer rubrum</i>	Red Maple
<i>Albizia julibrissin</i>	Silktree
<i>Alliaria petiolata</i>	Garlic mustard
<i>Allium vineale</i>	Wild Garlic
<i>Alnus glutinosa</i>	European Alder
<i>Amphicarpaea bracteata</i>	American Hogpeanut
<i>Arisaema triphyllum</i>	Jack In The Pulpit
<i>Asimina triloba</i>	Pawpaw
<i>Aster</i> sp.	Aster, species unknown
<i>Berberis</i> sp.	Barberry, species unknown
<i>Boehmeria cylindrica</i>	Smallspike False Nettle
<i>Carex crinita</i>	Fringed Sedge
<i>Carex intumescens</i>	Great Bladder Sedge
<i>Carex tribuloides</i>	Blunt Broom Sedge
<i>Carpinus caroliniana</i>	American Hornbeam
<i>Celastrus orbiculatus</i>	Oriental Bittersweet
<i>Cephalanthus occidentalis</i>	Common Buttonbush
<i>Cercis canadensis</i>	Eastern Redbud
<i>Chamaecrista fasciculata</i>	Partridge Pea
<i>Cinna arundinacea</i>	Sweet Woodreed
<i>Circaea alpina</i>	Small Enchanter's Nightshade
<i>Coreopsis</i> sp.	Tickseed, species unknown
<i>Cornus amomum</i>	Silky Dogwood
<i>Dichanthelium clandestinum</i>	Deertongue
<i>Dichanthelium acuminatum</i>	Tapered Rosette Grass
<i>Diospyros</i> sp.	Persimmon, species unknown
<i>Eleocharis</i> sp.	Spikerush
<i>Elaeagnus umbellata</i>	Autumn Olive
<i>Elymus virginicus</i>	Virginia Wildrye
<i>Epilobium</i> sp.	Willowherb, species unknown
<i>Euonymus fortunei</i>	Winter Creeper
<i>Euonymus</i> sp.	Spindletree, species unknown
<i>Fagus grandifolia</i>	American Beech

EXHIBIT 7
Lake Accotink Park
Rough Avens Habitat Evaluation
WSSI #22647.01

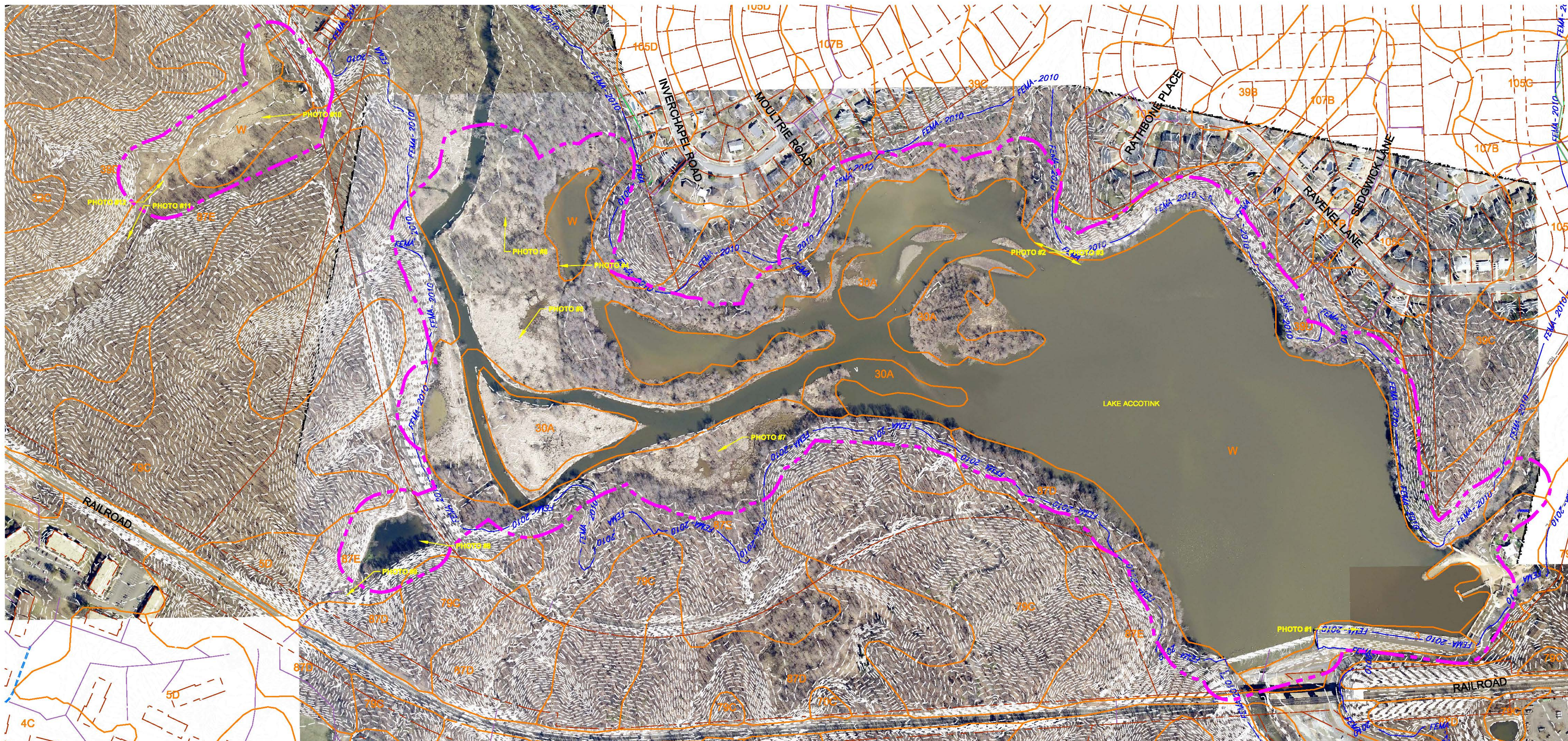
Vascular Plants Observed in the Study Area
(LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

