

# WETLAND EVALUATION REPORT

*for*

**PATUXENT GREENS COUNTRY CLUB  
14415 Greenview Drive  
Laurel, Prince George's County, Maryland**

*Prepared for:*

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*September 2017*

## **I. METHODOLOGY**

The property was evaluated for wetlands on May 15<sup>th</sup> of 2017 using the *Corps of Engineers Wetlands Delineation Manual and the Atlantic & Gulf Coast Supplement*<sup>1</sup>. The methods described in the manual and supplement were used as a guide for the field delineation of the wetland/upland boundary. This analysis requires the presence of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a wetland. Where positive indications of all three parameters are observed, the area is considered wetland. In addition to identifying vegetated wetlands on the property, other regulated Waters of the United States and/or waters of the State were considered as well. These waters included aquatic sites such as ponds, lakes, streams, rivers, and isolated wetlands. Should these other Federal or State regulated Waters be found to exist on the property, they are incorporated into the delineation of nontidal wetlands and labeled accordingly.

Five Wetland Delineation Data Sheets were completed within the study area. The data sheets describe the characteristics of the three parameter methodology at a specific location and solicit a conclusion based on the findings of the study. The conclusion will be an acknowledgement regarding the presence of regulated wetlands at the point center. The Wetland Delineation Data Sheets are included in Appendix A, as well as ground-level photographs showing various aspects of the site. This report describes the evaluation of the Waters of the United States, including jurisdictional wetlands, during the on-site evaluation.

## **II. SITE LOCATION AND EXISTING CONDITIONS**

The 195 acre site is located in Prince George's County on the east side of Greenview Drive in Laurel, Maryland (Figure 1). According to information provided by the Maryland SDAT Real Property Database service, the study area consists of a country club property situated on Tax Map 6, Grid F4 with a subdivision designation of 8500. Occupied single family residences situated on Greenview Drive form the southwestern limits of the property. Additional single family homes accessible from Parkview Way abut to the northwest. To the north lies a Home Depot commercial property, as well as an undeveloped residential parcel that is entirely forested. Along the northeastern property line the subject area borders an undeveloped fairlawn acreage maintained by the City of Laurel that abuts the Patuxent River. The Patuxent River main-stem forms the southeastern property boundary. To the south lies Patuxent River Park I owned by the Maryland-National Capital Park and Planning Commission.

The site is currently an active 18-hole golf course, with a clubhouse, ornamental stormwater management pond, and several maintenance structures. There are several interconnected water hazards throughout the site that drain south to a pond that regulates the water level with a large pumping station. Bear Branch was excavated along the northeastern limits of the fairways, with the borrow material used to create a protective berm along the maintained golf course to the northeast and southeast. A satellite image is included with this report showing existing site conditions as of July 2014 (Figure 2), as well as a colored infrared aerial photograph of the site and surrounding areas (Figure 3). The central latitude and longitude coordinates for this subject area are 39°05'12.66"N and 76°50'17.61"W, respectively.

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<sup>1</sup>Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

### III. RESEARCH OF AVAILABLE DOCUMENTS

#### A. National Wetland Inventory Maps

The National Wetland Inventory (NWI) is a Department of Interior, United States Fish and Wildlife Service document that has mapped wetland location and type through the use of aerial photographs in correlation with limited field analysis. The maps indicate wetland classifications according to a methodology described in *Classification of Wetlands and Deepwater Habitats of the United States*<sup>2</sup>. The NWI map for this section of Prince George's County (Figure 4) indicates that there are documented wetlands within the limits of the Patuxent Greens site. All the water hazard ponds are classified as PUBHx: excavated freshwater ponds with an unconsolidated bottom. The ponds are connected by a series of documented R5UBH channels (a perennial riverine system with an unconsolidated bottom) that generally drain to the south, forming a PFO1A (a temporarily flooded palustrine forested wetland complex that is dominated by broad leaved deciduous tree species) along the southern limits of the site. The main-stem of the Patuxent River meanders along the southeastern property line, and is classified as an R2UBH (lower perennial riverine system with an unconsolidated bottom) with PFO1C wetlands along the periphery (seasonally flooded palustrine forested wetlands). Bear Branch extends through the northeastern portion of the site and is classified as R2UBHx (an excavated lower perennial riverine system), with a fringe of PFO1C wetlands that extend throughout the property north of Bear Branch where no development is proposed.

#### B. County Soil Survey

The soil survey for this section of Prince George's County (Figure 5) indicates that four soil types are mapped within the study area, as well as standing water. 15 additional soils are mapped in close proximity within Prince George's County. Of those mapped within the subject property, two are classified as predominately hydric by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS): Zekiah & Issue soils (ZS) throughout the eastern portion of the site that are poorly drained, frequently flooded, and contain roughly 60% hydric inclusions throughout the soil profile, and Codorus and Hatboro soils (CF) that are found throughout the western portion. The following table provides a list of soils mapped close to the site and their various characteristics:

**Table 1: Soil Classes Mapped within Vicinity of the Patuxent Greens Property**

Map Symbol	Map unit name	Hydric Rating	Drainage Class	Hydrologic Soil Group
ApB	Aquasco silt loam, 2 to 5 % slopes	0	Somewhat poorly drained	D

<sup>2</sup>Cowardin, Lewis M. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Biological Services Program; FWS/OBS-79/31.

Map Symbol	Map unit name	Hydric Rating	Drainage Class	Hydrologic Soil Group
AuB	Aquasco-Urban land complex, 0 to 5 % slopes	0	Somewhat poorly drained	D
BaA	Beltsville silt loam, 0 to 2 % slopes	0	Moderately well drained	C
BaB	Beltsville silt loam, 2 to 5 % slopes	5	Moderately well drained	C
BuB	Beltsville-Urban land complex, 0 to 5 % slopes	5	Moderately well drained	C
CdD	Christiana-Downer-Urban land complex, 5 to 15 % slopes	0		D
CdE	Christiana-Downer-Urban land complex, 15 to 25 % slopes	5	Moderately well drained	D
CF	Codorus and Hatboro soils, frequently flooded	40	Poorly drained	C
Ch	Codorus-Hatboro-Urban land complex, frequently flooded	30	Poorly drained	D
Iu	Issue-Urban land complex, occasionally flooded	10	Somewhat poorly drained	B/D
RuB	Russett-Christiana-Urban land complex, 0 to 5 % slopes	0	Moderately well drained	D
SnB	Sassafras-Urban land complex, 0 to 5 % slopes	0	Well drained	B
SnD	Sassafras-Urban land complex, 5 to 15 % slopes	0	Well drained	A
UdaF	Udorthents, highway, 0 to 65 % slopes	0	Well drained	
UdbB	Udorthents, loamy, 0 to 5 % slopes	0	Well drained	C
UduB	Udorthents-Urban land complex, 0 to 5 % slopes	0	Well drained	C
Un	Urban land	0		D
UrbB	Urban land-Beltsville complex, 0 to 5 % slopes	0		D
W	Water	0		
ZS	Zekiah and Issue soils, frequently flooded	60	Poorly drained	B/D