<i>Fraxinus pennsylvanica</i>	Green Ash
<i>Galium aparine</i>	Stickywilly
<i>Galium lanceolatum</i>	Lanceleaf Wild Licorice
<i>Geum canadense</i>	White Avens
<i>Geum virginianum</i>	Cream Avens
<i>Hamamelis virginiana</i>	American Witchhazel
<i>Hedera helix</i>	English Ivy
<i>Hibiscus moscheutos</i>	Crimsoneyed rosemallow
<i>Impatiens capensis</i>	Jewelweed
<i>Ilex opaca</i>	American Holly
<i>Ipomoea pandurata</i>	Man Of The Earth
<i>Juncus effusus</i>	Common Rush
<i>Juniperus virginiana</i>	Eastern Red Cedar
<i>Lactuca sp.</i>	Lettuce, species unknown
<i>Leersia oryzoides</i>	Rice Cutgrass
<i>Lespedeza sp.</i>	Lespedeza, species unknown
<i>Ligustrum sp.</i>	Privet, species unknown
<i>Lindera benzoin</i>	Northern Spicebush
<i>Liriodendron tulipifera</i>	Tuliptree
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Lonicera maackii</i>	Amur Honeysuckle
<i>Ludwigia palustris</i>	Marsh Seedbox
<i>Lysimachia ciliata</i>	Fringed Loosestrife
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Melilotus officinalis</i>	Sweetclover
<i>Mentha piperita</i>	Peppermint
<i>Microstegium sp.</i>	Browntop, species unknown
<i>Nyssa sylvatica</i>	Black Gum
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Osmunda cinnamomea</i>	Cinnamon Fern
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Peltandra virginica</i>	Green Arrow Arum
<i>Persicaria virginiana</i>	Virginia Knotweed
<i>Phragmites australis</i>	Common Reed
<i>Phytolacca Americana</i>	American Pokeweed

EXHIBIT 7
Lake Accotink Park
Rough Avens Habitat Evaluation
WSSI #22647.01

Vascular Plants Observed in the Study Area
(LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