 SOIL MAPPED WITHIN STUDY AREA

 SOIL MAPPED IN CLOSE PROXIMITY

### C. United States Geological Survey Topographic & State LiDAR Maps

The United States Geological Survey's (USGS) topographic maps show the topography and relief of the region. Topographic maps generally show the location of forests, streams, ponds, roads, and buildings on properties (Figure 6). The 7.5 minute topographic map for the study area (Laurel Quadsheet) indicates that the site is uniformly flat with elevations roughly 140' above sea level along the northern property line, falling to around 120' along the southeastern property boundary abutting the Patuxent River. There are two unnamed perennial streams running through the central fairways connecting the water hazard ponds, flowing north to south where they form a confluence offsite and discharge directly into the Patuxent River. The Patuxent River main-stem flows along the southeastern property line, and Bear Branch was excavated through the northern portion of the site. A topographic map taken from the Maryland iMAP service showing state Light Detection and Ranging (LiDAR) elevation data is included as well (Figure 7). This map displays the changes in elevation throughout the site in greater detail, showing subtle variations in micro-topography that are not possible with large scale maps. For this area, dark red indicates higher elevations to the north and west of the country club, while yellow-green indicates the low-lying

perennial stream channels and floodplain along the southern and eastern portions of the study area. The berm constructed on the west side of Bear Branch is easily discernable from the high-resolution elevation data, as well as the nontidal water hazards.

#### IV. ON-SITE ASSESSMENT

##### A. *Hydrology*

The subject property is located within the upper Patuxent River watershed (MDE 8 Digit Watershed Number 02131004), which is part of the Patuxent Tributary Strategy Basin. All stormwaters falling on the maintained golf course drain from the interconnected water hazards in the north to the south western maintenance pond that has two high-volume pumps. Excess surface water is pumped to the south into an unnamed perennial tributary of the Patuxent River, which flows to the south where it forms a confluence with the Patuxent River. The southwestern portion of the site falls within Department of Natural Resources 12-digit Watershed Number 021311040939, while the northeastern portion falls within the designated 021311040940 watershed, both of which drain directly to the Patuxent River. Bear Branch was channelized and straightened through the northeastern portion of the site, with the excavated material used to construct a berm which spans the northeastern and southeastern portions along the perennial waterways, and prevent flooding in the entire golf course. The upper Patuxent River and Bear Branch are Use I waterways as classified by the Maryland Department of Environment at this location (COMAR 26.08.02.08).

##### B. *Soils*

Numerous holes were dug throughout the site with a tile spade, and the profiles at each were examined for indicators of anaerobic soil conditions. Anaerobic soils possess color characteristics which can be quantified by comparison to the Munsell Color Chart. Munsell chromas of one or less, or matrix chromas of two, observed in the surface layer of the soil profile is indicative of hydric soils. In sandy soils, the accumulation of organic material and/or organic streaking observed in the surface layer of the soil profile is indicative of hydric soils. The data sheets provided in Appendix A document the findings of the field evaluation.

##### C. *Vegetation*

The vegetation found on the site was documented during the field analysis and is listed on the Wetland Delineation Data Sheets contained in Appendix A. In conjunction with the Corps Manual, the *National List of Plant Species That Occur in Wetlands: Region 1 - Northeast*<sup>3</sup> is used to obtain the indicator status of species identified on the site. The list categorizes each species by the following indicator status:

- Obligate wetland (OBL). Occurs with estimated 99% probability in wetlands.

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<sup>3</sup>Resource Management Group, Inc. 1992. *National List of Plant Species that Occur in Wetlands: Region 1 - Northeast*. Grand Haven, Michigan. 107 pps.

- Facultative wetland (FACW). Usually occur in wetlands (estimated 67%-99% probability).
- Facultative (FAC). Equally likely to occur in wetlands and uplands (34%-66% probability).
- Facultative upland (FACU). Usually occur in nonwetlands (67%-99% probability).
- Obligate upland (UPL). Occur in uplands almost always (> 99% probability).

In order for the wetland vegetation criteria to be met, greater than 50% of the dominant vegetation must be comprised of either OBL, FACW, and/or FAC (excluding FAC-) species.

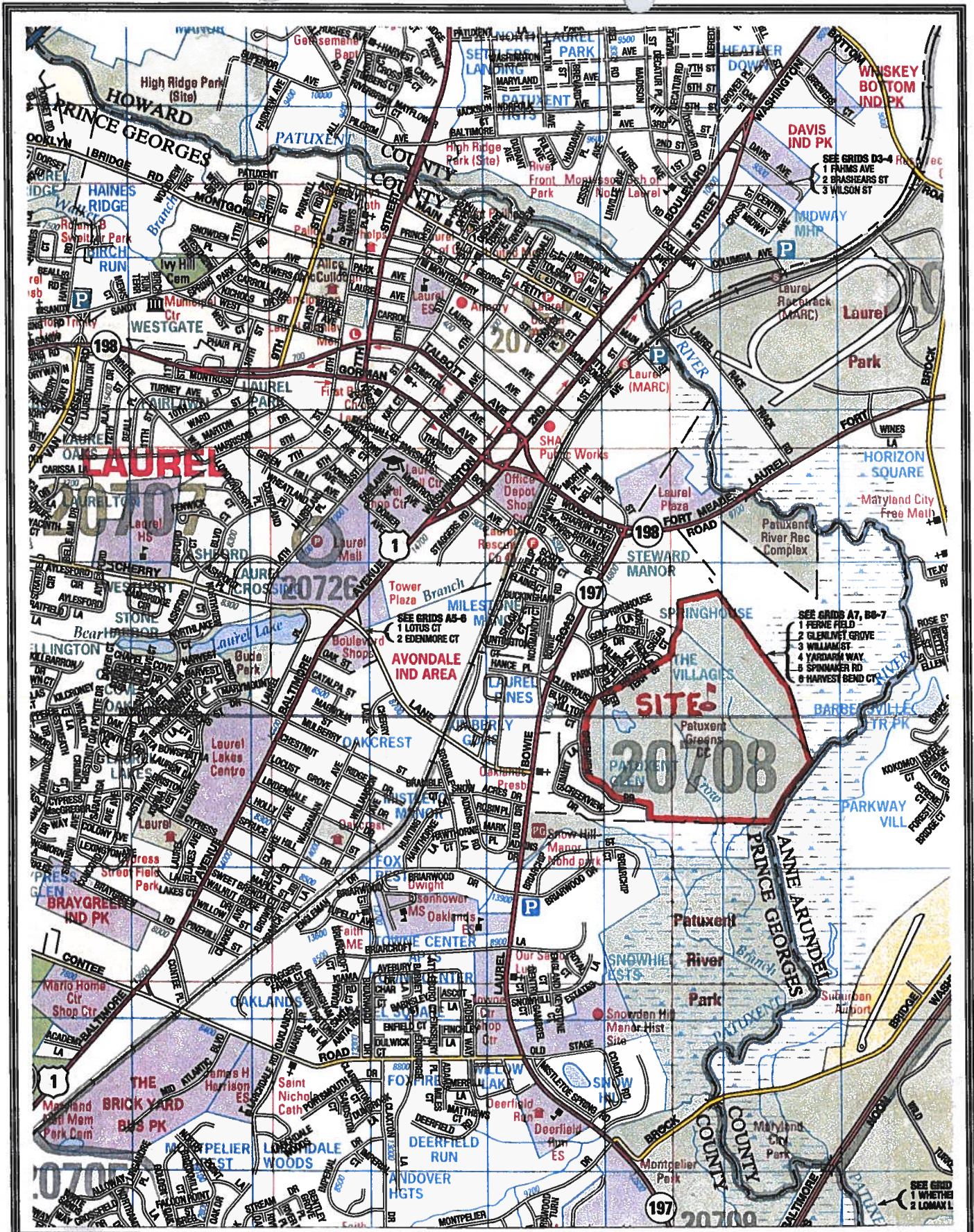
## V. WETLAND DELINEATION

Based on the three-parameter criteria set forth in the *Corps of Engineers Wetlands Delineation Manual and the Atlantic & Gulf Coast Supplement*, it was determined regulated wetlands exists within the boundaries of Patuxent Greens Country Club. The site has been highly disturbed, with man-made ponds constructed throughout which act as water hazards and control the hydrology of the site to allow for adequate irrigation. There is a large ornamental pond that serves as a stormwater management facility at the clubhouse in the western portion. During drought conditions, the golf course is supplemented by groundwater extraction to provide the necessary irrigation waters for the facility.

Southeast of the stormwater management pond is a drainage ditch that is frequently inundated, and drains to a 12" corrugated metal culvert pipe that runs under the paved cart path to the stormwater pond. This area was flagged as the "A" line, with flag A1 to A12 demarcating the wetland limits, and dominated with herbaceous wetland vegetation. Immediately south of the A line wetlands was a grove of southern red oak, red maple, and pin oak that was actively maintained and cleared of all understory, shrubs, and vines, as well as most herbaceous species. The hydrology of this area has been significantly altered due to the construction of the golf course, with relic soils that have a depleted matrix but no discernable hydrologic indicators.

Between Hole 2 and Hole 3 is a water hazard that has a forested wetland pocket on the west side, situated north of the tee box for Hole 2, which was flagged as the "D" line. The flags start at D1 on the north side of the wetland where it meets with the nontidal pond, and wraps around the western hydric limits, ending at flag D8 at the southern junction with the pond. The forest was dominated with sweet gum, black gum, and persimmon, with a minor component of tulip poplar and red maple on the fringe of the stand. The herbaceous layer included pokeweed, soft rush, skunk cabbage, jack-in-the-pulpit, and sensitive fern. The soil was black to a depth of 4 inches, with organic inclusions down to the water table 6 inches below the surface. There was evidence of historic beaver activity at this location, but no recent chew or any lodge/dam structures were observed during the delineation.

In the central portion of the golf course, between Holes 3, 4 and 6, is a patch of forest that has two isolated wetland channels that were flagged as the "E" line along the northwest fringe, and the "E2" line along the southeast edge. The northwestern depression flags run from E1 to E30, and is dominated with sweetgum and green ash in the shrub and canopy layers, as well as some pin oak. The herbaceous layer was primarily comprised of bugle weed, soft rush, shallow sedge, and other wetland sedge species. The southeastern depression was flagged E2-1 to E2-20 and extends into the maintained rough north of Hole 4. The soil at this location was a mucky mineral, black to 4 inches below the surface. Soft rush, bugle weed, and sedges dominated the herbaceous layer, and a couple sweetgum saplings were in close proximity to the inundated channel. The limits of the flagged wetlands can be found on the attached plan prepared by Rodgers Consulting.