<i>Pilea pumila</i>	Canadian Clearweed
<i>Pinus virginiana</i>	Virginia Pine
<i>Plantago major</i>	Common Plantain
<i>Podophyllum sp.</i>	Mayapple, species unknown
<i>Polygonum arifolium</i>	Halberdleaf Tearthumb
<i>Polygonum persicaria</i>	Spotted Ladysthumb
<i>Polygonum sagittatum</i>	Arrowleaf Tearthumb
<i>Polystichum aristichoides</i>	Christmas Fern
<i>Potentilla simplex</i>	Common Cinquefoil
<i>Potentilla sp.</i>	Cinquefoil, species unknown
<i>Prunus serotina</i>	Black Cherry
<i>Quercus alba</i>	White Oak
<i>Quercus rubra</i>	Northern Red Oak
<i>Robinia pseudoacacia</i>	Black Locust
<i>Rosa multiflora</i>	Multiflora Rose
<i>Rubus argutus</i>	Saw-Tooth Blackberry
<i>Salix nigra</i>	Black Willow
<i>Sassafras albidum</i>	Sassafras
<i>Scirpus cyperinus</i>	Woolgrass
<i>Smilacina racemosa</i>	False Solomon's Seal
<i>Smilax glauca</i>	Cat Greenbrier
<i>Smilax rotundifolia</i>	Common Greenbrier
<i>Symplocarpus foetidus</i>	Skunk Cabbage
<i>Thelypteris noveboracensis</i>	New York Fern
<i>Toxicodendron radicans</i>	Eastern Poison Ivy
<i>Vaccinium angustifolium</i>	Lowbush Blueberry
<i>Verbesina alternifolia</i>	Wingstem
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum
<i>Viburnum dentatum</i>	Southern Arrowwood
<i>Vinca minor</i>	Common Periwinkle
<i>Vitis sp.</i>	Grape, species unknown
<i>Wisteria sp.</i>	Wisteria, species unknown



LEGEND

STUDY AREA BOUNDARY

FAIRFAX COUNTY SOIL SURVEY

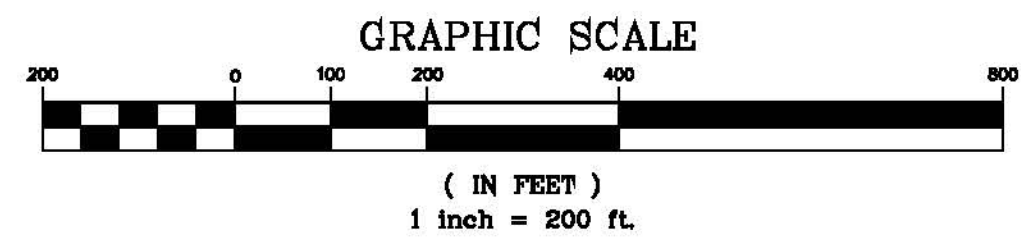


NOTES:

1. Wetland Studies and Solutions, Inc. (WSSI) visited the Lake Accotink Park study area between July 10 and 14, 2015 to conduct a habitat evaluation and search for the rough avens (*Geum laciniatum*). This attachment depicts the study area and current conditions referred to in detail in the report.
2. Topography and boundary information obtained from Fairfax County Digital Data and a 2015 natural color aerial photograph from Pictometry, were used as a base for this attachment.
3. Suitable habitat for rough avens is present within the study area. However, no rough avens were detected during this habitat evaluation and search.

MAPPED SOILS

MAPPING UNIT NUMBERS	SOIL SERIES NAME	SLOPE
3	BARKERS CROSSROADS	0-45%
30A	CODORUS-HATBORO COMPLEX	0-2%
39C	GLENELG SILT LOAM	7-15%
39D	GLENELG SILT LOAM	15-25%
79C	NATHALIE GRAVELLY LOAM	7-15%
87D	RHODHISS SANDY LOAM	15-25%
87E	RHODHISS SANDY LOAM	25-45%
95	URBAN LAND	N/A
105C	WHEATON-GLENELG COMPLEX	7-15%



**Attachment I:
ROUGH AVENS HABITAT EVALUATION AND
SEARCH MAP**

Prepared for: Burgess & Niple
Lake Accotink Park
 Fairfax County, Virginia

Wetland
 a DAVIS company

5300 Wellington Branch Drive • Suite 100
 Gainesville, Virginia 20155
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REVISIONS

No.	Date	Description	Rev. By	App. By

DATE: August 2015 SCALE: 1" = 200' C.L.: 2'

Horizontal Datum: VCS NAD 83
 Vertical Datum: NGVD 29
 Boundary and Topo Source:
 Fairfax County Digital Data

Design	Draft	Approved
BNR	BNR	MH

Sheet #
1 of 1

Computer File Name:
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