**FIGURE 1 PRINCE GEORGE'S COUNTY ADC MAP**  
**(SCALE: 1"=2000')**

CREDIT ©ADC THE MAP PEOPLE – BY PERMISSION PUN# 2090616

**PATUXENT GREENS COUNTRY CLUB**  
**14415 GREENVIEW DRIVE**  
**LAUREL, MARYLAND**





**FIGURE 2**

**AERIAL PHOTOGRAPH**

CREDIT – MD iMAP

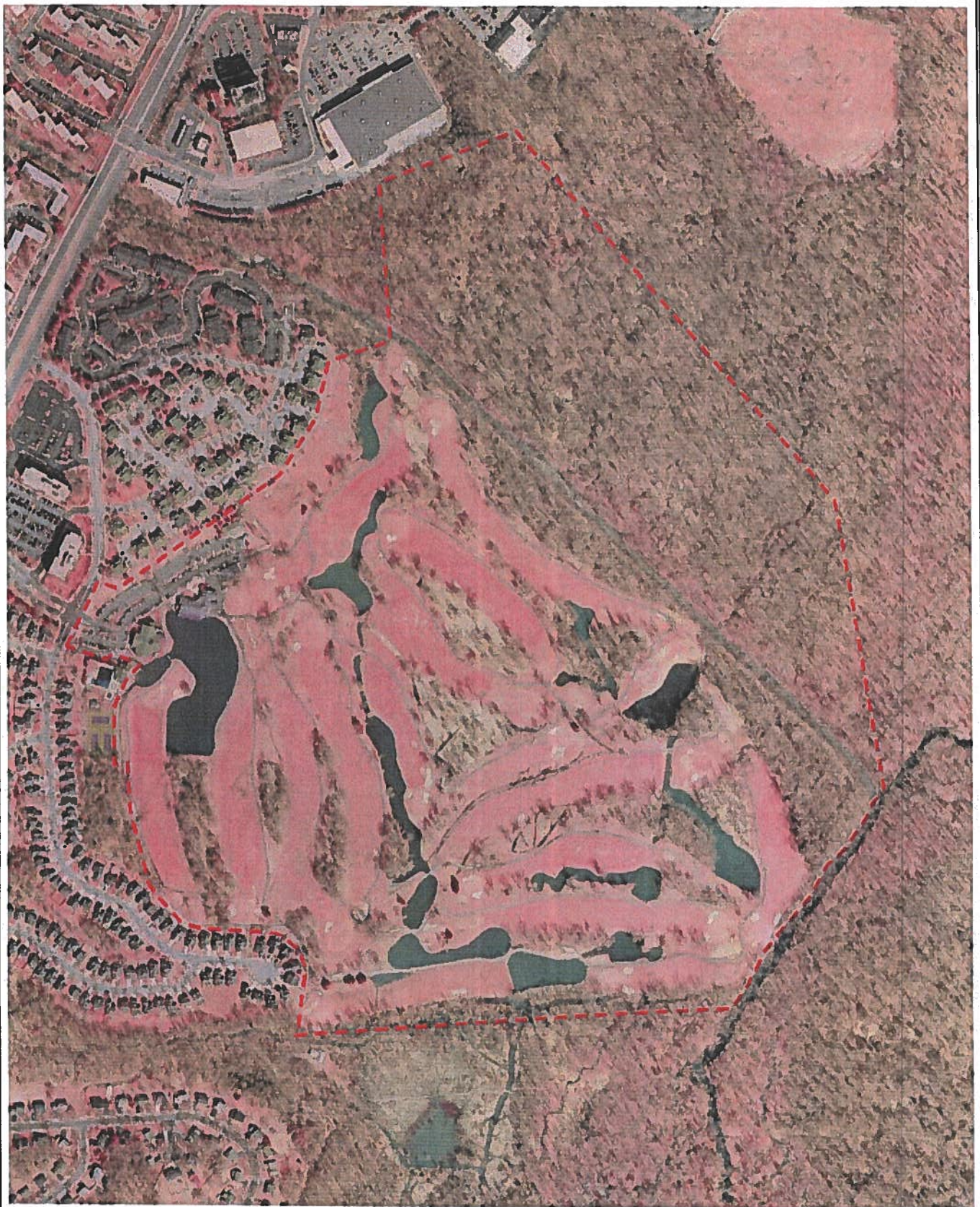
<http://geodata.md.gov/imaptemplate/>

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**LAUREL, MARYLAND**



**FIGURE 3 FALSE COLOR INFRA-RED PHOTO**

CREDIT – MD iMAP

<http://geodata.md.gov/imaptemplate/>

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U.S. Fish and Wildlife Service

# National Wetlands Inventory



### Wetlands

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Other
-  Riverine

**FIGURE 4 NWI WETLAND MAP**

CREDIT – USFWS NATIONAL WETLAND INVENTORY

<http://www.fws.gov/wetlands/Data/Mapper.html>

UNITED STATES FISH & WILDLIFE SERVICE

**PATUXENT GREENS COUNTRY CLUB**

14415 GREENVIEW DRIVE

LAUREL, MARYLAND

Hydric Rating by Map Unit—Anne Arundel County, Maryland, and Prince George's County, Maryland  
 Web Soil Survey  
 National Cooperative Soil Survey



Natural Resources  
 Conservation Service

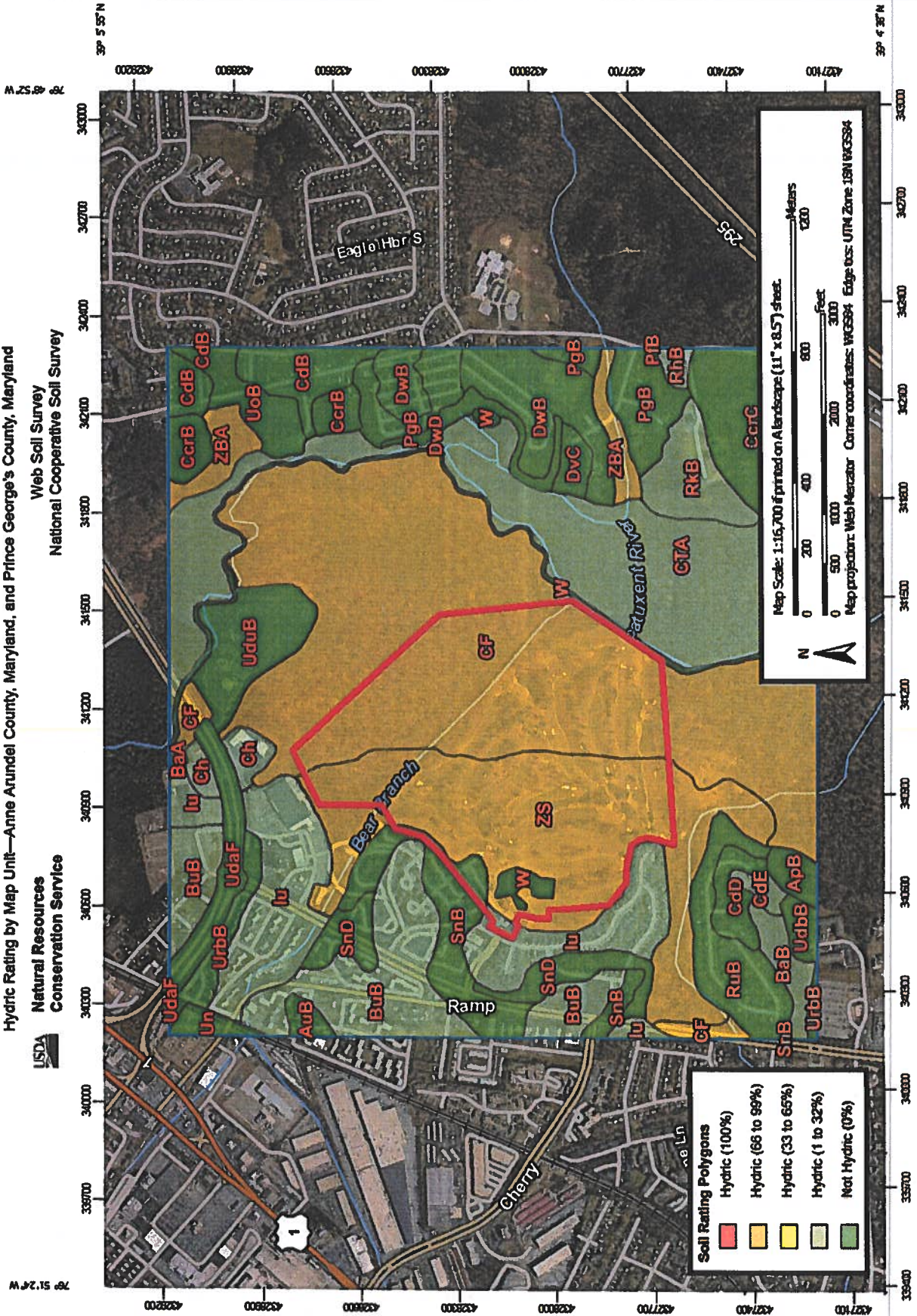


FIGURE 5

**SOIL SURVEY MAP**

CREDIT – NRCS WEB SOIL SURVEY

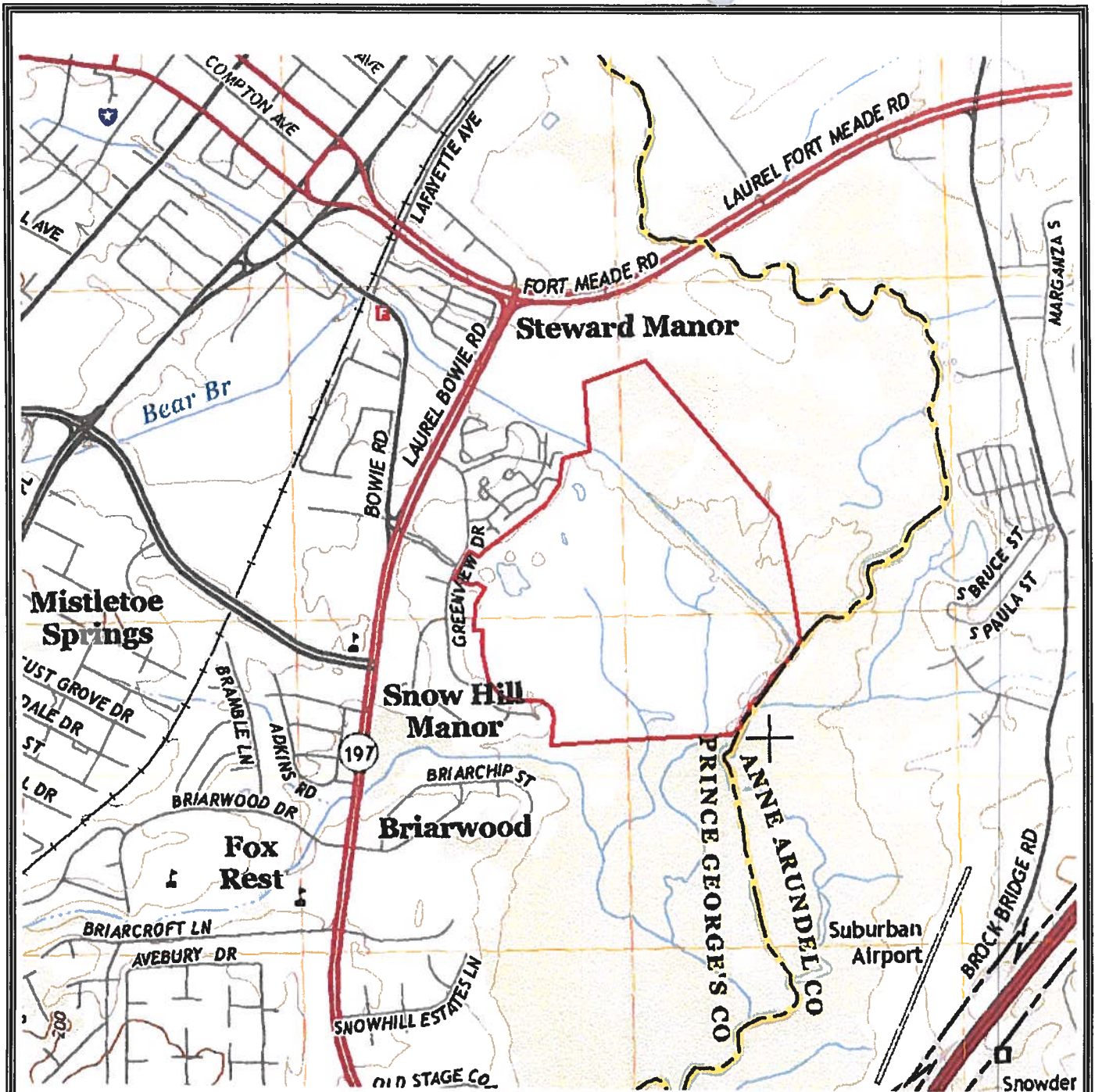
<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

USDA – NATURAL RESOURCE CONSERVATION SERVICE

**PATUXENT GREENS COUNTRY CLUB**

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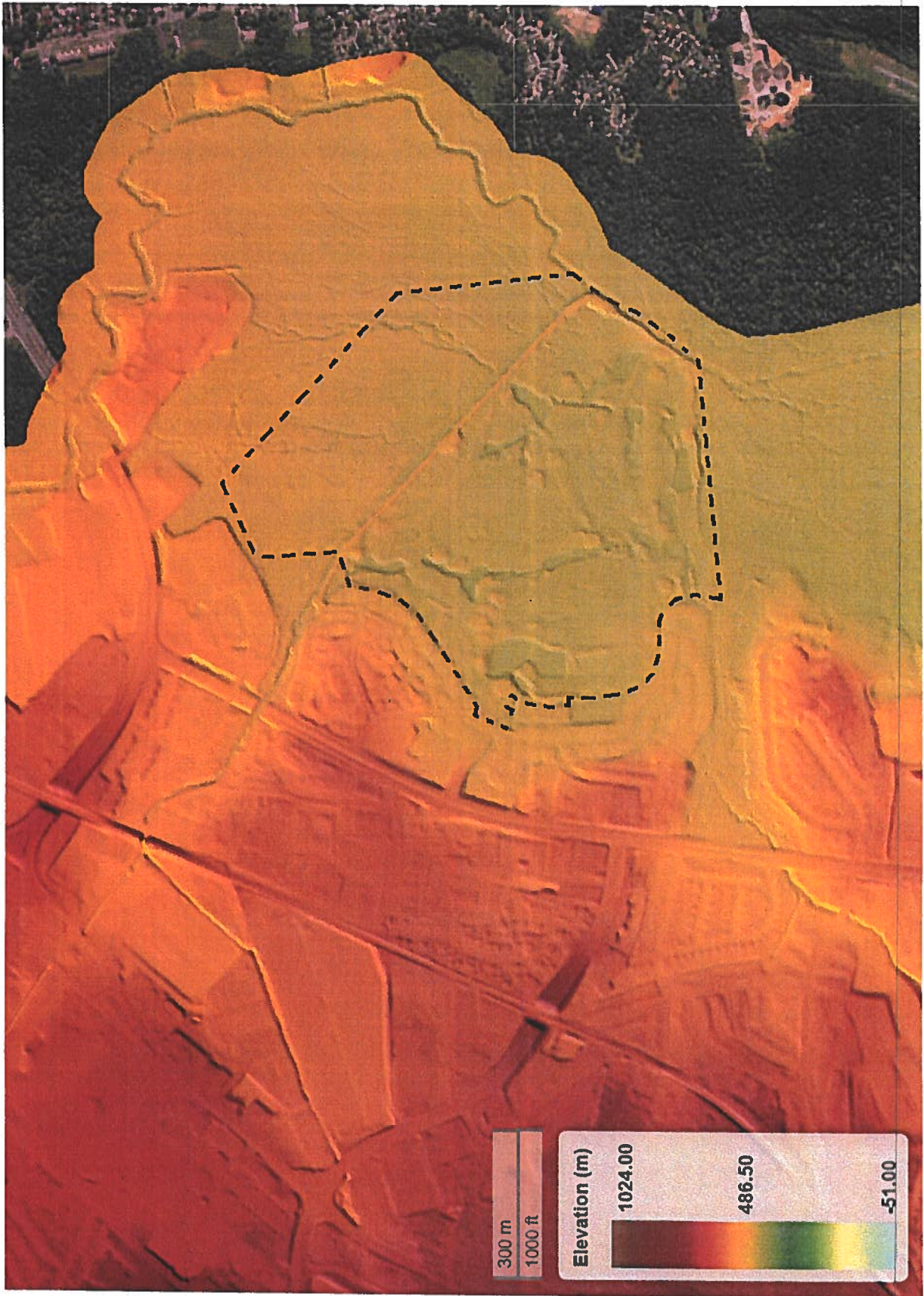
SCALE 1:24,000

Produced by the United States Geological Survey  
 North American Datum of 1983 (NAD83)  
 World Geodetic System of 1984 (WGS84). Projection and  
 1 000-meter grid: Universal Transverse Mercator, Zone 18S  
 10 000-foot ticks: Maryland Coordinate System of 1983

Imagery.....NAIP, June 2011  
 Roads.....HERE, ©2013  
 Names.....GNIS, 2013  
 Hydrography.....National Hydrography Dataset, 2011  
 Contours.....National Elevation Dataset, 2013  
 Boundaries.....Multiple sources; see metadata file 1972 - 2013

**FIGURE 6 USGS LAUREL QUADSHEET**  
 CREDIT – UNITED STATES GEOLOGICAL SURVEY  
<http://store.usgs.gov/>  
 UNITED STATES DEPARTMENT OF THE INTERIOR

**PATUXENT GREENS COUNTRY CLUB**  
 14415 GREENVIEW DRIVE  
 LAUREL, MARYLAND



**FIGURE 7**     **LiDAR TOPOGRAPHIC MAP**

CREDIT – MD iMAP

<http://imap.maryland.gov/Pages/lidar-topography-viewer.aspx>  
MD ENVIRONMENTAL RESOURCE & LAND INFORMATION NETWORK

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# **APPENDIX A**

## **WETLAND DELINEATION DATA SHEETS & SITE PHOTOGRAPHS**



**“A” Line wetland channel on east side of cart path between Holes 1 and 10, looking east**



**Southern connection of “D” Line wetlands to water hazard pond, looking south**





**Vegetation typical of forested "D" Line wetlands, looking west**



**Northern reaches of "E" Line wetland channel, looking southwest**



↑  
**Inundated portion of "E" Line wetland near central and southern portions of channel**  
↓





**Eastern limits of "E2" Line wetland channel, looking east**



**Western limits of "E2" Line wetland channel terminating at sweetgum shrub, looking west**

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Patuxent Greens Country Club City/County: Laurel/Prince George's County Sampling Date: 5-15-2017  
 Applicant/Owner: Alan Cohen State: MD Sampling Point: 1  
 Investigator(s): Milton McCarthy & Jacob McCarthy Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5%  
 Subregion (LRR or MLRA): MLRA149A Lat: 39°05'10.46"N Long: 76°50'29.42"W Datum: WGS84  
 Soil Map Unit Name: ZS - Zekiah and Issue soils, frequently flooded NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <b>Inundated drainage ditch draining to corrugated metal culvert underlying cart path between holes 1 &amp; 10, discharging to stormwater management pond by clubhouse. Flags A1 to A12.</b>	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0"</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>8"</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>3"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: <b>Water at surface</b>	

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: 1

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>0.1 acre</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
				0% = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>0.1 acre</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
				0% = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Herb Stratum</b> (Plot size: <u>0.1 acre</u> )				
1.	Soft Rush ( <i>Juncus effusus</i> )	10	Yes	OBL
2.	Arrow arum ( <i>Peltandra virginica</i> )	10	Yes	OBL
3.	Bugleweed ( <i>Lycopus virginicus</i> )	10	Yes	OBL
4.	Shallow Sedge ( <i>Carex lurida</i> )	5	No	OBL
5.	Sedge sp.	5	No	
6.				
7.				
8.				
9.				
10.				
11.				
12.				
				40% = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Woody Vine Stratum</b> (Plot size: <u>0.1 acre</u> )				
1.				
2.				
3.				
4.				
5.				
				0% = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u>				(A)
Total Number of Dominant Species Across All Strata: <u>3</u>				(B)
Percent of Dominant Species That Are OBL, FACW, or FAC: <u>3/3 = 100%</u>				(A/B)
<b>Prevalence Index worksheet:</b>				
Total % Cover of:		Multiply by:		
OBL species	_____	x 1 =	_____	
FACW species	_____	x 2 =	_____	
FAC species	_____	x 3 =	_____	
FACU species	_____	x 4 =	_____	
UPL species	_____	x 5 =	_____	
Column Totals:	_____	(A)	_____	(B)
Prevalence Index = B/A = _____				
<b>Hydrophytic Vegetation Indicators:</b>				
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Four Vegetation Strata:</b>				
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.				
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.				
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____				
Remarks: (If observed, list morphological adaptations below).				
Shallow drainage ditch in maintained lawn/rough on west side of hole 1. No trees, shrubs or woody vines at this location.				

**SOIL**

Sampling Point: 1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7"	10YR2/2	90	7.5YR4/6	10	C	PL	Sandy Loam	Soil appears to be relic
7-14"	10YR3/2	75	7.5YR4/6	25	C	M	Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)
- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: N/A  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Patuxent Greens Country Club City/County: Laurel/Prince George's County Sampling Date: 5-15-2017  
 Applicant/Owner: Alan Cohen State: MD Sampling Point: 2  
 Investigator(s): Milton McCarthy & Jacob McCarthy Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2%  
 Subregion (LRR or MLRA): MLRA149A Lat: 39°05'09.49"N Long: 76°50'28.97"W Datum: WGS84  
 Soil Map Unit Name: ZS - Zekiah and Issue soils, frequently flooded NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Sampling point taken due south of Data Point 1 (drainage ditch on west side of hole 1, just east of paved golf cart path) in grove of trees with maintained lawn. Site hydrology significantly altered when golf course was constructed.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (Includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: 2

<u>Tree Stratum</u> (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. Southern Red Oak ( <i>Quercus falcata</i> )	10	No	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. Red Maple ( <i>Acer rubrum</i> )	25	Yes	FAC	
3. Pin Oak ( <i>Quercus palustris</i> )	20	No	FACW	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>1/1 = 100%</u> (A/B)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____
8. _____	_____	_____	_____	
<u>55%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>155</u> (B)
<u>Sapling/Shrub Stratum</u> (Plot size: <u>0.1 acre</u> )				
1. _____	_____	_____	_____	Prevalence Index = B/A = <u>2.818181</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b> <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
<u>Herb Stratum</u> (Plot size: <u>0.1 acre</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				
<u>Woody Vine Stratum</u> (Plot size: <u>0.1 acre</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below). No understory/shrubs, herbaceous layer, or woody vines at this location.				



**SOIL**

Sampling Point: 2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-9"	10YR4/4	100					Sandy Loam	
9-16"	10YR4/3	90	7.5YR4/6	10	C	M	Sandy Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

- |  |   |   |
|--|---|---|
| <b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> |   | <b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>             |
| <input type="checkbox"/> Histosol (A1)   | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)                 | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                         |
| <input type="checkbox"/> Histic Epipedon (A2)                                    | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)                       | <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                        |
| <input type="checkbox"/> Black Histic (A3)                                       | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)                           | <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)     |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                                   | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)  |
| <input type="checkbox"/> Stratified Layers (A5)                                  | <input type="checkbox"/> Depleted Matrix (F3)                                       | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)                       | <input type="checkbox"/> Redox Dark Surface (F6)                                    | <input type="checkbox"/> Red Parent Material (TF2)                      |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)                   | <input type="checkbox"/> Depleted Dark Surface (F7)                                 | <input type="checkbox"/> Very Shallow Dark Surface (TF12)               |
| <input type="checkbox"/> Muck Presence (A8) (LRR U)                              | <input type="checkbox"/> Redox Depressions (F8)                                     | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)                               | <input type="checkbox"/> Marl (F10) (LRR U)   |   |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                       | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)                           |   |
| <input type="checkbox"/> Thick Dark Surface (A12)                                | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)                  |   |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)                   | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)                         |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)                     | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151)                              |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                                | <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)                     |   |
| <input type="checkbox"/> Sandy Redox (S5)  | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)                |   |
| <input type="checkbox"/> Stripped Matrix (S6)                                    | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) |   |
| <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)                      |   |   |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**  
 Type: N/A  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes \_\_\_\_\_    No X

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Patuxent Greens Country Club City/County: Laurel/Prince George's County Sampling Date: 5-15-2017  
 Applicant/Owner: Alan Cohen State: MD Sampling Point: 3  
 Investigator(s): Milton McCarthy & Jacob McCarthy Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5%  
 Subregion (LRR or MLRA): MLRA149A Lat: 39°05'13.85"N Long: 76°50'21.51"W Datum: WGS84  
 Soil Map Unit Name: ZS - Zekiah and Issue soils, frequently flooded NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Sampling point taken in central portion of country club, between holes 3, 4 and 6. Stand of unmaintained trees/shrubs with a swale running on west side. Flags E1 to E30.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Surface Water (A1)  <input checked="" type="checkbox"/> High Water Table (A2)  <input checked="" type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input checked="" type="checkbox"/> Water-Stained Leaves (B9)                 </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Marl Deposits (B15) (LRR U)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input checked="" type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)                 </td> </tr> </table>	<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Moss Trim Lines (B16)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Crayfish Burrows (C8)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)</td> </tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)													
<input type="checkbox"/> Surface Soil Cracks (B6)														
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)														
<input checked="" type="checkbox"/> Drainage Patterns (B10)														
<input type="checkbox"/> Moss Trim Lines (B16)														
<input type="checkbox"/> Dry-Season Water Table (C2)														
<input type="checkbox"/> Crayfish Burrows (C8)														
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)														
<input checked="" type="checkbox"/> Geomorphic Position (D2)														
<input type="checkbox"/> Shallow Aquitard (D3)														
<input type="checkbox"/> FAC-Neutral Test (D5)														
<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)														
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (Inches): <u>0 inches</u> Water Table Present? Yes <u>X</u> No _____ Depth (Inches): <u>8 inches</u> Saturation Present? Yes <u>X</u> No _____ Depth (Inches): <u>0 inches</u> (Includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____													
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:														
Remarks:														

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: 3

Tree Stratum (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. Green Ash ( <i>Fraxinus pennsylvanica</i> )	10	Yes	FACW
2. Sweetgum ( <i>Liquidambar styraciflua</i> )	10	Yes	FAC
3. Pin Oak ( <i>Quercus palustris</i> )	10	Yes	FACW
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			

30% = Total Cover

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Sapling/Shrub Stratum (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. Sweetgum ( <i>Liquidambar styraciflua</i> )	15	Yes	FAC
2. Green Ash ( <i>Fraxinus pennsylvanica</i> )	5	Yes	FACW
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			

20% = Total Cover

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Herb Stratum (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. Bugleweed ( <i>Lycopus virginicus</i> )	5	No	OBL
2. Shallow Sedge ( <i>Carex lurida</i> )	5	No	OBL
3. Seedbox ( <i>Ludwigia alternifolia</i> )	3	No	OBL
4. Soft Rush ( <i>Juncus effusus</i> )	5	No	OBL
5. Japanese Stilt Grass ( <i>Microstegium vimineum</i> )	20	Yes	FAC
6. Skunk Cabbage ( <i>Symplocarpus foetidus</i> )	5	No	OBL
7. Sedge sp.			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			

43% = Total Cover

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Woody Vine Stratum (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			

0% = Total Cover

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

Remarks: (If observed, list morphological adaptations below).

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 4/4 = 100% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>23</u>	x 1 = <u>23</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>93</u> (A)	<u>208</u> (B)

Prevalence Index = B/A = 2.23656

**Hydrophytic Vegetation Indicators:**

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0<sup>1</sup>
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**

Yes X No \_\_\_\_\_

**SOIL**

Sampling Point: 3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	Mucky Mineral	100					Loam	High concentration decomposing organic material
4-9"	10YR2/2	100					Sandy Loam	
9-12"	10YR3/1	80	7.5YR4/6	20	D	M	Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: N/A

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Patuxent Greens Country Club City/County: Laurel/Prince George's County Sampling Date: 5-15-2017  
 Applicant/Owner: Alan Cohen State: MD Sampling Point: 4  
 Investigator(s): Milton McCarthy & Jacob McCarthy Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5%  
 Subregion (LRR or MLRA): MLRA149A Lat: 39°05'11.86"N Long: 76°50'15.64"W Datum: WGS84  
 Soil Map Unit Name: Zekiah and Issue soils & Codorus and Hatboro soils, frequently flooded NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Sampling point taken on southeast side of stand of unmaintained trees/shrubs where Data Point 3 was taken (between holes 3, 4 and 6). Inundated depression originating in maintained lawn/rough to fringe of unmaintained area. Flags E2-1 to E2-20.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0 inches</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>7 inches</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0 inches</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: 4

	Absolute % Cover	Dominant Species?	Indicator Status																						
<b>Tree Stratum</b> (Plot size: <u>0.1 acre</u> )																									
1. Green Ash ( <i>Fraxinus pennsylvanica</i> )	5	No	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>3/3 = 100%</u> (A/B)  <b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center;">Total % Cover of:</td> <td style="width:25%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;">30</td> <td style="text-align:center;">x 1 = 30</td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;">15</td> <td style="text-align:center;">x 2 = 30</td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;">40</td> <td style="text-align:center;">x 3 = 120</td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;">0</td> <td style="text-align:center;">x 4 = 0</td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;">0</td> <td style="text-align:center;">x 5 = 0</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;">85 (A)</td> <td style="text-align:center;">180 (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.11765</u>  <b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		Total % Cover of:	Multiply by:	OBL species	30	x 1 = 30	FACW species	15	x 2 = 30	FAC species	40	x 3 = 120	FACU species	0	x 4 = 0	UPL species	0	x 5 = 0	Column Totals:	85 (A)	180 (B)
	Total % Cover of:	Multiply by:																							
OBL species	30	x 1 = 30																							
FACW species	15	x 2 = 30																							
FAC species	40	x 3 = 120																							
FACU species	0	x 4 = 0																							
UPL species	0	x 5 = 0																							
Column Totals:	85 (A)	180 (B)																							
2. Sweetgum ( <i>Liquidambar styraciflua</i> )	5	Yes	FAC																						
3. Pin Oak ( <i>Quercus palustris</i> )	5	No	FACW																						
4. _____																									
5. _____																									
6. _____																									
7. _____																									
8. _____																									
15% = Total Cover																									
50% of total cover: _____		20% of total cover: _____																							
<b>Sapling/Shrub Stratum</b> (Plot size: <u>0.1 acre</u> )																									
1. Sweetgum ( <i>Liquidambar styraciflua</i> )	20	Yes	FAC	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																					
2. Pin Oak ( <i>Quercus palustris</i> )	5	No	FACW																						
3. _____																									
4. _____																									
5. _____																									
6. _____																									
7. _____																									
8. _____																									
25% = Total Cover																									
50% of total cover: _____		20% of total cover: _____																							
<b>Herb Stratum</b> (Plot size: <u>0.1 acre</u> )																									
1. Bugleweed ( <i>Lycopus virginicus</i> )	5	No	OBL																						
2. Shallow Sedge ( <i>Carex lurida</i> )	5	No	OBL																						
3. Seedbox ( <i>Ludwigia alternifolia</i> )	5	No	OBL																						
4. Soft Rush ( <i>Juncus effusus</i> )	15	Yes	OBL																						
5. Japanese Stilt Grass ( <i>Microstegium vimineum</i> )	15	Yes	FAC																						
6. Sedge sp.																									
7. _____																									
8. _____																									
9. _____																									
10. _____																									
11. _____																									
12. _____																									
45% = Total Cover																									
50% of total cover: _____		20% of total cover: _____																							
<b>Woody Vine Stratum</b> (Plot size: <u>0.1 acre</u> )																									
1. _____																									
2. _____																									
3. _____																									
4. _____																									
5. _____																									
0% = Total Cover																									
50% of total cover: _____		20% of total cover: _____																							
Remarks: (If observed, list morphological adaptations below).																									

**SOIL**

Sampling Point: 4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	Mucky Mineral	100					Loam	Decomposing organic matter
4-7"	10YR3/1	100					Loam	
7-14"	10YR3/1	80	7.5YR4/6	20	D	M	Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Mucky Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: N/A  
 Depth (Inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks:

**WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region**

Project/Site: Patuxent Greens Country Club City/County: Laurel/Prince George's County Sampling Date: 5-15-2017  
 Applicant/Owner: Alan Cohen State: MD Sampling Point: 5  
 Investigator(s): Milton McCarthy & Jacob McCarthy Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-5%  
 Subregion (LRR or MLRA): MLRA149A Lat: 39°05'07.30"N Long: 76°50'22.28"W Datum: WGS84  
 Soil Map Unit Name: ZS - Zekiah and Issue soils, frequently flooded NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Sampling point taken on southwest side of water hazard/nontidal pond between holes 2 & 3. Flags D1 to D8. Old beaver chew observed but no evidence of recent activity.	

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> </tr> <tr> <td><input checked="" type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Marl Deposits (B15) (LRR U)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<p><u>Secondary Indicators (minimum of two required)</u></p> <table style="width:100%;"> <tr><td><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td><input checked="" type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><input checked="" type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td><input type="checkbox"/> FAC-Neutral Test (D5)</td></tr> <tr><td><input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)																															
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)																															
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																															
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)																															
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)																															
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																															
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)																															
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)																															
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																
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<input type="checkbox"/> FAC-Neutral Test (D5)																																
<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)																																
<p><b>Field Observations:</b></p> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>8 inches</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>3 inches</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____																															
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																
Remarks:																																



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: 5

<u>Tree Stratum</u> (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. Blackgum ( <i>Nyssa sylvatica</i> )	10	No	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>3/3 = 100%</u> (A/B)
2. Sweetgum ( <i>Liquidambar styraciflua</i> )	15	Yes	FAC	
3. Persimmon ( <i>Diospyros virginiana</i> )	10	No	FAC	
4. Red Maple ( <i>Acer rubrum</i> )	15	Yes	FAC	
5. Tulip Poplar ( <i>Liriodendron tulipifera</i> )	5	No	FACU	
6. _____				
7. _____				
8. _____				
55% = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>17</u> x 1 = <u>17</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>68</u> x 3 = <u>204</u> FACU species <u>19</u> x 4 = <u>76</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>134</u> (A) <u>357</u> (B)  Prevalence Index = B/A = <u>2.664179</u>
50% of total cover: _____		20% of total cover: _____		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. Sweetgum ( <i>Liquidambar styraciflua</i> )	5	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Green Ash ( <i>Fraxinus pennsylvanica</i> )	5	No	FACW	
3. Red Maple ( <i>Acer rubrum</i> )	5	Yes	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
15% = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft in height.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
50% of total cover: _____		20% of total cover: _____		
<u>Herb Stratum</u> (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	3	No	FACU	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
2. Soft Rush ( <i>Juncus effusus</i> )	10	No	OBL	
3. Pokeweed ( <i>Phytolacca americana</i> )	3	No	FACU	
4. Jack in the Pulpit ( <i>Arisaema triphyllum</i> )	10	No	FACW	
5. Skunk Cabbage ( <i>Symplocarpus foetidus</i> )	7	No	OBL	
6. Sensitive Fern ( <i>Onoclea sensibilis</i> )	15	Yes	FACW	
7. Japanese Honeysuckle ( <i>Lonicera japonica</i> )	3	No	FACU	
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
51% = Total Cover				
50% of total cover: _____		20% of total cover: _____		
<u>Woody Vine Stratum</u> (Plot size: <u>0.1 acre</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. Poison Ivy ( <i>Toxicodendron radicans</i> )	5	No	FAC	
2. Virginia Creeper ( <i>Parthenocissus quinquefolia</i> )	5	No	FACU	
3. Common Greenbrier ( <i>Smlax rotundifolia</i> )	3	No	FAC	
4. _____				
5. _____				
13% = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Remarks: (If observed, list morphological adaptations below).				

**SOIL**

Sampling Point: 5

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	Mucky Mineral	100					Loam	Decomposing organic matter
2-8"	10YR4/2	100					Loam	
8-15"	10YR2/1	100					Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                                 | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)                 |
| <input type="checkbox"/> Histic Epipedon (A2)                          | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)                       |
| <input type="checkbox"/> Black Histic (A3)                             | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)                           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                         | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                                   |
| <input type="checkbox"/> Stratified Layers (A5)                        | <input type="checkbox"/> Depleted Matrix (F3)                                       |
| <input checked="" type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)  | <input type="checkbox"/> Redox Dark Surface (F6)                                    |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)         | <input type="checkbox"/> Depleted Dark Surface (F7)                                 |
| <input checked="" type="checkbox"/> Muck Presence (A8) (LRR U)         | <input type="checkbox"/> Redox Depressions (F8)                                     |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)                     | <input type="checkbox"/> Marl (F10) (LRR U)   |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)  | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)                           |
| <input type="checkbox"/> Thick Dark Surface (A12)                      | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)                  |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)         | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)           | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151)                              |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                      | <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)                     |
| <input type="checkbox"/> Sandy Redox (S5)                              | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)                |
| <input type="checkbox"/> Stripped Matrix (S6)                          | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) |
| <input checked="" type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) |   |

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: N/A  
 Depth (Inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks: