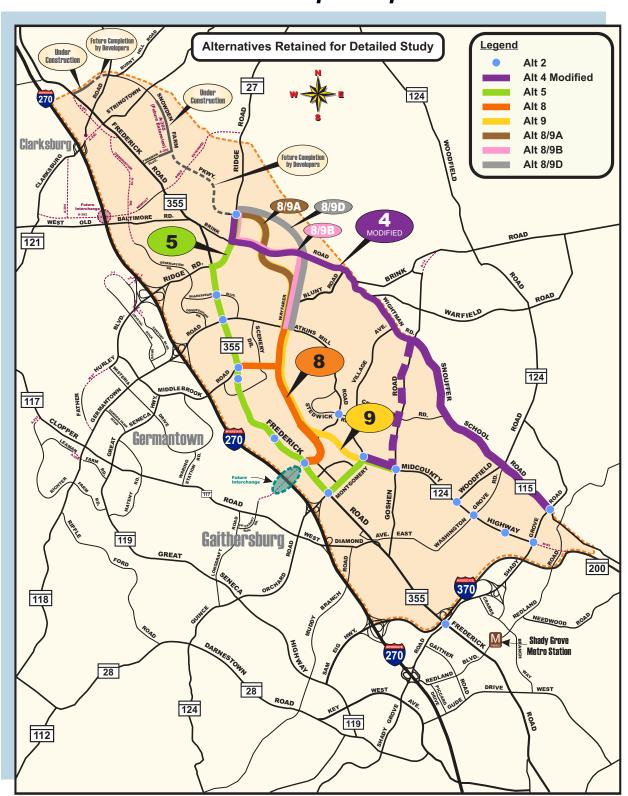


APPENDIX E

PARKS/FIDS/FOREST MITGATION



NATURAL RESOURCE INVENTORY BETHEL CHURCH PROPERTY

RK&K conducted a Natural Resource Inventory on the Bethel Church property in Germantown, Maryland, during April through June 2013. The Bethel Church property is a 119.4-acre site bounded on the north by Wilson Farm and residents of 22001 and 22005 Wildcat Road; on the south by Brink Road; on the east by residences on Davis Mill Road; and on the west by residences on Treva Court (see NRI Plan in **Appendix D**).

The Bethel Church property is a candidate site for forest and park mitigation, stream restoration, and/or wetland creation for the Midcounty Corridor Study (MCS) or another Montgomery County project that requires mitigation. The Bethel Church property is near the North Germantown Greenway and if purchased and reforested, would provide an additional 119.4 acres to the Greenway and additional FIDS habitat once the planted trees mature. Bethel Church contains two unnamed Use I-P tributaries to Great Seneca Creek whose water quality would be improved by the conversion of agricultural land to forest. Much of the current forest has a high priority for retention due to the presence of streams, wetlands, the high number of specimen trees (dbh \geq 24"), steep slopes, and high quality forest. Forest retention value rating characteristics are discussed below.

Surrounding land use consists of large-tract rural residential development and agriculture. There is no Maryland Agricultural Land Preservation Easement (MALP) on this property. Natural Resource Inventory (NRI) plans are attached. See **Appendix A** for project photos.

Summary

The 119.4 acre Bethel Church property contains three forest stands, two streams, eight wetlands, 397 specimen trees, and an occupied home. FS-1 is a 23.36 acre early successional Tulip Poplar Association in the center of the site where one wetland system and the two perennial streams are located. FS-2 is an 18.70-acre mid-successional Chestnut Oak forest located in the northeast and northwest ends of the property. FS-3 is a 24.36 acre mid-successional Tulip Poplar Association located in the north-central, southern, and eastern sections of the property. Two unnamed tributaries to Great Seneca Creek, both originating from numerous seeps on the property, flow north to south in the center of the property. Both streams contain numerous, abutting forested wetlands. The occupied farmhouse is located along Brink Road in the southern part of the property.

BACKGROUND INFORMATION

Background environmental information was obtained from the USGS 7.5 minute Gaithersburg quadrangle, FEMA FIRM maps, the Montgomery County Soil Survey, U.S. Fish and Wildlife National Wetland Inventory, and a recent survey of topography and property boundaries.

Topography

The project area topography is characterized by gently to somewhat steeply sloping upland hillsides and two streams with slightly incised banks that join together before exiting the property. Elevations within the property range from 626 NGVD 88 in the west to 472 NGVD 88 in the east. The NRI plans in Appendix D show slopes greater than 25% and slopes greater than 15% with highly erobible soils. Highly erodible soils are defined as those having a K- (erodibility) factor greater than 0.35.

Geology and Soils

The property is located in the Piedmont physiographic province characterized by broadly undulating to rolling topography underlain by metamorphic rocks with relief increased locally by low knobs or ridges and valleys. The Maryland Physiographic Map (2008) indicates the Bethel Church property is located in the Mt. Airy Upland District, characterized as a rolling upland due to the interaction of thick siltstones and quartzites with

stream reaches sometimes incised and within bedrock. The Maryland Geological Survey's Geologic Map of Maryland (1968) indicates that the project area is underlain by a Precambrian tuffaceous and non-tuffaceous phyllite, slate, and quartzite. The NRCS web soils data indicates that soils at the Bethel Church property include Eliot silt loam, 3-8% and 8-15%; Baile silt loam, 0-3% slopes (all hydric); Brinklow-Blocktown channery silt loam, 3-8% and 8-15% slopes; Occoquan loam, 3-8% slopes; Hatboro silt loam, 0-3% slopes (all hydric); and Blocktown-channery silt loam, 8-15% and 15-25% slopes, as indicated in **Table 1** below.

Map Unit Symbol	Map Unit Name	K-Factor (Whole Soil)	Hydric Rating	Hydrologic Soil Group
4B, 4C	Eliot Silt Loam, 3-8%, 8-15%	0.32	Not Hydric	С
6A	Baile silt loam, 0-3%	< 0.35	Hydric	D
16B, 16C	Brinklow-Blocktown	> 0.35	Not Hydric	B/C/D
	channery silt loam, 3-8%, 8-15%,			
17B	Occoquan loam, 3-8%	0.37	Not Hydric	В
54A	Hatboro silt loam, 0-3%	< 0.35	Hydric	D
116C, 116D	Blocktown-channery silt loam, 8-15%, 15-25%	< 0.35	Not Hydric	C/D

Table 1. Characteristics of Soils in Study Area

Waters of the United States

Two unnamed tributaries to Great Seneca Creek (W1 and W2) join together on the property before exiting the site. Both perennial streams derive their hydrology from headwater wetlands and springs onsite. Stream Waders collected benthic macro-invertebrate samples at a downstream site (860-3-2001) in 2001. The site had a total of 14 macro-invertebrate families with 10 EPT taxa and 3 dipterans, resulting in an IBI score of 3.00 and a rating of "Fair." Ephemeropterans made up 43% of the macro-invertebrates in the sample, indicating healthy stream conditions. National Wetland Inventory mapping indicates non-tidal wetlands located in the northern portion of the project area surrounding the perennial streams (See **Appendix A**).

Floodplains

The FEMA FIRM map for Montgomery County, Maryland, panel 24031C0180D, indicates that the study area is not in a mapped FEMA floodplain (See **Appendix A**).

Rare, Threatened, and Endangered Species

Letters requesting information about the presence of rare, threatened or endangered species (RTE's) were sent to the MDNR-Wildlife and Heritage Services (MDNR-WHS), and MDNR-Environmental Review Unit (MDNR-ERU) on June 12, 2013. The U.S. Fish and Wildlife Service Chesapeake Bay Field Office (USFWS) website was visited on May 28, 2013, and it was determined that the Gaithersburg quadrangle is included on the USFWS list of USGS topographic maps where no federally proposed or listed endangered or threatened species are known to occur in Maryland. As a result, the online list request certification resource was used to generate an online certification letter.

A response dated June 25, 2013 was received from MDNR-Wildlife and Heritage Services (MDNR-WHS) indicating that no rare, threatened, or endangered species exist on the Bethel Church property. A response is pending from MDNR-Environmental Review Unit (MDNR-ERU). See **Appendix B** for agency correspondence.

Cultural Resources

The Bethel Church property was evaluated to determine eligibility for the National Register of Historic Places (NRHP). The Maryland Historical Trust (MHT) concurred that the property is not individually eligible; however, the property could potentially be a contributing element of a much larger Wildcat Road/Davis Mill Road Rural Historic District. By letter addressed to MHT and dated July 8, 2013, MCDOT requested comments and concurrence for the NRHP eligibility of the Wildcat Road/Davis Mill Road Rural Historic District. A response is forthcoming.

Forest Characterization – Methods

The investigation method employed for this forest stand delineation were based on the *State Forest Conservation Technical Manual, Third Edition, 1997* for a Simplified Forest Stand Delineation (FSD). The State defines a forest as "a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater, and not less than 35 feet in width. Forest includes (1) areas that have at least 100 trees per acre with at least 50% of those having a two-inch diameter measured at 4.5 feet above the ground, and (2) forest areas that have been cut but nor cleared." Forest stands were characterized by their community type, successional stage, and overall forest condition. A walk-through level forest stand delineation was conducted and no plot points were recorded. Forest association designations are derived from *Maryland Forest Associations Species List* (Brush et al., 1977). Forest stand locations are shown on the NRI plans (See **Appendix D**).

The Bethel Church property forest characterization included an inventory of specimen trees. Montgomery County defines specimen trees as, "trees having a diameter at breast height of 24 inches or more; trees having 75 percent or more of the diameter at breast height of the current champion of that species; or a particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species." The location of all specimen trees within the Bethel Church property were recorded with an iPad and this information was transposed to the NRI plans, and the dbh, species, and health status of the tree was recorded. The health status of specimen trees was assessed by an ocular estimation of growth form, visible signs of decay, live crown ratio, and indications of disease or insect infestation.

Forest condition ratings are based on the following general factors. An "excellent" forest condition rating includes forest with numerous specimen trees, trees in good health, varied tree species diversity including climax forest tree species, excellent representation for all forest layers (overstory and understory trees, shrubs, and herbaceous perennials), rare or unusual plants, very minimal invasive plant cover, and ample wildlife habitat including food and cover. A "good" forest condition rating would include forest with some specimen trees, trees in good health, some tree species diversity, good representation of forest layers, very few invasive plants, and good wildlife habitat. A "fair" forest condition rating would include a forest with few or no specimen trees, trees health questionable, little tree species diversity, likely absence of one forest layers, moderate presence of invasive plants, and limited wildlife habitat. A "poor" forest condition rating would include a forest with no specimen trees, many trees in poor health, little tree species diversity, absence of one or more forest layers, heavy invasive plant presence, and little to no wildlife habitat.

The forest inventory included dominant canopy and understory species, dominant canopy size class, specimen tree identification, percent canopy closure, stand successional stage, stand condition, invasive cover, downed woody debris, and forest retention value. Table 2 lists characteristics for determining forest retention value ratings.

Table 2. Forest Retention Value Rating Characteristics

Table 2. Porest Retellion valu	e running emarateteristics
	Intermittent and perennial streams and their forest buffers
	Slopes > 25%
	Nontidal wetlands and buffers
	Erodible soils on slopes > 25%
High Detention Volum	100-year floodplains
High Retention Value	Habitat for rare, threatened and endangered (RTE) species or County Watchlist Species
	Large contiguous forest tracts especially those w/ FIDS habitat
	Forest stands w/ multiple specimen trees
	Forest with County Green infrastructure
	Stands with good structural diversity
	Corridor +300' foot wide
Moderate Retention Value	Forest stream buffers
	Tree buffers between incompatible land uses
	>24" dbh trees
_	Stands with poor structural diversity
Low Retention Value	Stands with moderate to high exotic/ invasive plant cover

Forest Characterization - Results

Three forest stands and three hundred and ninety seven specimen tees were identified during the investigation. An early successional Tulip Poplar Association is designated as FS-1 on the plans, a mid-successional Chestnut Oak Association is designated as FS-2, and a mid-successional Tulip Poplar Association is designated as FS-3. Specimen trees locations are shown on the NRI plan and a specimen tree table (**Appendix C**) provides the tree species, the dbh measurement of each tree, and its health status. Results of the investigation follow.

FS1: Early-successional Tulip Poplar Association

This 23.36-acre early-successional forest stand is located in the center of the Bethel Church property. The dominant canopy tree species are *Liriodendron tulipifera* (tulip poplar) and *Acer rubrum* (red maple). Other canopy tree species include *Prunus serotina* (black cherry), *Nyssa sylvatica* (black gum), *Ailanthus altimissa* (tree of heaven), *Sassafras albidum* (common sassafras), *Juglans nigra* (black walnut), *Quercus alba* (white oak), *Quercus rubra* (red oak) and *Diospyros virginiana* (persimmon). The understory is dominated by *Juniperus virginiana* (red cedar), *Cornus florida* (flowering dogwood), *Smilax rotundifolia* (greenbrier), *Rosa multiflora* (multiflora rose), and red maple and white oak saplings from overstory species. Trees between 6" and 12" dbh comprise the dominant canopy size class in this forest stand with only one specimen tree. The vine and herbaceous layers are dominated by *Toxicodendron radicans* (eastern poison ivy), *Celastris orbiculatus* (Oriental bittersweet), and *Lonicera japonica* (Japanese honeysuckle).

Canopy closure is estimated at 70-80% and downed woody debris was moderate. FS1 has a fair forest condition rating and a low Forest Retention Value since it contains only one specimen tree and is used as a wildlife corridor with moderate wildlife habitat value, and contains moderate invasive plant cover.

FS2: Mid-successional Chestnut Oak Association

This 18.70-acre mid-successional forest stand is located along upland slopes in the northeastern and northwestern corners of the site. The dominant canopy tree species is chestnut oak. Other canopy tree species include *Carya glabra* (pignut hickory), white oak, black cherry, northern red oak), black gum and red maple. The understory is dominated by black cherry, red maple, *Morus alba* (white mulberry), multiflora rose, *Rubus alleghiensis* (blackberry), *Kalmia latifolia* (mountain laurel) and many saplings from overstory species (especially chestnut oak). Trees between 12" and 24" dbh comprise the dominant canopy size class in this forest stand with many specimen trees. Overall there is little to no vine or herbaceous plant cover and mountain laurel cover is dense in the eastern portion of FS2. Canopy closure is estimated at approximately 80% and downed woody debris is moderate. FS2 has a good forest condition rating and high Forest Retention Value due to the presence of many specimen trees, use as a wildlife corridor, presence of large, dense areas of mountain laurel, and only minor invasive plant cover.

FS3: Mid-successional Tulip Poplar Association

This 24.36-acre mid-successional forest stand is located along the two unnamed tributaries to Great Seneca Creek and in the northeast corner of the site. The most common canopy tree species are tulip poplar and red maple. Other canopy tree species include red oak, white oak, *Carya glabra* (pignut hickory), black cherry, black gum, sassafras, and *Pinus virginiana* (Virginia pine). The understory is dominated by flowering dogwood, black gum, *Lindera benzoin* (spicebush), *Vaccinium corybosum* (highbush blueberry), *Smilax rotundifolia* (greenbrier), and *Rhododendron viscosum* (swamp azalea). Trees between 12" and 20" dbh comprise the dominant canopy size class in this forest stand with many specimen trees. The vine and herbaceous layers are dominated by *Impatiens capensis* (jewel weed), *Dennstaedtia punctilobula* (eastern hayscented fern), *Symplocarpus foetidus* (skunk cabbage), and *Microstegium vimineum* (Japanese stiltgrass). Canopy closure is estimated at approximately 80% and downed woody debris was moderate to high. FS3 has a good forest condition rating and a high Forest Retention Value due to its many specimen trees, perennial streams, wetlands and floodplain, its use as a wildlife corridor with high wildlife habitat value, its functioning as a stream buffer, and low invasive plant cover.

Specimen Trees

Three hundred and ninety-seven specimen trees, T1-T397, were located within the Bethel Church property. Specimen trees are abundant throughout FS2 and FS3. Retention of mature forest with specimen trees is important because specimen trees account for a larger proportion, per tree, of the forest canopy, seed and mast production, water and nutrient absorption, and biomass. Specimen tree information is summarized in a table found in **Appendix C**, and the locations of specimen trees are indicated on the NRI plans in **Appendix D**.

WETLAND DELINEATION-FIELD INVESTIGATION

Two jurisdictional waters of the U.S. and eight wetlands were identified during the wetland delineation. Wetland quality evaluations are based on the condition of the resource, diversity of plant species, presence of invasive species,

and best professional judgment. Stream quality evaluations are based on existing DNR and Montgomery County data collected for benthic macro-invertebrates and fish and an index of Biological Integrity (IBI) that rates stream health.

WETLAND DELINEATION-Methods

All waters of the U.S., including wetlands, in the study area were delineated by a team of environmental scientists. The applicable data form (Routine Wetland Determination for wetlands and/or the RK&K-derived Waters of the U.S. form) was completed for each delineated feature. Each delineated feature was named, the boundary points marked with pink flagging numbered consecutively and photographed. Boundary point positions were located using traditional survey methods or GPS.

Waters of the U.S., other than wetlands, were delineated using the limits defined in 33 C.F.R. § 328. The boundaries of non-tidal waters of the U.S. other than wetlands were set at the ordinary high water mark (OHW). The OHW was determined in the field using physical characteristics established by the fluctuations of water (e.g., change in plant community, changes in the soil character, shelving) in accordance with U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05.

Wetlands were delineated in accordance with the U.S. Army Corps of Engineers 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region Version 2.0, ed. J.F. Berkowitz, J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center and supplemental guidance issued by the United States Army Corps of Engineers (USACE). Routine wetland determination methods with onsite inspection were used to determine the presence of wetlands in the study area.

Clean Water Act jurisdiction of delineated features was determined in accordance with the June 5, 2007 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following the U.S. Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States (Rapanos); and the January 19, 2001 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following U.S. Supreme Court's decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC).

WETLAND DELINEATION- Results

W1 – Waters of the U.S. (unnamed tributary to Great Seneca Creek)

W1 is a perennial, unnamed tributary to Great Seneca Creek that originates on the Bethel Church property from wetland seeps associated with wetlands W9, W10, and W11; and flows to the east until it joins W2. W1 is a relatively permanent water (RPW) with a natural channel shape, width of 2 to 5 feet, bank depth of 2 to 4 feet, water depth of 2-8", and banks with slopes varying from 1:1 to 3:1. Channel substrate consists of silts, cobbles, sands, and gravel. The feature has well defined bed and banks and observed indicators of the ordinary high water mark include sediment deposition, presence of litter and debris, and sediment sorting. The forest surrounding W1 is dominated by red maple, black cherry, red cedar, greenbrier, jewelweed, *Polystichum acrostichoides* (Christmas fern), *Vitis riparia* (grape vine), and *Sphagnum* spp. (sphagnum moss). Maryland DNR's Stream Waders collected benthic macro-invertebrate samples at a site (860-3-2001) downstream of

Feature W1 in 2001. The site had a total of 14 macroinvertebrate families, with 10 EPT taxa and 3 Dipterans, resulting in a "Fair" IBI score of 3.00. Ephemeropterans made up 43% of the macroinvertebrates in the sample, indicating healthy stream conditions. The feature provides adequate habitat for fish and benthic macroinvertebrates due to its stable conditions, variety of substrates, and presence of riffle-pool sequences. Feature W1 was flowing during the April 2011 and May and June 2013 field reviews, and is jurisdictional under Rapanos guidance.

W2 – Waters of the U.S. (unnamed tributary to Great Seneca Creek)

W2 is a perennial, unnamed tributary to Great Seneca Creek that originates on the Bethel Church property from wetland seeps associated with headwater wetland W8. W2 flows in a southerly direction and wetlands W3 through W7 are abutting wetlands. W2 is a RPW with a natural channel shape, a width of 3 to 6 feet, bank depth of 1 to 2 feet, water depth of 2-6", and banks with varying slopes from 2:1 to 3:1. Channel substrate consists of silts, sands, gravel, and bedrock. The feature has well defined bed and banks and observed indicators of the ordinary high water mark include clear natural line impressed on the bank, shelving, leaf litter disturbed, presence of litter and debris, sediment sorting, and observed/predicted flow event. The forest surrounding W1 is dominated by red maple, red cedar, blackgum, tulip poplar, multiflora rose, spice bush, Japanese honeysuckle, *Persicaria perfoliata* (mile-a-minute), and skunk cabbage. Maryland DNR's Stream Waders collected benthic macro-invertebrate samples at a site (860-3-2001) downstream of Feature W2 in 2001. The site had a total of 14 macroinvertebrate families, with 10 EPT taxa and 3 Dipterans, resulting in a "Fair" IBI score of 3.00. Ephemeropterans made up 43% of the macroinvertebrates in the sample, indicating healthy stream conditions. The feature provides adequate habitat for fish and benthic macro-invertebrates due to its stable conditions, variety of substrates, and presence of riffle-pool sequences. Feature W2 was flowing during the April 2011 and May and June 2013 field reviews, and is jurisdictional under Rapanos guidance.

W3 – Emergent Wetland

W3 is a very small emergent wetland abutting W2. Dominant vegetation includes skunk cabbage, sphagnum moss, and an unknown grass species. Primary indicators of hydrology include A1: Surface water; A2: High Water Table; A3: Saturation; B9: Water-Stained Leaves with secondary indicators including B10: Drainage Patterns and B16: Moss Trim Lines. The soils in W3 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W3 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W2, an RPW flowing year round. W3 resource quality is good based on the undisturbed condition of the resource and lack of invasive species.

W4 – Forested Wetland

W4 is a very small forested wetland abutting W2. Dominant vegetation includes red maple, spice bush, skunk cabbage, and jewel weed. Primary indicators of hydrology include A1: Surface water; A3: Saturation with secondary indicators including B10: Drainage Patterns and B16: Moss Trim Lines. The soils in W4 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W4 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W2, an RPW flowing year round. W4 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W5 – Emergent Wetland

W5 is a very small emergent wetland abutting W2. Dominant vegetation includes skunk cabbage and jewel weed. Primary indicators of hydrology include A1: Surface water; A3: Saturation; B1: Water marks; B9: Water-stained leaves with secondary indicators including B10: Drainage Patterns and B16: Moss Trim Lines. The soils in W5 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W5 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W2, an RPW flowing year round. W5 resource quality is good based on the undisturbed condition of the resource and lack of invasive species.

W6 - Shrub Scrub Wetland

W6 is a very small shrub scrub wetland abutting W2. Dominant vegetation includes spice bush, greenbrier, skunk cabbage, and jewel weed. Primary indicators of hydrology include A1: Surface water; A3: Saturation; B1: Water marks; B9: Water-stained leaves with a secondary indicator including B16: Moss Trim Lines. The soils in W6 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W6 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W2, an RPW flowing year round. W6 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

There is no W7 feature.

W8 - Forested Wetland

W8 is an approximately ½ acre forested wetland serving as the hydrology source for W2. Dominant vegetation includes red maple, spice bush, skunk cabbage, jewelweed, and Oriental bittersweet. Numerous specimen trees are located in the wetland buffer of W8. Primary indicators of hydrology include B9: Water-stained leaves and a secondary indicator includes D5: FAC-Neutral Test. Numerous seeps from the slopes in the northern portion of W8 supply hydrology to this wetland. The soils in W8 meet the requirements of Hydric Soil Indicator F2: Loamy Gleyed Matrix. Feature W8 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and abuts Features W2, an RPW flowing year round. W8 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, specimen trees in the buffer, the numerous seeps present, and low number of invasive plants present.

W9 – Forested Wetland

W9 is a small forested wetland abutting W1. Dominant vegetation includes red maple, *Carex lurida* (lurid sedge), *Agrostis alba* (redtop), and *Microstegium vimineum* (Japanese stilt grass). Primary indicators of hydrology include A1: Surface water; A3: Saturation; and B9: Water-stained leaves. The soils in W9 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Seeps from the slopes in the western portion of W9 supply hydrology to this wetland. Feature W9 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W1, an RPW flowing year round. W9 resource quality is good based on the undisturbed condition of the resource and lack of invasive species.

W10 - Emergent Wetland

W10 is a very small emergent wetland abutting W1. Dominant vegetation includes jewelweed, redtop and Oriental bittersweet. A primary indicator of hydrology includes A3: Saturation. T Seeps from the western portion of W10 supply hydrology to this wetland. The soils in W10 meet the requirements of Hydric Soil Indicator F3: Depleted

Matrix. Feature W10 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W1, an RPW flowing year round. W10 resource quality is good based on the undisturbed condition of the resource and the low number of invasive plants present.

W11 - Forested Wetland

W11 is a small forested wetland abutting W1. Dominant vegetation includes red maple, *Berberis thunbergii* (Japanese barberry), jewelweed, redtop, and Oriental Bittersweet. Primary indicators of hydrology include A1: Surface water and B9: Water-stained leaves. Seeps from the slopes in the northwestern portion of W11 supply hydrology to this wetland. The soils in W11 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W11 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W1, an RPW flowing year round. W11 resource quality is good based on the undisturbed condition of the resource and lack of invasive species.

MITIGATION POTENTIAL OF THE BETHEL CHURCH PROPERTY

The Bethel Church property would complement and enhance the existing park system. Following is a discussion of the benefits of this addition to the park system.

Forest and Parkland Mitigation

Table 2 summarizes the acreage of impact to all parks (first row) and to the subset of Montgomery County/M-NCPPC owned parkland (second row).

Table 2: Park Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Park Impact (acres)	0	19.4	0.2	45.2	30.6	29.6	48.1	33.5	32.5
County & M-NCPPC owned Park (acres)	0	15.4	0.2	43.3	28.7	27.7	45.5	30.9	29.9

Table 3 presents the acreage of impact to all forests (first row) and to the subset of forest that is on Montgomery County/M-NCPPC owned parkland (second row).

Table 3: Forest Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Forest Impact (acres)	0	31.0	2.0	57.6	52.5	61.4	72.9	67.7	76.7
Impact to Forest on County Parklands (acres)	0	8.35	2.0	41.0	26.5	25.5	43.3	28.7	27.7

Approximately 66.4 acres of the 119.4-acre Bethel Church property is already forested. Another 2.1 acres of the property is occupied by small clusters of trees, the residence, and surrounding yard. Therefore, approximately 51 acres of farm fields would be available to reforest (except under Alternative 8D and Alternative 9D which would

traverse the Bethel Church property and leave only 47 acres for reforestation). MCDOT would propose to reforest all farm fields and convey the entire property to M-NCPPC, with the exception of the 10 acres of highway right-of-way that would be required if Option D were constructed. The conveyance would include the 43 acres of mid-successional forest and 23 acres of early-successional forest that already exist on the property (42 acres of mid-successional forest and 18 acres of early-successional forest if Option D were constructed). MCDOT would appreciate M-NCPPC's consideration of mitigation credit for the preservation of existing forest. MCDOT would expect this property to satisfy the following:

- The entire parkland mitigation obligation for impacts to Montgomery County/M-NCPPC parkland, including the replacement of the approximately 5 acres of non-forested parkland that will be sought for wetland mitigation,
- The entire mitigation obligation for impacts to the forest on Montgomery County/M-NCPPC parkland, and
- A portion of the required forest mitigation for non-park forest impacts.

It is noted that Section 22A-12 (h) of the Montgomery County Forest Conservation Law requires legal instruments *such as* conservation easements, deed restrictions, covenants, and *other agreements, as necessary* to protect forest conservation areas. Unless notified otherwise by M-NCPPC, MCDOT assumes that the conveyance of the property to M-NCPPC would satisfy the requirement for protecting the forest, and would not require a forest conservation easement.

FIDS Habitat

When the reforestation of the Bethel Church property is mature, new FIDS habitat would be created. The construction of Option D with Alternative 8 or Alternative 9 would result in the least amount of FIDS habitat creation on the Bethel Church property because the highway would divide the property. If Option D were created, two areas of interior habitat would be created; a 25-acre interior habitat on the north side of Option D and a 12-acre interior habitat on the south side of Option D (see **Interior Forest** figure). If any other alternative were constructed, approximately 55 acres of new FIDS habitat would be created because the Bethel Church property would not be divided by the highway.

Connectivity to Existing Parkland

Montgomery County currently owns large holdings of contiguous parklands south of Brink Road, including Seneca Crossing Local Park (28.14 acres), North Germantown Greenway Stream Valley Park (380.81 acres), and Great Seneca Stream Valley Park (2012.85 acres). Approximately 0.8 miles north of Brink Road is the location of the 250.9-acre Goshen Recreational Park. Montgomery GIS mapping indicates a planned acquisition of land from the Wilson property and others, which would provide a greenway along Wildcat Branch connecting the Goshen Recreational Park to Wildcat Road. The incorporation of the Bethel Church property into the park system would almost connect North Germantown Greenway Stream Valley Park to Goshen Recreational Park. This acquisition would substantially enhance the planned greenway, and reduce the amount of future park acquisition required to complete the connection to Goshen Recreational Park.

In the event that Option D is identified as the Preferred Alternative, M-NCPPC Parks Department asked MCDOT to consider hiker passage across the new highway. MCDOT evaluated several options for providing hiker passage across Option D.

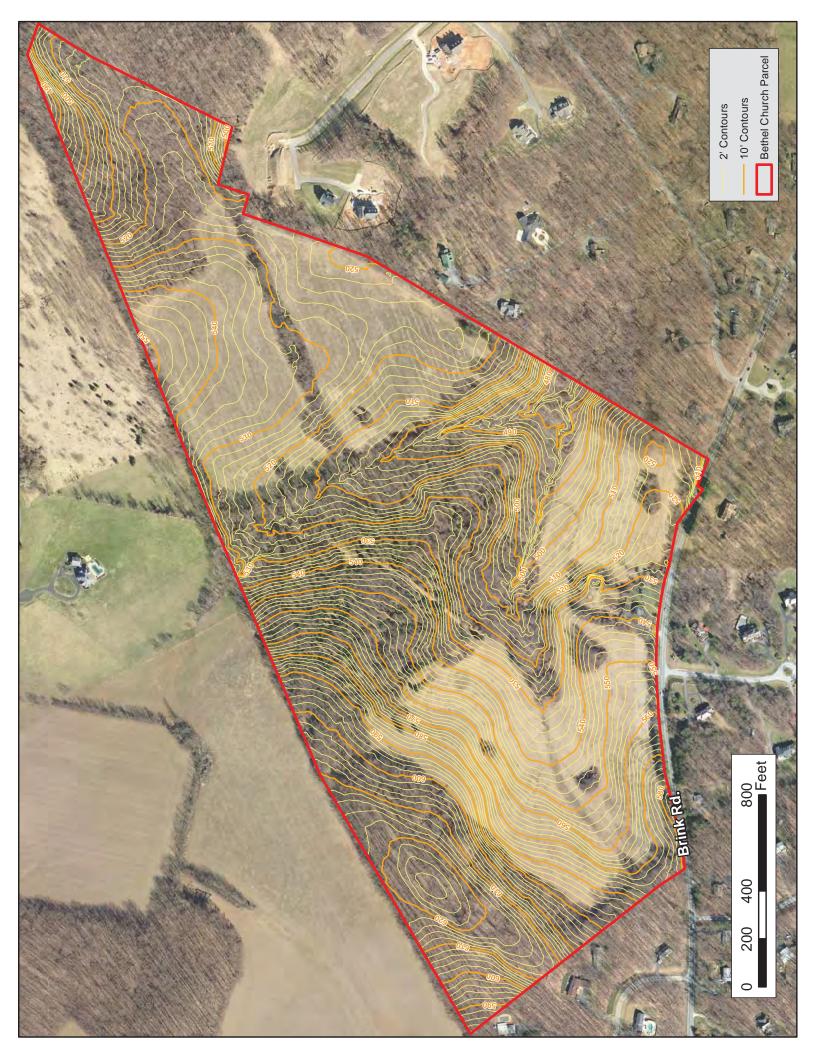
- Hikers could use the shared use path along Option D to traverse the Lawland Court neighborhood, cross Brink Road at the signalized intersection, and immediately enter the Bethel Church property.
- It would be possible to provide an underpass of Option D in the vicinity of Station 367, where a culvert is already proposed to carry a perennial, unnamed tributary to Seneca Creek (WUS 1) under the highway.
- A pedestrian bridge is also feasible, since the highway would be depressed as it traverses the Bethel Church property.

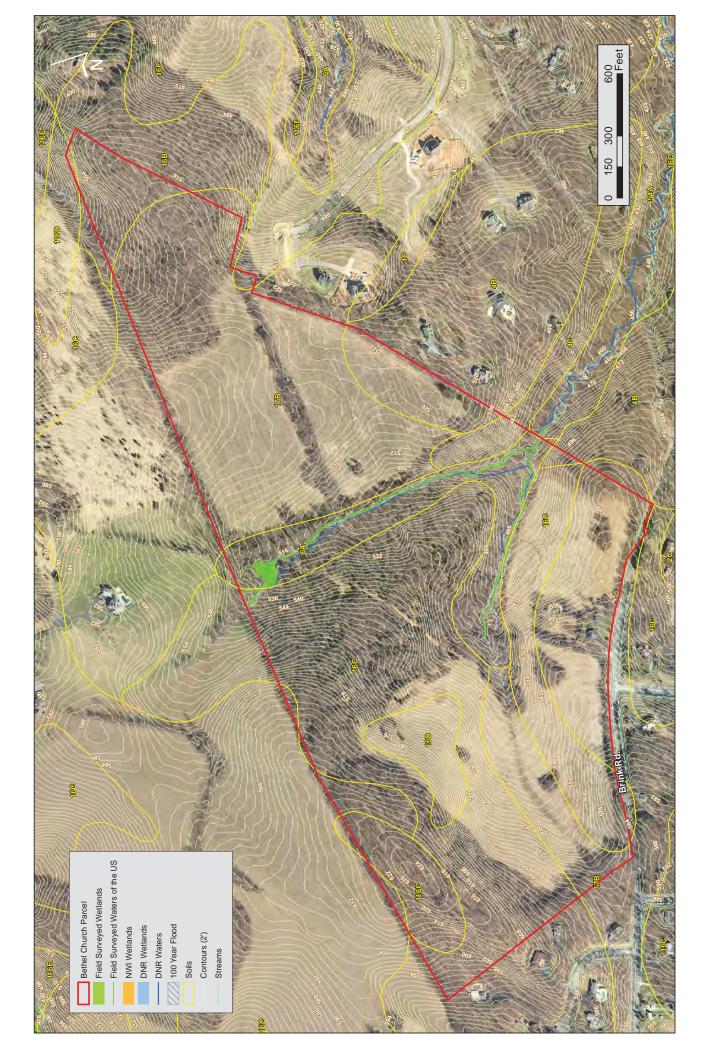
Water Quality Benefits

The Bethel Church property drains to unnamed tributaries to Great Seneca Creek, a Use I-P stream. The property is not currently farmed, therefore, nutrient inputs have largely subsided. However, the reforestation would enhance the water quality of the unnamed tributary to Great Seneca Creek by infiltrating and reducing runoff volumes; and by reducing erosion and sedimentation.

APPENDIX A

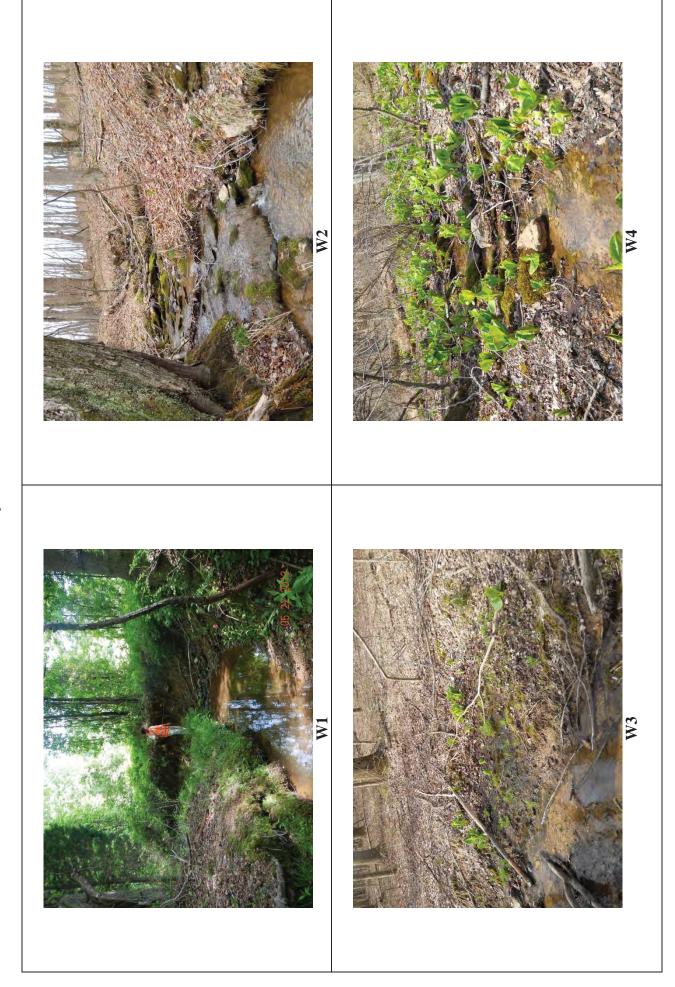
Project Map/NWI Map
Project Photos
FIRM Map





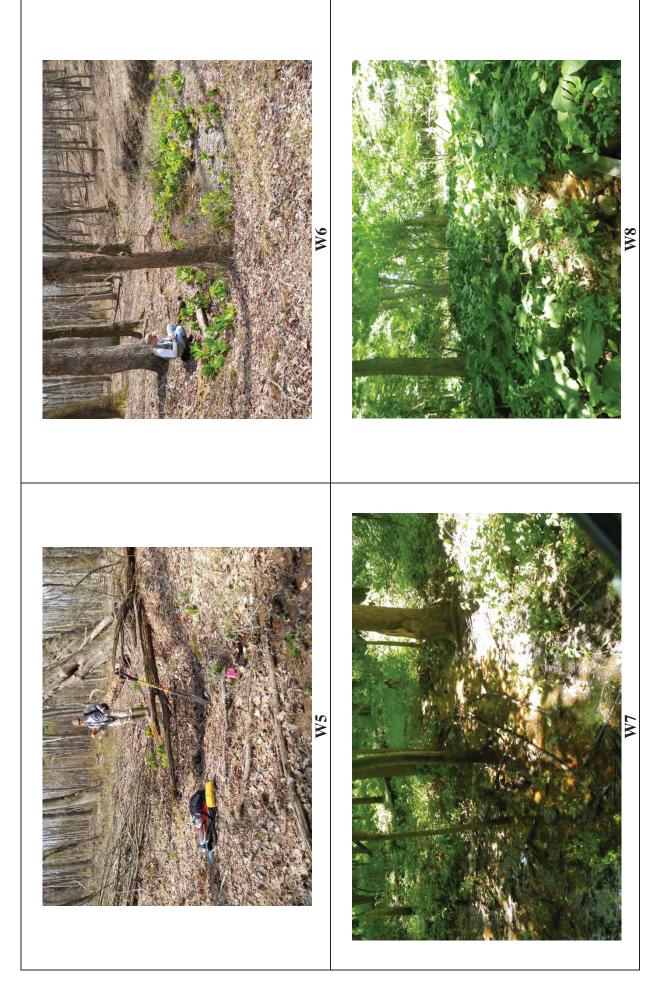


NRI – Bethel Church Project Photos



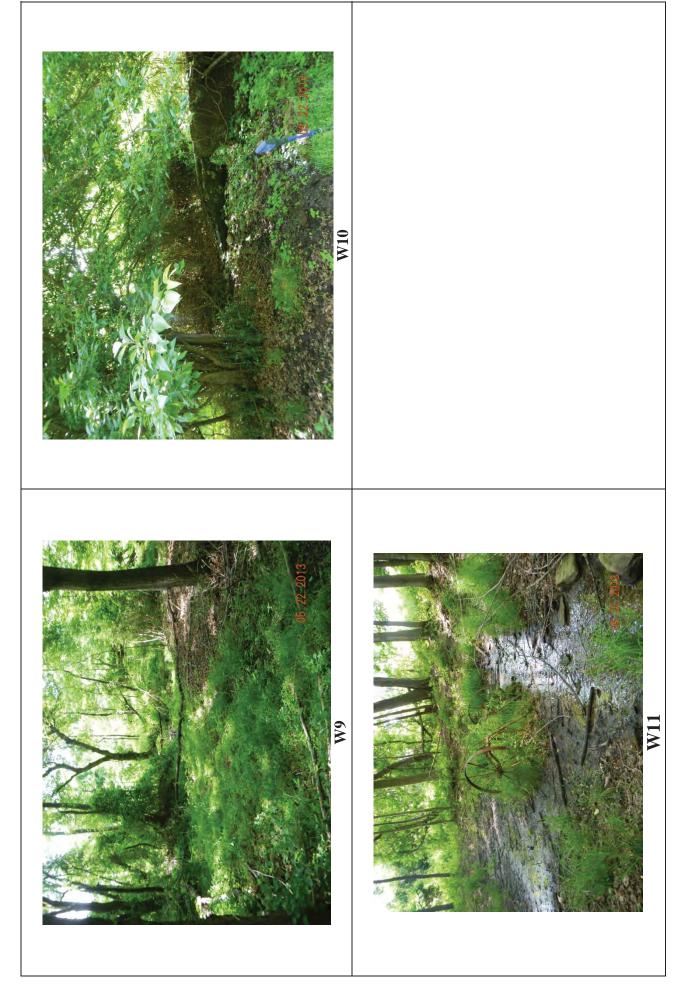
NRI – Bethel Church

Project Photos



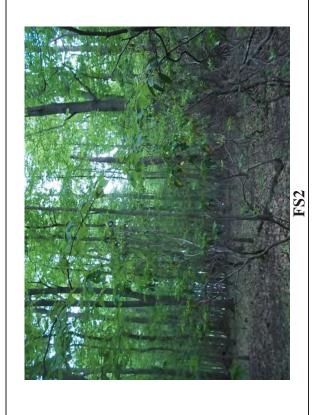
NRI – Bethel Church Project Photos



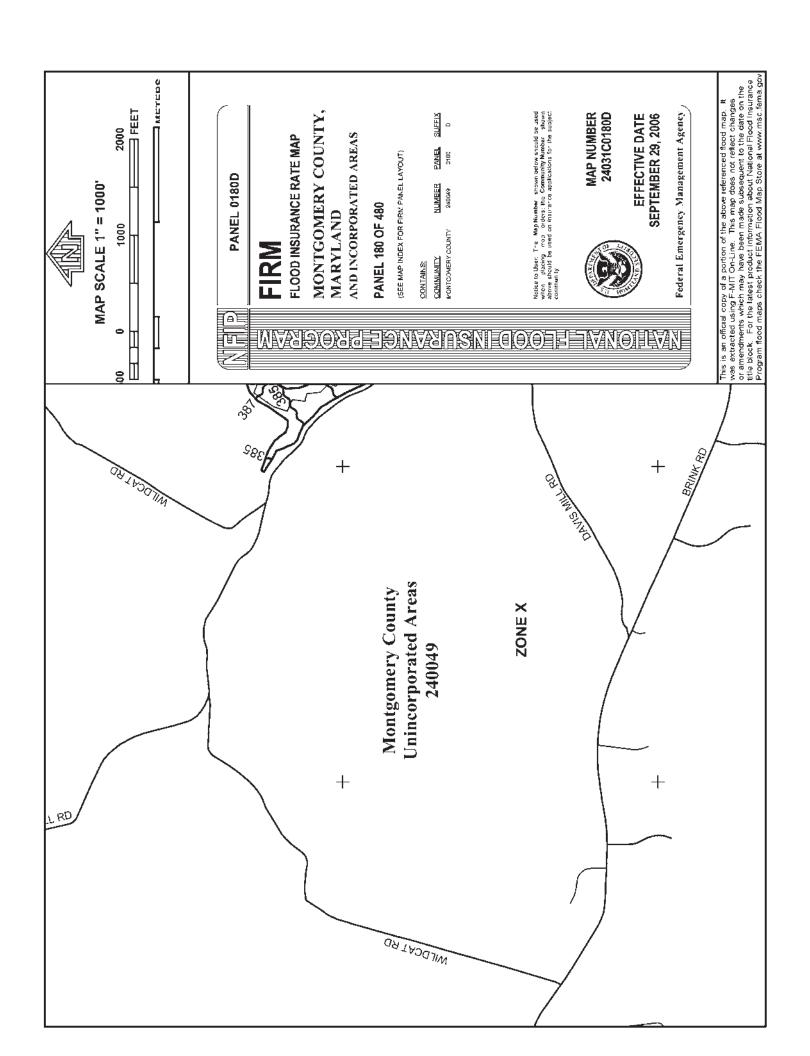


NRI – Bethel Church Project Photos









APPENDIX B

Agency Correspondence

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: May 30, 2013

PROJECT NAME AND LOCATION: Site Evaluation-Wilson Farm and Bethel Church
Germantown, Montgomery County Maryland (maps enclosed)

Germantown, Montgome	ry County Maryland (maps enclosed)
NAME OF STREAM(S) (and MDE Use Classification) WITHIN Fwo unnamed tributaries to Wildcat Branch, Use III-P (Wilso Fwo unnamed tributaries to Great Seneca Creek, Use I-P (Bet	n Farm)
SUB-BASIN (6 digit watershed): 02-14-02	
DNR RESPONSE (sections below to be completed by	MD DNR):
Generally, no instream work is permitted in Use I streams du 15, inclusive, during any year.	ring the period of March 1 through June
Where presence of yellow perch has been documented in the generally no instream work is permitted in Use I and Certain Use I hrough June 15, inclusive, during any year.	
Generally, no instream work is permitted in Use III streams dapril 30, inclusive, during any year.	during the period of October 1 through
Generally, no instream work is permitted in Use IV streams of 31, inclusive, during any year.	luring the period of March 1 through May
Other applicable site specific time of year restriction informa	tion:
ADDITIONAL FISHERIES RESOURCE NOTES:	
ADDITIONAL COMMENTS ON BEST MANAGEMENT PRAC	CTICES:
MD DNR, E	Environmental Review Unit signature
DATE:	

PHONE: 410-260-8334



June 12, 2013

Mr. Roland Limpert
Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, Maryland 21401

Project: Site Evaluation -- Wilson Farm and Bethel Church

Subject: Request for Project Area Fisheries Resources Information

Dear Mr. Limpert:

We are providing site evaluation planning services to the Montgomery County Department of Transportation, Transportation and Design Section for the Wilson Farm and Bethel Church properties. These sites abut each other and are being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study project in Germantown, Montgomery County, MD. The 105 acre Wilson Farm and the 120 acre Bethel Church property are located north of Brink Road, east of Wildcat Road, and west of Davis Mill Road. The Midcounty Corridor Study project may result in minor impacts to nontidal Waters of the U.S. and may require both state and federal permit authorizations (Section 404/401).

We are requesting information regarding the potential presence of state fisheries resources within or near the project area. Project location maps are enclosed for each site to aid your review.

If you have any questions concerning this project, please contact me at wmorgante@rkk.com (410) 462-9174. Thank you for your assistance.

Sincerely,

Rummel, Klepper & Kahl, LLP

William Morgante Project Scientist

Enclosure

cc: Rick Adams (RK&K)
Paul Wettlaufer (RK&K)

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: May 30, 2013

PROJECT NAME AND LOCATION: Site Evaluation-Wilson Farm and Bethel Church
Germantown, Montgomery County Maryland (maps enclosed)

NAME OF STREAM(S) (and MDE Use Clas Two unnamed tributaries to Wildcat Bran Two unnamed tributaries to Great Seneca	ch, Use III-P (Wilson Farm)
SUB-BASIN (6 digit watershed): 02-14-02	,
DNR RESPONSE (sections below to	be completed by MD DNR):
Generally, no instream work is permitted 15, inclusive, during any year.	d in Use I streams during the period of March 1 through June
	en documented in the vicinity of an instream project area, se I and Certain Use II waters during the period of February 15
Generally, no instream work is permitted April 30, inclusive, during any year.	d in Use III streams during the period of October 1 through
Generally, no instream work is permitted 31, inclusive, during any year.	d in Use IV streams during the period of March 1 through May
Other applicable site specific time of year	ar restriction information:
ADDITIONAL FISHERIES RESOURCE NO	OTES:
ADDITIONAL COMMENTS ON BEST MA	ANAGEMENT PRACTICES:
	MD DNR, Environmental Review Unit signature
	DATE:

PHONE: 410-260-8334



United States Department of the Interior

U.S. Fish & Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401 410/573 4575



Online Certification Letter

Project:	Site	Evaluation	- Wilson	Farm	& Bethel	Church	
							- /

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (http://www.fws.gov/chesapeakebay/EndSppWeb/ELEMENTS/listreq.html) are the USGS topographic map areas where no federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington, D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map(s)

Gaithersburg		10 100 100 100 11 11 11 11 11 11 11 11 1	antingan	
				2

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize

loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche Field Supervisor



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
Joseph P. Gill, Secretary
Frank W. Dawson III, Deputy Secretary

June 25, 2013

William Morgante Rummel, Klepper, and Kahl, LLP 81 Mosher St. Baltimore, MD 21217

RE: Environmental Review for Wilson Farm and Bethel Church, Germantown, possible mitigation sites for Mid Country Corridor Study project, north of Brink Road east of Wildcat Rd. and west of Davis Mill Rd., Montgomery County, MD.

Dear Mr. Morgante:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

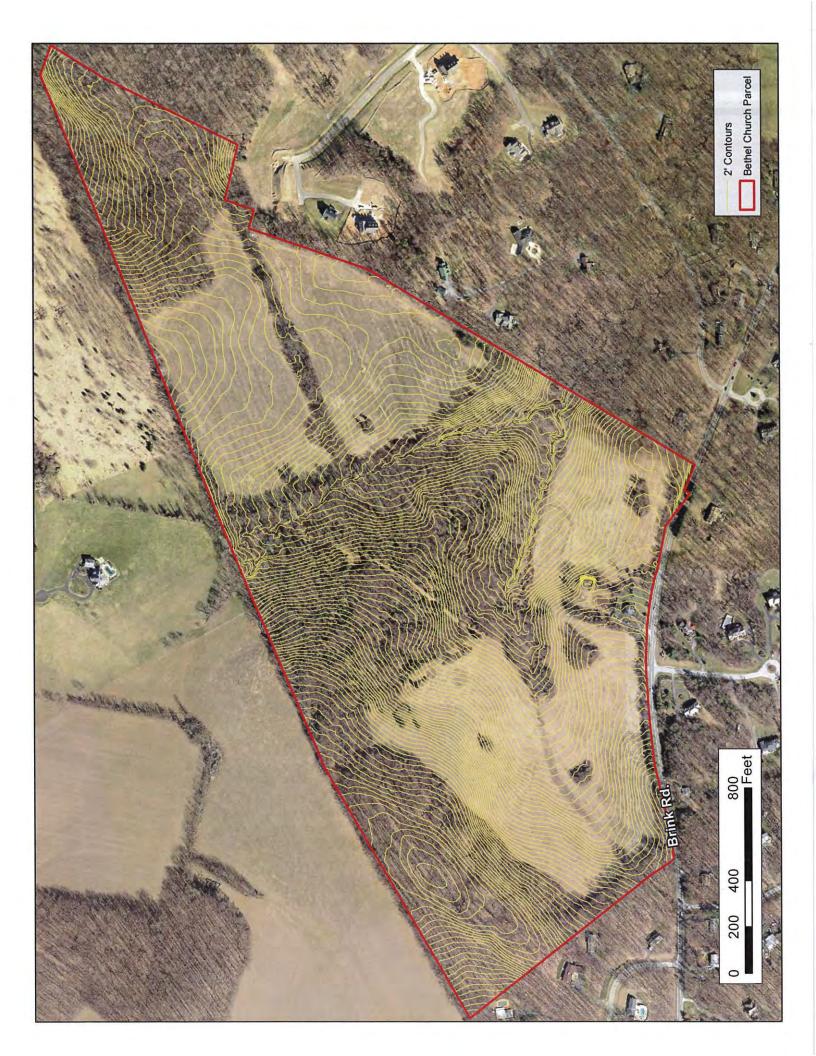
Lori A. Byrne,

Environmental Review Coordinator Wildlife and Heritage Service

MD Dept. of Natural Resources

ER# 2013.0908.mo





APPENDIX C

Forest Stand Summary Sheets
Specimen Tree Table
Waters of the U.S. Data Sheets
Wetland Data Sheets

FOREST STAND ANALYSIS BETHEL CHURCH - ALFS-1)

Date: 5/20/13

Crew: ET, winn

					VEX
				COMMUNITY	TYPE OF
					ADEA*
Do1205-14 8	BULLENSMAN	WALNUT S	THE HEAVEN SO THE HEAVEN S SASSAFIAS S	(Dominan Species and Approx.	EXISTING VEGETATION
	*		6-12"	Size (dbh) & Age	
	*	24 over	TAR LOUAGE TOWN HS,	General Conditions	STAND CHARACTERISTICS
			LOW REMAINS	NOTES	NOTES

Area measured to the nearest 1/10 acre.

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FOREST STAND ANALYSIS BETHEL CHURCH B
C HESTNUT DAY ASSOC. (FS-2)

Date: 5/20/13

Crew: &I, WHIN

			2	VEV
			COMMUNITY	TYPE OF
			ANDA	^ DП ^ *
	MADE STORE	CHESTNUT DIC- 43 BUTTELL CHERTY-S HICKORY BUTTELL CHERTY-S HICKORY STREET REPORTS FOR MARIE FOR MA	(Dominant Species and Approx.	EXISTING VEGETATION
		142-81	Size (dbh) & Age	
	LOTS OF 24" AND	MATURE DATE SALETY POROS	General Conditions	STAND CHARACTERISTICS
	NOOFLAK DENENDO	PHOLOC A-C	INOTES	NOTHIN

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS BENEL CHURCH C

Date: 5/20/13

Crew: ET, WMM

KEY		AREA*	EXISTING VEGETATION (Dominant Species and Approx.	STANI	STAND CHARACTERISTICS	
NEI	C	AKEA	(Dominant Species and Approx. %)	Size (dbh) & Age	General Conditions	nditions
			RIPLKORD - 35 BIPLK CHEEM - 16	1,12.4 1,21-9	6-12" (COOD) FAI	12
			BIPER CHAMES ME POSE PRESENTE THE PROPERTY OF			
						_

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS BETHI CHURCH D
TULE POPLAR ASSOC(FS-3)

Date: 5\70|13

Crew: ET, WHM

			3	VEV
		SOURGIONAL	COMMUNITY	TYPE OF
				^ DT ^ *
Mich Bright Acid	PRO DAIL - 10	TUILE BONDE - 35 PERSONNER - 20 BLACK CHEMP - 15 HUCKONY - 20 OFFICE DATA - 15	EXISTING VEGETATION (Dominant Species and Approx.	
	Scattered	12-18 16:10 >2411 500C	Size (dbh) & Age	
	2	NEAR POOD	General Conditions	STAND CHARACTERISTICS
	MIGH RETENTION	PHOto 11-13	NOTES	

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS EXONE CHUNCH E ASSOC (FS-1)

Date: 5/70/13

Crew: ET, WMM

				KEY COMMUNITY	
			EARLY .		
				, MANAGA	ARFA*
0230	SHOULD SHOW SHOW IN THE WALL OF THE WALL O	C7613 15	10 PIACK 60 W 10 75 PIA	EXISTING VEGETATION (Dominant Species and Approx. %)	
			2-12	Size (dbh) & Age	
		Parcell - Briting VALNE	KANG CHOOLS PLANS	General Conditions	STAND CHARACTERISTICS
		MODERATE RETENTION	PHOFOS 14-16	NOTES	

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS BETWEL CHURCH F ASSOC, (FS-4)

Date: 5)20 13

Crew: ET, WMY

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS BETTYEN CHURCH G (FS-3)

Project.:

5/20/13

Date:

Crew: ET, WMM

KEY MAN COMMUNITY 505 TO 15147 TYPE OF AREA* (Dominant Species and Approx Correspondent Co 115/20th REO DEX DISCIPLATOR . BLACK GUM とういろのかいいい ていっています **EXISTING VEGETATION** MU 000 20 6-100 Size (dbh) とからい & Age STAND CHARACTERISTICS (0000 South of ER CAD 100 of shit grass General Conditions HEATHY NOUW OOO! DIS-62 # 24-26 BOAS THE STAND MOORPAYE PERITOR NOTES

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS BETHEL CHORCH - H (FS 2)

Date: 5/20/13

3 Crew:

Crew: ET, WMM

Area measured to the nearest 1/10 acre.

_					
Tree	Species - Common				
Number	Name	Species - Scientific Name	DBH	Condition	Comments
T1	White oak	Quercus alba	46	Fair	vines in crown, deadwood
T2	White oak	Quercus alba	37	Good/fair	deadwood
T3	Tulip poplar	Liriodendron tulipifera	24	Good	
T4	Red maple	Acer rubrum	29	Fair	trunk cavity, deadwood, irregular growth form
T5	Tulip poplar	Liriodendron tulipifera	25	Good	
T6	Tulip poplar	Liriodendron tulipifera	26	Good	
T7	Tulip poplar	Liriodendron tulipifera	25	Good	
	тапр рорга	zeac.ia.e.i.tai.p.i.e.a		3000	deadwood, girdling root, included bark, irregular
T8	Pad manla	Acer rubrum	36	Fair	growth form
	Red maple		-		
T9	Tulip poplar	Liriodendron tulipifera	28	Good/fair	deadwood
T10	Tulip poplar	Liriodendron tulipifera	29	Good	
					trunk wound, highly irregular growth form, included
T11	Tulip poplar	Liriodendron tulipifera	32	Poor	bark, fungus, suckering
T12	Tulip poplar	Liriodendron tulipifera	36	Fair	twin, included bark
T13	Tulip poplar	Liriodendron tulipifera	33	Poor	vines in crown, trunk cavity, broken leader
T14	Red maple	Acer rubrum	41	Fair/poor	deadwood, suckering, crown dieback, included bark
T15	Tulip poplar	Liriodendron tulipifera	36	Poor	irregular growth form, broken main leader, trunk
T16	Tulip poplar	Liriodendron tulipifera	43	Fair/poor	trunk decay, deadwood, crown dieback
T17	Red maple	Acer rubrum	29	Fair	twin, included bark, trunk cavity, lean
	· ·			Poor	broken leader, included bark, trunk cavity
T18	Tulip poplar	Liriodendron tulipifera	30		· · · · · · · · · · · · · · · · · · ·
T19	Red maple	Acer rubrum	28	Fair/poor	twin, irregular growth form, suckering, trunk decay
T20	Black cherry	Prunus serotina	27	Poor	deadwood, trunk decay, broken leader, sparse crov
T21	Black cherry	Prunus serotina	26	Poor	lean, almost dead
T22	Red maple	Acer rubrum	47	Fair	included bark, trunk decay, multistem
T23	American elm	Ulmus americana	43	Fair/poor	trunk cavity, twin, trunk decay, suckering
T24	Chestnut oak	Quercus prinus	26	Good	slight lean
T25	Red maple	Acer rubrum	24	Good	lean
T26	Black cherry	Prunus serotina	24	Fair	deadwood, sparse crown, split
T27	Red maple	Acer rubrum	36	Fair/poor	split, included bark, trunk decay
127	neu mapie	Acertubrum	30	ган/роог	
					multistem, trunk decay, trunk cavity, dead leader,
T28	Black cherry	Prunus serotina	24	Poor	severe lean, deadwood
T29	Black cherry	Prunus serotina	26	Fair/poor	deadwood, dead leader, split above dbh, sparse cro
T30	Red maple	Acer rubrum	32	Fair	deadwood, crown dieback
T31	Pignut hickory	Carya glabra	24	Good/fair	included bark, split above dbh
T32	Tulip poplar	Liriodendron tulipifera	29	Good	
T33	Northern red oak	Quercus rubra	28	Good	
T34	Northern red oak	Quercus rubra	33	Fair	deadwood, split, crown dieback
T35	Northern red oak	Quercus rubra	28	Fair	crown dieback, flared base
T36	Northern red oak	Quercus rubra	54	Fair	multistem, dead leader, trunk decay, included bark
T37	Chestnut oak	Quercus prinus	27	Good	
T38	White oak	Quercus alba	26	Fair/poor	lean, deadwood, included bark, fungus, trunk cavity
130	Winte oak	Quereus and		1 4117 1001	extreme trunk decay, suckering, dead leader, lean,
T20	Dad manla	A	42	Daar	,,
T39	Red maple	Acer rubrum	43	Poor	deadwood
T40	Red maple	Acer rubrum	25	Good/fair	split above dbh, minor deadwood
T41	Red maple	Acer rubrum	35	Fair	split, included bark
T42	Chestnut oak	Quercus prinus	33	Fair	severe lean, included bark, crown dieback
					lean, trunk decay, dead leader, irregular growth for
T43	White oak	Quercus alba	36	Fair/poor	deadwood, crown dieback
T44	White oak	Quercus alba	27	Fair/poor	severe lean, vines, deadwood, sparse crown
T45	White oak	Quercus alba	27	Fair	split above dbh, deadwood,
T46	Northern red oak	Quercus rubra	25	Fair	trunk decay, dead leader, twin
T47	White oak	Quercus alba	24	Good/fair	slight lean, trunk decay, deadwood
T48	Tulip poplar	Liriodendron tulipifera	34	Fair	3x, irregular growth form, included bark, trunk deca
	1	· ·			
T49	Tulip poplar	Liriodendron tulipifera	27	Good/fair	trunk decay, sparse crown
T50	Northern red oak	Quercus rubra	24	Poor	dead crown, flared base, major deadwood
T51	Pin oak	Quercus palustris	28	Fair	severe lean, deadwood
T52	Chestnut oak	Quercus prinus	28	Fair	lean, irregular growth form, sparse crown
T53	Northern red oak	Quercus rubra	46	Fair/poor	deadwood

	T54	Chestnut oak	Quercus prinus	31	Good	slight lean
1 '	T55	Chestnut oak	Quercus prinus	29	Fair	crown dieback

T57 Chestnut oak Quercus prinus 30 Good/fair deadwood T58 Chestnut oak Quercus prinus 31 Fair split above and below dbh, deadwood, 3x T59 Chestnut oak Quercus prinus 27 Fair twin, 27x22, split below dbh, included bark T60 Chestnut oak Quercus prinus 44 Fair split above, dbh, cavity, deadwood T61 Chestnut oak Quercus prinus 33 Fair split above dbh, included bark, deadwood T62 Chestnut oak Quercus prinus 25 Fair twin, 25x18, split below dbh T63 Chestnut oak Quercus prinus 24 Fair irregular growth form, lean T64 Chestnut oak Quercus prinus 27 Fair lean, irregular growth form, sparse crown T65 Chestnut oak Quercus prinus 31 Fair deadwood, dead leader, trunk decay T66 Chestnut oak Quercus prinus 29 Good/fair deadwood T67 White oak Quercus alba 31 Good T68 Chestnut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead T69 Chestnut oak Quercus prinus 24 Fair lean, deadwood T70 Chestnut oak Quercus prinus 25 Good T71 Chestnut oak Quercus prinus 25 Good T72 Chestnut oak Quercus prinus 27 Fair lean, deadwood T73 Chestnut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay T73 Chestnut oak Quercus prinus 28 Fair lean, trunk decay T74 Chestnut oak Quercus prinus 28 Fair lean, trunk decay T75 Chestnut oak Quercus prinus 28 Fair lean, trunk decay T76 Chestnut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay T77 Chestnut oak Quercus prinus 28 Fair lean, trunk decay T78 Chestnut oak Quercus prinus 25 Good/fair deadwood T79 Chestnut oak Quercus prinus 32 Poor dead leader, sparse crown, lean T76 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, dead leader T79 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, de	TEC	Charter to a la	0	20	F-1-	and it had a width to be 20, 20, and a second
Chestriut day. Quercus prinus 27 fair spirit above and below dhit, included bark 1750. Chestriut day. Quercus prinus 44 fair spirit above and below dhit, included bark 1750. Chestriut day. Quercus prinus 45 fair spirit above, dbit, cavity, deadwood 1751. Chestriut day. Quercus prinus 25 fair vivi, 25x16, spirit below dbh. Included bark 1750. Chestriut day. Quercus prinus 25 fair vivi, 25x16, spirit below dbh. Included bark 1750. Chestriut day. Quercus prinus 27 fair less, inregular growth form, team 1750. Chestriut day. Quercus prinus 31 fair regular growth form, team 1750. Chestriut day. Quercus prinus 31 fair deadwood, dead leader, trunk decay 45 fair less, inregular growth form, team 1750. Chestriut day. Quercus prinus 31 good 45 fair less, inregular growth form, team 1750. Chestriut day. Quercus prinus 31 good 45 fair less, inregular growth form, sparse crown 45 fair less, deadwood. General prinus 45 good fair deadwood, deadwood 45 fair less, trunk decay 45 fair less, deadwood 45 fair less, trunk decay 45 fair less, deadwood 45 fair less, trunk decay 45 fair less, trunk	T56	Chestnut oak	Quercus prinus	28	Fair	split below dbh, twin, 28x20, sparse crown
Destinut calk Quercus prinus 27 Fair Evin, 27/22, gill below dish, included bank Tible Destinut calk Quercus prinus 33 Fair Spit above dish, included bank, deadwood Chestriut calk Quercus prinus 25 Fair Spit above dish, included bank, deadwood Chestriut calk Quercus prinus 27 Fair Spit above dish, included bank, deadwood Chestriut calk Quercus prinus 27 Fair Irregular growth form, bean Chestriut calk Quercus prinus 27 Fair Irregular growth form, bean Chestriut calk Quercus prinus 29 Good/fair Good Geodycood, dead leader, trunk decay Good/fair Good Geodycood Geodycoo			·		1	
Top Chestriut oak Quercus primus 34 Fair split above, dahr, cavity, deadwood		+	· ·			
Test		Chestnut oak	Quercus prinus			
Chestnut oak Quercus prinus 25 Fair twin, 2548, split below dish Chestnut oak Quercus prinus 24 Fair Irregular growth form, lean Chestnut oak Quercus prinus 27 Fair Irregular growth form, lean Chestnut oak Quercus prinus 27 Fair Irregular growth form, sparse crown Chestnut oak Quercus prinus 28 Good Good/fair Goo	T60	Chestnut oak	Quercus prinus	44	Fair	split above, dbh, cavity, deadwood
Destrut oak Quercus prinus 24 Fair Irregular growth form, Isoan	T61	Chestnut oak	Quercus prinus		Fair	
Total Chestnut oak Quercus prinus 31 fair deadwood, dead leader, trunk decay Good/fair deadwood Quercus prinus 31 fair deadwood Good Chestnut oak Quercus prinus 29 Good/fair deadwood Good Good Chestnut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead Good Chestnut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead Good Chestnut oak Quercus prinus 25 Good Good Chestnut oak Quercus prinus 25 Good Good Chestnut oak Quercus prinus 25 Good Good Good Good Good Good Good Goo	T62	Chestnut oak	Quercus prinus	25	Fair	twin, 25x18, split below dbh
To Chestnut oak Quercus prinus 31 fair deadwood dead leader, trunk decay (167 White oak Quercus prinus 31 Good (170 White oak Quercus prinus 28 Poor crown dieback, lean, mostly dead (170 Chestnut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead (170 Chestnut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (171 Chestnut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (171 Chestnut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (171 Chestnut oak Quercus prinus 29 Fair/poor dead leader, sparse crown, lean (171 Chestnut oak Quercus prinus 29 Good/fair deadwood (171 Chestnut oak Quercus prinus 29 Good/fair deadwood, trunk decay (171 Chestnut oak Quercus prinus 30 Good/fair deadwood, trunk decay (171 Chestnut oak Quercus prinus 30 Good/fair deadwood, trunk decay (171 Chestnut oak Quercus prinus 30 Good/fair deadwood, trunk decay, deadwood, trunk decay (171 Chestnut oak Quercus prinus 31 Poor spitiabove dbh, cavity, included bark, dead leader trunk decay, sparse crown (171 Chestnut oak Quercus prinus 25 Good/fair trunk decay, parse crown (171 Chestnut oak Quercus prinus 25 Good/fair (171 Chestnut oak Quercus prinus 25 Fair (171 Chestnut oak Quercus prinus 27 Fair (171 Chestnut oak Quercus prinus 27 Fair (171 Chestnut oak Quercus prinus 27 Fair	T63	Chestnut oak	Quercus prinus	24	Fair	irregular growth form, lean
Te6 Chestmut oak Quercus prinus 29 Good/fair deadwood (Chestmut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead (Chestmut oak Quercus prinus 28 Poor crown dieback, lean, mostly dead (Chestmut oak Quercus prinus 28 Fair lean, deadwood, trunk decay (Chestmut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (Chestmut oak Quercus prinus 28 Fair lean, trunk decay (Chestmut oak Quercus prinus 28 Fair lean, trunk decay (Chestmut oak Quercus prinus 28 Fair lean, trunk decay (Chestmut oak Quercus prinus 28 Fair lean, trunk decay (Chestmut oak Quercus prinus 28 Good/fair (Chestmut oak Quercus prinus 28 Good/fair (Chestmut oak Quercus prinus 28 Good/fair (Chestmut oak Quercus prinus 29 Poor (Chestmut oak Quercus prinus 38 Poor (Chestmut oak Quercus prinus 39	T64	Chestnut oak	Quercus prinus	27	Fair	lean, irregular growth form, sparse crown
Top	T65	Chestnut oak	Quercus prinus	31	Fair	deadwood, dead leader, trunk decay
Test	T66	Chestnut oak	Quercus prinus	29	Good/fair	deadwood
Teg Chestnut oak Quercus prinus 24 fair lean, deadwood Chestnut oak Quercus prinus 25 Good Statut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (171 Chestnut oak Quercus prinus 32 Poor dead leader, sparse crown, lean deadwood, trunk decay deadwood, trunk decay deadwood, trunk decay deadwood sparse crown, lean deadwood chestnut oak Quercus prinus 25 Good/fair deadwood chestnut oak Quercus prinus 30 Good split above dbh, cavity, included bark, dead leader (177 Chestnut oak Quercus prinus 32 Poor Split above dbh, cavity, included bark, dead leader (178 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair split above dbh, included bark, deadwood, crown dieback, lissests (179 Chestnut oak Quercus prinus 26 Fair irregular growth form (179 Chestnut oak Quercus prinus 26 Fair twin, split below dbh, slightly flared base, trunk decay, flared base (179 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base (179 Chestnut oak Quercus prinus 27 Foor major trunk decay, flared base (179 Chestnut oak Quercus prinus 28 Fair splits above dbh, included bark, 24" and 22" stems (179 Chestnut oak Quercus prinus 28 Fair splits above dbh, included	T67	White oak	Quercus alba	31	Good	
Teg Chestnut oak Quercus prinus 24 fair lean, deadwood Chestnut oak Quercus prinus 25 Good Statut oak Quercus prinus 29 Fair/poor sparse crown, deadwood, trunk decay (171 Chestnut oak Quercus prinus 32 Poor dead leader, sparse crown, lean deadwood, trunk decay deadwood, trunk decay deadwood, trunk decay deadwood sparse crown, lean deadwood chestnut oak Quercus prinus 25 Good/fair deadwood chestnut oak Quercus prinus 30 Good split above dbh, cavity, included bark, dead leader (177 Chestnut oak Quercus prinus 32 Poor Split above dbh, cavity, included bark, dead leader (178 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown (179 Chestnut oak Quercus prinus 25 Good/fair split above dbh, included bark, deadwood, crown dieback, lissests (179 Chestnut oak Quercus prinus 26 Fair irregular growth form (179 Chestnut oak Quercus prinus 26 Fair twin, split below dbh, slightly flared base, trunk decay, flared base (179 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base (179 Chestnut oak Quercus prinus 27 Foor major trunk decay, flared base (179 Chestnut oak Quercus prinus 28 Fair splits above dbh, included bark, 24" and 22" stems (179 Chestnut oak Quercus prinus 28 Fair splits above dbh, included	T68	Chestnut oak	Quercus prinus	28	Poor	crown dieback, lean, mostly dead
Chestnut oak Quercus prinus 25 Good		Chestnut oak	· · · · · · · · · · · · · · · · · · ·		_	lean, deadwood
T71			·	_		
T72 Chestnut oak Quercus prinus 32 Poor dead leader, sparse crown, lean T73 Chestnut oak Quercus prinus 25 Good/fair deadwood T74 Chestnut oak Quercus prinus 25 Good/fair minor deadwood, trunk decay T75 Chestnut oak Quercus prinus 30 Good T77 Chestnut oak Quercus prinus 30 Good T77 Chestnut oak Quercus prinus 32 Poor spitt above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown T79 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown T79 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown T79 Chestnut oak Quercus prinus 25 Poor trunk decay, flared base, irregular growth form T79 Chestnut oak Quercus prinus 32 Poor insects T81 Chestnut oak Quercus prinus 44 Fair split above dbh, included bark, sparse crown T82 Chestnut oak Quercus prinus 26 Fair irregular growth form T83 Chestnut oak Quercus prinus 24 Fair 11" twin T84 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, slightly flared base, trunk decay, T85 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood T86 Chestnut oak Quercus prinus 26 Fair major trunk decay, flared base trunk decay, T87 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, minor deadwood T88 Chestnut oak Quercus prinus 25 Fair lean, deadwood, trunk decay, flared base T89 Chestnut oak Quercus prinus 25 Fair lean, deadwood, dead leader, sparse crown T90 Chestnut oak Quercus prinus 30 Fair lean, deadwood, dead leader, sparse crown T91 Chestnut oak Quercus prinus 30 Fair splits above dbh, included bark, irregular growth form T92 Chestnut oak Quercus prinus 30 Fair splits above dbh, included bark, irregular growth form T93 Chestnut oak Quercus prinus 30 Fair lean, deadwood, dead leader, sparse crown T99 Chestnut oak Quercus prinus 30 Fair deadwood T99 Chestnut oak Quercus prinus 26 Fair poor sparse crown, deadwood, dispht lean T99 Chestnut oak Quercus prinus 26 Good/fair sparse crown, deadwood, dispht lean T99 Chestnut oak Quercus p			·	+		sparse crown, deadwood, trunk decay
T73 Chestnut oak Quercus prinus 25 Good/fair deadwood, trunk decay Guercus prinus 25 Good/fair minor deadwood, trunk decay Cuercus prinus 25 Good/fair minor deadwood, trunk decay Cuercus prinus 30 Good Good Good/fair minor deadwood, trunk decay Guercus prinus 32 Poor Split above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown Good/fair Good/fair Split above dbh, included bark, sparse crown Good/fair Good/fair Split above dbh, included bark, sparse crown Good/fair		+	·	+	 	
T75		+	·			•
T75		+	·	_	_	
T76 Chestnut oak Quercus prinus 30 Good Split above dbh, cavity, included bark, dead leader T77 Chestnut oak Quercus prinus 32 Poor split above dbh, cavity, included bark, dead leader T78 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown included bark, trunk decay, deadwood, crown dieback, deadwood decay, deadwood, crown dieback, included bark, sparse crown included bark, trunk decay, deadwood, crown dieback, deadwood included bark, sparse crown included bark, trunk decay, deadwood decay, deadwood, dead leader, sparse crown decay, deadwood, dead leader, sparse crown decay, deadwood, dead leader, sparse crown decay, deadwood, dead decay, deadwood decay, deadwood, dead decay, deadwood, dead decay, deadwood, dead decay, deadwood, decay, decay, decay, decay, decay, decay, decay, decay, deca		+	·			
T77 Chestnut oak Quercus prinus 22 Poor split above dbh, cavity, included bark, dead leader 178 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown 179 Chestnut oak Quercus prinus 29 Poor trunk decay, farses, irregular growth form 180 Chestnut oak Quercus prinus 32 Poor included bark, trunk decay, deadwood, crown dieback, insects 20 Chestnut oak Quercus prinus 44 Fair split above dbh, included bark, sparse crown 182 Chestnut oak Quercus prinus 26 Fair irregular growth form 183 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, slightly flared base, trunk decay, flated bark, decay, deadwood 186 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood 187 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, deadwood 187 Chestnut oak Quercus prinus 26 Fair migor trunk decay and spir trunk decay and			 	+	-	minor deadwood, trunk decay
T78 Chestnut oak Quercus prinus 25 Good/fair trunk decay, sparse crown T79 Chestnut oak Quercus prinus 29 Poor trunk decay, flared base, irregular growth form included bark, trunk decay, deadwood, crown dieback, insects T80 Chestnut oak Quercus prinus 32 Poor included bark, trunk decay, deadwood, crown dieback, insects T81 Chestnut oak Quercus prinus 44 Fair split above dbh, included bark, sparse crown T82 Chestnut oak Quercus prinus 26 Fair irregular growth form T83 Chestnut oak Quercus prinus 24 Fair 11"twin T84 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood T85 Chestnut oak Quercus prinus 26 Fair indiving trunk decay T86 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, deadwood T87 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base T88 Chestnut oak Quercus prinus 25 Poor major trunk decay, deadwood T89 Chestnut oak Quercus prinus 31 Fair 22" stems T90 Chestnut oak Quercus prinus 30 Poor trunk decay, deadwood, dead leader, sparse crown T91 Chestnut oak Quercus prinus 30 Fair slight lean, irregular growth form T92 Chestnut oak Quercus prinus 25 Fair growth form T93 Chestnut oak Quercus prinus 30 Fair slight lean, irregular growth form T94 Chestnut oak Quercus prinus 25 Fair sparse crown, deadwood, slight lean T95 Chestnut oak Quercus prinus 26 Fair/poor sparse crown, deadwood, slight lean T96 Chestnut oak Quercus prinus 26 Fair/poor sparse crown, deadwood, slight lean T97 Chestnut oak Quercus prinus 29 Fair sparse crown T98 Chestnut oak Quercus prinus 29 Fair deadwood T99 Chestnut oak Quercus prinus 29 Foor sparse crown T99 Chestnut oak Quercus prinus 29 Foor sparse crown, deadwood, slight lean T99 Chestnut oak Quercus prinus 26 Good/fair sparse crown T99 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood T100 Chestnut oak Quercus prinus 26 Good T101 Chestnut oak Quercus prinus 27 Good T102 Chestnut oak Quercus prinus 26 Good T103 Chestnut oak Quercus prinus 27 Good T104 Chestnut oak Quercus prinu		+	•			
Chestnut oak Quercus prinus 29 Poor trunk decay, flared base, irregular growth form included bark, trunk decay, deadwood, crown dieback, insects insec			·	+		
T80 Chestnut oak Quercus prinus 32 Poor inscetts split above dbh, included bark, sparse crown dieback, and the split above dbh, included bark, sparse crown dieback, split above dbh, included bark, sparse crown dieback, and split above dbh, included bark, sparse crown deback, and split above dbh, slightly flared base, trunk decay, deadwood dead leaders, sparse crown deadwood dead leaders, sparse crown deadwood dead leaders, trunk decay, deadwood dead leaders, trunk decay, deadwood dead leaders, sparse crown deadwood dead leaders, trunk decay, deadwood dead leaders, sparse crown, deadwood, slight lean deadwood, dead leaders, sparse crown deadwood, slight lean deadwood dead leaders, sparse crown, deadwood dead leaders, sparse crown deadwood dead leaders, sparse c		Chestnut oak	Quercus prinus		Good/fair	
T80 Chestnut oak Quercus prinus 44 Fair split above dbh, included bark, sparse crown T81 Chestnut oak Quercus prinus 44 Fair split above dbh, included bark, sparse crown T82 Chestnut oak Quercus prinus 26 Fair irregular growth form T83 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, slightly flared base, trunk decay, T83 Chestnut oak Quercus prinus 26 Fair major trunk decay T84 Chestnut oak Quercus prinus 26 Fair major trunk decay T85 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, deadwood T87 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base T88 Chestnut oak Quercus prinus 25 Poor major trunk decay, flared base T89 Chestnut oak Quercus prinus 30 Fair 22" stems T90 Chestnut oak Quercus prinus 30 Poor trunk decay, deadwood, dead leader, sparse crown T91 Chestnut oak Quercus prinus 30 Fair slight lean, irregular growth form T92 Chestnut oak Quercus prinus 25 Fair sporth form T93 Chestnut oak Quercus prinus 26 Fair sporth form T94 Chestnut oak Quercus prinus 27 Fair sprowth form T95 Chestnut oak Quercus prinus 28 Fair sprowth form T96 Chestnut oak Quercus prinus 27 Fair sprowth form T97 Chestnut oak Quercus prinus 28 Fair sparse crown, deadwood, slight lean T98 Chestnut oak Quercus prinus 26 Fair/poor sparse crown, deadwood, vines in crown, trunk decay T99 Chestnut oak Quercus prinus 29 Fair deadwood T99 Chestnut oak Quercus prinus 29 Fair deadwood, flared base T99 Chestnut oak Quercus prinus 28 Poor severe lean, major deadwood T100 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood T101 Chestnut oak Quercus prinus 26 Good/fair split above dbh, major deadwood T102 Chestnut oak Quercus prinus 27 Good T103 Chestnut oak Quercus prinus 26 Fair/poor dead crown, suckering T104 Chestnut oak Quercus prinus 26 Fair/poor dead crown, suckering T105 Chestnut oak Quercus prinus 26 Fair/poor dead crown, suckering T106 Chestnut oak Quercus prinus 29 Fair lean, deadwood	T79	Chestnut oak	Quercus prinus	29	Poor	trunk decay, flared base, irregular growth form
T81 Chestnut oak Quercus prinus 26 Fair irregular growth form T82 Chestnut oak Quercus prinus 26 Fair irregular growth form T83 Chestnut oak Quercus prinus 24 Fair 11" twin, split below dbh, slightly flared base, trunk decay, 11" twin split below dbh, slightly flared base, trunk decay, 11" twin 11" twin 25x 21, split below dbh, included bark, deadwood 185 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood 185 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, minor deadwood 187 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base 188 Chestnut oak Quercus prinus 25 Poor major trunk decay, deadwood 187 Chestnut oak Quercus prinus 31 Fair 22" stems 31, splits above and below dbh, included bark, 24" and 22" stems 189 Chestnut oak Quercus prinus 31 Fair 22" stems 32, 22" stems 32, 22" stems 33, splits above and below dbh, included bark, 24" and 23" stems, fair, included bark, 24" and 23" stems, fair, included bark, 24" and 32, 22" and 23" stems, fair, included bark, irregular 32, 22" stems 34, 22" and 23" stems, fair, included bark, irregular 32, 22" and 33" stems, fair, included bark, irregular 34, 22" and 23" stems, fair, included bark, irregular 34, 22" and 35" stems, fair, included bark, irregular 34, 25 Fair growth form 34, 25 Fair growth form 34, 26 Fair/poor sparse crown, deadwood, slight lean 44 Fair/poor sparse crown, deadwood, slight lean 44 Fair/poor sparse crown deadwood, slight lean 44 Fair/poor deadwood, slight lean 44 Fair/poor deadwood, slight lean 44 Fair/poor deadwood slight lean 44 Fair/poor deadwood slight lean 44 Fair/poor deadwood slight lean 45 Fair sparse crown deadwood slight lean 45 Fair sparse crown deadwood slight lean 45 Fair sparse crown deadwood slight lean 46 Fair/poor deadwood slight lean 46 Fair/poor deadwood slight lean 47 Fair split above dbh, major deadwood 5100 Chestnut oak Quercus prinus 26 Good/fair sparse crown deadwood 5100 Chestnut oak Quercus prinus 26 Good 5100 Chestnut oak Quercus pri						included bark, trunk decay, deadwood, crown dieback,
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T83 Chestnut oak Quercus prinus 25 Fair twin, split below dbh, slightly flared base, trunk decay, 185 Chestnut oak Quercus prinus 26 Fair major trunk decay decay, deadwood decay, flared base prinus 26 Fair major trunk decay, flared base decay, 186 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base 25 Poor major trunk decay, flared base 25 Poor major trunk decay, deadwood 32, splits above dbh, included bark, minor deadwood 33x, splits above and below dbh, included bark, 24" and 33x, splits above and below dbh, included bark, 24" and 34x, splits above dbh, and 34x, splits above dbh, and 34x, splits above dbh, and 3	T81	Chestnut oak	Quercus prinus	44	Fair	split above dbh, included bark, sparse crown
T83 Chestnut oak Quercus prinus 24 Fair 11" twin T84 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood T85 Chestnut oak Quercus prinus 26 Fair major trunk decay 186 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base 187 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base 188 Chestnut oak Quercus prinus 25 Poor major trunk decay, deadwood 3x, splits above and below dbh, included bark, 24" and 22" stems 22" stems 190 Chestnut oak Quercus prinus 31 Fair 22" stems 190 Chestnut oak Quercus prinus 30 Poor trunk decay, deadwood, dead leader, sparse crown 191 Chestnut oak Quercus prinus 30 Fair slight lean, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular 193 Chestnut oak Quercus prinus 25 Fair sparse crown, deadwood, slight lean 194 Chestnut oak Quercus prinus 26 Fair/poor sparse crown, deadwood, vines in crown, trunk decay 195 Chestnut oak Quercus prinus 26 Fair/poor sparse crown, deadwood, slight lean 197 Chestnut oak Quercus prinus 29 Fair deadwood 197 Chestnut oak Quercus prinus 29 Fair deadwood 197 Chestnut oak Quercus prinus 29 Fair deadwood, flared base 197 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood 197 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay deadwood 197 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood 197 Chestnut oak Quercus prinus 27 Good 197 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood 197 Chestnut oak Quercus prinus 29 Fair split above dbh, major deadwood 197 Chestnut oak Quercus prinus 26 Good/fair 197 Sentut oak Quercus prinus 27 Good 197 Chestnut oak Quercus prinus 28 Poor dead leaders, trunk decay, deadwood 197 Chestnut oak Quercus prinus 29 Fair lean, deadwood 197 Chestnut oak Quercus prinus 29 Fair lean, deadwood 197 Chestnut oak Quercus prinus 29 Fair lean, deadwood 197 Chestnut oak Quercus prinus 29 Fair lean, deadwood 197 Chestnut oak Quercus prinus 29 Fair lean, deadwood 197 Ches	T82	Chestnut oak	Quercus prinus	26	Fair	irregular growth form
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T84 Chestnut oak Quercus prinus 25 Fair twin, 25x21, split below dbh, included bark, deadwood T85 Chestnut oak Quercus prinus 34 Good/fair splits above dbh, included bark, deadwood T87 Chestnut oak Quercus prinus 26 Fair lean, deadwood, trunk decay, flared base T88 Chestnut oak Quercus prinus 25 Poor major trunk decay, flared base T88 Chestnut oak Quercus prinus 25 Poor major trunk decay, deadwood T88 Chestnut oak Quercus prinus 31 Fair 22" stems T90 Chestnut oak Quercus prinus 30 Poor trunk decay, deadwood, dead leader, sparse crown T91 Chestnut oak Quercus prinus 30 Fair slight lean, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, irregular growth form 3x, 22" and 23" stems, fair, included bark, i	T83	Chestnut oak	Ouercus prinus	24	Fair	
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T101Chestnut oakQuercus prinus37Fairsplit above dbh, major deadwoodT102Chestnut oakQuercus prinus27GoodT103Chestnut oakQuercus prinus25Good/fairminor deadwoodT104Chestnut oakQuercus prinus26GoodT105Chestnut oakQuercus prinus26Fair/poordead crown, suckeringT106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood		+	•	_		
T102Chestnut oakQuercus prinus27GoodT103Chestnut oakQuercus prinus25Good/fairminor deadwoodT104Chestnut oakQuercus prinus26GoodT105Chestnut oakQuercus prinus26Fair/poordead crown, suckeringT106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood			· · · · · · · · · · · · · · · · · · ·	+		-
T103Chestnut oakQuercus prinus25Good/fairminor deadwoodT104Chestnut oakQuercus prinus26GoodT105Chestnut oakQuercus prinus26Fair/poordead crown, suckeringT106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood			·			Spire above doil, major dedawood
T104Chestnut oakQuercus prinus26GoodT105Chestnut oakQuercus prinus26Fair/poordead crown, suckeringT106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood			· ·	_	+	minor deadwood
T105Chestnut oakQuercus prinus26Fair/poordead crown, suckeringT106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood			·	_		minor deadwood
T106Chestnut oakQuercus prinus29Fairlean, deadwoodT107Chestnut oakQuercus prinus35GoodT108Chestnut oakQuercus prinus28Poortwin, 28x27, mostly dead crownT109Chestnut oakQuercus prinus27Poorcrown dieback, deadwood			·	+	+	<u> </u>
T107 Chestnut oak Quercus prinus 35 Good T108 Chestnut oak Quercus prinus 28 Poor twin, 28x27, mostly dead crown T109 Chestnut oak Quercus prinus 27 Poor crown dieback, deadwood			·		 	-
T108 Chestnut oak Quercus prinus 28 Poor twin, 28x27, mostly dead crown T109 Chestnut oak Quercus prinus 27 Poor crown dieback, deadwood		+	•			lean, deadwood
T109 Chestnut oak Quercus prinus 27 Poor crown dieback, deadwood			·		+	
	T108	Chestnut oak	Quercus prinus	28	_	
T110 Chestnut oak Quercus prinus 26 Fair crown sparse, lean, deadwood	T109	Chestnut oak	Quercus prinus	27	Poor	crown dieback, deadwood
	T110	Chestnut oak	Quercus prinus	26	Fair	crown sparse, lean, deadwood

T111	Chestnut oak	Quercus prinus	29	Fair	sparse crown, trunk decay
T112	Chestnut oak	Quercus prinus	27	Fair	deadwood, slight lean
T113	Chestnut oak	Quercus prinus	28	Good/fair	sparse crown
T114	White oak	Quercus alba	26	Good/fair	split above dbh, deadwood
T115	Chestnut oak	Quercus prinus	24	Poor	dead crown
T116	Chestnut oak	Quercus prinus	24	Fair	irreg growth form
T117	Chestnut oak	Quercus prinus	31	Poor	sparse crown, included bark
T118	Northern red oak	Quercus rubra	27	Fair/poor	deadwood, irreg. growth form
T119	Northern red oak	Quercus rubra	28	Fair	deadwood, barbed wire in trunk
T120	Chestnut oak	Quercus prinus	26	Fair	deadwood, irreg growth form, trunk decay
T121	Northern red oak	Quercus rubra	29	Fair	split above dbh, deadwood
T122	Northern red oak	Quercus rubra	27	Good	Spin above abil, acaawood
T123	Chestnut oak	Quercus prinus	26	Fair	twin, 26x25, included bark, deadwood
T124	Chestnut oak	Quercus prinus	26	Fair	sparse crown, deadwood
T125	Chestnut oak	Quercus prinus	27	Fair	split below dbh, twin, 27x22, included bark
T126	Chestnut oak	Quercus prinus	38	Good/fair	split above dbh, included bark
T127	Chestnut oak	Quercus prinus	35	Poor	3x, trunk cavity, split below dbh and above
T127	Chestnut oak	Quercus prinus	30	Good/fair	lean, sparse crown
T128	Chestnut oak	Quercus prinus	24	Fair/poor	irreg growth form, sparse crown, deadwood
T130	Chestnut oak	· ·	34	Fair	split above dbh, included bark
		Quercus prinus	24	+	included bark, trunk cavity
T131 T132	Chestnut oak	Quercus prinus	28	Fair/poor Fair	split at dbh, included bark
T132	Chestnut oak	Quercus prinus	28	Fair	
-	Chestnut oak Chestnut oak	Quercus prinus	32	Fair	irreg growth form, cavity at base, crown dieback split above dbh, irreg growth form, included bark
T134		Quercus prinus Quercus rubra	27		deadwood, split above dbh
T135	Northern red oak			Fair/poor	deadwood in crown
T136	Chestnut oak	Quercus prinus	28 25	Good/fair	
T137	Chestnut oak	Quercus prinus		Fair Fair	deadwood, sparse crown split at and above dbh, included bark, flared base
T138	Chestnut oak	Quercus prinus	40		• • • • • • • • • • • • • • • • • • • •
T139	Chestnut oak	Quercus prinus	25	Good/fair	twin, 25x20, split below dbh, included bark
T140 T141	Chestnut oak Northern red oak	Quercus prinus	26 26	Poor Good	dead twin, trunk cavity, included bark
		Quercus rubra	38	Fair	split above and below a dbh, deadwood, sparse crown
T142	Chestnut oak	Quercus prinus		+	
T143 T144	Chestnut oak	Quercus prinus	29 26	Fair Good/fair	lean, sparse crown irreg growth form,
	Chestnut oak Chestnut oak	Quercus prinus	24	Fair	
T145		Quercus prinus			flared base, lean, deadwood
T146	Chestnut oak	Quercus prinus	28	Good	split above dbb, deadwood, included bark
T147	Chestnut oak	Quercus prinus	36	Fair	split above dbh, deadwood, included bark
T148	Chestnut oak Northern red oak	Quercus prinus	26 25	Fair/poor Good	vines in crown, deadwood
T149		Quercus rubra		_	h
T150	Chestnut oak	Quercus prinus	31	Fair/poor	huge trunk cavity
T151	Chestnut oak	Quercus prinus	42	Good/fair	vines in crown, lean
T152	Northern red oak	Quercus rubra	30	Good/fair	vines in grown
T153	Northern red oak	Quercus rubra	34		vines in crown
T154	Pignut hickory	Carya glabra	30	Good	canker on trunk
T155	Chestnut oak	Quercus prinus	33	Fair	canker on trunk
T156	Chestnut oak	Quercus prinus	34	Fair	lean, vines in crown, deadwood
T157	Chestnut oak	Quercus prinus	27	Good/fair	trunk decay
T158	Chestnut oak	Quercus prinus	27	Good/fair	minor lean
T159	Chestnut oak	Quercus prinus	31	Good	
T160	Chestnut oak	Quercus prinus	33	Good	distribution forms bounds and
T161	Chestnut oak	Quercus prinus	36	Fair/poor	slight lean, large trunk cavity
T162	Northern red oak	Quercus rubra	27	Fair	deadwood, vines in crown
T163	Chestnut oak	Quercus prinus	24	Fair	vines in crown, slight lean, sparse crown
T164	Chestnut oak	Quercus prinus	24	Fair/poor	vines in crown, sparse crown
T165	Chestnut oak	Quercus prinus	31	Fair	deadwood

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T166	Chestnut oak	Quercus prinus	25	Good/fair	irregular growth form, deadwood
T167	Chestnut oak	Quercus prinus	32	Fair	trunk flare, trunk decay
T168	Chestnut oak	Quercus prinus	28	Fair	irregular growth form, deadwood
T169	Chestnut oak	Quercus prinus	25	Fair	irregular growth form
T170	Chestnut oak	Quercus prinus	25	Good	
T171	Chestnut oak	Quercus prinus	26	Fair	lots of deadwood
T172	Chestnut oak	Quercus prinus	24	Poor	dead leader, trunk decay
T173	Chestnut oak	Quercus prinus	32	Fair	deadwood, lean
T174	Chestnut oak	Quercus prinus	29	Fair	trunk decay, deadwood
T175	Chestnut oak	Quercus prinus	24	Good/fair	twin 24x23, split, deadwood
T176	Chestnut oak	Quercus prinus	25	Fair	twin, 25x15, trunk decay, deadwood
T177	Chestnut oak	Quercus prinus	25	Fair	included bark, deadwood, irregular growth form
T178	Chestnut oak	Quercus prinus	26	Good/fair	irregular growth form, deadwood
T179	Chestnut oak	Quercus prinus	26	Fair	deadwood, lean
T180	Northern red oak	Quercus rubra	27	Fair	dead twin, included bark, deadwood
T181	Northern red oak	Quercus rubra	25	Fair	lean
T182	White oak	Quercus alba	24	Fair	lots of deadwood, sparse crown
T183	Chestnut oak	Quercus prinus	24	Good	
T184	Northern red oak	Quercus rubra	24	Fair	included bark, sparse crown
T185	Chestnut oak	Quercus prinus	25	Good	
T186	Northern red oak	Quercus rubra	24	Fair/poor	twin, included bark, trunk decay, vines in crown
T187	Chestnut oak	Quercus prinus	25	Fair	twin, 25x18, splits above dbh, included bark
T188	Black oak	Quercus velutina	27	Fair	twin, 27x22, deadwood, included bark
T189	White oak	Quercus alba	25	Good/fair	included bark, deadwood
T190	Northern red oak	Quercus rubra	24	Poor	severe lean, base decay, trunk cavity
T191	Chestnut oak	Quercus prinus	25	Fair	twin, 25x16, included bark, deadwood
T192	Tulip poplar	Liriodendron tulipifera	24	Good	
T193	Tulip poplar	Liriodendron tulipifera	25	Good	
T194	Red maple	Acer rubrum	26	Poor	severe trunk decay, lean, deadwood, twin, 26x13
T195	Black gum	Nyssa sylvatica	26	Fair	trunk decay, deadwood
					trunk decay, sparse crown, fungus, suckering, included
T196	Red maple	Acer rubrum	30	Poor	bark, twin
T197	Chestnut oak	Quercus prinus	35	Good/fair	deadwood, sparse crown
T198	White oak	Quercus alba	27	Good	
T199	Tulip poplar	Liriodendron tulipifera	29	Good/fair	deadwood
T200	White oak	Quercus alba	40	Good	
T201	White oak	Quercus alba	35	Good/fair	deadwood
T202	Tulip poplar	Liriodendron tulipifera	25	Good	
T203	Tulip poplar	Liriodendron tulipifera	31	Fair	twin, 31x22, included bark, irregular growth form
T204	Red maple	Acer rubrum	24	Fair/poor	twin, broken leader, trunk decay, suckering,
T205	Tulip poplar	Liriodendron tulipifera	43	Good/fair	trunk decay
T206	White oak	Quercus alba	36	Fair	trunk decay, deadwood
T207	White oak	Quercus alba	28	Good/fair	slight lean, deadwood
T208	Black walnut	Juglans nigra	35	Fair	twin, splits above dbh, included bark
T209	Tulip poplar	Liriodendron tulipifera	46	Fair	trunk decay, cavities, deadwood, vines
T210	Tulip poplar	Liriodendron tulipifera	33	Good/fair	vines in crown
T211	Tulip poplar	Liriodendron tulipifera	30	Good/fair	trunk decay
T212	Tulip poplar	Liriodendron tulipifera	45	Fair	twin, trunk decay, deadwood
T213	Tulip poplar	Liriodendron tulipifera	26	Fair	lean, broken leader
T214	Tulip poplar	Liriodendron tulipifera	27	Good	
T215	Red maple	Acer rubrum	27	Fair/poor	twin, 27x25, included bark, suckering, vines in crown
T216	Tulip poplar	Liriodendron tulipifera	30	Poor	twin, dead leader, trunk decay, vines in crown
T217	Red maple	Acer rubrum	26	Fair/poor	trunk decay & cavity, dead leader, deadwood
T218	Red maple	Acer rubrum	33	Poor	trunk decay, deadwood, lean
T219	Black cherry	Prunus serotina Liriodendron tulipifera	28	Poor	trunk decay, vines in crown, deadwood, sparse crown

T221	Tulin nonlar	Livia dandran tulinifara	28	Cood/fair	vinos in graven
	Tulip poplar	Liriodendron tulipifera	25	Good/fair	vines in crown included bark, split above dbh
T222	Tulip poplar	Liriodendron tulipifera		Fair	included bark, split above dbit
T223	Tulip poplar	Liriodendron tulipifera	24	Good	Amounts de servi
T224	Tulip poplar	Liriodendron tulipifera	35	Fair	trunk decay
T225	Tulip poplar	Liriodendron tulipifera	36	Good/fair	minor trunk decay
T226	Tulip poplar	Liriodendron tulipifera	24	Fair	twin 24x23, included bark, deadwood
T227	Tulip poplar	Liriodendron tulipifera	35	Poor	extensive trunk decay, broken leader
T228	Chestnut oak	Quercus prinus	51	Fair	twin, included bark, split above dbh
T229	White oak	Quercus alba	27	Good	minor deadwood
T230	Red maple	Acer rubrum	24	Fair	deadwood
T231	Red maple	Acer rubrum	30	Fair/poor	twin, 30x30, lean, included bark, deadwood, suckering
T232	Tulip poplar	Liriodendron tulipifera	37	Good/fair	trunk decay
T233	Tulip poplar	Liriodendron tulipifera	30	Poor	broken leader, trunk decay, trunk cavity, almost dead
T234	Red maple	Acer rubrum	34	Fair	twin, 34x14, suckering, deadwood
T235	Red maple	Acer rubrum	29	Good/fair	deadwood, trunk decay
T236	Tulip poplar	Liriodendron tulipifera	31	Good/fair	irregular growth form
T237	White oak	Quercus alba	27	Good	
T238	Tulip poplar	Liriodendron tulipifera	29	Good/fair	trunk decay
T239	Tulip poplar	Liriodendron tulipifera	37	Fair	trunk decay, deadwood, broken branches
T240	Tulip poplar	Liriodendron tulipifera	25	Good	
T241	Black oak	Quercus velutina	28	Fair/poor	twin, dead leader, crown dieback, included bark
T242	Northern red oak	Quercus rubra	28	Fair	trunk cavity, deadwood
T243	Tulip poplar	Liriodendron tulipifera	31	Fair	decay
T244	Tulip poplar	Liriodendron tulipifera	33	Good/fair	twin, 33x13, included bark
T245	Tulip poplar	Liriodendron tulipifera	30	Good/fair	trunk decay
T246	Tulip poplar	Liriodendron tulipifera	46	Good/fair	trunk decay
T247	Black oak	Quercus velutina	26	Good/fair	flared trunk, deadwood
T248	Tulip poplar	Liriodendron tulipifera	26	Good	narea trank, acaawooa
T249	Red maple	Acer rubrum	33	Fair	lean, deadwood, trunk decay
T250	Northern red oak	Quercus rubra	29	Fair	trunk decay, sparse crown
T250	Northern red oak	Quercus rubra	26	Fair	irregular growth form, deadwood
T251	Northern red oak	Quercus rubra	33	Poor	twin, splits above dbh, deadwood, trunk cavities
			39	Good	deadwood
T253	Black gum	Nyssa sylvatica		+	
T254	Black oak	Quercus velutina	24	Fair	deadwood, included bark
T255	Black oak	Quercus velutina	30	Fair	deadwood, sparse crown
T256	Black oak	Quercus velutina	34	Fair/poor	lots of deadwood, trunk cavities
T257	Chestnut oak	Quercus prinus	38	Fair	deadwood
T258	Northern red oak	Quercus rubra	29	Fair	deadwood, irregular growth form
T259	Chestnut oak	Quercus prinus	31	Good	
T260	White oak	Quercus alba	25	Fair	broken leader
T261	Northern red oak	Quercus rubra	34	Good/fair	deadwood, minor trunk decay
T262	White oak	Quercus alba	30	Fair	split above dbh, included bark
T263	Red maple	Acer rubrum	33	Fair	included bark, deadwood, trunk cavities
T264	Red maple	Acer rubrum	27	Good/fair	trunk decay
T265	Tulip poplar	Liriodendron tulipifera	27	Good	
T266	Red maple	Acer rubrum	30	Poor	trunk decay, broken leader, vines
					dead leader, trunk decay, cavities, irregular growth
T267	Red maple	Acer rubrum	27	Poor	form, included bark
T268	Tulip poplar	Liriodendron tulipifera	24	Good/fair	trunk cavity
T269	Tulip poplar	Liriodendron tulipifera	24	Good	
T270	Red maple	Acer rubrum	28	Fair	twin, 28x13, deadwood, trunk decay
T271	Red maple	Acer rubrum	24	Fair	deadwood, suckering, lean
T272	Red maple	Acer rubrum	24	Good	
T273	Red maple	Acer rubrum	29	Fair	trunk decay, suckering, split
T274	Tulip poplar	Liriodendron tulipifera	28	Good	
T275	Red maple	Acer rubrum	38	Fair	4x, deadwood, lean
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T276	Red maple	Acer rubrum	24	Fair	irregular growth form
T277	Red maple	Acer rubrum	27	Fair	3x, trunk cavity, included bark
T278	Red maple	Acer rubrum	28	Fair	twin, irregular growth form
T279	Black cherry	Prunus serotina	24	Fair/poor	deadwood, irregular growth form
T280	Red maple	Acer rubrum	26	Good/fair	deadwood, exposed roots
T281	Red maple	Acer rubrum	25	Fair	irregular growth form
T282	Red maple	Acer rubrum	24	Fair	deadwood, suckering
T283	Tulip poplar	Liriodendron tulipifera	24	Poor	broken trunk, vines in crown
T284	Black gum	Nyssa sylvatica	26	Fair	deadwood
T285	White oak	Quercus alba	25	Good/fair	vines in crown
T286	White oak	Quercus alba	27	Good/fair	vines, deadwood
T287	Northern red oak	Quercus rubra	28	Fair	deadwood, crown dieback
T288	Northern red oak	Quercus rubra	36	Fair	slight lean, deadwood, sparse crown
T289	Tulip poplar	Liriodendron tulipifera	27	Good/fair	dead twin
T290	Northern red oak	Quercus rubra	30	Good/fair	deadwood
T291	Northern red oak	Quercus rubra	33	Fair	slight lean, sparse crown
T291	Black gum	Nyssa sylvatica	26	Fair	broken leader
T293	Black oak	Quercus velutina	31	Good	brokerriedder
T294		- - 	32	Fair	included bark, split above dbh
T294	Black gum Northern red oak	Nyssa sylvatica Quercus rubra	31	Fair	vines in crown, trunk cavity
	Northern red oak		27	Good	villes ill crowil, trails cavity
T296 T297	Northern red oak	Quercus rubra Quercus rubra	31	Fair	deadwood, trunk decay
T297		Quercus rubra Quercus rubra	28	Fair	
-	Northern red oak		_		lean, irregular growth form, trunk decay
T299	Northern red oak	Quercus rubra	27	Good/fair	trunk decay, minor deadwood
T300	Northern red oak	Quercus rubra	25	Fair/poor	sparse crown
T301	Tulip poplar	Liriodendron tulipifera	30	Good	
T302	Northern red oak	Quercus rubra	32	Good	Paka Isan Pash dad bank an Pasa na hala an
T303	Northern red oak	Quercus rubra	27	Good/fair	slight lean, included bark, split, trunk decay
T304	Northern red oak	Quercus rubra	29	Good	dead.com
T305	Black oak	Quercus velutina	32	Good/fair	deadwood, sparse crown
T306	Black oak	Quercus velutina	44	Good/fair	slight lean, cankers
T307	Black oak	Quercus velutina	41	Fair	twin, split above dbh, included bark
T308	Black oak	Quercus velutina	29	Good	and the above of the final colored bands
T309	Black oak	Quercus velutina	30	Good/fair	split above dbh, included bark
T310	Black oak	Quercus velutina	34	Fair	split above dbh, dead leader
T311	Black oak	Quercus velutina	33	Fair	deadwood
T312	Tulip poplar	Liriodendron tulipifera	30	Good	
T313	Tulip poplar	Liriodendron tulipifera	35	Fair/poor	split above dbh, included bark, trunk decay
T314	Northern red oak	Quercus rubra	29	Good	minor deadwood
T315	Tulip poplar	Liriodendron tulipifera	28	Fair	trunk cavity
T316	Northern red oak	Quercus rubra	33	Good/fair	trunk decay
T317	Northern red oak	Quercus rubra	29	Good	
T318	Tulip poplar	Liriodendron tulipifera	24	Good	
T319	Tulip poplar	Liriodendron tulipifera	24	Good	
T320	Tulip poplar	Liriodendron tulipifera	25	Good	demand anyone
T321	Tulip poplar	Liriodendron tulipifera	24	Fair/poor	damaged crown
T322	Chestnut oak	Quercus prinus	31	Good	minor deadwood
T323	Chestnut oak	Quercus prinus	31	Good/fair	irregular growth form
T324	Chestnut oak	Quercus prinus	37	Fair/poor	severe trunk wound, deadwood
T325	Red maple	Acer rubrum	28	Fair	deadwood
T326	Northern red oak	Quercus rubra	25	Fair/poor	twin, 25x25, major deadwood
T327	Northern red oak	Quercus rubra	26	Fair	twin, 26x22, splits below dbh, included bark
T328	Tulip poplar	Liriodendron tulipifera	26	Good	
T329	Tulip poplar	Liriodendron tulipifera	25	Good	1
T330	Tulip poplar	Liriodendron tulipifera	24	Good	minor trunk decay

T224	T= 1: 1	1	25		
T331	Tulip poplar	Liriodendron tulipifera	25	Good	and the second below to also dead be sub-
T332	Tulip poplar	Liriodendron tulipifera	45	Good/fair	split above dbh, included bark
T333	Northern red oak	Quercus rubra	31	Fair	deadwood, included bark
T334	Black oak	Quercus velutina	25	Good/fair	crown dieback
T335	Tulip poplar	Liriodendron tulipifera	25	Good	
T336	Northern red oak	Quercus rubra	29	Poor	severe trunk wound & deadwood
T337	Red maple	Acer rubrum	25	Fair	multistem, 2 dead leaders, irregular growth form
T338	Tulip poplar	Liriodendron tulipifera	37	Fair/poor	large trunk cavity, major trunk decay
T339	Red maple	Acer rubrum	29	Good/fair	multistem, included bark
T340	White oak	Quercus alba	29	Good	minor deadwood
T341	Tulip poplar	Liriodendron tulipifera	29	Good	
T342	Black oak	Quercus velutina	28	Good	minor deadwood
T343	Black gum	Nyssa sylvatica	24	Good	
T344	Tulip poplar	Liriodendron tulipifera	27	Good	
T345	Black oak	Quercus velutina	26	Fair	severe lean
T346	Tulip poplar	Liriodendron tulipifera	26	Good	
T347	Northern red oak	Quercus rubra	26	Fair	deadwood, sparse crown
T348	Tulip poplar	Liriodendron tulipifera	28	Good	
T349	Tulip poplar	Liriodendron tulipifera	24	Fair	broken leader, included bark
T350	Tulip poplar	Liriodendron tulipifera	25	Fair	irregular growth form, vines
T351	Tulip poplar	Liriodendron tulipifera	27	Good/fair	irregular growth form
T352	Tulip poplar	Liriodendron tulipifera	29	Fair/poor	dead leader
T353	Red maple	Acer rubrum	24	Fair	twin, 24x12, irregular growth form, suckering
T354	Tulip poplar	Liriodendron tulipifera	26	Fair	irregular growth form
T355	Tulip poplar	Liriodendron tulipifera	31	Good	
T356	Tulip poplar	Liriodendron tulipifera	29	Good	
T357	Black oak	Quercus velutina	28	Poor	dead leader, severe trunk decay, deadwood
T358	Chestnut oak	Quercus prinus	33	Fair	deadwood, sparse crown
T359	Chestnut oak	Quercus prinus	24	Good	
T360	Chestnut oak	Quercus prinus	25	Good	
T361	Chestnut oak	Quercus prinus	25	Fair	split above dbh, included bark, deadwood
T362	Chestnut oak	Quercus prinus	32	Fair	split above dbh, included bark, lean, trunk decay
T363	Chestnut oak	Quercus prinus	24	Fair	deadwood
T364	Chestnut oak	Quercus prinus	27	Good/fair	lean, deadwood
T365	Chestnut oak	Quercus prinus	32	Good	
					trunk decay, irregular growth form, deadwood, sparse
T366	Chestnut oak	Quercus prinus	25	Poor	crown
T367	White oak	Quercus alba	29	Good/fair	lean, deadwood
T368	Tulip poplar	Liriodendron tulipifera	33	Good	
T369	Tulip poplar	Liriodendron tulipifera	31	Good/fair	irregular growth form
T370	Tulip poplar	Liriodendron tulipifera	29	Good	- ·
T371	Tulip poplar	Liriodendron tulipifera	28	Good/fair	deadwood, irregular growth form
T372	Tulip poplar	Liriodendron tulipifera	28	Good	, 5 - 6
T373	Chestnut oak	Quercus prinus	26	Fair	irregular growth form, deadwood
T374	Chestnut oak	Quercus prinus	29	Good	0 1 0 1 1 7 1 2 7 1
T375	Chestnut oak	Quercus prinus	27	Good	
1373	S. IESEITAE OUR	Quereus printus		3000	twin, 26x21, included bark, irregular growth form,
T376	Chestnut oak	Quercus prinus	26	Fair	deadwood
T377	Chestnut oak	Quercus prinus	25	Good/fair	lean, deadwood
T378	Chestnut oak	Quercus prinus	28	Fair	severe lean, deadwood
T379	Chestnut oak	Quercus prinus	24	Good	minor deadwood
T380		·	24	Good	Timor deddwood
	Chestnut oak	Quercus prinus	+		3x, 32x14, split above dbh, included bark
T381 T382	Chestnut oak	Quercus prinus	32	Fair Fair	-
T383	Northern red oak Chestnut oak	Quercus rubra Quercus prinus	26 34	Fair	sparse crown 3x, 34x16, included bark, deadwood, split above dbh
T384	Chestnut oak	Quercus prinus	25	Fair	deadwood, irregular growth form, trunk decay
T385	Chestnut oak	Quercus prinus	27	Good/fair	slight lean, deadwood
1303	Janesanat ouk	Lac. oad printad			- 0,

T386	Chestnut oak	Quercus prinus	33	Good/fair	split above dbh, included bark
T387	Chestnut oak	Quercus prinus	24	Good	
T388	Slippery elm	Ulmus rubra	57	Fair/poor	5x, 57x19, included bark, trunk decay, cavity,
T389	Sycamore	Platanus occidentalis	26	Good/fair	vines in crown
T390	Black cherry	Prunus serotina	34	Poor	deadwood, crown dieback, dead leader
T391	Black oak	Quercus velutina	24	Fair	sparse crown, deadwood, lean
T392	Pignut hickory	Carya glabra	25	Good	
T393	Black cherry	Prunus serotina	28	Fair/poor	deadwood, trunk decay
T394	Black walnut	Juglans nigra	24	Good/fair	irregular growth form
T395	Black walnut	Juglans nigra	30	Fair/poor	lean, deadwood
T396	Tulip poplar	Liriodendron tulipifera	24	Fair/poor	one sided crown, deadwood, irregular growth form
T397	Chestnut oak	Quercus prinus	29	Fair	irregular growth form

Waters of the U.S. Data Sheet

Project: M. Clay	545		Rostmes M.	m)	Oftenson Outlane
Date:	1100 11/1	State: MD	Photos.	2 (-27	Stream Order:
Crew:	ELB, WMM	County: Montagner	>	Last Flag Number:	
Feature Hydr	Feature Hydrologic Class (check one):	-0	0		
Tidal	Perennial		Intermittent (SNE)		Enhemeral (SNE)
TNW (Subject to ebb and			RPW - Seasonal (must	Non-RPW drain	Non-RPW draining uplands (not iurisdictional)
flow)	(Flowing year round)	(pur	flow at least 3 months a	Non-RPW eros	Non-RPW erosional feature (not jurisdictional)
	X RPW – Perennial	al year)		Non-RPW with	Non-RPW with abutting wetland
	(Flowing year round)	(puno		Non-RPW with	Non-RPW with adjacent wetland
Describe rational for	Describe rational for hydrologic class:SIG NIFICAMT	W.	O W DUING BOY WEATHER	Non-RPW wetland ad (outside of study area)	Non-RPW wetland adjacent or abutting upstream (outside of study area)
Feature Desci	Feature Description: (check all that apply)				or conf
Shaj	Shape (with respect to top of bank)	(A)	Substrate	ato	Township and I
X Natural Channel Shane	hane Width 7 1	Denthu			vegetation
Artificial (man-made)		etahility:	Cobbles V Creen		KB: SKUNK CADDRAGE, HONEY, WINEY,
Manipulated (man-altered)		to ble	Redrock Congrete	rete.	10/12/19
Other:	Side	(to vertical)	(or les	320	LB: LB:
Notes:			Constant Constant		
Flow & Biolog	Flow & Biological Characteristics: (check all that apply)	ill that apply)			Spice bus M
Surface Flow	V Subsurface Flow		Biolo	Biological Characteristics	ø
Discrete	Yes	X Riparian corridor	1-80	Habitat for: 2,	
X Confined	No	Type: Lo. Foot	Width: 1003+	Federally listed species	d species
Discrete and confined	ned X Unknown	X Wetland fringe Herobunater	modulaters	Fish/spawn areas	eas
Overland Sheetflow	W	3		Other environ	Other environmentally sensitive areas
Notes:					
Non-tidal tribi	Non-tidal tributary has: (check all that apply; include photos for each & list photo#)	ly; include photos for eac	h & list photo #)		
Bed and Banks			Ordinary High Water Mark		
XYes	X Clear, natural line impressed on the bank		Sediment deposition	×	Sediment sorting
No	Changes in the character of soil	r of soil	Water staining	2	Scour
	Shelving	×	Presence of litter and debris	×	Observed/predicted flow events

Abrupt change in plant community

Other:

Destruction of terfestrial veg.

Presence of wrack line

Mean High Water Mark indicated by:

Survey to available datum

Physical markings

Oil or scum line along shore objects Fine shell or debris deposits (foreshore)

High Tide Line

Physical markings/characteristics

Tidal gauges

Notes:

Tidal tributary has: (check all that apply; include photos for each & list photo #)

Vegetation matted down, bent, or absent

Leaf litter disturbed

Chemical Characteristics

Water is discolored

Oily film Other:

Vegetation lines/changes in types

Water is clear

pplicant/Owner: MONT.CO. DPW	OD City/County: Mon	State: MD Sampling Point: W3
nvestigator(s): UMM, FCS	Section, Township, R	
andform (hillslope, terrace, etc.): †errace		- / 1/
ubregion (LRR or MLRA): 182-5; MLLA Lat:	Local relief (concave, co	onvex, none): Concoure fuelly Slope (%):
	LC	ong:CDatum:
oil Map Unit Name:		NWI classification:
re climatic / hydrologic conditions on the site typical for		
re Vegetation, Soil, or Hydrology	_ significantly disturbed? → Are	e "Normal Circumstances" present? Yes No
re Vegetation, Soil, or Hydrology	_ naturally problematic? 📈 🖯 (If r	needed, explain any answers in Remarks.)
		locations, transects, important features, et
Hydrophytic Vegetation Present? Yes X Hydric Soil Present? Yes X Wetland Hydrology Present? Yes X	No Is the Sample within a Wetla	
YDROLOGY		
Wetland Hydrology Indicators:	**************************************	Secondary Indicators (minimum of two required
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil Cracks (B6)
	rue Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	lydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
	Oxidized Rhizospheres on Living Roo	
	resence of Reduced Iron (C4) tecent Iron Reduction in Tilled Soils	Dry-Season Water Table (C2) (C6) Crayfish Burrows (C8)
	hin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
	ther (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)		Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)
Water-Stained Leaves (B9)		Microtopographic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral Test (D5)
ield Observations:	1/_ =	
furface Water Present? Yes No	Depth (inches): //2 IV	
	Depth (inches):	()
Vater Table Present? Yes No [Depth (inches): W	etland Hydrology Present? Yes No
Vater Table Present? Yes No Daturation Present? Yes No D		
/ater Table Present? Yes No Daturation Present? Yes No Daturation Present? Yes No Daturation Present?	l, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? No Deaturation Present? No Deaturation Present?	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? No Deaturation Present? No Deaturation Present? No Deature Present Pr	ll, aerial photos, previous inspection	s), if available:
Vater Table Present? Atter Table Present? Atturation Present? Atturation Present? Atturation Present? Yes No Describes Capillary fringe) Atturation Present? Yes No Describes No	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Death Caturation Present? No Death Caturation Present? No Death Caturation Presents No Death Caturation Present?	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Death Caturation Present? No Death Caturation Present? No Death Caturation Presents No Death Caturation Present?	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? No Deaturation Present? No Deaturation Present? No Deature Present Pr	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? No Deaturation Present? No Deaturation Present? No Deature Present Pr	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Deaturation Present? Yes No Deaturation Present? Yes No Deaturation Present? No Deaturation Present? No Deaturation Present? No Deature Present Pr	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Death Caturation Present? No Death Caturation Present? No Death Caturation Presents No Death Caturation Present?	II, aerial photos, previous inspection	s), if available:
Vater Table Present? Yes No Describe Recorded Data (stream gauge, monitoring well-	II, aerial photos, previous inspection	s), if available:

VEGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point:
		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:) 1.	-	Species?	COLUMN TO SERVICE	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2.				(0.2007) 22-24-21(0.11)
3				Total Number of Dominant Species Across All Strata: (B)
4				Percent of Dominant Species / , 0/
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		-		Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
0		= Total Co	ver	OBL species x 1 = 60
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 = Z
1				FAC species x 3 = 0
2				FACU species x 4 = O
3				UPL species x 5 = 100
4				Column Totals: <u>82</u> (A) <u>162</u> (B)
5				Prevalence Index = B/A =2,0
6		,		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				✓ 3 - Prevalence Index is ≤3.0¹
10		= Total Co	/er	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 44 radius) Foetidus	DUA	D	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Skunk cabbage-symplocaepus	40		FACW	
2. Juneus effusus (soff rish) 3. Sphagnun ugoss sp.	20	-	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Sedad SP	5		N1	Definitions of Four Vegetation Strata:
5. Grass Sp.	20	D	UPL.	
6.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8.				Sapling/Shrub – Woody plants, excluding vines, less
.9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.

87 = Total Cover

= Total Cover

44-50 17-20

Remarks: (Include photo numbers here or on a separate sheet.)

Woody Vine Stratum (Plot size: _____)

85# OroHA

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?

SOIL									Sampling Point: \\\3
Profile Desc	ription: (Describe	to the dep	th needed	to docun	nent the	indicator	or confir	m the absence of ir	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Color (Redo	x Feature	S			
0-1"	107R 3/2	100		moist)	%	_Type ¹	_Loc ²		Remarks
2-411	10483/2	185	542	4/6	-	-		SANAY	
61-12	10 424/1	180	5 YR	416	15	RM	M	Silt loan	
	10 (2711		5 12	716	20		PL	- Si) + loan	
¹ Type: C=Co Hydric Soil Ir	ncentration, D=Depl	etion, RM=	Reduced N	Matrix, MS	 =Masked	Sand Gra	ains.	² Location: PL=Por	e Lining, M=Matrix.
Black His Hydrogen Stratified 2 cm Muc Depleted Thick Darl Sandy Mu MLRA Sandy Gle Sandy Rec Stripped M Restrictive La	pedon (A2) fic (A3) Sulfide (A4) Layers (A5) k (A10) (LRR N) Below Dark Surface k Surface (A12) cky Mineral (S1) (LR 147, 148) eyed Matrix (S4) dox (S5)		Poly Thin Loar Dep Red Depl Red Iron- M Umb	k Surface of value Below Dark Surface Matrox Dark Soldeted Dark ox Depressing Manganes ILRA 136) Tric Surface mont Floor	bw Surface face (S9) Matrix (F3) urface (F6 Surface sions (F8 se Masse	(MLRA 1 F2) 6) (F7)) s (F12) (L	47, 148) .RR N, 6, 122)	2 cm M	for Problematic Hydric Soils ³ : fluck (A10) (MLRA 147) Prairie Redox (A16) RA 147, 148) ont Floodplain Soils (F19) RA 136, 147) arent Material (TF2) hallow Dark Surface (TF12) Explain in Remarks) s of hydrophytic vegetation and il hydrology must be present, disturbed or problematic.
Type: Depth (inche	es):							Hydric Soil Prese	ent? Yes X No
Remarks: So	nasi wetlar	I ISSE	ED OF	er sl	SH	slope	ABI	THUG SPREY	· mr

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Applicant/Owner Investigator(s): Section, Township, Range: Local relief (concave, convex, none): Concave Subregion (LRR or MLRA): Long: Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _ No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? ND (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? No Is the Sampled Area Hydric Soil Present? No within a Wetland? Wetland Hydrology Present? Yes Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) _ True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Depth (inches) Water Table Present? Depth (inches): Saturation Present? Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Red Maple - AUGA RUERUM TULIP Poplat - Liviadendian tulipifus	70	Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)
TUID POPLAT- Livindendron			1.10	
				Total Number of Dominant Species Across All Strata: (B)
				Percent of Dominant Species That Are OBL, FACW, or FAC:
				Prevalence Index worksheet:
	-			Total % Cover of: Multiply by:
pling/Shrub Stratum (Plot size: 154)	85	= Total Cov	/er	OBL species <u>85</u> x1 = <u>85</u> FACW species <u>50</u> x2 = <u>100</u>
Spice bus n-linera Broson	30	D	Friew	FAC species
				FACU species x 4 =
				UPL species
				Prevalence Index = B/A = 1.48
				Hydrophytic Vegetation Indicators:
		_		1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
-				 ✓ 3 - Prevalence Index is ≤3.0¹ — 4 - Morphological Adaptations¹ (Provide supportin
rb Stratum (Plot size: 544)		= Total Cov	rer	data in Remarks or on a separate sheet)
Skunk Cabbaga Stations Skunk Cabbaga Stations Server Cabbaga Stations Cabb	25	<u>D</u>	PACW FAC	Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must
Boehmeria Cyclindrica	5		FACW	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
,				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o
				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.
ody Vine Stratum (Plot size:)	125	= Total Cov	er	Woody vine – All woody vines greater than 3.28 ft in height.
				Hydrophytic
				Vegetation Present? Yes No
		= Total Cov		Present? Tes No
narks: (Include photo numbers here or on a separate s	heet.)			

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.) Depth	5 61 5								Sa	ampling Point:	MH
Depth Matrix Redox Features Color (moist) % Type Loc Texture Remarks	Profile Des	scription: (Describe	to the dep	th needed to docum	ent the ir	ndicator	or confirm	m the absence	of indicator	rs.)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Black Histio (Bippedon (A2) Black Histio (A3) Hydrogen Sulffide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (F1) Depleted Dark Surface (F2) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S5) Umbric Surface (F2) Sandy Mucky Mineral (S1) (LRR N, MLRA 136) Sandy Gleyed Matrix (S6) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): Type: Loamy Gleyed Matrix, MS=Masked Sand Grains. Alto Deplete Ining, M=Matrix. Indicators for Problematic Hydric Soils*: Indicators of Problematic Hydric Soils*: Indicators of Problematic Hydric Soils*: Indicators of Pydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	Depth	Matrix		Redox	Features						
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Setrictive Layer (if observed): Type: Depth (inches): Depetation, RM=Reduced Matrix, MS=Masked Sand Grains. PLocation: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils*: Indicators for Problematic Hydric Soils*: 1 cosst Prairie Redox (A10) (MLRA 147, 148) Cosst Prairie Redox (A16) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	(inches)	Color (moist)	_%_	Color (moist)	%	_Type ¹	Loc ²	Texture		Remarks	
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Setrictive Layer (if observed): Type: Depth (inches): Depetation, RM=Reduced Matrix, MS=Masked Sand Grains. PLocation: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils*: Indicators for Problematic Hydric Soils*: 1 cosst Prairie Redox (A10) (MLRA 147, 148) Cosst Prairie Redox (A16) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	0-4	1048411	65	54K516	35	D	M	SILTIDAN	\		
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Thin Dark Surface (S7) Loamy Gleyed Matrix (F3) Zom Muck (A10) (LRR N) Depleted Below Dark Surface (F1) Thick Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 136, 122) Sandy Gleyed Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): As Station: PL=Pore Lining, M=Matrix Jecation: PL=Pore Lining, M=Matrix Loamy Gleyed Sand Grains. Indicators for Problematic Hydric Soils²: Indicators (F1) Coast Prairie Redox (A10) (MLRA 147, 148) (MLRA 136, 147) (MLRA 136, 147) (MLRA 136, 147) (MLRA 136, 147) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 136, 147) (MLRA 147, 148) (MLRA 136, 147) (MLRA 147, 148) (MLRA 147, 1	4-8	Gley 14/N	85	7.5 YR 5/8	15	D	M				
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147, 148) Depleted Below Dark Surface (S9) (MLRA 147, 148) Loamy Gleyed Matrix (F2) Peleded Matrix (F3) Depleted Below Dark Surface (A11) Thick Dark Surface (A11) Depleted Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): "Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils*:	2+	cofusal		7770				- 12/201	-	I III	
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Depleted Matrix (F3) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): Depleted Matrix (F3) Red Ox Dark Surface (F6) Depleted Dark Surface (F7) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Type: Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) Wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes				Loamy Gleyed	Matrix (F:	2)					F19)
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Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) Wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes	MLRA	147, 148)			e wasses	(F12) (L	RR N,				
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present, unless disturbed or problematic. Type: Depth (inches): Hydric Soil Present? Yes No.					(F13) (M	LRA 136	5. 122)	3Indic	ators of hyd	Ironhytic year	totion and
Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? YesNo				Piedmont Flood	lplain Soil	ls (F19) (MLRA 14	8) we	tland hydrol	oav must be i	nresent
Type:								2.5			
Depth (inches): Hydric Soil Present? Yes No.		.ayer (if observed):								33.50 (1)=2.15(1)	
nyunc soil Present? Yes No		40.000		-						11	
Remarks:		hes):						Hydric Soil F	resent?	Yes X	No
	Remarks:					_		C. 4-12 to 14 c. 5 c.			-

P4010 #52

Project/Site: MCS OPTION D	City/County: MODT, Sampling Date: 41411
	State: MD Sampling Point: W5- I
Investigator(s): EPB , W. M M	
	ocal relief (concave, convex, none): Slope (%):
LICK &	Long: Datum:
Soil Map Unit Name:	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of y	
	하다 그들은 내가 가는 사람이 없어 하고 있다면 하다면 하는데
	y disturbed? N Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally p	
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, transects, important features, e
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No Yes No Remarks:	within a Wetland? Yes X No
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required
Primary Indicators (minimum of one is required; check all that apply)	
Surface Water (A1) True Aquatic F	Her 하늘 다른 사람들은 다른 사람들은 보고 있는데 되었다. 그리고 있는데 보고 있는데 보고 있는데 되었다. 그리고 있는데 보고 있는데 보다 되었다. 되었다. 보고 있는데 보고
High Water Table (A2) Saturation (A3) Hydrogen Sulf	fide Odor (C1) Drainage Patterns (B10) ospheres on Living Roots (C3) Moss Trim Lines (B16)
✓ Water Marks (B1) — Presence of R	HEND IN THE INTERPOLATION IN THE TOTAL CONTROL OF SHOULD SEED AND SHOULD SEED IN THE TOTAL CONTROL OF THE PART
	eduction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Sur	
Algal Mat or Crust (B4) Other (Explain	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Shallow Aquitard (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations:	(710 1104141) (000 (00)
Surface Water Present? Yes No Depth (inches	s);
Water Table Present? Yes No Depth (inches	
Saturation Present? Yes V No Depth (inches (includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:
Remarks:	
Remarks: SEEP ABUTTING PERENOVAL	SWEAM W- >

ree Stratum (Plot size: A)	Absolute Dominant II	ndicator Dominance Lest Workshoot
	% Cover Species?	Status Number of Dominant Species
		Total Number of Dominant
		That Are OBL, FACW, or FAC: (A/B)
		Dravalance Index workshoot:
		Total % Cover of: Multiply by:
	= Total Cove	OBL species X1 = Z5
apling/Shrub Stratum (Plot size: N A)		FACW species 50 x 2 = 10
		The state of the s
		95 105
		Prevalence Index = B/A =
		Hydrophytic vegetation indicators:
		1 - Rapid Test for Hydrophylic Veneration
·		4 - Morphological Adaptations ¹ (Provide supporting
erb Stratum (Plot size:)	= Total Cover	data in Remarks or on a separate sheet)
SKUNK CABBALIE STAPLOCARPOS	25 4	Problematic Hydrophytic Vegetation ¹ (Explain)
IMPATIENS CAPENSIS		FACILI
		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		Tues Meady whente avaluation vince 2 in (7.6 am) or
		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
		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
		more in diameter at breast height (DBH), regardless of height.
		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
		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.
		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.
ody Vine Stratum (Plot size: NA)		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
oody Vine Stratum (Plot size:)	= Total Cover	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
oody Vine Stratum (Plot size: NA)	= Total Cover	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
oody Vine Stratum (Plot size:)	= Total Cover	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.
oody Vine Stratum (Plot size: NA)	= Total Cover	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
oody Vine Stratum (Plot size:N)	= Total Cover	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

Sampling Point: 45

Depth	Matr	ix	pth needed to docur Redo	x Feature	S				
(inches)	Color (moist		Color (moist)	%	Type ¹	_Loc ²	Texture	Re	marks
0-511	10-125	13 100	- MA				SAND		
2-911	2.57 5	5/1 80	10725/6	20	D	M	SILLOAN	0	
- PEROSAL	L						-911-(-02) (
				-					
						-			
				-					
		T. 12		_					
ype: C=Con ydric Soil Inc	centration, D=I	Depletion, RM	=Reduced Matrix, MS	=Masked	Sand Gra	ains.	² Location: PL=I	Pore Lining, M=I	Matrix.
_ Histosol (A			D-10.	10 -10					atic Hydric Soils ³ :
_ Histosof (A _ Histic Epip			Dark Surface		- (00) 15-			m Muck (A10) (N	
_ Black Histi			Polyvalue BelThin Dark Sur	ow Surrac	Ce (S8) (M	ILRA 147,		st Prairie Redox	
	Sulfide (A4)		Loamy Gleyed			47, 148)		MLRA 147, 148) dmont Floodplai	
_ Stratified L			X Depleted Mate		-)			VILRA 136, 147)	
	(A10) (LRR N		Redox Dark S		3)			Parent Materia	
_ Depleted B	Below Dark Sur	face (A11)	Depleted Dark					y Shallow Dark	
	Surface (A12) cky Mineral (S1		Redox Depres				Oth	er (Explain in Re	emarks)
Salluv IVIIIC	kv wineral (S)) (LKK N.	Iron-Mangane	se Masse	s (F12) (L	RR N,			
MI RA 1	47 148)								
MLRA 14	47, 148)		MLRA 136)	/II DA 126	2 422)	31		version of the
MLRA 14	47, 148) yed Matrix (S4)		MLRA 136 Umbric Surfac) e (F13) (I					ytic vegetation and
MLRA 14 Sandy Gley Sandy Red Stripped Ma	47, 148) yed Matrix (S4) lox (S5) atrix (S6)		MLRA 136) e (F13) (I			8) wetl	and hydrology n	nust be present,
MLRA 14 Sandy Gley Sandy Red Stripped Ma	47, 148) yed Matrix (S4) lox (S5)		MLRA 136 Umbric Surfac) e (F13) (I			8) wetl		nust be present,
MLRA 14 Sandy Gley Sandy Red Stripped Ma	47, 148) yed Matrix (S4) lox (S5) atrix (S6)		MLRA 136 Umbric Surfac) e (F13) (I			8) wetl	and hydrology n	nust be present,
MLRA 14 Sandy Gley Sandy Red Stripped Ma	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe		MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Masstrictive Lay Type:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe		MLRA 136 Umbric Surfac) e (F13) (I			8) wetl	and hydrology n ss disturbed or	nust be present,
MLRA 14 _ Sandy Gley _ Sandy Red _ Stripped Ma strictive Lay Type: Depth (inche	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic.
MLRA 14 _ Sandy Gley _ Sandy Red _ Stripped Ma strictive Lay Type: Depth (inche	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic.
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic.
MLRA 14 _ Sandy Gley _ Sandy Red _ Stripped Ma strictive Lay Type: Depth (inche	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic.
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inche	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inches marks:	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic.
MLRA 14 Sandy Gley Sandy Red Stripped Ma strictive Lay Type: Depth (inche	47, 148) yed Matrix (S4) lox (S5) atrix (S6) ver (if observe	d):	MLRA 136 Umbric Surfac) e (F13) (I			8) wetl unle	and hydrology n ss disturbed or	nust be present, problematic,

Project/Site: MGS	T MOREO -	City/C	County: MONT.		Sampling Date:	4/4/11
Applicant/Owner:M C	DOT					
Investigator(s):			on, Township, Range:			
Landform (hillslope, terrace,	, etc.):		ief (concave, convex, no			(%).
Subregion (LRR or MLRA):	LLR-S MIRA HALIYAI					
Soil Map Unit Name:						
Are climatic / hydrologic con						
Are Vegetation, Soil						No.
Are Vegetation, Soil						No
SUMMARY OF FINDI						itures, etc.
Hydrophytic Vegetation Pri Hydric Soil Present?	Yes	X_ No	Is the Sampled Area within a Wetland?	Yes_X	No	
Wetland Hydrology Presen	nt? Yes					
HYDROLOGY						
Wetland Hydrology Indica	afore:			Canadau ladi	-t (t-t-t	V 10
Primary Indicators (minimu		ack all that anniv)			cators (minimum of ty	vo required)
Surface Water (A1)	m of one is required, cite	_ True Aquatic Plants (I	B14)	Surface So	egetated Concave Su	urfaco (R9)
High Water Table (A2)		_ Hydrogen Sulfide Odd			atterns (B10)	inace (Do)
Saturation (A3)			es on Living Roots (C3)			
Water Marks (B1)	_	Presence of Reduced	Iron (C4)		Water Table (C2)	
Sediment Deposits (B2		_ Recent Iron Reduction		Crayfish Bu	Addition to the control of the contr	
Drift Deposits (B3) Algal Mat or Crust (B4)		_ Thin Muck Surface (C			Visible on Aerial Imag	0.000 0.000 0.000 0.000
Iron Deposits (B5)		Other (Explain in Rem	iarks)	Stunted or	Stressed Plants (D1)	
Inundation Visible on A	verial Imagery (B7)			Shallow Aq		
✓ Water-Stained Leaves	(B9)				raphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutra	al Test (D5)	
Field Observations:						
Surface Water Present?	Yes No					- 1
Water Table Present? Saturation Present?	Yes No No No					
(includes capillary fringe)				lydrology Prese	ent? Yes V	No
Describe Recorded Data (st	tream gauge, monitoring	well, aerial photos, prev	vious inspections), if ava	ilable:		
Remarks: SEEP OF	F Slope ABO	ITTING PEOF	UNIAL SIZE	MM WZ		
						T.
						1

EGETATION (Four Strata) – Use scientific				Sampling F	Point:
Tree Stratum (Plot size:N_A)		Dominant Species?		Dominance Test worksheet:	
1	Total Control of the	The state of the s	Continue	Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
				matrice obe, triow, or the	
				Total Number of Dominant	3 (B)
3.				Species Across All Strata:	(D)
				Percent of Dominant Species	10 001
i				That Are OBL, FACW, or FAC:	100/0 (A/I
·				Prevalence Index worksheet:	
`,				Total % Cover of: Mu	iltiply by:
k				OBL species <u>%5</u> x 1 = _	
Sapling/Shrub Stratum (Plot size:)		= Total Cov	er	FACW species 25 x2=	
LINDERA BENZOIN	10	0	FAC	FAC species x 3 =	45
Smilax Rutunda Folia	- 10	-	FAC	FACU species x 4 = _	
				UPL species x 5 = _	
·				Column Totals: 125 (A)	10-
				Column Totals:(A)	_100_(B
				Prevalence Index = B/A =	1.44
•				Hydrophytic Vegetation Indicators:	
				1 - Rapid Test for Hydrophytic Ve	
				✓ 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.01	
0		-		4 - Morphological Adaptations¹ (F	Provide supporti
1 1 01 1 - (D) 1 - (D)	_15_	= Total Cov	er	data in Remarks or on a separ	rate sheet)
Herb Stratum (Plot size:) SYMPHLO CALPUS FOETI OUS	20	V	OBL	Problematic Hydrophytic Vegetati	ion ¹ (Explain)
	2-	-1			
IMPAMENS CAPENSIS		<u> </u>	FACIN	¹ Indicators of hydric soil and wetland	hydrology must
SPHRGNUM MOSS		N	OBL	be present, unless disturbed or proble	ematic.
				Definitions of Four Vegetation Strat	ta:
				Tree – Woody plants, excluding vines	3 in (7.6 cm)
	-			more in diameter at breast height (DB	
				height.	
				Sapling/Shrub - Woody plants, exclu	udina vines, less
				than 3 in. DBH and greater than 3.28	
0,	-			Herb - All herbaceous (non-woody) p	lante regardles
l. <u></u>				of size, and woody plants less than 3.	
2.					- 4 2 22 4 :-
	_ [ID :	= Total Cov	er	Woody vine – All woody vines greate height.	r than 3.28 π in
/oody Vine Stratum (Plot size: NA)				noight.	
				Hydrophytic	
				Vegetation	
				Present? Yes No	
	=	Total Cove	er		
emarks: (Include photo numbers here or on a separate		= Total Cove	er		

SOIL Profile Desc	ription: (Describe	to the dent	needed to door	iment the indi-	ofor or '	firms the!	Sampling Poi	nt:
Depth	Matrix	co trie debt			ator or conf	irm the absence	e of indicators.)	
(inches)	Color (moist)	_ %	Color (moist)	dox Features % Tv	/pe ¹ Loc ²	Texture	Remark	
0-5"	54 2.5/1	100						
we fine	4105"					COARCES	AND WICHBALL	
1010							SAMPle full	of the Lic
							Franchis	
							-	
							+	
						-	-	
-							_	
1								
'Type: C=Cor Hydric Soil In	ncentration, D=Depl	etion, RM=F	Reduced Matrix, M	IS=Masked Sar	d Grains.	² Location: Pl	_=Pore Lining, M=Matrix	
Histosol (A			D-1 0	(07)			ators for Problematic I	
	pedon (A2)		Dark Surfac		O) (88) D 4 4	2	cm Muck (A10) (MLRA	
Black Hist			Thin Dark S	elow Surface (S urface (S9) (ML	8) (MLRA 14	17, 148) C	Coast Prairie Redox (A16	5)
	Sulfide (A4)		Loamy Glev	ed Matrix (F2)	KA 147, 148		(MLRA 147, 148)	· /E40)
	ayers (A5)		∠ Depleted Ma				edmont Floodplain Soil (MLRA 136, 147)	s (F19)
	k (A10) (LRR N)			Surface (F6)		R	led Parent Material (TF2)
	Below Dark Surface	(A11)	Depleted Da	irk Surface (F7)			ery Shallow Dark Surfac	
	Surface (A12)		Redox Depre				ther (Explain in Remark	
	cky Mineral (S1) (LF 147, 148)	KK N,		nese Masses (F	12) (LRR N,			
	yed Matrix (S4)		MLRA 13	96) ace (F13) (MLR	A 400 400V	3		
Sandy Rec	dox (S5)		Piedmont Flo	oodplain Soils (I	A 136, 122)		icators of hydrophytic ve	
Stripped M	latrix (S6)			ocapiani cons (i	13) (WENA	10.00	etland hydrology must b nless disturbed or proble	
	yer (if observed):						moco diotarbod or proble	inatio.
Туре:			=					
Depth (inche	es):					Hydric Soil	Present? Yes X	No
Remarks:								
REFU	SALC 5	"- Je	CH SOCKY	3				
			7.					

		NATION DATA FO				_ Sampling Date: _ 6/25/13
Applicant/Owner:			ongrooding		State M	Sampling Date: Sampling Point: S
nvestigator(s):	WHH	5.0	Saction Town	chin Danga:	_ State: 1 0	Sampling Point:
andform (nillslope, terrac	e, etc.):	Loc	al relief (conca	ive, convex, no	ne):	Slope (%):
						Datum:
						fication:
Are climatic / hydrologic c						
Are Vegetation, So	oil, or Hydrolo	ogy significantly of	disturbed?	Are "Norma	l Circumstances	present? Yes No
Are Vegetation, So	oil, or Hydrok	ogy naturally prol	blematic?	(If needed,	explain any ansy	vers in Remarks)
						ts, important features, et
001111111111111111111111111111111111111	Jiiioo Attuon	one map snowing	Sampling	John Iocatio	ons, transec	is, important features, et
Hydrophytic Vegetation I Hydric Soil Present? Wetland Hydrology Pres	Yes	No		ampled Area Wetland?	Yes_V	
Remarks:	ent? Yes	No				
Wetland Hydrology Ind Primary Indicators (minin Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (num of one is require	d; check all that apply) True Aquatic Pla Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Red	e Odor (C1) pheres on Livi duced Iron (C4	ng Roots (C3)	Surface So Sparsely V Drainage F Moss Trim Dry-Seaso	cators (minimum of two required) vil Cracks (B6) egetated Concave Surface (B8) Patterns (B10) Lines (B16) n Water Table (C2) urrows (C8)
Drift Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5)		Thin Muck Surfa			Stunted or Geomorph	
Inundation Visible or Water-Stained Leave					Shallow Ac	
Aquatic Fauna (B13)					✓ FAC-Neutr ✓ FAC-Neutr	raphic Relief (D4)
Field Observations:					✓ LYC-Menti	al rest (D5)
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes No	Depth (inches): Depth (inches): Depth (inches):	7811	2.7		ent? Yes No
Describe Recorded Data	(stream gauge, mon	itoring well, aerial photos	s, previous ins	pections), if ava	ilable:	
Remarks: PHoto \	1508 Welland wor	M Source C	4 SFOF.	lake s	FEPS UP	- Slinge

			Dominance Test worksheet:		
30	7	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	_4_	(A)
			Total Number of Dominant Species Across All Strata:	5	(B)
			Percent of Dominant Species That Are OBL, FACW, or FAC:	80%	(A/E
	-	-	Prevalence Index workshoot:		
70	-	-		Multiply by	
20% of	total cover	er 6			
_ 2070 01	total cover				
25	Y	FAIN			
		400			
	_		Column Totals: (A)		- /B
					_
			Hydrophytic Vegetation Indicat	tors:	
25 =	Total Cov	or or	3 - Prevalence Index is ≤3.01		
20% of t	otal cover:	5	4 - Morphological Adaptations	s1 (Provide supp	portir
- 2000 -					
70	Y	OBL	Problematic Hydrophytic Veg	etation ¹ (Explain	n)
70	Y				
T			¹ Indicators of hydric soil and wetla	and hydrology m	nust
T		- Table 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			
			Definitions of Four Vegetation S	Strata:	
			Tree - Woody plants, excluding vi	ines, 3 in. (7.6 c	cm) o
			more in diameter at breast height	(DBH), regardle	ess o
		-	neight.		
			Sapling/Shrub - Woody plants, e	excluding vines,	less
			than 3 in. DBH and greater than o	r equal to 3.28	ft (1
90 =	Total Cove		Herb – All herbaceous (non-wood	y) plants, regard	dless
		18			
			Woody vine - All woody vines gre	eater than 3.28 t	ft in
5	Y	FACU -	neight.		
		CITAL			
-					
			Hydrophytic		
5	Total Cove		Vegetation	No	
	Total Cove			No	
	25 = 20% of t	Cover Species? 30 = Total Cover 20% of total cover: The species? The	30 = Total Cover 6 25 FACW 25 = Total Cover 20% of total cover: 5 TO Y FACW T FAC	## Species? Status Species	Species Status Status

Sampling Point: W8

Profile Description: (Describe to the dep Depth Matrix	Redox F	eatures			
(inches) Color (moist) %	Color (moist)	% Type	_Loc ²	Texture	Remarks
0-8" Sley 1 31N 70 PETUSAL E 8"	548416	30 6	PL S	Myclory	
ype: C=Concentration, D=Depletion, RM=	Reduced Matrix, MS=N	Masked Sand Gra	ins. ² Lc	ocation: PL=Pore	Lining, M=Matrix.
_ Histosol (A1) _ Histic Epipedon (A2)	Dark Surface (S Polyvalue Below	Surface (S8) (MI	_RA 147, 148	2 cm Muc	r Problematic Hydric Soils ³ : ck (A10) (MLRA 147) airie Redox (A16)
Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed):	Thin Dark Surface Loamy Gleyed Model Depleted Matrix Redox Dark Surface Depleted Dark S Redox Depression Iron-Manganese MLRA 136) Umbric Surface (Piedmont Floodp	ce (S9) (MLRA 14 Matrix (F2) (F3) Jace (F6) urface (F7) ons (F8) Masses (F12) (L	RR N, , 122) MLRA 148)	(MLRA Piedmont (MLRA Very Shal Other (Ex	147, 148) 150 Floodplain Soils (F19) 136, 147) 10w Dark Surface (TF12) 10plain in Remarks) 15 hydrophytic vegetation and drology must be present, urbed or problematic.
Strictive Layer (if observed): Type: Depth (inches):	÷'			dric Soil Present	/
emarks: PETULALCB" EGANULI					

Project/Site: M/S- BETHEL	City/County: Moん	Γ ,	Sampling Date: 5/77/13
Applicant/Owner:		State: MO	Sampling Point: W9 -1 +h
Investigator(s): KT, WMM			
Landform (hillslope, terrace, etc.):			
Subregion (LRR or MLRA): Lat:			
Soil Map Unit Name:		NWI classificat	
Are climatic / hydrologic conditions on the site typical for th			
Are Vegetation, Soil, or Hydrology			
그리고 하는 사람이 되었다. 그는 그들은 사람들이 얼마를 하는 것이 없는데 하는데 얼마를 받는다.		ed, explain any answers	
SUMMARY OF FINDINGS – Attach site map		TO CLAY DEL BOY DE TRUTTE	
SOMMANT OF FINDINGS - Attach site map	snowing sampling point loca	ations, transects,	important features, etc.
	No Is the Sampled Ar	ea ,	
	within a Wetland?	Yes	No
Wetland Hydrology Present? Yes Yes	40		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)
Primary Indicators (minimum of one is required; check all		Surface Soil C	
	e Aquatic Plants (B14)		etated Concave Surface (B8)
	drogen Sulfide Odor (C1) idized Rhizospheres on Living Roots (0	☐ Drainage Patte C3) ☐ Moss Trim Line	
	esence of Reduced Iron (C4)		/ater Table (C2)
Sediment Deposits (B2)	cent Iron Reduction in Tilled Soils (C6)	Crayfish Burro	ws (C8)
1 (1	n Muck Surface (C7)		ible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Iron Deposits (B5)	ner (Explain in Remarks)	Geomorphic P	essed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquita	
Water-Stained Leaves (B9)			hic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral T	est (D5)
Field Observations:	V2-111		
	epth (inches): $\frac{\sqrt{z-1''}}{2}$		
		nd Hydrology Present	? Yes No O
(includes capillary fringe)			. 100
Describe Recorded Data (stream gauge, monitoring well,	aeriai pnotos, previous inspections), ii	available:	
Remarks:	D. 2000 1120	1.13	
SEEP ON SIDE OF STOPE	5 LIBIOLIA G LAID	01	
PHOTO#5 4177,4478			

VECETATION !	Caur Ctrata	Lica colontifia	names of	nlante
VEGETATION	rour Strata	- Use scientific	Hairies Of	piants.

Sampling Point;

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30) 1. ACER RUBRUM		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant Species Across All Strata: (B)
4 5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6.		
7.		Prevalence Index worksheet:
8.		Total % Cover of: Multiply by:
**	60 = Total Cover	OBL species x 1 = 0
Sapling/Shrub Stratum (Plot size:)	, ,	FACW species x 2 = 0
1,		FAC species x 3 = 0
2		FACU species x 4 = 0
3.		UPL species x 5 = 0
4.		Column Totals: 0 (A) 0 (B)
5.		Prevalence Index = B/A =
6.		
7.		Hydrophytic Vegetation Indicators:
8.		1 - Rapid Test for Hydrophytic Vegetation
9.		2 - Dominance Test is >50%
10		☐ 3 - Prevalence Index is ≤3.0 ¹
	= Total Cover	4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
Herb Stratum (Plot size:5)		Problematic Hydrophytic Vegetation¹ (Explain)
Z= = = 1 - 1 - 1	10 4 OBL	Problematic Hydrophytic Vegetation (Explain)
2. ALROSTIS ALBA.	20 Y FACW	
3. MICTOSTEDIUM VIMINEUM	10 Y FAC	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4		Definitions of Four Vegetation Strata:
5		Definitions of Four Vegetation Strata.
		Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
6		more in diameter at breast height (DBH), regardless of height.
7,		neight.
8,		Sapling/Shrub - Woody plants, excluding vines, less
9		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10		Herb - All herbaceous (non-woody) plants, regardless
11		of size, and woody plants less than 3.28 ft tall.
12.	A ST	Woody vine - All woody vines greater than 3.28 ft in
Was de View Charles (Dict size)	= Total Cover	height.
Woody Vine Stratum (Plot size:)		
1		
2		
3		
4.		Hydrophytic
2.7		Vagatation
5.		
5 6	= Total Cover	Present? Yes No No

0	0	11
0	U	L

Sampling Point: W9

(inches)	Color (moist)	%	Color (moist)	Features %	Type ¹	Loc ²	Texture	Remarks
1-4	254511	85	10 7 8 4 16	15	C	PC	SL	. tomarko
4-12	2.54 6/1		10 YR 6/8	40	0	M	clay	
							1	
		-						
								94
		-						×
	oncentration, D=Dep	oletion, RM	Reduced Matrix, MS	=Masked	Sand Gr	ains.		=Pore Lining, M=Matrix.
Iydric Soil Histosol	Indicators:		☐ Dark Surface	400				ators for Problematic Hydric Soils ³ : cm Muck (A10) (MLRA 147)
Black H Hydroge Stratifie 2 cm Mi Deplete Thick D Sandy M MLR. Sandy F Stripped	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR N) d Below Dark Surfacerk Surface (A12) Mucky Mineral (S1) (in A 147, 148) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) Layer (if observed) ches):	LRR N,	Polyvalue Be Thin Dark Su Loamy Gleye Depleted Mat Redox Dark S Depleted Dar Redox Depre Iron-Mangane MLRA 130 Depleted Dar Fiedmont Flo	rface (S9) d Matrix (rix (F3) Surface (F k Surface ssions (F8 ese Masse 6) ce (F13) ((MLRA: F2) 6) (F7) 3) 9s (F12) (LRR N,	□ P	oast Prairie Redox (A16) (MLRA 147, 148) iedmont Floodplain Soils (F19) (MLRA 136, 147) ed Parent Material (TF2) ery Shallow Dark Surface (TF12) ther (Explain in Remarks) icators of hydrophytic vegetation and etland hydrology must be present, nless disturbed or problematic. Present? Yes No

Project/Site: MCS BETHOL City/County:	1007 /0 Sampling Date: 5[22/13
Applicant/Owner:	State: MO Sampling Point: WIO-I
Investigator(s): ET, WMM Section, Township	, Range: WIO -
Landform (hillslope, terrace, etc.): Local relief (concave,	
Subregion (LRR or MLRA): Lat:	
Soil Map Unit Name:	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes Are Vegetation, Soil, or Hydrology significantly disturbed? ~ 0 Are Vegetation, Soil, or Hydrology naturally problematic? ~ 0 CSUMMARY OF FINDINGS – Attach site map showing sampling poi	Are "Normal Circumstances" present? Yes
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes No No No Within a W. Is the Sam within a W.	pled Area
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sc Thin Muck Surface (C7) Other (Explain in Remarks)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Roots (C3) Moss Trim Lines (B16) Dry-Season Water Table (C2)
Field Observations: Surface Water Present? Yes No Depth (inches): *C" Water Table Present? Yes No Depth (inches): *S" Saturation Present? Yes No Depth (inches): *C" (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No No
Remarks: PETE SAL IN SOIL PITE 6" SEER UPSIDGE FROM 101	

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: WO

	Absolute	Dominan	t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1. No RE	% Cover	Species	? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant Species Across All Strata: (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC: 662 (A/B
6			-	Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				
		= Total Co	over	OBL species x 1 = 0
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 = 0 FAC species x 3 = 0
1. NONE				FACU species x 4 = 0
2.		-		UPL species x 5 = 0
0,		-		Column Totals: 0 (A) 0 (B)
4				Column Totals: (A) (B)
5		-	-	Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8,				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0¹
10				4 - Morphological Adaptations ¹ (Provide supporting
		= Total C	over	data in Remarks or on a separate sheet)
Herb Stratum (Plot size:) 1. IMPATIENS CAPENSIS	150	.1	CAMI	Problematic Hydrophytic Vegetation¹ (Explain)
1. IMPATIENS CAPENSIS	a a a	4	FACH,	
2. ABRASTIS ALBA	40	Y_	FACW	¹ Indicators of hydric soil and wetland hydrology must
3. PERSILARIA SAGITTATA			OBL	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6,				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of
7,				height.
				C. U. (Obs.). We shall alente evaluding visce least
8. 9.	1			Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				
11,				Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.
				of size, and woody plants less than 3.26 it tail.
12	100	= Total C	ovor	Woody vine - All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:)	100	_ Total C	.0761	height.
1. CEPASTRUS ORBIGULATUS	15	Y	PACU	
2		-		
3.				
4				
4,		-		Hydrophytic
5				Vegetation Present? Yes No No
		= Total C		11000111
6	16			

_	_	_	-	
c	$\boldsymbol{\Box}$	ı		
	u			

Sampling Point: W10

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion Type: Indicators of Nuclear Indicators (RS) (MLRA 147, 148) Matrix (S6) Type: C=Concentration, D=Depletion Type: Indicators (RS) (MLRA 147, 148) Type: C=Concentration, RM=Reduced Matrix, MS=Masked Sand Grains. Type: Indicators (RS) (MLRA 148) Type: Indicators of Nuclear	inchael	Matrix		Redo	x Features				
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced States (Table, RM=Reduced States Sta	illones)	Color (moist)	_ %	Color (moist)	%	Type ¹	_Loc ²		Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix. ydric Soil Indicators: Indicators for Problematic Hydric Soils³. Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147) Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147) 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Red Parent Material (TF2) Yery Shallow Dark Surface (F7) Redox Depressions (F8) Cherry Shallow Dark Surface (F12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) MLRA 136) Ton Muck (A10) (LRR N, MLRA 136, 122) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 148) Piedmont Floodplain So	0-1			-		_	_	DEAT	
Indicators for Problematic Hydric Soils Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S5) Stripped Matrix (S6) Sestrictive Layer (if observed): Type: Depth (inches): Dark Surface (S7) Dark Surface (S7) Dark Surface (S8) (MLRA 147, 148) Dark Surface (S8) (MLRA 147, 148) Doughtean Surface (S8) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Jindicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	1-6	254 4/2	85	54244	15	_C_	PL	5L	
Histosol (A1)	_								
Histosol (A1)		-						4	
Histosol (A1)		1				_	\leftarrow		
Indicators for Problematic Hydric Soils Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S5) Stripped Matrix (S6) Sestrictive Layer (if observed): Type: Depth (inches): Dark Surface (S7) Dark Surface (S7) Dark Surface (S8) (MLRA 147, 148) Dark Surface (S8) (MLRA 147, 148) Doughtean Surface (S8) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Jindicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	_	14	-	-					
Histosol (A1)		-			-			-	
Indicators for Problematic Hydric Soils Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S5) Stripped Matrix (S6) Depth (inches): Depth (inches): Depth (inches): Indicators for Problematic Hydric Soils Problematic Hydric For Hydric Hydrogen Indicators Indicators Indicators Indicators Indicators Indicators Indicators Indicators In	-	-		-	-			_	-
Indicators for Problematic Hydric Soils Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S5) Stripped Matrix (S6) Sestrictive Layer (if observed): Type: Depth (inches): Dark Surface (S7) Dark Surface (S7) Dark Surface (S8) (MLRA 147, 148) Dark Surface (S8) (MLRA 147, 148) Doughtean Surface (S8) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Jindicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		-		-	-		_		
Histosol (A1)	400: C-C	oncontration D-Dor	lotion PM		S-Maskad	Cond Cr		21 continue F	DI - Dera Lining M-Matrix
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F3) Depleted Below Dark Surface (F6) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Strictive Layer (if observed): Hydric Soil Present? Polyvalue Below Surface (S8) (MLRA 147, 148) (MLRA 147, 148) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Iron-Manganese Masses (F12) (LRR N, MLRA 136, 122) Sandy Redox (S5) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 148) Betrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No Cast Prairie Redox (A16) (MLRA 147, 148) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 147, 148) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No Cast Prairie Redox (A16) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 147, 148) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			detion, tylvi	-rreduced Matrix, M	5-Masked	Saliu Gi	allis.	Indication. F	cators for Problematic Hydric Soils ³ :
PEFUSAL @ 61- GRAVEL PHOTO 4467-4469	Histic Ep Black Hi Hydroge Stratified 2 cm Mu Depleted Thick Do Sandy M MLRA Sandy F Stripped	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR N) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) (i A 147, 148) Gleyed Matrix (S4) Redox (S5) d Matrix (S6)	LRR N,	Polyvalue B Thin Dark S Loamy Gley Depleted Ma Redox Dark Depleted Da Redox Depr Iron-Mangar MLRA 1: Umbric Surf	elow Surface (S9) ed Matrix (atrix (F3) Surface (F ark Surface essions (Fi nese Massi 36) ace (F13) ((MLRA 1 F2) 6) (F7) 3) es (F12) (LRR N,	148)	Coast Prairie Redox (A16) (MLRA 147, 148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
	Depth (in		11-69	1vel 4469					
	Depth (in		11-69	1vel 4769					
	Depth (in		167-	1469					
	Depth (in		167-	1vel 4769					
	Depth (in		11- GA	1vel 4469					
	Depth (in		11- GA	1469					
	Depth (in		167-	1469					

Project/Site: MCS - BETHER City/County:	10,37 (U . Sampling Date: 5/22/13				
Applicant/Owner:					
Investigator(s): FT, WH 17 Section, Township					
Landform (hillslope, terrace, etc.): Local relief (concave					
Subregion (LRR or MLRA): Lat:	Long: Datum:				
Soil Map Unit Name:	NWI classification:				
Are climatic / hydrologic conditions on the site typical for this time of year? Yes Are Vegetation , Soil , or Hydrology significantly disturbed? And Are Vegetation , Soil , or Hydrology naturally problematic? And SUMMARY OF FINDINGS — Attach site map showing sampling po	Are "Normal Circumstances" present? Yes No No (If needed, explain any answers in Remarks.)				
Hydrophytic Vocatation Proceed?	npled Area				
HYDROLOGY					
Wetland Hydrology Indicators:	Cocondany Indicators (minimum of his associated)				
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)					
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Other (Explain in Remarks)	Dry-Season Water Table (C2)				
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Yes No Depth (inches): 12 11 Yes Depth (inches): 212 11 Depth (inches): 212 11	Wetland Hydrology Present? Yes No No				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspen	ctions), if available:				
Remarks: SEEP WETLAND DET STOPE					

VEGETATION (Four Strata	Sampling Point:			
		Absolute	Dominant Indicat	or Dominance Test worksheet:
Tron Stratum (Plot size:	1			S N Construct Charles A

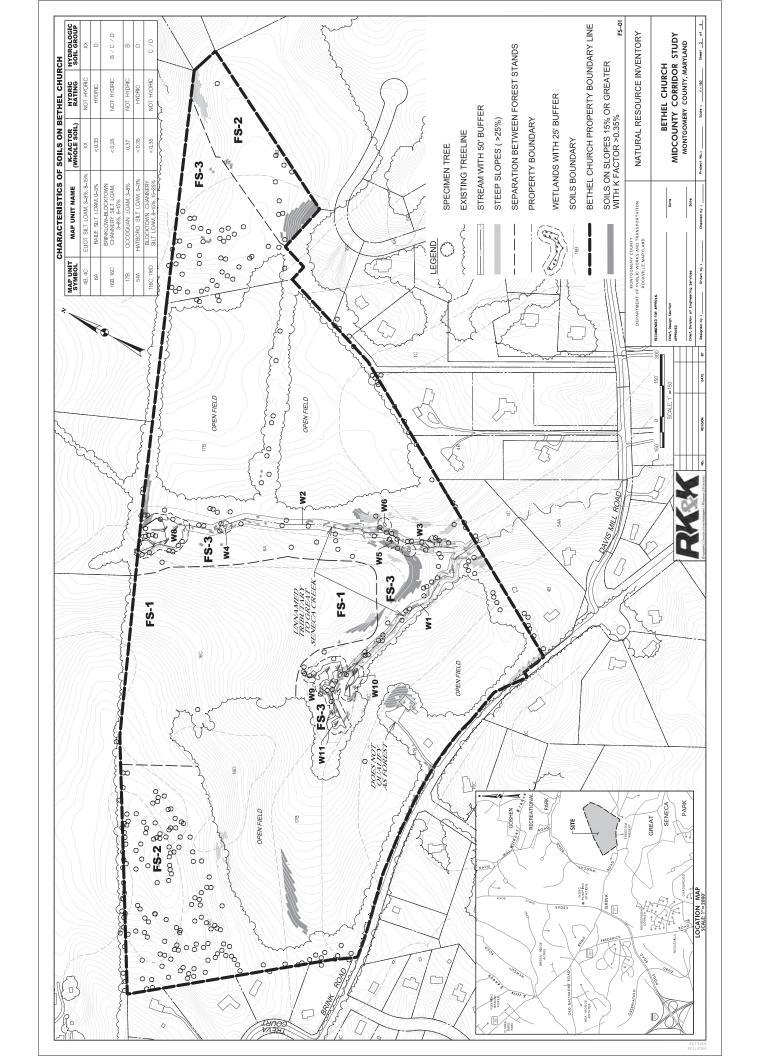
Absolute	Dominant	Indicator	Dominance Test worksheet:
% Cover	Species?	Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
			Total Number of Dominant Species Across All Strata: (B)
			Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
			Prevalence Index worksheet:
			Total % Cover of: Multiply by:
70			OBL species x 1 = 0
60	= Total Cov	/er	FACW species x 2 = 0
-	V	EMI	FAC species x 3 =
			FACU species x 4 = 0
			UPL species x 5 = 0
_			
			Column Totals: 0 (A) 0 (B)
	_		Prevalence Index = B/A =
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
			U 3 - Prevalence Index is ≤3.0¹
5	= Total Co	ver	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
	VI.	190	Problematic Hydrophytic Vegetation¹ (Explain)
20	1	FAC	Problematic Hydrophytic Vegetation (Explain)
20	Y	FACW	
15	Y	PACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		_	
			Definitions of Four Vegetation Strata:
-0	-		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
			Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
			of size, and woody plants loss than 6.25 it tall
73	- Total Co	War	Woody vine - All woody vines greater than 3.28 ft in
-1-	20	20=14-6	height.
T		FACU	
	-		
-		-	
		-	Hydrophytic
			Vegetation
			Present? Yes No No
	5 20 20 15 10 8	% Cover Species? 60 = Total Cov 5	Species? Status FAC

Sampling Point: _____

pth Matrix ches) Color (moist)	%	Redox	Features	T	1 - 2	+			000	
Color (moist)	100	Color (moist)	%	Type ¹	_Loc²	Clay		Rema	arks	
3-6 254 5 2	80	2.54246	20	-	PL	CLAY	venn			
2-12 2,57 5/2	25	1.5925/8			-					-
0 10 010 010		10716 310	15		PL	CA	1 -			_
		-						-		
pe: C=Concentration, D=Deple	etion. RM=	Reduced Matrix, MS	=Masked	Sand Gr	ains	21 ocation:	PI =Pore	Lining, M=Ma	atriv	
dric Soil Indicators:	320-03	32.00.22.00.40.40.40.40.40.40.40.40.40.40.40.40.	- Internet	04,10 0,	anio.	Inc	dicators f	or Problemat	tic Hydric So	oils³:
Histosol (A1)		Dark Surface	(S7)					uck (A10) (ML		
Histic Epipedon (A2)		Polyvalue Bel				148)	Coast F	rairie Redox (
Black Histic (A3)		Thin Dark Sur			147, 148)			RA 147, 148)		
Hydrogen Sulfide (A4) Stratified Layers (A5)		Loamy Gleyed Depleted Mate		F2)				nt Floodplain : RA 136, 147)	Soils (F19)	
2 cm Muck (A10) (LRR N)		Redox Dark S		6)				rent Material (TF2)	
Depleted Below Dark Surface	(A11)	Depleted Dark					Very Sh	nallow Dark Su	urface (TF12))
Thick Dark Surface (A12)		Redox Depres						Explain in Rem		
Sandy Mucky Mineral (S1) (LI MLRA 147, 148)	RR N,	Iron-Mangane		es (F12) (LRR N,					
		MLRA 136))							
				MI RA 13	6 122)	3	Indicators	of hydrophyti	ic vegetation	and
Sandy Gleyed Matrix (S4) Sandy Redox (S5)		Umbric Surface	ce (F13) (s of hydrophyti I hydrology mu		
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6)	4	Umbric Surface	ce (F13) (wetland	s of hydrophyti I hydrology mu disturbed or pr	ist be preser	
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed):		Umbric Surface	ce (F13) (wetland	hydrology mu	ist be preser	
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type:		Umbric Surface	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches):		Umbric Surface	ce (F13) (18)	wetland	l hydrology mu disturbed or pr	ist be preser	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:		Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surface	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
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Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): marks:	174-	Umbric Surfac	ce (F13) (18)	wetland unless	l hydrology mu disturbed or pr	ust be preser roblematic.	nt,

APPENDIX D

NRI Plans



NATURAL RESOURCE INVENTORY FOR WILSON PROPERTY

RK&K conducted a Natural Resource Inventory at the Wilson Property in Germantown, Maryland, during April through June 2013. The Wilson Property is a 105.3-acre site located northeast of the intersection of Brink Road and Wildcat Road and it is bounded on the north by an unnamed tributary to Wildcat Branch; on the south by Brink Road, residences on Treva Court, and the Bethel Church property; on the east by private residences at 22001 and 22005 Wildcat Road; and on the west by Wildcat Road (see NRI Plan in **Appendix D**).

The Wilson Property is a candidate site for forest and park mitigation, stream restoration, and/or wetland creation for the Midcounty Corridor Study (MCS) or a future Montgomery County project requiring mitigation. Wilson Property is opposite the Seneca Crossing Local Park, and the two are separated by Brink Road. If purchased and reforested, Wilson Property would provide an additional 105.3 acres to the greenway consisting of Seneca Crossing Local Park, North Germantown Greenway Stream Valley Park, and Great Seneca Park. In combination with the existing forest on this property and adjacent properties, the reforestation of existing agricultural land would create contiguous FIDS habitat once the planted trees matured. Wilson Property contains two unnamed Use III-P tributaries to Wildcat Branch, whose water quality would be improved by the conversion of agricultural land to forest. Much of the existing forest has high retention priority due to the presence of streams and/or wetlands, high numbers of specimen trees (dbh ≥ 24"), steep slopes, and high quality forest. Forest retention value rating characteristics are discussed below.

Surrounding land use consists of agriculture, large-tract rural residential development, and a cemetery. There is no Maryland Agricultural Land Preservation Easement (MALP) on this property. Natural Resource Inventory (NRI) plans are attached. See **Appendix A** for project photos.

Summary

Two forest stands, three streams, five wetlands, 298 specimen trees, and an abandoned house were observed on the Wilson Property. An 8.08 acre mid-successional Tulip Poplar Association was observed in the low lying, riparian area abutting two unnamed tributaries to Wildcat Branch, and a 25.87 acre mid-successional Chestnut Oak Association was noted on the forested, steeper upland slopes (see NRI Plan in **Appendix D**). Two unnamed tributaries to Wildcat Branch with abutting forested wetlands are located within the riparian forest located in the northern section of the property. The vacant farmhouse, sheds, a trailer home, storage trailer, and dump piles are located on a hill near the southwest corner of the site, and would require an investigation for the presence of hazardous materials.

Background Information

Background environmental information was obtained from the USGS 7.5 minute Gaithersburg quadrangle, FEMA FIRM maps, NRCS Web Soil Survey and the Montgomery County Soil Survey, U.S. Fish and Wildlife National Wetland Inventory, and recent survey of topography and property boundaries.

Topography

Wilson Property topography is characterized by gently to somewhat steeply sloping upland hillsides on the majority of the site, with slightly incised stream banks in the northern part of the site. Elevations on the property range from 450 to 608 NGVD 88. The NRI plans in Appendix D show slopes greater than 25% and slopes greater than 15% with highly erodible soils. Highly erodible soils are defined as those having a K- (erodibility) factor greater than 0.35.

Geology and Soils

The property is located in the Piedmont physiographic province characterized by broadly undulating to rolling topography underlain by metamorphic rocks with relief increased locally by low knobs or ridges and valleys.

The Maryland Physiographic Map (2008) indicates that Wilson Property is located in the Mt. Airy Upland District, characterized as a rolling upland due to the interaction of thick siltstones and quartzites with stream reaches sometimes incised and within bedrock. The Maryland Geological Survey's Geologic Map of Maryland (1968) indicates that the project area is underlain by a Precambrian tuffaceous and non-tuffaceous phyllite, slate, and quartzite. The NRCS web soils data indicates that soils at Wilson Property include Baile silt loam, 0-3% slopes (all hydric); Blocktown channery silt loam, 3-8%, 8-15% and 15-25% slopes; Brinklow-Blocktown channery silt loam, 3-8%, 8-15%, and 15-25% slopes; Glenville silt loam, 3-8% slopes; Hatboro silt loam, 0-3% slopes (all hydric); and Occoquan loam, 3-8% slopes, as indicated in **Table 1** below.

Table 1. Characteristics of Soils on Wilson Property

Map Unit Symbol	Map Unit Name	K-Factor (Whole	Hydric Rating	Hydrologic Soil Group
		Soil)		
6A	Baile Silt loam, 0-3% slopes	< 0.35	All Hydric	D
116A,	Blocktown Channery Silt Loam,	< 0.35	Not All Hydric	C/D
116B, and	3-8%, 8-15%, & 15-25%			
116C				
16B, 16C,	Brinklow-Blocktown	> 0.35	Not All Hydric	B/C/D
16D	channery silt loam, 3-8%, 8-			
	15%, & 15-25%			
5B	Glenville silt loam, 3-8%	< 0.35	Not All Hydric	С
54A	Hatboro silt loam, 0-3%	< 0.35	All Hydric	D
17B	Occoquan loam, 3-8%	0.37	Not All Hydric	В

Potential for Hazardous Materials

RK&K scientists performed a visual evaluation for potential hazardous materials and identified waste piles with 55-gallon drums and a fertilizer shed, both located near the abandoned farm house in the southwestern portion of the property. In addition, two large (100 gallons+) petroleum storage tanks; a large, closed, metal storage trailer; and an abandoned mobile home are possible concerns. An investigation of the property will be required to determine the extent of contamination, if any, from previous hazardous material spills, dumping, or leakage from storage tanks.

Waters of the United States

Three unnamed tributaries to Wildcat Branch (W1, W2, and W5) are located on the Wilson Property property. Wildcat Branch and its tributaries are classified as Use III-P streams. W1 and W2 are perennial streams receiving flow from outside the property and W5 originates from seeps on the property. Water quality data from Montgomery County DEP at monitoring stations along Wildcat Branch is summarized in **Table 2**, below.

The National Wetland Inventory mapping indicates the presence of non-tidal wetlands located in the northern portion of the project area surrounding the perennial streams (See **Appendix A**).

Floodplains

The FEMA FIRM map for Montgomery County, Maryland, panel 24031C0180D, indicates that the study area is not in a mapped FEMA floodplain (See **Appendix A**).

Table 2. Range of DEP's Water Quality Data Collected Along Wildcat Branch

Montoring Station	Dissolved O ₂ (mg/l)	рН	Temperature (°C)	Sampling Dates
Use III-P Water	>5 at all times,	6.5 - 8.5	≤ 20°C	
Quality Standards	min daily avg >6			
GSWB 201	8.7 - 12.36	6.24 - 8.05	8.5 - 18.9	1999 - 2010
GSWB 203 B	9.4 – 11.58	5.39 - 7.29	6.6 - 15.2	1996 - 2006
GSWB 204	9.47 – 11.79	6.71 - 7.31	6.4 - 16.8	1997 - 2006

Rare, Threatened, and Endangered Species

Letters requesting information about the presence of rare, threatened or endangered species (RTE's) were sent to the MDNR-Wildlife and Heritage Services (MDNR-WHS), and MDNR-Environmental Review Unit (MDNR-ERU) on June 12, 2013. The U.S. Fish and Wildlife Service Chesapeake Bay Field Office (USFWS) website was reviewed on May 28, 2013, and it was determined that the Gaithersburg quadrangle is included on the USFWS list of USGS topographic maps where no federally proposed or listed endangered or threatened species are known to occur in Maryland. As a result, the online list request certification resource was used to generate an online certification letter.

Responses are pending from MDNR-Wildlife and Heritage Services (MDNR-WHS) and MDNR-Environmental Review Unit (MDNR-ERU). See **Appendix B** for agency correspondence.

Cultural Resources

Wilson Property was evaluated to determine eligibility for the National Register of Historic Places (NRHP). The Maryland Historical Trust (MHT) concurred that the property is not individually eligible due to the advanced deterioration of the abandoned building, however, the property could potentially be a contributing element of a much larger Wildcat Road/Davis Mill Road Rural Historic District. By letter addressed to MHT and dated July 8, 2013, MCDOT requested comments and concurrence for the NRHP eligibility of the Wildcat Road/Davis Mill Road Rural Historic District. A response is forthcoming.

Forest Characterization – Methods

The investigation method employed for this forest characterization was based on the *State Forest Conservation Technical Manual, Third Edition, 1997* for a Simplified Forest Stand Delineation (FSD). The State defines a forest as "a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater, and not less than 35 feet in width. 'Forest' includes (1) areas that have at least 100 trees per acre with at least 50% of those having a two-inch diameter measured at 4.5 feet above the ground, and (2) areas that have been cut but not cleared." Forest stands were characterized by their community type, successional stage, and overall forest condition. A walk-through level forest stand delineation was conducted and no plot points were recorded. Forest association designations are derived from *Maryland Forest*

Associations Species List (Brush et al., 1977). Forest stand locations are shown on the NRI plans (See **Appendix D**).

The Wilson Property forest characterization included an inventory of specimen trees. Montgomery County defines

specimen trees as, "trees having a diameter at breast height of 24 inches or more; trees having 75 percent or more of the diameter at breast height of the current champion of that species; or a particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species." The location of all specimen trees within Wilson Property were recorded with an iPad and this information was transposed on the NRI plans, and the dbh, species, and health status of the tree was recorded. The health status of specimen trees was assessed by an ocular estimation of growth form, visible signs of decay, live crown ratio, and indications of disease or insect infestation.

Forest condition ratings are based on the following general factors. An "excellent" forest condition rating includes forest with numerous specimen trees, trees in good health, varied tree species diversity including climax forest tree species, excellent representation for all forest layers (overstory and understory trees, shrubs, and herbaceous perennials), almost no invasive plants, and ample wildlife habitat including food and cover. A "good" forest condition rating would include forest with some specimen trees, trees in good health, some tree species diversity, good representation of forest layers, very few invasive plants, and good wildlife habitat. A "fair" forest condition rating would include a forest with few or no specimen trees, trees in questionable health, little tree species diversity, absence of one forest layer, moderate presence of invasive plants, and limited wildlife habitat. A "poor" forest condition rating would include a forest with no specimen trees, many trees in poor health, little tree species diversity, absence of one or more forest layers, heavy invasive plant presence, and little to no wildlife habitat.

The forest inventory included dominant canopy and understory species, dominant canopy size class, specimen tree identification, percent canopy closure, stand successional stage, stand condition, invasive cover, downed woody debris, and forest retention value. **Table 3** (below) lists characteristics for determining forest retention value ratings.

Table 3. Forest Retention Value Rating Characteristics

	Intermittent and perennial streams and their forest buffers
	Slopes > 25%
	Nontidal wetlands and buffers
	Erodible soils on slopes > 25%
High Detention Volum	100-year floodplains
High Retention Value	Habitat for rare, threatened and endangered
	(RTE) species or County Watchlist Species
	Large contiguous forest tracts especially those
	w/ FIDS habitat
	Forest stands w/ multiple specimen trees
	Forest with County Green infrastructure
	Stands with good structural diversity
Moderate Retention Value	Corridor +300' foot wide
	Forest stream buffers

	Tree buffers between incompatible land uses
	>24" dbh trees
	Stands with poor structural diversity
Low Retention Value	Stands with moderate to high exotic/ invasive
	plant cover

Forest Characterization - Results

Two forest stands and two hundred and ninety eight specimen trees were identified during the investigation. The Tulip Poplar Association is designated as FS-1 on the plans and the Chestnut Oak Association is designated as FS-2. Specimen trees locations are shown on the NRI plan and a specimen tree table (**Appendix C**) provides the tree species, the dbh measurement of each tree, and its health status. Results of the investigation follow.

FS1: Mid-successional Tulip Poplar Association

This 8.08 acre mid-successional riparian forest stand is located along the two unnamed tributaries to Wildcat Branch. The most common canopy tree species is *Liriodendron tulipifera* (tulip poplar). Other canopy tree species include *Quercus prinus* (chestnut oak), *Quercus alba* (white oak), *Acer rubrum* (red maple), *Carpinus caroliniana* (ironwood), *Carya glabra* (pignut hickory), *Nyssa sylvatica* (blackgum), and *Diospyros virginiana* (persimmon). The understory is dominated by *Lindera benzoin* (spicebush), *Hamamelis virginiana* (witchhazel), *Viburnum prunifolium* (blackhaw viburnum), *Rosa multiflora* (multiflora rose) and saplings from overstory species. Trees between 12" and 20" dbh comprise the dominant canopy size class in this forest stand with many specimen trees. The vine and herbaceous layers are dominated by *Toxicodendron radicans* (eastern poison ivy), *Osmunda cinnamomea* (cinnamon fern) and *Symplocarpus foetidus* (skunk cabbage). Canopy closure is estimated at approximately 80% and downed woody debris was moderate. FS1 has a good forest condition rating and a high Forest Retention Value due to its many specimen trees, presence of perennial streams, wetlands and floodplain, high wildlife habitat value and use as a wildlife corridor, its function as a buffer for use III tributary streams, and invasive plant cover.

FS2: Mid-successional Chestnut Oak Association

This 25.87 acre mid-successional forest stand is located mainly along upland slopes. The dominant canopy tree species is chestnut oak. Other canopy tree species include tulip poplar, pignut hickory, white oak, and *Quercus rubra* (northern red oak). The understory is dominated by ironwood, pignut hickory, *Prunus serotina* (black cherry), witchhazel, blackgum, *Vaccinium angustifolium* (low bush blueberry), *Smilax rotundifolia* (greenbrier), *Celastrus orbiculatus* (Asiatic bittersweet) and saplings from overstory species. Trees between 12" and 20" dbh comprise the dominant canopy size class in this forest stand with many specimen trees. The vine and herbaceous layers are dominated by eastern poison ivy, *Vitis riparius* (eastern grape), and *Thelysteris noveboracensis* (New York fern). Canopy closure is estimated at approximately 80% and downed woody debris is moderate. The northern half of FS2 has a good forest condition rating and a high Forest Retention Value due to the presence of many specimen trees, a perennial stream, its use as a wildlife corridor, its function as a forest buffer for use III tributary streams, and low invasive plant cover. The southern half of FS2 has a good to fair forest condition rating and a moderate Forest Retention Value due to the presence of many specimen trees, use as a wildlife corridor, its function as a forest buffer for use III tributary streams, and the low to moderate invasive plant cover.

Specimen Trees

Two hundred and ninety-eight specimen trees, T1-T298, are located within the Wilson Property property. Specimen trees are abundant throughout all the forested areas of Wilson Property and are especially concentrated in the stream

and wetland areas. Retention of mature forest with specimen trees is important because specimen trees account for a larger proportion, per tree, of the forest canopy, seed and mast production, water and nutrient absorption, and biomass. Large mature specimen trees also provide exponentially greater benefit than smaller saplings or whips for air quality improvement, stormwater reduction, and wildlife habitat. Specimen tree information is summarized in a table found in **Appendix C**, and the locations of specimen trees are indicated on the NRI plans in **Appendix D**.

WETLAND DELINEATION - FIELD INVESTIGATION

Three jurisdictional waters of the U.S. and five wetlands were identified during the wetland delineation. Wetland quality evaluations are based on an evaluation of wetland functions and values, the condition of the resource, diversity of plant species, and presence of invasive plants. In addition, quality evaluations for streams are based on referencing existing DNR and Montgomery County data collected by for benthic macro-invertebrates and fish and an index of Biological Integrity (IBI) to rate stream health.

WETLAND DELINEATION-Methods

All waters of the U.S., including wetlands, in the study area were delineated by a team of environmental scientists. The applicable data form (Routine Wetland Determination for wetlands and/or the RK&K-derived Waters of the U.S. form) was completed for each delineated feature. Each delineated feature was named, the boundary points marked with pink flagging numbered consecutively and photographed. Boundary point positions were located using traditional survey methods or GPS.

Waters of the U.S., other than wetlands, were delineated using the limits defined in 33 C.F.R. § 328. The boundaries of non-tidal waters of the U.S. other than wetlands were set at the ordinary high water mark (OHW). The OHW was determined in the field using physical characteristics established by the fluctuations of water (e.g., change in plant community, changes in the soil character, shelving) in accordance with U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05.

Wetlands were delineated in accordance with the U.S. Army Corps of Engineers 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region Version 2.0, ed. J.F. Berkowitz, J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center and supplemental guidance issued by the United States Army Corps of Engineers (USACE). Routine wetland determination methods with onsite inspection were used to determine the presence of wetlands in the study area.

Clean Water Act jurisdiction of delineated features was determined in accordance with the June 5, 2007 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following the U.S. Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States (Rapanos); and the January 19, 2001 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following U.S. Supreme Court's decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC).

WETLAND DELINEATION- Results

W1 – Waters of the U.S. (unnamed tributary to Wildcat Branch)

W1 is a perennial, unnamed tributary to Wildcat Branch that enters the site from the northwest via a culvert under Wildcat Road and crosses the site for approximately 200 linear feet before flowing into W2. W1 is a (relatively permanent water) RPW with a natural channel shape, with a width of 8 to 15 feet, a bank depth of 2 to 4 feet, water depth of 2-8", and banks with 1:1 and 2:1 slopes. Channel substrate consists of cobbles, sands, and gravel. The feature has well defined bed and banks, and observed indicators of the ordinary high water mark include disturbed leaf litter, vegetation matted down, bent, or absent, sediment deposition, water staining, presence of litter and debris, destruction of terrestrial vegetation, presence of a wrack line, and scour. The forest surrounding W1 is dominated by ironwood, red maple, spicebush, *Rosa multiflora* (multiflora rose), and skunk cabbage. MCDEP collected benthic macro-invertebrate and fish samples at a site (GSWB201) within W1 in 2010. The site received a "Good" benthic IBI score of 28 and a "Good" fish IBI score of 4. Feature W1 was flowing during the April 2011 and May and June 2013 field reviews, and is jurisdictional under Rapanos guidance.

W2 – Waters of the U.S. (unnamed tributary to Wildcat Branch)

W2 is a perennial, unnamed tributary to Wildcat Branch that enters the site from the northwest via a culvert under Wildcat Road, crosses the site for approximately 500 linear feet, is conveyed via a culvert again under Wildcat Road, and flows for 1,000 lf before exiting the site. W2 is a RPW (Relatively Permanent Water) with a natural channel shape, with a width of 10 to 15 feet, a bank depth of 2 to 8 feet, water depth of 2-12", and banks with a 2:1 slope. Channel substrate consists of cobbles, sands, and gravel. The feature has well defined bed and banks, and observed indicators of the ordinary high water mark include disturbed leaf litter, sediment deposition, water staining, presence of litter and debris, sediment sorting, and scour. The forest surrounding W2 is dominated by ironwood, red maple, spicebush, multiflora rose, and skunk cabbage. Feature W2 provides good to fair aquatic habitat. Maryland DNR's Stream Waders collected benthic macro-invertebrate samples at a site (865-4-2001) downstream of Feature W2 in 2001. The site had a total of 15 macroinvertebrate families, with 10 EPT taxa and 4 Dipterans, resulting in a "Fair" IBI score of 3.86. Ephemeropterans made up 30% of the macroinvertebrates in the sample, indicating healthy stream conditions. As previously mentioned MCDEP collected benthic macro-invertebrate and fish samples at a site (GSWB201) within WUS1 in 2010. The site received a "Good" benthic IBI score of 28 and a "Good" fish IBI score of 4. This feature provides adequate habitat for fish and benthic macroinvertebrates due to its instream cover, variety of substrates and the presence of riffle-pool sequences. Feature W2 was flowing during the April 2011 and May and June 2013 field reviews. and is jurisdictional under Rapanos guidance.

W3 – Forested Wetland

W3 is a large forested wetland abutting the western portion of W2 south of Wildcat Road. Dominant vegetation includes red maple, green ash (*Fraxinus pennsylvanica*), ironwood, spicebush, winterberry holly (*Ilex verticillata*), skunk cabbage, and jewelweed (*Impatiens capensis*). Primary indicators of hydrology include A1: Surface Water, A3: Saturation, B1: Water Marks, and B9: Water-Stained Leaves with secondary indicators including B10: Drainage Patterns and D2: Geomorphic Position. The soils in W3 meet the requirements of Hydric Soil Indicator F6: Redox Dark Surface. Feature W3 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Feature W2, an RPW flowing year round. W3 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W4 – Forested Wetland

W4 is a small forested wetland abutting W1 and W2. Dominant vegetation includes green ash, ironwood, spicebush, multiflora rose, and skunk cabbage. Primary indicators of hydrology include B9: Water-Stained Leaves and C3: Oxidized Rhizospheres on Living Roots with a secondary indicator of D2: Geomorphic Position. The soils in W4 meet the requirements of Hydric Soil Indicator F19: Piedmont Floodplain Soils. Feature W4 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W1 and W2, both RPWs flowing year round. W4 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and minimal invasive species.

W5 – Waters of the U.S. (unnamed tributary to Wildcat Branch)

W5 is perennial stream that originates from a hillside seep and flows approximately 400 linear feet before being conveyed under Wildcat Road through a 24" pipe and flowing into wetland W6. W5 is a RPW with a natural channel shape, with a width of 8 to 20 feet, a bank depth of 1 to 10 feet, water depth of 2-18", and banks with a 2:1 and 1:1 slope. Channel substrate consists of bedrock, cobbles, sands, and gravel. The feature has well defined bed and banks, and observed indicators of the ordinary high water mark include disturbed leaf litter, sediment deposition, water staining, presence of litter and debris, destruction of terrestrial vegetation, presence of a wrack line, and scour. The forest surrounding W5 is dominated by tulip poplar, black gum, chestnut oak, ironwood, Japanese stiltgrass, Oriental bittersweet, jewel weed, and cinnamon fern. As mentioned above MCDEP collected benthic macro-invertebrate and fish samples at a site (GSWB201) near W5 in 2010. The site received a "Good" benthic IBI score of 28 and a "Good" fish IBI score of 4. Feature W5 was flowing during the June, 2013 field review, and is jurisdictional under Rapanos guidance.

W6 - Forested Wetland

W6 is a large forested wetland located north of Wildcat Road receiving hydrologic input from W5 via the above described 24" pipe. W6 abuts perennial stream W2. Dominant vegetation includes black gum, ironwood, spicebush, and skunk cabbage. Primary indicators of hydrology include A2: High Water Table and B9: Water-Stained Leaves. The soils in W6 do not meet the requirements of a Hydric Soil Indicator though the 3-12" horizon contain 30% redox features with redox concentrations in both the pore linings and the matrix. Though Feature W6 does not meet the three-parameter definition of a wetland, it is our professional judgment that the USACE would consider this feature to be a jurisdictional wetland since it meets two of the three parameters. The soil contains abundant redox features, and it receives hydrologic input from W5, a perennial stream. W6 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and absence of invasive species.

W7 – Forested Wetland

W7 is a small forested wetland located north of Wildcat Road that receives hydrologic input from a seep in the hillside. W7 abuts perennial stream W2. Dominant vegetation includes red maple, black gum, ironwood, spicebush, and skunk cabbage. Primary indicators of hydrology include A2: High Water Table and B9: Water-Stained Leaves. Similar to the soils in W6, the soils in W7 do not meet the requirements of a Hydric Soil Indicator though the 2-12" horizon contain 20% redox features with redox concentrations in the pore lining. Though Feature W7 does not meet the three-parameter definition of a wetland, it is our professional judgment that the USACE would consider this feature to be a jurisdictional wetland since it meets two of the three parameters. The soil contains abundant redox features and it receives hydrologic input from seeps. W7 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W8 – Forested Wetland

W8 is a large forested wetland abutting the western portion of W1 west of Wildcat Road. Dominant vegetation includes red maple, black walnut (*Juglans nigra*), spicebush, and skunk cabbage. Primary indicators of hydrology include A1: Surface Water, A2: High Water Table, A3: Saturation, and C3: Oxidized Rhizospheres on Living Roots. The soils in W8 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W8 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Feature W1, an RPW flowing year round. W8 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and absence of invasive species.

MITIGATION POTENTIAL OF THE WILSON PROPERTY PROPERTY

The Wilson Property property would complement and enhance the existing Montgomery County park system. The following is a discussion of the benefits of this addition to the park system.

Forest and Parkland Mitigation

Table 4 summarizes the acreage of impact to all parks (first row) and to the subset of Montgomery County/M-NCPPC owned parkland (second row).

Table 4: Park Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Park Impact (acres)	0	19.4	0.2	45.2	30.6	29.6	48.1	33.5	32.5
Impact to County & M-NCPPC-owned Park (acres)	0	15.4	0.2	43.3	28.7	27.7	45.5	30.9	29.9

Table 5 presents the acreage of impact to all forests (first row) and to the subset of forest that is on Montgomery County/M-NCPPC owned parkland (second row).

Table 5: Forest Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Forest Impact (acres)	0	31.0	2.0	57.6	52.5	61.4	72.9	67.7	76.7
Impact to Forest on County Parklands (acres)	0	8.35	2.0	41.0	26.5	25.5	43.3	28.7	27.7

Currently, 34 acres of the 105.3-acre Wilson Property is forest, leaving 71 acres of farm fields available to reforest, except under Alternative 8D and Alternative 9D. Option D would cross the Wilson Property, leaving approximately 64 acres of farm fields for reforestation. This is a preliminary estimate, and assumes the abandoned farmhouse would be demolished. The available acreage could be further reduced by the construction of a hiker crossing and/or additional stormwater management structures which may be required by the Special Protection Area permit -- neither of which has been designed at this time. MCDOT would propose to reforest all farm fields, and convey the entire

property to M-NCPPC, with the exception of the 12 acres of highway right-of-way that would be required if Option D were constructed. The Wilson Property conveyance would include the 34 acres of mid-successional forest that already exists on the property (28.7 acres if Option D were constructed). MCDOT would appreciate M-NCPPC's consideration of mitigation credit for the preservation of existing forest. MCDOT would anticipate that this property would be able to satisfy the following:

- The entire parkland mitigation obligation for impacts to Montgomery County/M-NCPPC parkland, including the replacement of the approximately 5 acres of non-forested parkland that will be sought for wetland mitigation,
- The entire mitigation required for impacts to forest that would be impacted on Montgomery County/ M-NCPPC parkland, and
- A portion of the mitigation required for non-park forest impacts.

Section 22A-12 (h) of the Montgomery County Forest Conservation Law requires legal instruments *such as* conservation easements, deed restrictions, covenants, and *other agreements, as necessary* to protect forest conservation areas. Unless notified otherwise by M-NCPPC, MCDOT assumes that the conveyance of the property to M-NCPPC would satisfy the requirement for protecting the forest, and would not require a forest conservation easement.

FIDS Habitat

New FIDS habitat would be created when proposed reforestation on the Wilson Property matures. The construction of Option D of Alternative 8 or Alternative 9 would result in the least amount of FIDS habitat creation on the Wilson Property because the proposed roadway would fragment the property. If Option D were constructed, one area of new FIDS habitat would be created, a 28-acre area on the south side of Option D (see **Interior Forest** figure). If any other alternative were constructed, approximately 60 acres of new FIDS habitat would be created.

Connectivity to Existing Parkland

Montgomery County currently owns large holdings of contiguous parklands south of Brink Road, including Seneca Crossing Local Park (approximately 28 acres), North Germantown Greenway Stream Valley Park (approximately 381 acres), and Great Seneca Stream Valley Park (approximately 2,013 acres). Approximately 0.8 miles north of Brink Road is the location of the 251-acre Goshen Recreational Park. Montgomery GIS mapping indicates the planned acquisition of land from the Wilson Property and properties to the north in order to create a greenway along Wildcat Branch, connecting the Goshen Recreational Park to Wildcat Road. The conveyance of the Wilson property to M-NCPPC would substantially enhance the planned greenway, and reduce the amount of future park acquisition required to complete the connection to Goshen Recreational Park.

M-NCPPC Parks Department previously advised that if Option D were constructed, hiker access across Option D would be desirable. MCDOT is evaluating three potential options:

- Overpass: It would be feasible to construct a pedestrian bridge over Option D at any location on the Wilson Property,
- Underpass: It would be feasible to construct a pedestrian underpass (e.g., a structural plate pipe arch) near the eastern boundary of the Wilson Property, and

• At-Grade: It would be feasible to construct a pedestrian crossing of Option D at the planned intersection with Wildcat Road. However, the vehicular traffic volumes do not warrant a traffic signal at this intersection. Therefore, MCDOT would evaluate a pedestrian-activated traffic signal, flashing lights, or some other means of informing motorists that pedestrians are preparing to cross the highway.

Water Quality Benefits

Wilson Property drainage conveys to Wildcat Branch, a Use III-P natural trout stream, and the highest rated stream within the project study area. Wildcat Branch is the only sub-watershed in the Great Seneca basin that supports a high quality, cold water fish community. This section of the sub-watershed is located just downstream of the Clarksburg Special Protection Area (SPA), which received the SPA designation because it is a geographic area with high quality or unusually sensitive water resources or other environmental features. The conversion of the Wilson Property farmland to forest would improve the water quality of Wildcat Branch by infiltrating and reducing runoff volumes; decreasing nutrient, pesticide, and herbicide runoff; and reducing erosion and sedimentation. These improvements would help maintain the high quality characteristics and biological integrity of water resources in the Wildcat Branch sub-watershed.

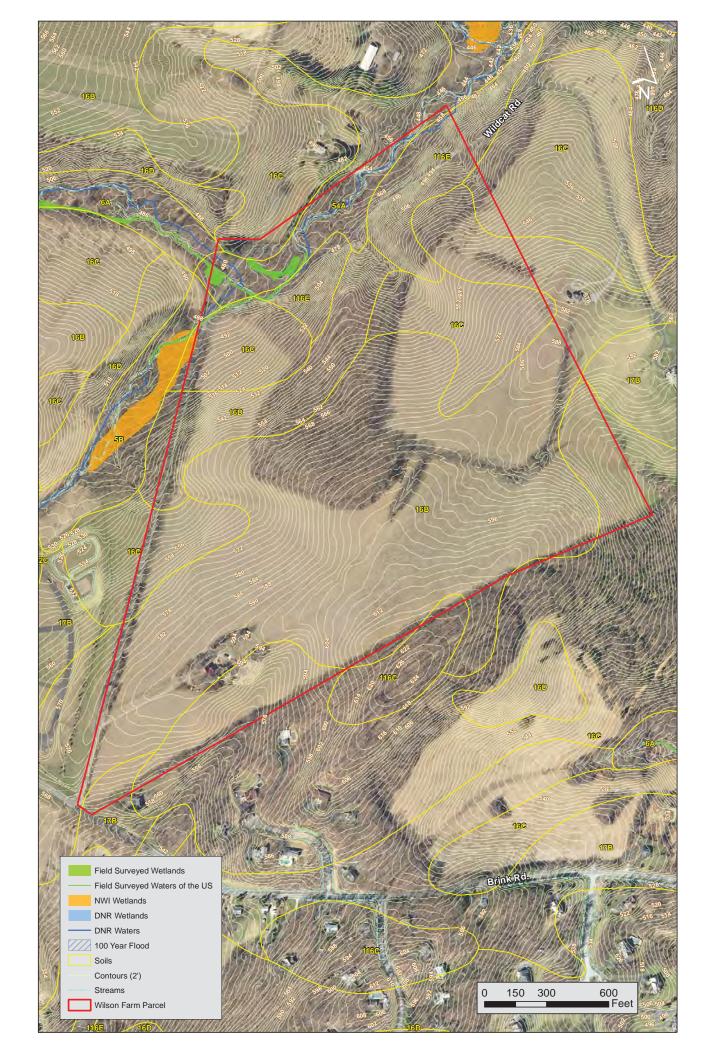
APPENDIX A

Project Map/NWI Map

Project Photos

FIRM Map





NRI – Wilson Farm

Project Photos

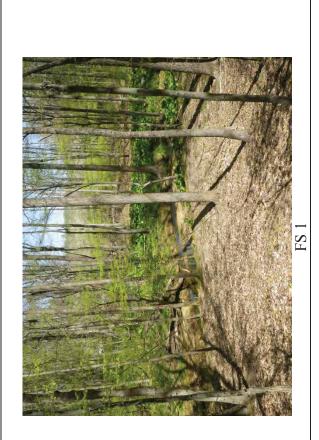


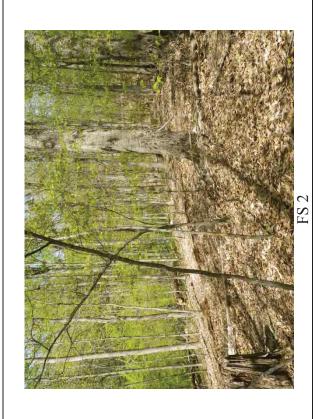
NRI – Wilson Farm

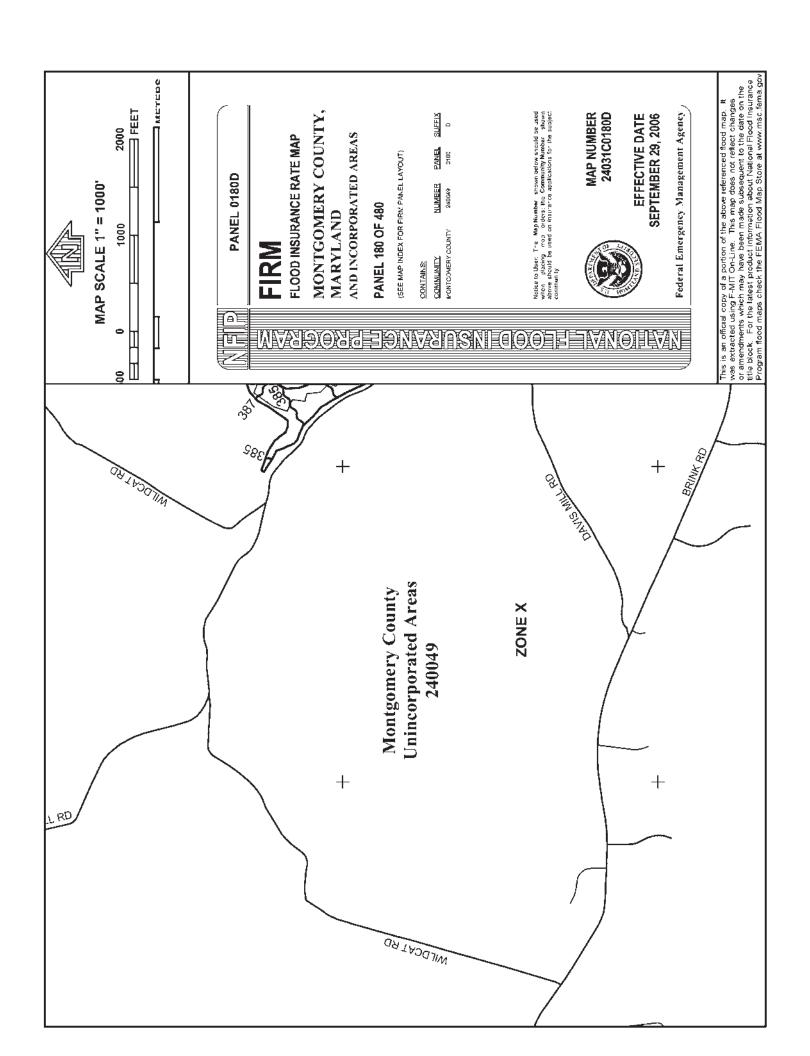
Project Photos



NRI – Wilson Farm Project Photos







APPENDIX B

Agency Correspondence





June 12, 2013

Mr. Roland Limpert
Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, Maryland 21401

Project: Site Evaluation -- Wilson Farm and Bethel Church

Subject: Request for Project Area Fisheries Resources Information

Dear Mr. Limpert:

We are providing site evaluation planning services to the Montgomery County Department of Transportation, Transportation and Design Section for the Wilson Farm and Bethel Church properties. These sites abut each other and are being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study project in Germantown, Montgomery County, MD. The 105 acre Wilson Farm and the 120 acre Bethel Church property are located north of Brink Road, east of Wildcat Road, and west of Davis Mill Road. The Midcounty Corridor Study project may result in minor impacts to nontidal Waters of the U.S. and may require both state and federal permit authorizations (Section 404/401).

We are requesting information regarding the potential presence of state fisheries resources within or near the project area. Project location maps are enclosed for each site to aid your review.

If you have any questions concerning this project, please contact me at wmorgante@rkk.com (410) 462-9174. Thank you for your assistance.

Sincerely,

Rummel, Klepper & Kahl, LLP

William Morgante Project Scientist

Enclosure

cc: Rick Adams (RK&K)
Paul Wettlaufer (RK&K)

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: May 30, 2013

PROJECT NAME AND LOCATION: Site Evaluation-Wilson Farm and Bethel Church
Germantown, Montgomery County Maryland (maps enclosed)

NAME OF STREAM(S) (and MDE Use Clas Two unnamed tributaries to Wildcat Bran Two unnamed tributaries to Great Seneca	ch, Use III-P (Wilson Farm)
SUB-BASIN (6 digit watershed): 02-14-02	,
DNR RESPONSE (sections below to	be completed by MD DNR):
Generally, no instream work is permitted 15, inclusive, during any year.	d in Use I streams during the period of March 1 through June
	en documented in the vicinity of an instream project area, se I and Certain Use II waters during the period of February 15
Generally, no instream work is permitted April 30, inclusive, during any year.	d in Use III streams during the period of October 1 through
Generally, no instream work is permitted 31, inclusive, during any year.	d in Use IV streams during the period of March 1 through May
Other applicable site specific time of year	ar restriction information:
ADDITIONAL FISHERIES RESOURCE NO	OTES:
ADDITIONAL COMMENTS ON BEST MA	ANAGEMENT PRACTICES:
	MD DNR, Environmental Review Unit signature
	DATE:

PHONE: 410-260-8334



United States Department of the Interior

U.S. Fish & Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401 410/573 4575



Online Certification Letter

Project:	Site	Evaluation	- Wilson	Farm	& Bethel	Church	
							- /

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (http://www.fws.gov/chesapeakebay/EndSppWeb/ELEMENTS/listreq.html) are the USGS topographic map areas where no federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington, D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map(s)

Gaithersburg		10 100 100 100 11 11 11 11 11 11 11 11 1	antingan	
				2

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize

loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche Field Supervisor



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
Joseph P. Gill, Secretary
Frank W. Dawson III, Deputy Secretary

June 25, 2013

William Morgante Rummel, Klepper, and Kahl, LLP 81 Mosher St. Baltimore, MD 21217

RE: Environmental Review for Wilson Farm and Bethel Church, Germantown, possible mitigation sites for Mid Country Corridor Study project, north of Brink Road east of Wildcat Rd. and west of Davis Mill Rd., Montgomery County, MD.

Dear Mr. Morgante:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne,

Environmental Review Coordinator Wildlife and Heritage Service

MD Dept. of Natural Resources

ER# 2013.0908.mo



APPENDIX C

Forest Stand Summary Sheets

Waters of the U.S. Data Sheet

Wetland Data Sheets

Specimen Tree Table

FOREST STAND ANALYSIS WILSON FORESTA - TSH

Date: 4/26/13

Crew: ES6,WMMM

	TYPE OF		EXISTING VEGETATION		STAND CHARACTERISTICS	
KEY	COMMUNITY	AREA*	(Dominant Species and Approx. %)	Size (dbh) & Age	General Conditions	NOTES
	MID	٤	TUILDY 50% RESIMPLE 20% RESIMPLE 20% RESIMPLE 20%	12-20"	Good SOMETINATION	FLOCOPENIS, wettend, lowland
			Spice BUSHY Smiler HAW VIBULUAS Smiler HAW VIBULUAS Smiler HAW VIBULUAS	Jay Luluh		HIGH PRIORITY Reference > 12
			FACCUE VIOLETS			LEBE alough
						Eloch-simet water

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS WISON FOREST B-F52

Date: 4/25/13

Crew: WMM/CSG

Project .: KEY COMMUNITY TYPE OF AREA* Hickory - 10% Tullp Aplar - 30-40% 12-20" (Dominant Species and Approx. Herbacieous Muscleybod - 50-60% NY Fern - 100% **EXISTING VEGETATION** no low shruto area Size (dbh) & Age STAND CHARACTERISTICS Canopy Closure Books DWD-maderate Good General Conditions Platos - 3849-3840 High Retention Value - # of S-side of 18 disturbed - open No invasives early - mid successional area - gastine Row NOTES TOWN DWATES

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS WILLSON FOREST C - FS 2

Date: $\sqrt{|\gamma|} \sqrt{|\gamma|}$

Crew: ESG, WMM

				1	VEV.
				COMMUNITY	
				STATA	VDEV*
	GRAPE VITE	CHECKY CHECKY	102 - AND LONG TONG TONG TONG COPE COPE COPE COPE COPE COPE COPE COPE	(Dollman Species and Approx.	EXISTING VEGETATION
			12-20"	Size (dbh) & Age	
			KAR-OUTSTONES	General Conditions	STAND CHARACTERISTICS
		3845, 3846 PITOS Nekator value 201 AC	KARP-OUT STORY GOOD MOR HOR XID! AS		NOTES

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS WILLSON FOREST & - FS 1

Date: 5)10)13

Crew: KJH, WMM

photos # 2995, 2997, 2998(Stream)

				KEY		
				COMMUNITY	ТҮРЕ ОБ	
			Alod G Stren	AREA*		
		Spicor Bush V M.F Rose V Frand Plantiful Morson NATOTS	TULIP - 50 CHESTOUT OAK - 20 HICKOOP - 10 WHITE OAK - 15 MUSCIEWOOD - 15	(Dominant Species and Approx. $\%$)	EXISTING VEGETATION	
			12-18"	Size (dbh) & Age		
	Some MADALD ROSE MIL BOSE MILL BOOK SANSVINI SOME INVIVENCE CHARMEN SOME INVIVENCE CHARMEN CH	Lots or understand	General Conditions	STAND CHARACTERISTICS		
		HIGH POCK FORM FOR ST HIGH RESCATION VAINE bus TO Street Walker, ST	Stream valley w/ Harry Seeps w/ SKUNK (MB3 AGE (NHOTO #2994,7996)		NOTES	

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS WILSON FOREST E-F52

Date: 5116/13

Crew: KUR, WAY

PHOTO 20,99

			KEY	Project.
			COMMUNITY	TYPE OF
			AKEA*	1
		M. RED OAK ZO THICKOCHY O. DAK ZIO	(Dominant Species and Approx.	EXISTING VEGETATION
		WKF0	Size (dbh) & Age	
	CWD-moderate	MO HERES GOOD CHESTNOT REVENDATION	General Conditions	STAND CHARACTERISTICS
		PLEMOSE DO INVITATIVES		NOTES

Area measured to the nearest 1/10 acre.

FOREST STAND ANALYSIS WILSON-FOREST F-FS 2

Date: 5 /13/

Crew: WMM/ET

Project .: _ KEY COMMUNITY TYPE OF AREA* Biackburn Much careed (Dominant Species and Approx. これでナンノ Logic Story **EXISTING VEGETATION** 12-18-16 Size (dbh) & Age SMTCESSYON STAND CHARACTERISTICS したり、 Fair to good General Conditions producte invasive bittersweet NOTES

Area measured to the nearest 1/10 acre.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: MCS - DPT	ci d C or			
Applicant/Owner:MonT. (o	. DPW		State: _ M D _ S	ampling Point: W3
Investigator(s): EAS, WHH	Se	ection, Township, Range:		
Landform (hillslope, terrace, etc.):				
Subregion (LRR or MLRA): MLRA	5 147 149 Lat:	Long		Dotum:
Soil Map Unit Name:				
		Lucio V		
Are climatic / hydrologic conditions on the				
Are Vegetation, Soil, or				
Are Vegetation, Soil, or	Hydrology naturally proble	ematic? No (If needed,	, explain any answers in	Remarks.)
SUMMARY OF FINDINGS - A	tach site map showing s	ampling point locat	ions, transects, im	portant features, etc
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	YesX	No
Remarks:				
LAST FLAG WIZ-17				
FI# OTOH9				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is	required; check all that apply)		Surface Soil Crac	ks (B6)
Surface Water (A1)	True Aquatic Plant			ed Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide		✓ Drainage Patterns	
Saturation (A3) Water Marks (B1)		neres on Living Roots (C3)		***/ *********************************
Sediment Deposits (B2)	Presence of Redu		Dry-Season Wate	
Drift Deposits (B3)	Thin Muck Surface	ction in Tilled Soils (C6)	Crayfish Burrows	
Algal Mat or Crust (B4)	Other (Explain in F		Stunted or Stresse	on Aerial Imagery (C9)
Iron Deposits (B5)	only (Explain in)	(ornance)	✓ Geomorphic Posit	
Inundation Visible on Aerial Imager	y (B7)		Shallow Aquitard	
✓ Water-Stained Leaves (B9)			Microtopographic	
Aquatic Fauna (B13)			FAC-Neutral Test	
Field Observations:	,			
Surface Water Present? Yes	No Depth (inches): _	0-5.1		
Water Table Present? Yes	No Depth (inches):			
Saturation Present? Yes (includes capillary fringe)	∠ No Depth (inches): ②	Surface Wetland	Hydrology Present?	Yes No
Describe Recorded Data (stream gauge	, monitoring well, aerial photos, p	I previous inspections), if av	ailable:	
Remarks:				

VEGETATION	(Four Strata)	- Use scientific	names of plants.
AFRIGIALION	i oui otiala	- Use scientific	maines of plants.

Sampling Point:

Tree Stratum (Plot size: 151) 1. ACER PU BRUNN	% Cover	Dominant Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC:
2. FRAZINUS PENNSYLVANICUM	15		FACW	
3.				Total Number of Dominant Species Across All Strata: (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC:
6				
7				Prevalence Index worksheet:
8				Total % Cover of: Multiply by:
	55	= Total Cov	er (23)	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1. VACCINDUM LOLY MBOSUM			FALW	FAC species x 3 =
2. Il se vorticulata	_ 20_	D	FACE	FACU species x 4 =
3. CARPINUS RATEGUANA				UPL species x 5 =
1. Lindoura Benzoin			FAC	Column Totals: (A) (B)
5.				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
3,				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0¹
10				4 - Morphological Adaptations ¹ (Provide supporting
la Daro Vaco da visado	45	= Total Cove	er (23)	data in Remarks or on a separate sheet)
Herb Stratum (Plot size:) 1. SYMPLOCATERS FORTIOUS	00	-	601	Problematic Hydrophytic Vegetation ¹ (Explain)
IN CAME AS TOPPOS	- 10		OBL	
IMPATIENS CAPEASIS				¹ Indicators of hydric soil and wetland hydrology must
3.				be present, unless disturbed or problematic.
1.				Definitions of Four Vegetation Strata:
j,				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.
0				Herb – All herbaceous (non-woody) plants, regardless
1				of size, and woody plants less than 3.28 ft tall.
2				
Voody Vine Stratum (Plot size:)	120 :	Total Cove	er (60)	Woody vine – All woody vines greater than 3.28 ft in height.
				District de
				Hydrophytic Vegetation
				Present? Yes X No
	0 =	Total Cove	r	
Remarks: (Include photo numbers here or on a separate s		Total Cove		

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grain Hydric Soil Indicators: Histosol (A1)	ins. ² Locati	ion: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grain Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F3)	ins. ² Locati	on: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grai Hydric Soil Indicators: Histosol (A1)	LRA 147, 148)	ion: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Dark Surface (S7) Polyvalue Below Surface (S8) (ML Thin Dark Surface (S9) (MLRA 14 Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	LRA 147, 148)	Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Dark Surface (S7) Polyvalue Below Surface (S8) (ML Thin Dark Surface (S9) (MLRA 14 Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	LRA 147, 148)	Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Dark Surface (S7) Polyvalue Below Surface (S8) (ML Thin Dark Surface (S9) (MLRA 14) Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	LRA 147, 148)	Indicators for Problematic Hydric S 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
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Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Polyvalue Below Surface (S8) (ML Thin Dark Surface (S9) (MLRA 14 Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	LRA 147, 148) 47, 148)	Coast Prairie Redox (A16)
 Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Thin Dark Surface (S9) (MLRA 14) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) 	17, 148)	
Stratified Layers (A5) Depleted Matrix (F3)		(MLRA 147, 148)
		Piedmont Floodplain Soils (F19)
		(MLRA 136, 147)
✓ Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)		Red Parent Material (TF2)
Thick Dark Surface (A12) Redox Depressions (F8)		Very Shallow Dark Surface (TF12)Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LR	RR N.	Other (Explain in Remarks)
MLRA 147, 148) MLRA 136)		
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136,	, 122)	³ Indicators of hydrophytic vegetation
Sandy Redox (S5) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (N	VILRA 148)	wetland hydrology must be preser
Restrictive Layer (if observed):		unless disturbed or problematic.
Type:		
Depth (inches):		· · ·
Remarks:	Hydri	c Soil Present? Yes No _

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: MCS - Option D Cit	y/County: Montgomery Sampling Date: 4/7/11
Applicant/Owner: Mo Co	State: MD Sampling Point: WH
Investigator(s): WIMM / EAS Se	ection Township Range:
	relief (concave, convex, none): Slope (%):
Subregion (LRR or MLRA): NURA 1471148 Lat:	Slope (%):
Soil Map Unit Name:	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation, Soil, or Hydrology significantly dis	
Are Vegetation, Soil, or Hydrology naturally proble	matic? 🎜 🗅 (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	Is the Sampled Area within a Wetland? Yes No
Remarks:	
Photo #13	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plant	그 그 그 그 그는
High Water Table (A2) Saturation (A3) Hydrogen Sulfide (C) Oxidized Rhizosph	
Water Marks (B1) Presence of Reduc	The first plant and the first and the first plant and the first plant and the first and the first plant an
[10000 Hard Hard Hard Hard Hard Hard Hard Hard	tion in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	
Algal Mat or Crust (B4) Other (Explain in R	lemarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)Water-Stained Leaves (B9)	Shallow Aquitard (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4)
Field Observations:	FAC-Neutral Test (D5)
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, p	revious inspections), if available:
Remarks:	
floodplain terrace & confluence of st	ream

ree Stratum (Plot size: \(\bigcup \)	% Cover	Dominant Species?	Status	Dominance Test worksheet: Number of Dominant Species	
Carpinus calotiniana Fraxinus pennsylvaniaum	10		FACW	That Are OBL, FACW, or FAC: Total Number of Dominant Charling Agreement All Charles	_ (A)
				Species Across Ali Strata.	_ (B)
		-		Percent of Dominant Species That Are OBL, FACW, or FAC:	(A/B)
				Prevalence Index worksheet:	
				Total % Cover of: Multiply by:	
	50	= Total Cov	er (25)	OBL species x 1 =	
apling/Shrub Stratum (Plot size: 10 1)			(10)	FACW species x 2 =	
Lindera benzoin			FAL	FAC species x 3 =	
Rosa multiflora			FACU	FACU species x 4 =	
				UPL species x 5 =	
				Column Totals: (A)	(B)
				Prevalence Index = B/A =	
				Hydrophytic Vegetation Indicators:	
				1 - Rapid Test for Hydrophytic Vegetation	
				✓ 2 - Dominance Test is >50%	
		-		3 - Prevalence Index is ≤3.0 ¹	
0		= Total Cov	er (5)(2)	4 - Morphological Adaptations ¹ (Provide sudata in Remarks or on a separate shee	ipporting t)
lerb Stratum (Plot size:)	00	-	OBL	Problematic Hydrophytic Vegetation ¹ (Expl	lain)
Symplocarpus foetidus	10				
Jap stillarass microstrown	5	_	TAC 1	¹ Indicators of hydric soil and wetland hydrology	must
Allium vineale			FACU	be present, unless disturbed or problematic.	
Indian strawberry buches NEA india	AZ		- KAIC O	Definitions of Four Vegetation Strata:	
Impatiens capensis			FACW	Tree – Woody plants, excluding vines, 3 in. (7.	6 cm) o
				more in diameter at breast height (DBH), regar	dless o
		-		height.	
	_			Sapling/Shrub - Woody plants, excluding vine	es, less
(than 3 in. DBH and greater than 3.28 ft (1 m) to	all.
0				Herb – All herbaceous (non-woody) plants, reg	ardless
1				of size, and woody plants less than 3.28 ft tall.	100
2	102	= Total Cov	er (51)	Woody vine – All woody vines greater than 3.2	28 ft in
Voody Vine Stratum (Plot size:)			(202)	height.	
4					
				Mina.	
				Hydrophytic	
			_	Vegetation Present? Yes X No	
		Tatal Car		Present? Tes_/NO	
		= Total Cov	/er		_
Remarks: (Include photo numbers here or on a separate s	neet.)				
PHOTO #13					

0	0	111	
-	6)	ш	

Sampling Point: W 4

(inches)	Matrix		Redo	x Features	3		n the absence of indi	
2 11	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-9	2,54 413	80	107846	_20_	C	M	Siltloam	
4-12	2.57 413	75	104246	20	C	PL	silt loan	10.88
			2.54 4/2	_5	D	M	silt loam	
		-						
								
Type: C=Co	ncentration D-Dani	lotion DM-E	Paduasal Matrix, NAC	Nah A a a la a d	0 10		2	VIII 20 00 00 00
lydric Soil Ir	ncentration, D=Depl	ietion, Rivi-r	Reduced Matrix, MS	=iviasked	Sand Gr	ains.	² Location: PL=Pore L	_ining, M=Matrix. r Problematic Hydric Soils ³ :
Histosol (Dark Surface	(S7)				ck (A10) (MLRA 147)
_ Histic Epi	ipedon (A2)		Polyvalue Be		e (S8) (N	ILRA 147		airie Redox (A16)
_ Black His			Thin Dark Su	rface (S9)	(MLRA 1	47, 148)	(MLRA	147, 148)
	n Sulfide (A4) Layers (A5)		Loamy Gleye	Andreas and the second second	2)			Floodplain Soils (F19)
	ck (A10) (LRR N)		Depleted Mat Redox Dark S		21			136, 147)
	Below Dark Surface	(A11)	Depleted Dark					nt Material (TF2) llow Dark Surface (TF12)
_ Thick Dar	k Surface (A12)		Redox Depre					plain in Remarks)
	ucky Mineral (S1) (L	RR N,	Iron-Mangane			RR N,		r and a state of
	147, 148)		MLRA 136				400	
Sandy Gle Sandy Re	eyed Matrix (S4)		Umbric Surface					of hydrophytic vegetation and
	Matrix (S6)		✓ Piedmont Floo	odpiain So	ils (F19)	(MLRA 14		ydrology must be present,
	ayer (if observed):						unless dis	sturbed or problematic.
Type:								
Depth (inch	nes):						Hydric Soil Present	t? Yes No
emarks:								

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: MCS-WILSON City/County: MONT Sampling Date: 6/25/13 _____ State: Mp ___ Sampling Point: W & Applicant/Owner: Section, Township, Range:____ Investigator(s): WMM, for Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%):____ Subregion (LRR or MLRA): 149A in LRRS Lat: _____ Long: ____ Soil Map Unit Name: ___ ____ NWI classification: ___ Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 🗟 Are "Normal Circumstances" present? Yes _____ No ____ Are Vegetation _____, Soil _____, or Hydrology _____ 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? No Is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: HYDRIC SOIL IN DICATOR LINCKING.

	Secondary Indicators (minimum of two required)
required; check all that apply)	Surface Soil Cracks (B6)
True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks)	Dry-Season Water Table (C2)
No Depth (inches):	Netland Hydrology Present? Yes X No
E FOR STREAM W5	
	— Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres on Living Ro — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled Soils — Thin Muck Surface (C7) — Other (Explain in Remarks) ery (B7) No Depth (inches):

That Are OBL, FACW, or FAC: 2 NY SA STIVATION 3 A CER REPORT 15 FAC 4 UM S RUBGA 15 FAC 50% of total cover: 50% of total cover: 50% of total cover: 50% of total cover: 20% of total cover: 4 UPL species 50% of total cover: 60	Tree Stratum (Plot size:)	Absolute % Cover	Species?	Indicator Status	Sampling Point: Dominance Test worksheet: Number of Dominant Species //
Total Number of Dominant Species Across All Status (B Species (A) Cover (C Status (B) Species	1. CARPINUS CAPOLLINIAMA	30	1	FAC	TI 1 4 CO
### Percent of Dominant Spacies That Are OBL, FACW, or FAC: Percent of Dominant Spacies That Are OBL, FACW, or FAC: OOOO	2. NY >>A SYLVATILE	20		FAC	The state of the s
### Percent of Dominant Spacies That Are OBL, FACW, or FAC: Percent of Dominant Spacies That Are OBL, FACW, or FAC: OOOO	B. ALER RUSROW	15		FAC	Casaisa Ass. All Ot 1
Percent of Dominant Species Total Cover 50% of total cover: 45 77 Sapling/Shrub Stratum (Plot size: 51 P) LINDEAN STATUM Bank Stratum (Plot size: 51 P) Bank Stratum (Plot size: 50% of total cover: 15 20% of total cover: 20% of total cove	1. ULMUS RUBTA	15			Opedies Acioss Ali Strata. (B)
Prevalence Index worksheet: Total % Cover of Multiply by: OBL species x 1 = FACW species x 2 = FACW species x 3 = FACU species x 4 = UPL species x 4 = UPL species x 5 = Column Totals: (A) Prevalence Index = BIA = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is 550% 3 - Prevalence Index is 53.0* 4 - Morphological Adaptations! (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation Strata: Tree - Woody plants, excluding vines, 3 in, (7.6 cm), more in diameter at breast height (DBH), regardless of height. Sapting/Shrub - Woody plants, excluding vines, 3 in (7.6 cm), more in diameter at breast height (DBH), regardless of size, and woody plants, excluding vines, a feet where you held to 3.28 ft (in hight). Solved Vine Stratum (Plot size:) 1 - Total Cover 20% of total cover 20% of total cover 20% of total cover 20% of total cover. 50% of total cover: 20% of total cover 20% of total cover. Follows a control of the species of the specie	5. CARY A GLABRA	16			Percent of Dominant Species
Total & Cover of Sulfly by: Sapling/Shrub Stratum (Plot size: 57 20% of total cover: 45 20% of total cover: 46 20% of total cover: 47 20% of total cover: 48	5				(10)
Solve of total cover: 42 20% of total cover: 45 20% of total cover:	7-	- 0 -			
Sapling/Shrub Stratum (Plot size: 57 & 30 Y FACM) Sapling/Shrub Stratum (Plot size: 57 & 30 Y FACM) Sapling/Shrub Stratum (Plot size: 50% of total cover: 50% of tot	1=	90	= Total Cove	er	
FAC species x3 = FACU species x4 = UPL species x5 = Column Totals; (A) (EPrevalence Index = BK/a = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Members and Faculty of Stratum (Plot size: 5) - STAPLO FACE STATUM (Plot size: 5) - STATUM (Plot size: 5)		20% of	total cover:	18	
FACU species			- 1		
UPL species x 5 = Column Totals; (A) (E Prevalence Index = B/A = Hydrophytic Vegetation Indicators; 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0' 4 - Morphological Adaptations' (Provide supporting to the Branch of total cover: 5 / A - Morphological Adaptations' (Provide supporting to the Branch of total in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) 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) of more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Woody vine Stratum (Plot size:)	LINDERA BRN 80 IN	30		FACW	FAC species x 3 =
UPL species x 5 = Column Totals; (A) (E Prevalence Index = B/A = Hydrophytic Vegetation Indicators; 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 50% of total cover: 5 20 = Total Cover 20% of total cover: 6 4 - Morphological Adaptations (Provide supporting the Branch of the Stratum (Plot size: 5 1) STATED CORES FOR THE FORTING FOR THE FORTING FOR THE STATE THE PROPERTY OF THE	2,				FACU species x 4 =
Column Totals: (A) (E Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 **Rapid Test for Hydrophytic Vegetation 2 **Dominance Test is >50% 3 **Prevalence Index is 3.0 ** 4 **Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) 1 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); more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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 vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Yes					
Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 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 or equal to 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 Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 4 - Morphological Adaptations¹ (Provide supporting that is in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 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 size, and woody plants less than 3.28 ft (1 m) tall. Woody vine – All woody vines greater than 3.28 ft in height.					
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Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0¹ 4 - Morphological Adaptations' (Provide supportion data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation 1 (Explain) Indicators of hydric soil and welland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 in the stratum (Plot size:) Foody Vine Stratum (Plot size:) Foody Vine Stratum (Plot size:) Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Yes			\leftarrow		Prevalence Index = B/A =
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0" 4 - Morphological Adaptations' (Provide supporting that a in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation' (Explain) Problematic Hydrophytic Vegetation' (Explain) Indicators of Four Vegetation Strata: Tree - Woody plants, excluding vines, as in (7.6 cm) Tree - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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 No No No No No No No No No N			_		
2 - Dominance Test is >50% 30 = Total Cover 20% of total cover: 6 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators 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 in diameter at breast height (DBH), regardless on height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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 Stratum (Plot size:) 1 - Total Cover 20% of total cover: 20% of total cover: 4 bydrophytic Vegetation Present? 50% of total cover: 4 bydrophytic Vegetation Present? 50% of total cover:					
30 = Total Cover 50% of total cover: 15 20% of total cover: 6 Lerb Stratum (Plot size: 5) SAMPLO CAR FOR FOR FOR FOR FOR FOR FOR FOR FOR FO					
Solution					
data in Remarks or on a separate sheet) Street of the fortions of years of the fortions of the present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in, (7.6 cm) of more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, 1 in, 10 BH and greater than or equal to 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 Stratum (Plot size:) ### Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No		_30 =	Total Cove	r	[17] "[18] [18] [18] [18] [18] [18] [18] [18]
data in Remarks or on a separate sheet) STAPLO CAR AS FORTONS SAPPLO CAR AS FORTONS SAPPLO CAR AS FORTONS SAPPLO CAR AS FORTONS SAPPLO CAR AS FORTONS AS INDICATE AS FORTONS AS INDICATE AS FORTONS 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 or height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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 Stratum (Plot size: Solve of total cover: Total Cover 20% of total cover: Yes No No No No Hydrophytic Vegetation Yes No No No Tresent? Yes No Tresent? Yes No No Tresent? Yes No Tresent? Yes No Tresent? Yes No Tresent? Yes No Tresent?	50% of total cover:	20% of 1	otal cover:	6	[10]
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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) of more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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 Stratum (Plot size:) #Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No					
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Sapling/Shrub – Woody plants, excluding vines, less than 3 in, DBH and greater than or equal to 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 Stratum (Plot size:) ### Woody Vine – All woody vines greater than 3.28 ft in height. #### Hydrophytic Vegetation Present? Yes No					more in diameter at breast height (DBH), regardless of
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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) ## b – 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. ## b – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. ## b – All herbaceous (non-woody) plants, regardless of size, and woody vines greater than 3.28 ft in height.					Sapling/Shrub – Woody plants, excluding vines less
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. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No					Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
50% of total cover: 30 20% of total cover: Woody vine - All woody vines greater than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No	0				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes No	0				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
height. Hydrophytic Vegetation Present? Yes No No	0	60 =	Total Cover		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless
Hydrophytic Vegetation Present? Yes No	50% of total cover:	60 =	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Hydrophytic Vegetation Present? Yes No	50% of total cover:	60 =	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
Hydrophytic Vegetation Present? Yes No	50% of total cover:	60 =	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
Hydrophytic Vegetation Present? Yes No	50% of total cover:	60 =	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
Hydrophytic Vegetation Present? Yes No	50% of total cover:	60 =	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
	 0 1	60 = 20% of to	Total Cover	12	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
50% of total cover: 20% of total cover:	 0 1	60 = 20% of to	Total Cover		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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.
	 0 1	60 = 20% of to	Total Cover		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
emarks: (Include photo numbers here or on a separate sheet.)	50% of total cover: 30/200dy Vine Stratum (Plot size:)	60 = 20% of to	Total Cover:		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
100 CH 100		60 = 20% of to	Total Cover:		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
	50% of total cover:	60 = 20% of to	Total Cover:		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
	50% of total cover:	60 = 20% of to	Total Cover:		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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

~	0	11	

Depth	ription: (Describe t Matrix			x Features			in the absence of it	idicators.)	
inches)	Color (moist)	%	Color (moist)		Type	Loc ²	Texture	Dear 100	
0-311	10 KR 4/1	100						Remarks	_
3-121	104R 5/3	20	7.5YR5/6	30	C	PLM	siltlaam_		
dric Soil In		etion, RM=			Sand Gr	ains.	² Location: PL=Pol	re Lining, M=Matrix. for Problematic Hydrid	c Soils
Black Hist Hydrogen Stratified I 2 cm Muc Depleted	pedon (A2)	(A11)	Dark Surface Polyvalue Belt Thin Dark Sur Loamy Gleyed Depleted Matr Redox Dark S Depleted Dark	ow Surfac face (S9) I Matrix (F ix (F3) urface (F6 Surface ((MLRA 1 2) 6) F7)	MLRA 147, 147, 148)	2 cm M , 148) Coast I (MLI Piedmo (MLI Very SI	Muck (A10) (MLRA 147) Prairie Redox (A16) RA 147, 148) ont Floodplain Soils (F18 RA 136, 147) hallow Dark Surface (TF Explain in Remarks)	9)
Sandy Mu MLRA Sandy Gle Sandy Rec Stripped M	ucky Mineral (S1) (LR 147, 148) eyed Matrix (S4) dox (S5)	R N,	Redox Depres Iron-Manganes MLRA 136 Umbric Surfac Piedmont Floo Red Parent Ma	se Masses l e (F13) (M dplain Soi	s (F12) (I ILRA 13	6, 122) (MLRA 14	(8) wetland	s of hydrophytic vegetat hydrology must be presi isturbed or problematic.	ion and ent,
Type:	iyer (ii observed):								
. , , ,	nes):		=				\$5.5 m 2.3 m		
Depth (inch							I Hydric Soil Press	ent? Yes X N	0

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: MCS- WILSOP City/County: MONT Sampling Date: 6/25/13 Applicant/Owner: ____ State; _____ Sampling Point: W-7 Investigator(s): WHH, FT _____ Section, Township, Range:_ Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): ______ Slope (%): Subregion (LRR or MLRA): 149A TA LKKS Lat: _____ Datum: _____ NWI classification: ___ Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? $r^{1/3}$ (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 Is the Sampled Area Hydric Soil Present? Yes No within a Wetland? Wetland Hydrology Present? Remarks: HYDMI SOIL INDICATOR WEKING. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) __ True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) ___ Hydrogen Sulfide Odor (C1) ★ High Water Table (A2) __ Drainage Patterns (B10) __ Oxidized Rhizospheres on Living Roots (C3) __ Moss Trim Lines (B16) __ Saturation (A3) __ Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) __ Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) ✓ Water-Stained Leaves (B9) ___ Microtopographic Relief (D4) ___ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes No > Depth (inches): Surface Water Present? Yes No Depth (inches): Water Table Present? Saturation Present? Yes ____ No _ < Depth (inches): Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: SPER WET AND ADJACED TO WILD CAT PD, ABITTING WZ

	Absolute Dominant	Indicator	Sampling Point: W7
1. NYSSA SELVATION (Plot size: 10 K)	% Cover Species?	Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2. ALRIC RUBBOOM 3.		- HAC	Total Number of Dominant Species Across All Strata:
4 5 6			Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B
7			Prevalence Index worksheet:
2/	00 = Total Co		Total % Cover of: Multiply by:
50% of total cover: 3	20% of total cover	12	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)	15 11	CALL	FACW species x 2 =
1. LINDERA BEN7012		TACIN	FAC species x 3 =
2. CARPINUS CAPOLINTEANA		FAC	FACU species x 4 =
3			UPL species x 5 =
1			Column Totals: (A) (B)
5			Prevalence Index = B/A =
5		-	Hydrophytic Vegetation Indicators:
7		-	1 - Rapid Test for Hydrophytic Vegetation
3		-	2 - Dominance Test is >50%
)	30		3 - Prevalence Index is ≤3.01
,50% of total cover:	= Total Cov	er (4 - Morphological Adaptations (Provide supporting
Herb Stratum (Plot size: 5 P)	20 % Of total cover		data in Remarks or on a separate sheet)
1. STUPLOLAR PUS FOOTHOUS	-60 V	OBI	Problematic Hydrophytic Vegetation¹ (Explain)
2. OSMINDA CINNAMONEA	10 1/	FACW	
3	-10 -1V	11/00	¹ Indicators of hydric soil and wetland hydrology must
4		_	be present, unless disturbed or problematic.
5			Definitions of Four Vegetation Strata:
3			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
		-	more in diameter at breast height (DBH), regardless of
3.		_	height.
),			Sapling/Shrub - Woody plants, excluding vines, less
0		-	than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
1	-		
	70 - Table	-	Herb - All herbaceous (non-woody) plants, regardless
50% of total cover: 35	20% of total cover:		of size, and woody plants less than 3.28 ft tall.
Voody Vine Stratum (Plot size:	2070 01 total cover.		Woody vine - All woody vines greater than 3.28 ft in
			height.
3			
1		-	
5.			Hydrophytic /
	= Total Cove		Vegetation Present? Yes No
50% of total cover:		20-	

Depth	Matrix		Redox	Feature:	0		the absence of indicat	ors.)
(inches)	Color (moist)	%	Color (moist)	_ %	_Type ¹	Loc²	Texture	Remarks
0-2"	1012412	100		_	_	-	Sithe clay land	rtemarks
2-12"	101/15/3	<u>80</u>	2.5 7.12 116	Zo		PL	1,3 1,0 10	
_ Histosol (A1)	etion, RM=F	Dark Surface (S7)		Jr. H	2 cm Muck /	ng, M=Matrix. roblematic Hydric Soils A10) (MLRA 147)
Histic Epi	pedon (A2) tic (A3)		Polyvalue Belo Thin Dark Surf.	w Surfac ace (S9)	e (S8) (MI (MLRA 14	LRA 147, 14	48) Coast Prairie (MLRA 14	Redox (A16)
Black Hisi Hydrogen Stratified 2 cm Muc Depleted Thick Darl Sandy Mu MLRA	Sulfide (A4) Layers (A5) k (A10) (LRR N) Below Dark Surface k Surface (A12) ucky Mineral (S1) (LR 147, 148)		Loamy Gleyed Depleted Matri. Redox Dark Su Depleted Dark Redox Depress Iron-Manganes MLRA 136)	x (F3) Irface (F6 Surface (Sions (F8)	(2) (5) (F7)		Piedmont Flo (MLRA 13	oodplain Soils (F19) 6, 147) Dark Surface (TF12)
Black Hisi Hydrogen Stratified 2 cm Muc Depleted Thick Darl Sandy Mu MLRA Sandy Gle Sandy Rec Stripped M	a Sulfide (A4) Layers (A5) kk (A10) (LRR N) Below Dark Surface k Surface (A12) acky Mineral (S1) (LR 147, 148) eyed Matrix (S4) dox (S5) Matrix (S6)		 Depleted Matrix Redox Dark Su Depleted Dark Redox Depress 	x (F3) irface (F6 Surface (ions (F8) e Masses (F13) (M	(2) (5) (F7) (5) (S) (F12) (LI (S) (F12) (II (S) (F19) (II	RR N, , 122) MLRA 148)	 — Piedmont Flor (MLRA 13 — Very Shallow ★ Other (Explain Indicators of hywetland hydroles) 	oodplain Soils (F19) 6, 147) Dark Surface (TF12) In in Remarks) odrophytic vegetation and ogy must be present,
Black Hisi Hydrogen Stratified 2 cm Muc Depleted Thick Darl Sandy Mu MLRA Sandy Gle Sandy Rei Stripped M	a Sulfide (A4) Layers (A5) kk (A10) (LRR N) Below Dark Surface k Surface (A12) acky Mineral (S1) (LR 147, 148) eyed Matrix (S4) dox (S5)		Depleted Matri. Redox Dark Su Depleted Dark Redox Depress Iron-Manganes MLRA 136) Umbric Surface Piedmont Flood	x (F3) irface (F6 Surface (ions (F8) e Masses (F13) (M	(2) (5) (F7) (5) (S) (F12) (LI (S) (F12) (II (S) (F19) (II	RR N, , 122) MLRA 148)	 — Piedmont Flor (MLRA 13 — Very Shallow ★ Other (Explain Indicators of hywetland hydroles) 	odplain Soils (F19) 6, 147) Dark Surface (TF12) In in Remarks) Odrophytic vegetation and
Black Hisi Hydrogen Stratified 2 cm Muc Depleted Thick Darl Sandy Mu MLRA Sandy Gle Sandy Rei Sandy Rei Stripped M	La Sulfide (A4) Layers (A5) Layers (A5) Layers (A5) Layers (A10) (LRR N) Below Dark Surface Layer (A12) Layer (A12) Layer (A148) Layer		Depleted Matri. Redox Dark Su Depleted Dark Redox Depress Iron-Manganes MLRA 136) Umbric Surface Piedmont Flood	x (F3) irface (F6 Surface (ions (F8) e Masses (F13) (M	(2) (5) (F7) (5) (S) (F12) (LI (S) (F12) (II (S) (F19) (II	RR N, , 122) MLRA 148) 127, 147)	 — Piedmont Flor (MLRA 13 — Very Shallow ★ Other (Explain Indicators of hywetland hydroles) 	oodplain Soils (F19) 6, 147) Dark Surface (TF12) In in Remarks) odrophytic vegetation and ogy must be present,

COULD NOT FIND ON APPOINCELE HOME SO IL INDICATOR.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: MID COUNTY - OPTION D	City/County:MONTGOMERY CO Sampling Date:4/6/11
Applicant/Owner:	State: MD Sampling Point: W &
Investigator(s): NMM/KDG	Section, Township, Range:
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Slope (%):
Subregion (LRR or MLRA): HL RA 147/143 Lat:	Long: Datum:
Soil Map Unit Name:	
	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of	
Are Vegetation, Soil, or Hydrology significa	
Are Vegetation, Soil, or Hydrology naturally	problematic? NO (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map show	ing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes No Yes No	within a Wetland? Yes No
HVDDOLOGV	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that app Surface Water (A1) True Aquatic	
	C Plants (B14) Sparsely Vegetated Concave Surface (B8) ulfide Odor (C1) Drainage Patterns (B10)
	ulfide Odor (C1) Drainage Patterns (B10) izospheres on Living Roots (C3) Moss Trim Lines (B16)
	Reduced Iron (C4) Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron	Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck S	urface (C7) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain Line Deposits (B5)	
Inundation Visible on Aerial Imagery (B7)	Geomorphic Position (D2)
Water-Stained Leaves (B9)	Shallow Aquitard (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations:	TAO-Neutral Test (DO)
Surface Water Present? Yes No Depth (inche	es): O
Water Table Present? Yes X No Depth (inche	
Saturation Present? Yes X No Depth (inche	es): O Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial pho	
Remarks: SURFACE WATER PRESENT IN LOW	M⊅ NS
A Liter Library	130 300 100
PHOTO 12	
	. ()
	1/1
	V

	Absolute	Dominan	t Indicator	Dominance Test worksheet:
ree Stratum (Plot size:)			? Status	Number of Dominant Species
WARMY JUGIANS NIGRA	50	D	-FACU	That Are OBL, FACW, or FAC: (A)
RED MAPLE ACER PUBLUM	35	D	LRAC	Total Number of Dominant
CHOARY PRUNIS SEROTINA			YFAC U	Species Across All Strata: (B)
-				Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)
			-	That Are OBL, FACW, or FAC:
				Prevalence Index worksheet:
		-		Total % Cover of: Multiply by:
		-		OBL species
	90	= Total Co	over	FACW species
apling/Shrub Stratum (Plot size:)	about 5	2	110	FAC species 85 x3 = 2155
SPICEBUSH LINDERA RENZOIS	_50_	_D_	NEAL	FAC species X3= Z02
			. —	FACU species x 4 = 280
				UPL species15 x 5 =15
				Column Totals: 260 (A)
				Prevalence Index = B/A = 2.69
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				✓ 2 - Dominance Test is >50%
		-		✓3 - Prevalence Index is ≤3.0 ¹
).		100000		4 - Morphological Adaptations ¹ (Provide supporting
LOUIS (DLI)	_50_	= Total Co	over	data in Remarks or on a separate sheet)
CKUNK CABBAGE SYMPLECARDIS	80	-	VOB'L	Problematic Hydrophytic Vegetation ¹ (Explain)
		- D	_	
GARLIC MUSTARD Alliavia petidat	A 15	-	VEAC U	¹ Indicators of hydric soil and wetland hydrology must
VIOLET SP. VIOLASP.	5_		UPL	be present, unless disturbed or problematic.
SPRING BRUTY CLAYTONIA SP.			- FAL U	Definitions of Four Vegetation Strata:
WILD ONION Allium Ascoloeuun	1 10		UPL	To the dealers evaluating vines 2 in (7.6 cm) of
WILD STRAWBURRY	T			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
SPHAGNUM MOSS	10		VOBL	height.
				a u (a) I (a) L L L L L L L L L L L L L L L L L L L
				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
			-	than 5 m. DBT and greater than 5.25 m (1 m) tans
)			-	Herb – All herbaceous (non-woody) plants, regardless
•				of size, and woody plants less than 3.28 ft tall.
		100000		Woody vine - All woody vines greater than 3.28 ft in
A A Complete	150	= Total Co	over	height.
/oody Vine Stratum (Plot size:)				
		-	-	V
				Hydrophytic
	أستعفي			Vegetation
				Present? Yes No
	NA	= Total Co	over	
emarks: (Include photo numbers here or on a separate si				
	,,,,,			
PHOTO #12				
A T - I / A - T				

-	0	м	
-		м	

Depth	Matein	to the ue		unent the	indicator	or confir	m the absence of ind	icators.)
(inches)	Matrix Color (moist)	%	Color (moist)	lox Feature				
0-2	104R 3/2	100	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
100							SILLOPOR	
2-12	2.5Y 5/2	80_	10 YR 5/6	50	_ C	M_{-}	silt loam	
		-		-				
				_				
Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ins.	² Location: PL=Pore	Lining, M=Matrix. or Problematic Hydric Soils ³ :
Black His Hydrogel Stratified 2 cm Mud Depleted Thick Dal Sandy Mu MLRA Sandy Gla Sandy Re Stripped M	ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5) ck (A10) (LRR N) Below Dark Surface k Surface (A12) ucky Mineral (S1) (LI 147, 148) eyed Matrix (S4) dox (S5) Matrix (S6) eyer (if observed):		Dark Surface Polyvalue Be Thin Dark Su Loamy Gleye Depleted Ma Redox Dark Depleted Da Redox Depre Iron-Mangan MLRA 13 Umbric Surfa Piedmont Flo	elow Surface (S9) ed Matrix (Fork Surface (F	(MLRA 14 F2) 6) (F7)) s (F12) (L VLRA 136	RR N,	2 cm Mu, 148) Coast Pr (MLRA Piedmon' (MLRA Red Pare Very Sha Other (Ex	ck (A10) (MLRA 147) airie Redox (A16) A 147, 148) t Floodplain Soils (F19) A 136, 147) ent Material (TF2) Illow Dark Surface (TF12) cplain in Remarks) of hydrophytic vegetation and hydrology must be present, sturbed or problematic.

		100		-		
Project: MCS Wilson Farm		State: MD		Photos: 4509	W1	Stream Order:
Crew: ET/WMM		County: Montgomery	omery	Last Flag N	Number: N/A	
Feature Hydrologic Class (check one):	s (check one):					
Tidal	Perennial		Intermittent (SNE)	VE)		Ephemeral (SNE)
TNW (Subject to ebb and flow)	TNW – Perennial (Flowing year round)	0	RPW – Seasonal (must flow at least 3 months a	00	Non-RPW draini Non-RPW erosic	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	Flowing year round)	ınd)	year)	00	Non-RPW with a	Non-RPW with adjacent wetland
Describe rational				0	Non-RPW wetlar	Non-RPW wetland adjacent or abutting upstream
for hydrologic class:					(outside of study area)	area)
Feature Description: (check all that apply)	ieck all that apply)					
Shape (with re	Shape (with respect to top of bank)	3		Substrate		Vegetation
✓ Natural Channel Shape	Width: 8-15 ft.	Depth: 2-8"	Silts	✓ Sands	Muck	RB: Spice bush, musclewood, skunk
Artificial (man-made)	Bank Erosion/stability:	ability:	✓ Cobbles	✓ Gravel	Other:	cabbage, red maple, multiflora rose
Manipulated (man-altered)	Minor erosion		Bedrock	Concrete		
Other:	Side slope 1:1(to vertical)	l(to vertical)	✓ 2:1	3:1	4:1(or less)	LB: Spice bush, musclewood, skunk
Notes: Originates from 24" pipe culvert under Wildcat Rd.	pe culvert under		Bank depth 2-4'. I	Flows into W2.	io	cabbage, red maple, multiflora rose
Flow & Biological Characteristics: (check all that apply)	cteristics: (check al	I that apply)		Biological	Richard Characteristics	0
✓ Single channel – confined	Yes	✓ Riparian corridor	rridor	H ₀	Tabitat for:	
Multiple/braided channels	No	Type: Forested	ed Width: 100+ ft.)O+ ft.	Federally listed species	d species
Poorly/undefined channel	✓ Unknown	✓ Wetland fringe	nge		Fish/spawn areas	Fish/spawn areas
Notes: Abuts W4						
Non-tidal tributary has: (check all that apply; include photos for each & list photo #)	(check all that apply	; include photos	for each & list ph	oto #)		
Bed and Banks			Ordinary I	Water N	ark	
✓ Yes ☐ Clear	Clear, natural line impressed on the bank	sed on the bank	✓ Sedimen	Sediment deposition	Se	Sediment sorting
No Char	Changes in the character of soil	of soil	✓ Water staining	aining	✓ Sc	Scour
Shelving	ving		✓ Presence	Presence of litter and debris		Observed/predicted flow events
✓ Vege	Vegetation matted down, bent, or absent	bent, or absent	✓ Destruct	Destruction of terrestrial veg.		Abrupt change in plant community
✓ Leaf	Leaf litter disturbed		✓ Presence	Presence of wrack line		Other:
Tidal tributary has: (check all that apply; include photos for each & list photo #)	ck all that apply; inc	clude photos for e	each & list photo	#)		
Figh Tide Lin	6	Wean High	Wean High Water Wark indicated by:	cated by:	0	Chemical Characteristics
Oil or scum line along shore objects	objects	Survey to av	Survey to available datum		Water is clear	ur .
Fine shell or debris deposits (foreshore)	(foreshore)	Physical markings	rkings		Water is discolored	olored
Physical markings/characteristics	stics	☐ Vegetation I	Vegetation lines/changes in types	pes	Oily film	
Tidal ganges					Other:	

		Waters	Waters of the U.S. Data Sheet	Sheet		
Project: MCS Wilson Farm				ure ID:	W2	Stream Order: 1
Date: 6/25/2013		State: MD		Photos: 4510		
Crew: ET/WMM		County: Montgomery	ery	Last Flag Nu	umber: N/A	
Feature Hydrologic Class (check one):	lass (check one):					
Tidal	Perennial		Intermittent (SNE	E)		Ephemeral (SNE)
TNW (Subject to ebb and flow)	TNW – Perennial (Flowing year round)	0	RPW – Seasonal (must flow at least 3 months a	00	lon-RPW draini lon-RPW erosio	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	(Flowing year round)	ınd)	year)	00 z z	on-RPW with a on-RPW with a	Non-RPW with abutting wetland Non-RPW with adjacent wetland
Describe rational				O z	on-RPW wetlar	Non-RPW wetland adjacent or abutting upstream
for hydrologic class:				(0	(outside of study area)	area)
Feature Description: (check all that apply)	(check all that apply)					
Shape (with	Shape (with respect to top of bank))		Substrate		Vegetation
✓ Natural Channel Shape	Width: 10-15 ft.	Depth: 2-12"	Silts	✓ Sands	Muck	RB: Red maple, musclewood, spice
Artificial (man-made)	Bank Erosion/stability:	abili	✓ Cobbles	✓ Gravel	Other:	bush, multiflora rose, skunk
Manipulated (man-altered)) Severe erosion		Bedrock	Concrete		cabbage
Other:	Side slope 1:1(to vertical)	l(to vertical)	2:1	3:1	4:1(or less)	LB: Red maple, musclewood, spice
Notes: Originates from pipe culvert under Wildcat Rd.	ulvert under Wildcat F	રીd. Bank depth 2-8 ft. Crosses under Wildcat Rd. downstream.	ft. Crosses und	er Wildcat Rd.	downstream.	bush, multiflora rose, skunk cabbage
Flow & Biological Characteristics: (check all that apply)	aracteristics: (check al	l that apply)				
Surface Flow	Subsurface Flow			Biological	Characteristics	
✓ Single channel – confined	Yes	✓ Riparian corridor			Habitat for:	
Multiple/braided channels	No	Type: Forested	Width: 100+ ft	7.7	Federally listed species	species
Overland Sheetflow		=			Other environm	Other environmentally sensitive areas
Notes:						
Non-tidal tributary has: (check all that apply; include photos for each & list photo #)	is: (check all that apply	; include photos for	r each & list pho	to #)		
Bed and Banks			Ordinary High	Water Ma	domail of	
Yes C	Clear, natural line impressed on the bank	sed on the bank	✓ Sediment	Sediment deposition	Se	Sediment sorting
No C	Changes in the character of soil	of soil	✓ Water staining	ning	K	Scour Scour
< ·	Vegetation matted down, bent, or absent	bent, or absent	✓ Destructio	Destruction of terrestrial ves		Abrupt change in plant community
✓ Le	Leaf litter disturbed		✓ Presence of			Other:
Tidal tributary has: (c	(check all that apply; inc	include photos for each &	h & list photo #)			
	line	Wean High W	ater Wark indicated	ated by:	0	Chemical Characteristics
Oil or scum line along shore objects	re objects	Survey to available datum	lable datum		Water is clear	r
Fine shell or debris deposits (foreshore)	ts (foreshore)	Physical markings	ings		Water is discolored	olored
Physical markings/characteristics	eristics	Vegetation lin	Vegetation lines/changes in types	es	Oily film	
Tidal gauges					Other:	
Notes: Tributary to Wildcat Branch	Branch					

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: MCS - DPDOAD City/County:	Mのみて Sampling Date: 4/7/11
Applicant/Owner: MonT. (0. Dgw	
Investigator(s): EAS, WHH Section, Townsh	
Landform (hillslope, terrace, etc.): Tell ALC Local relief (concave Subregion (LRR or MLRA): MLRA 147)148 Lat:	e, convex, none).
	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	
Are Vegetation, Soil, or Hydrology significantly disturbed? No	
Are Vegetation, Soil, or Hydrology naturally problematic? $^{1/2}$	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling po	oint locations, transects, important features, etc.
Hydric Coll Drogont's	mpled Area Wetland? Yes No
LAST FIAG WIZ-17	
PHOTO #17	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	✓ Drainage Patterns (B10)
	g Roots (C3) Moss Trim Lines (B16)
	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled S Drift Deposits (B3) Thin Muck Surface (C7)	
Drift Deposits (B3) Thin Muck Surface (C7) Algal Mat or Crust (B4) Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)Stunted or Stressed Plants (D1)
Iron Deposits (B5)	✓ Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
✓ Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches): O - Z ' I	
Water Table Present? Yes No Depth (inches):	Land Shin Call Control of 1995
Saturation Present? Yes No Depth (inches): 2 501 face (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	Wetland Hydrology Present? Yes No
The state of the s	otions), ii available.
Remarks:	
	71

VEGETATION	(Four Strata) - Use scientific	names of	plants.
------------	--------------	--------------------	----------	---------

Sampling Point:

% Cove		Status	Dominance Test workshe Number of Dominant Speci	es	
40	D		That Are OBL, FACW, or FA	AC:5	(A)
			Total Number of Dominant		
			Species Across All Strata:		(B)
			Percent of Dominant Specie	es	
				AC: 100%	(A/B)
			Prevalence Index workship	eet:	
	-				
_55	= Total Cov	rer (28)			
5		E0/11)			
20					
10		EAL			
			Column Totals:	_ (A)	_ (B)
			Prevalence Index = B	3/A =	
			Hydrophytic Vegetation Ir	ndicators:	
			1 - Rapid Test for Hydro	ophytic Vegetation	
			The state of the s		
-					
45	- Total Cov	or (23)	4 - Morphological Adap	tations1 (Provide supp	orting
_10	- Total Gov	GI (6.23			
90	D	OBL	Problematic Hydrophyti	ic Vegetation¹ (Explain	1)
30		FACU			
			¹ Indicators of hydric soil and	d wetland hydrology m	iust
			Definitions of Four Vegeta	ition Strata:	
				neight (DBH), regardle	ss of
			neight.		
			than 3 in. DBH and greater t	than 3.28 ft (1 m) tall.	
-		-			dless
-			of size, and woody plants le	ss than 3.28 ft tall.	
120	- Total Cour	((0)	Woody vine - All woody vin	nes greater than 3.28	ft in
100	= Total Cove	er (GO)	height.	C. Charles	
					_
		-			
			Hydrophytic		
				/ No	
0	= Total Cove		rieseitti ies/	NO	
	- LUISH (-(1)/F				
	#5 20 10 10 10 10	#5 = Total Cov 10 D 10 D 10 D 10 D 10 D 10 D 10 D	S5	That Are OBL, FACW, or F. Total Number of Dominant Species Across All Strata: Percent of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or F. Prevalence Index worksh Total % Cover of: OBL species FACW species FACW species FACU species UPL	Total Number of Dominant Species

Brotile December 19 11 1 11		Sampling Point: WA 3
Depth Matrix	depth needed to document the indicator or cor	nfirm the absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc	
0-10" - 254 3 /2 95	79 TYPO LOC	
refucat)	1070 414 5 C PL	- TOCACTICODICA
TO PORTE OF		- 70% of to tal
Type: C=Concentration, D=Depletion, R	RM=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
lydric Soil indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Histic Epipedon (A2)	Dark Surface (S7)	2 cm Muck (A10) (MI RA 147)
Black Histic (A3)	Polyvalue Below Surface (S8) (MLRA 1	
Hydrogen Sulfide (A4)	Thin Dark Surface (S9) (MLRA 147, 148Loamy Gleyed Matrix (F2)	
_ Stratified Layers (A5)	Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)	Red Parent Material (TF2)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)
Thick Dark Surface (A12)Sandy Mucky Mineral (S1) (LRR N,	Redox Depressions (F8)	Other (Explain in Remarks)
MLRA 147, 148)	Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
_ Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (MLRA 136, 122)	3 Indicators of headers to the
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA	³ Indicators of hydrophytic vegetation and vetland hydrology must be present,
Stripped Matrix (S6)		unless disturbed or problematic.
estrictive Layer (if observed):		
Type:		
Depth (inches):		Hydric Soil Present? Yes No
emarks:		

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: MCS - Ophor) D City	County: Montgomen	Sampling Date: 4 7 11
Applicant/Owner:		Sta	te: MD Sampling Point: WH
Investigator(s): MMM / EAS	Sec	tion, Township, Range:	
Landform (hillslope, terrace, etc.): +en			Concave Slope (%):
Subregion (LRR or MLRA): LRR-S			
Soil Map Unit Name:			
Are climatic / hydrologic conditions on the			
Are Vegetation, Soil, or Hy			
Are Vegetation, Soil, or Hy			
			transects, important features, et
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes No Yes No Yes No	Is the Sampled Area	Yes No
Photo #13			
HYDROLOGY			
Wetland Hydrology Indicators:		Secon	ndary Indicators (minimum of two required)
Primary Indicators (minimum of one is rec	uired; check all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants		parsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Od		Prainage Patterns (B10)
Saturation (A3)			loss Trim Lines (B16)
Water Marks (B1) Sediment Deposits (B2)	Presence of Reduce		Ory-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Re	30 Maria	tunted or Stressed Plants (D1)
Iron Deposits (B5)		Control of the contro	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)		hallow Aquitard (D3)
Water-Stained Leaves (B9)			licrotopographic Relief (D4)
Aquatic Fauna (B13)		F	AC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes	No / Depth (inches):		
Water Table Present? Yes			
Saturation Present? Yes	No Depth (inches): No Depth (inches):	Wotland Underly	P
(includes capillary fringe)	_	Wetland Hydrold	ogy Present? Yes V No No
Describe Recorded Data (stream gauge, r	nonitoring well, aerial photos, pre	evious inspections), if available:	
2000			
Remarks:	n r 1		
floodplain terrace @	confluence of sm	eam	

101	Absolute			Dominance Test worksheet:		
ree Stratum (Plot size: 10 /) . Carpinus caroliniaha		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Fraxinus pennsylvanicium	10		FACW	Total Number of Dominant Species Across All Strata:	3	(B)
				Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)
5				Prevalence Index worksheet:		
				Total % Cover of:	Multiply by:	
	50	= Total Cov	- 12 m	OBL species x	1 =	_
apling/Shrub Stratum (Plot size: 10 ')		= Total Cov	(10)	FACW species x	2 =	_
Lindera benzoin	10_	D	FAL	FAC species x	3 =	_
Rosa multiflora			FACU	FACU species x	4 =	
1,100				UPL species x	5 =	
				Column Totals: (A	.)	_ (B)
				Prevalence Index = B/A =		
				Hydrophytic Vegetation Indica		
				1 - Rapid Test for Hydrophy		
				✓ 2 - Dominance Test is >50%		
				3 - Prevalence Index is ≤3.0		
0				4 Morphological Adaptation	ns ¹ (Provide sur	oporti
	10	= Total Co	ver (5)(2)	data in Remarks or on a	separate sheet))
Herb Stratum (Plot size:)	80	h	081	Problematic Hydrophytic Ve	getation ¹ (Expla	ain)
Symplocarpus foetidus	- 60		FAL	ENTERNA SERVICE		
2. Jáp stiltgrass microstrown 3. Allium vineale	5		FACU	¹ Indicators of hydric soil and wet be present, unless disturbed or p	land hydrology problematic.	must
. Indian strawberry buches NFA india			FACU	Definitions of Four Vegetation	Strata:	
s. Impatiens capensis			FACW	Tree – Woody plants, excluding more in diameter at breast heigh	vines, 3 in. (7.6 nt (DBH), regard	cm) o
	_			height.		
i	-			Sapling/Shrub – Woody plants, than 3 in. DBH and greater than	excluding vines 3.28 ft (1 m) tal	s, less II.
0		-		Herb – All herbaceous (non-wood of size, and woody plants less the	ody) plants, rega	ardles
1						
2		= Total Co	ver (51)	Woody vine - All woody vines	greater than 3.2	8 ft in
Noody Vine Stratum (Plot size:)		Total oo	(205	height.		
			للنتن			
				Maria de la companya		
				Hydrophytic		
5.				Vegetation		
5				Present? Yes X	_ No	
	0	= Total Co	ver			
Remarks: (Include photo numbers here or on a separate s	sheet.)					
PHOTO #13						
The second secon						

0	-	w	
	<i>(</i>)		
•	•		_

Sampling Point: W 4

Depth (inches)	Matrix	0/	Redo	x Features			m the absence of indi	
(inches)	254 413	80	Color (moist)		Type ¹	_Loc²		Remarks
11 - 12	2.5 4 4 13	75	104846	20		M	Siltloom	
4-10	CID 1 713	- 75	TOYRYL	20		PL	Silt I bam	Heles .
			254412	-5	_D_	_M_	silt loan	
		-						
Гуре: С=Сс	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked S	Sand Gra	ains.	² Location: PL=Pore I	Lining, M=Matrix.
ydric Soil I	ndicators:		4072					r Problematic Hydric Soils ³ :
_ Histosol			Dark Surface				2 cm Mu	ck (A10) (MLRA 147)
Histic Ep Black His	ipedon (A2)		Polyvalue Be Thin Dark Su	low Surface	e (S8) (N	ILRA 147		airie Redox (A16)
	n Sulfide (A4)		Loamy Gleye			47, 148)		A 147, 148) t Floodplain Soils (F19)
	Layers (A5)		Depleted Mat	rix (F3)				A 136, 147)
	ck (A10) (LRR N)	44.00	Redox Dark S				Red Pare	ent Material (TF2)
	Below Dark Surface rk Surface (A12)	e (A11)	Depleted Dar Redox Depre					llow Dark Surface (TF12)
	ucky Mineral (S1) (L	RR N.	Iron-Mangane			RRN	Other (Ex	rplain in Remarks)
MLRA	147, 148)		MLRA 136		(, , _) (,	-1,1,1,1,		
	leyed Matrix (S4)		Umbric Surfa				³ Indicators	of hydrophytic vegetation and
	edox (S5) Matrix (S6)		✓ Piedmont Flo	odplain Soi	ls (F19)	(MLRA 14		nydrology must be present,
	ayer (if observed):						unless di	sturbed or problematic.
Type:							Hydric Soil Presen	t? Yes No
Type: Depth (incl	hes):						Hydric John Flesen	
Depth (incl	hes):		_				riyana son Fresen	
Depth (incl	hes):						Tryunc 3011 Fresen	
The second second	hes):		_				nyunc son Fresen	
Depth (incl	hes):		_				Tryunc Son Fresen	
Depth (incl	hes):		_				nyunc son Fresen	
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Depth (incl	hes):						Tryunc Son Fresen	
Depth (incl	hes):						Tryunc Son Fresen	

Project: MCS Wilson				Feature II	e ID: w5		Stream Order: 1
Date: 6/25/2013		State: MD		Photos: 45	: 4511		
Feature Hydrologic Class (check one):	s (check one):						
Tidal	Perennial		Intermittent (SNE	t (SNE)		E	Ephemeral (SNE)
TNW (Subject to ebb and (flow)	TNW - Perennial (Flowing year round)	0	RPW – Seasonal (must flow at least 3 months a	Seasonal (must least 3 months a	O Non-RP	V draining	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	RPW – Perennial (Flowing year round)	ınd)	year)	1	O Non-RP	V with abo V with adj	Non-RPW with abutting wetland Non-RPW with adjacent wetland
Describe rational Originates for hydrologic class:	Originates from spring. Two ephemeral channels feed upstream.	o ephemeral cha	annels feed	upstream.	O Non-RPY (outside	Non-RPW wetland ad (outside of study area)	Non-RPW wetland adjacent or abutting upstream (outside of study area)
Feature Description: (check all that apply)	reck all that apply)		2				
Shape (with re	Shape (with respect to top of bank)	(c)		Substrate	ate		Vegetation
✓ Natural Channel Shape	Width: 8-20 ft.	Depth: 2-18"	Silts	✓ Sands		Muck 1	RB: Stiltgrass, ferns, tulip poplar, black gum,
Artificial (man-made)	Bank Erosion/stability:	stability:	✓ Cobbles	<		Other:	bittersweet, jewel weed, chestnut oak, skunk cabbage, musclewood, hav scented fern.
Manipulated (man-altered)	Moderate erosion	sion	✓ Bedrock	ck Concret	crete		cinnamon fern
Other:	Side slope 1:1(to vertical)	:1(to vertical)	2:1	3:1		4:1(or less)	LB: Stiltgrass, ferns, tulip poplar, black gum,
Notes: Drains into wetland on opposite side of Wildcat Rd. through 24" pipe culvert.	opposite side of	Wildcat Rd. thro	ugh 24" pip	e culvert. Ba	Bank depth 1-10 ft.		cabbage, musclewood, hay scented fern, cinnamon fern
Flow & Biological Characteristics: (check all that apply) Surface Flow Subsurface Flow	Subsurface Flow	ll that apply)		Biolo	Biological Characteristics	teristics	
✓ Single channel – confined	Yes	✓ Riparian corridor	ridor		Habitat for:		
Multiple/braided channels Poorly/undefined channel	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Type: Forested Wetland fringe		Width: 100+ ft.	Fish/sr	Federally listed species	pecies
Overland Sheetflow					Other 6	nvironme	Other environmentally sensitive areas
Notes:							
Non-tidal tributary has: (check all that apply; include photos for each & list photo	(check all that appl	y; include photos	for each & lis	st photo #)			
Bed and Banks			Ordinary	ry High Water	er Mark		
✓ Yes ☐ Clea	Clear, natural line impressed on the bank	ssed on the bank	✓ Sedi	Sediment deposition	n	Sedi	Sediment sorting
No Char	Changes in the character of soil	of soil	✓ Wate	Water staining		✓ Scour	H
Shelving	ving		✓ Pres	Presence of litter and debris	nd debris	Obse	Observed/predicted flow events
Vege	Vegetation matted down, bent, or absent	, bent, or absent	✓ Dest	Destruction of terrestri	estrial veg.	Abru	Abrupt change in plant community
✓ Leaf	Leaf litter disturbed		✓ Pres	Presence of wrack line	line	Other:	II)
Tidal tributary has: (check all that apply; include photos for each & list photo #)	ck all that apply; in	clude photos for e	ach & list ph	oto #)			
boots to the control of the control	e ·	Wean High	Vater Mark	Water Mark indicated by:		Che	Chemical Characteristics
Oil or scum line along shore objects	objects	Survey to av	Survey to available datum	1	Water is	r is clear	
Fine shell or debris deposits (foreshore)	(foreshore)	Physical markings	rkings		Wate	Water is discolored	ored
Physical markings/characteristics	stics	Vegetation l	Vegetation lines/changes in types	in types	Oily film	film	
Tidal gauges		The second second	The second	MC 00 1	Other:		
7.5							

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: MCS-WILSON City/County: MONT _____ Sampling Date: 6 25 1 3 State: HD Sampling Point: WG Applicant/Owner: Investigator(s): WMM, For Section, Township, Range:_ Landform (hillslope, terrace, etc.): ______ Slope (%):______ Slope (%):______ Slope (%):______ Slope (%):_____ Subregion (LRR or MLRA): 199A in LRRS Lat: ______ Long: ____ NWI classification: Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 📈 n Are "Normal Circumstances" present? Yes _____ No ____ Are Vegetation _____, Soil _____, or Hydrology _____ 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? Is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: HYDRIC SOIL IN DICATOR LINUCIAG. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) True Aquatic Plants (B14) _ Sparsely Vegetated Concave Surface (B8) ✓ High Water Table (A2) __ Hydrogen Sulfide Odor (C1) _ Drainage Patterns (B10) __ Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) ___ Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) __ Sediment Deposits (B2) __ Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) __ Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) X Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) X FAC-Neutral Test (D5) Field Observations: Yes ____ No _ Depth (inches): 761 Surface Water Present? Yes _ X No _ ___ Depth (inches):_ (a Water Table Present? Saturation Present? Yes X No Depth (inches): > 6" Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: WETLAND FRINGE FOR STIFFING WS

30 20 15	Species?	FAC FAC	Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: (B)
- 2 p	4	FAC	That Are OBL, FACW, or FAC: (A) Total Number of Dominant
15		FAC	Total Number of Dominant
15		FAC	
16			
10	610800	FAL	
			Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B
			Prevalence Index worksheet:
90	= Total Cov	0.5	Total % Cover of: Multiply by:
20% of	total cover:	18	OBL species x 1 =
			FACW species x 2 =
30	V	FACUL	FAC species x 3 =
			FACU species x 4 =
			UPL species x 5 =
			Column Totals: (A) (B)
			(B)
			Prevalence Index = B/A =
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
20	T. 10		3 - Prevalence Index is ≤3.01
20=	Total Cove	er /	4 - Morphological Adaptations (Provide supporting
_ 20% of t	otal cover:	_0_	data in Remarks or on a separate sheet)
100	1	~ 4.	Problematic Hydrophytic Vegetation ¹ (Explain)
		_	Problematic Hydrophytic Vegetation (Explain)
			10
			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
			Definitions of Four Vegetation Strata:
			T 14/3-2-1-1-1
			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 or equal to 3.28 ft (1
		-	m) tall.
60 =	Total Cove	10	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
_ 20% of to	otal cover:_	1 de	Woody vine - All woody vines are to the 2.00 %
			Woody vine – All woody vines greater than 3.28 ft in height.
			Hydrophytic Vegetation
-	Total Cove		Present? Yes No
		10	
		20% of total cover: 30	30 = Total Cover 20% of total cover; 6 SL

0	0	11	
_	()		

Depth	cription: (Describe t	o trie dep				or confin	m the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo. Color (moist)	x Features %		1 - 2		
0-31	10 KR 4/1	1000			Type	_Loc ²	Texture	Remarks
3.121		100	5 Mb 1/2				loan	
2:16	10416375	20	2.5YR 5/6	_30_		ETM.	siltlaam	
Type: C=Cc	oncentration, D=Deple	etion, RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins.	²Location: PI	=Pore Lining, M=Matrix.
ydric Soil I	ndicators:		0.4 (10.1)		ound On		Indica	tors for Problematic Hydric So
Black His Hydroger Stratified 2 cm Muc Depleted Thick Dar Sandy Mt MLRA Sandy Re Sandy Re	n Sulfide (A4) Layers (A5) ck (A10) (LRR N) Below Dark Surface rk Surface (A12) ucky Mineral (S1) (LR 147, 148) eyed Matrix (S4) edox (S5) Matrix (S6)		Polyvalue Bell Thin Dark Sur Loamy Gleyed Depleted Matr Redox Dark S Depleted Dark Redox Depres Iron-Mangane MLRA 136 Umbric Surfac Red Parent Ma	face (S9) I Matrix (F ix (F3) urface (F6 Surface (sions (F8) se Masses) e (F13) (N dplain Soi	(MLRA 1 2)) F7) 5 (F12) (L ILRA 136 Is (F19) (47, 148) .RR N, 6, 122) MLRA 14	148) Co Pi Ve Ot 3Indic 8) wetl	cm Muck (A10) (MLRA 147) past Prairie Redox (A16) (MLRA 147, 148) edmont Floodplain Soils (F19) (MLRA 136, 147) ery Shallow Dark Surface (TF12) her (Explain in Remarks) eators of hydrophytic vegetation a and hydrology must be present, ess disturbed or problematic.
	ayer (if observed):				.,		2 5,110	os distarbed or problematic.
estrictive La			_					
testrictive La	A CONTRACTOR						Hydric Soil F	Present? Yes No
estrictive La	nes):							2002. 9/2/3

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: M(5- WILSO? City/County: MowT _____ Sampling Date: 6 2 5 13 ___ State: _____ Sampling Point: W-7 Applicant/Owner: ____ Investigator(s): WHM, FT Section, Township, Range:_ Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): ______ Slope (%): Subregion (LRR or MLRA): 149A in LRKS Lat: ______ Datum:____ NWI classification: ____ Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No ____ Are "Normal Circumstances" present? Yes _____ No Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? $r^{1/3}$ (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 Is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: HYDRIC SOIL INDICATOR INPKING. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) __ True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) — Hydrogen Sulfide Odor (C1) __ Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) __ Saturation (A3) __ Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) __ Sediment Deposits (B2) __ Recent Iron Reduction in Tilled Soils (C6) ___ Crayfish Burrows (C8) __ Drift Deposits (B3) ___ Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) __ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) ★ Water-Stained Leaves (B9) Microtopographic Relief (D4) ___ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes _____ No _ Depth (inches):_ Surface Water Present? Yes ____ No / Depth (inches): Water Table Present? Saturation Present? Yes ____ No ___ Depth (inches): Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks SFEP WETT AND ADJACEN TO WILD CAT PD, ABJUTION WZ

Tree Stratum (Plot size:)	Absolute % Cover	Dominant	Indicator	Sampling Point: W7
1. NYSSA STLVATILA	35	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2. ALER RUBBUM 3.			FAC	Total Number of Dominant
1				Percent of Dominant Species (B)
5				That Are OBL, FACW, or FAC: (A/E
				Prevalence Index worksheet:
	60:	= Total Cove	er .	Total % Cover of: Multiply by:
50% of total cover: _30	20% of	total cover:	12	OBL species x 1 =
apling/Shrub Stratum (Plot size:)		- 1		FACW species x 2 =
LINDERA BENTOIN		1	FACW	FAC species x 3 =
CARPINUS CAPOLINTEANA		¥_	FAC	FACU species x 4 =
	-			UPL species x 5 =
				Column Totals: (A) (B
	-			Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
			_	2 - Dominance Test is >50%
	30	T-1-10	-	3 - Prevalence Index is ≤3.01
,50% of total cover:15		Total Cove total cover:	6	4 - Morphological Adaptations ¹ (Provide supportin
erb Stratum (Plot size: 5 P)	20 /6 01	lotal cover	0	data in Remarks or on a separate sheet)
SYMPLECIAL PUS FORTIOUS	40	V	081	Problematic Hydrophytic Vegetation ¹ (Explain)
ASMOMAKUIS ACKINOZO	1.6	-	60-11	(Explain)
	-10	IV	FICH	¹ 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.
				S1/S- 1 W
				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
				m) tall.
				Herb – All herbaceous (non-woody) plants, regardless
27	70 =	Total Cover		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 35	_ 20% of t	otal cover:_	14	
oody Vine Stratum (Plot size:)				Woody vine – All woody vines greater than 3.28 ft in height.
				neight.
				Hydrophytic /
		Total Cover		Vegetation Present? Yes No
		otal cover:		765 <u>V</u> 110
50% of total cover:				

	71	

Depth (inches)	Matric	inc dop	h needed to docum	nem me in	uicator (or confirm	tne ab	sence of i	ndicat	ors.)		
	Matrix Color (moist)	%	Redo: Color (moist)	x Features %	Tuna	1 2	Ŧ.,					
0-211	1016 412	100	Color (moist)		Type ¹	_Loc ²	Text			Rema	irks	_
7 171	1070513						SIHU	Clary	1000			
6-16	LO TROLS	80	2.57111	20		PL		1-	11			
								_				
					-		-					_
-				-	_							
Type: C=Co	ncentration, D=Deple	etion, RM=	Reduced Matrix, MS	=Masked S	and Grai	ns.	² Locatio	on: PL=Pa	ore Lini	ng, M=Ma	triv	
Hydric Soil Ir	ndicators:							Indicators	for Pr	oblemation	c Hydric Sc	ils ³
Histosol (Dark Surface							410) (MLR		
— Histic Epi — Black His	pedon (A2)		Polyvalue Bel	ow Surface	(S8) (MI	RA 147,		Coast	Prairie	Redox (A		
	Sulfide (A4)		Thin Dark Sur Loamy Gleyed	tace (S9) (I	MLRA 14	7, 148)				7, 148)		
	Layers (A5)		Depleted Matr)			Pledm	ont Flo	odplain So 6, 147)	oils (F19)	
	k (A10) (LRR N)		Redox Dark S								face (TF12)	
	Below Dark Surface	(A11)	Depleted Dark	Surface (F	7)					n in Rema		
	k Surface (A12)	2D 11	Redox Depres									
	ucky Mineral (S1) (LF 147, 148)	KK N,	Iron-Mangane		(F12) (LI	RR N,						
	eyed Matrix (S4)		MLRA 136 Umbric Surfac		DA 126	122)		3,				
_ Sandy Re	dox (S5)		Piedmont Floo	dplain Soils	s (F19) (N	MLRA 148	3)	wetland	rs of ny Lhydrol	arophytic	vegetation a	and
	Matrix (S6)		Red Parent Ma	aterial (F21	(MLRA	127, 147)		unless	disturbe	ed or probl	lematic.	
octrictivo I	ayer (if observed):											
Туре:			-				Hydric	Soil Pres	ent?	Yes	No_	/
Type: Depth (inch	nes):					-				_		
Type: Depth (inch												
Type: Depth (inch		. 506	В									
Type: Depth (inch emarks:	WATER FROM	- 3 F G	P									
Type: Depth (inchemarks:	WATER FROM	IND A	APPOLICABL	FH	1000	· ća		A LOVE	Di M			
Type: Depth (inchemarks:	WATER FROM	IND A	APPOLICABL	(E H	Y DM	i So	111	1 DI LA	NOT			
Type: Depth (inchemarks:		IND A	APOLICARI	CE H	H DM	i So	1,1.	1 DI LA	1 TO A			
Type: Depth (inchemarks:	WATER FROM	IND A	Applicas	CE H	y DN	i So	1,1.	DI LA	170K	2		
Type: Depth (inchemarks:	WATER FROM	HA DUI	Applicas	(E H	Y DW	i So	111	DI LA	TO V	v		
Type: Depth (inchemarks:	WATER FROM	A DU	P APPOLICABL	KE H	Y DW	î So	1,1.	DI LA	NOLI	w		
Type: Depth (inchemarks:	WATER FROM	IND W	APPOLICABL	E H	y an	i So	1,1.	DI LA	NOL			
Type: Depth (inchemarks:	WATER FROM	IND W	APPLICABL	E H	y and t	i So	1,1.	ADI LA	NOL			
Type: Depth (inch temarks:	WATER FROM	IND W	APPLICABL	CE H	Ma Y	i So	1,1.	ADI LA	NOF	2		
Type: Depth (inch temarks:	WATER FROM	HA DUI	Applicas	TE H	4 DM	c So	1,1.	DI LA	NOT			
Type: Depth (inchemarks:	WATER FROM	A DU	Apolicas	CE H	Y DAY	c So	1, 1.	DI LA	NOT			
Type: Depth (inchemarks:	WATER FROM	IND W	Apolicas	KE H	Y DM	i So	1, 1.	ADI LA	NOT I			
Type: Depth (inch Remarks:	WATER FROM	IND W	APPOLICABL	E H	Y DM	i So	1,1.	DI LA	170 pg			
Type: Depth (inch emarks:	WATER FROM	IND W	APPLICABL	E H	Y DM	i So	1, 1.	DI LA	NOT			
Type: Depth (inchemarks:	WATER FROM	IND W	PAPOLICAS	CE H	Y DM	c So	1, 1.	DILA	NOT			

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: MID COUNTY - OPTION D	City/County: MONTGOMERY CO Sampling Date:4/6/11
	State: MD Sampling Point: W 8
the same of the sa	Section, Township, Range:
	_ Local relief (concave, convex, none): Slope (%):
Subregion (LRR or MLRA): MARA PARTITION 1911	Long: Datum:
Soil Map Unit Name:	
	NWI classification;
Are climatic / hydrologic conditions on the site typical for this time Are Vegetation, Soil, or Hydrology significations.	이번 경기에 있는 것 같아요. 그는 그리고 한 경기를 가는 것이 되었다. 그리고 있는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이다.
Are Vegetation, Soil, or Hydrology natura	
	wing sampling point locations, transects, important features, etc
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that a	pply) Surface Soil Cracks (B6)
	atic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	Sulfide Odor (C1) Drainage Patterns (B10)
[[[[]] [] [] [] [] [] [] []	Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) of Reduced Iron (C4) Dry-Season Water Table (C2)
Name	on Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
[[[[[[[[[[[[[[[[[[[Surface (C7) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Ex	plain in Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13) Field Observations:	FAC-Neutral Test (D5)
Surface Water Present? Yes No Depth (in	about 0
Water Table Present? Yes X No Depth (in	
Saturation Present? Yes X No Depth (in	
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial	ohotos, previous inspections), if available:
Remarks:	
Remarks: SURFACE WATER PRESENT IN UN	M WENS
PHOTO 12	

VEGETATION (Four Strata) – Use scientific n	ames or	plants.		WIO Sampling Point:
		-6	nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)			? Status	Number of Dominant Species
1. WARMY JUGIANS NIGRA				That Are OBL, FACW, or FAC:3(A)
2. RED MAPLE ACER PUBLUM	35	D	LRAC	Total Number of Dominant
3. CHERRY PRUNIS SEROTINA	5		YFAC U	Species Across All Strata: (B)
4				Openies / Ni otrata.
				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 35% (A/B)
6				Prevalence Index worksheet:
7				
8				Total % Cover of: Multiply by:
		= Total Co	over	OBL species 90 x1 = 90
Sapling/Shrub Stratum (Plot size:)				FACW species0 x 2 =0
1. SPILLBUSH LINGUEA REAZOIS	50	7	VEAL	FAC species
				FACU species x 4 = 200
2				
3				UPL species
4				Column Totals: 260 (A)
5				219
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				✓2 - Dominance Test is >50%
9				√3 - Prevalence Index is ≤3.0 ¹
10) [] [] [] [] [] [] [] [] [] [
	50	= Total Co	over	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Herb Stratum (Plot size:)	A STATE			Problematic Hydrophytic Vegetation¹ (Explain)
1. CKUNK CABBAGE SYMPLECARPUS	80	D	-OB'L	Problematic Hydrophytic Vegetation (Explain)
2. GARLIC MUSTARD Alliavia petidat	a 15		VEAC U	
3. VIOLET SP. VIOLA SP.				¹ Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
4. SPRING BRUTY CLAYTONIA SP.				Definitions of Four Vegetation Strata:
5. MLD on and Allium Ascoloevum				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. WILD STRAWBURRY	T			more in diameter at breast height (DBH), regardless of
7. SPHAGNUM MOSS	10		V OBL	height.
8				
9.				Sapling/Shrub – Woody plants, excluding vines, less
		-		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10			-	Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				
	120	= Total Co	ver	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:)				height.
1				
2.				
3		-	-	
4				Hydrophytic
5				Vegetation
6				Present? Yes No
	NA	= Total Co	ver	
2		10(0)	VCI	
Remarks: (Include photo numbers here or on a separate sh	ieet.)			
DHOM #13				

0	0	11	

Sampling Point: N.D

Depth	scription: (Describe Matrix		Redo	x Feature	S			
(inches)	Color (moist)	100	Color (moist)	%	_Type ¹	Loc²		Remarks
1-12	2.5Y 5/2	80	10 YR 5/6	20		M	silt loams	
_ Histosol		etion, RM	Dark Surface	(S7)			2 cm Mu	Lining, M=Matrix. or Problematic Hydric Soils ³ ck (A10) (MLRA 147)
Black Hi Hydroge Stratified 2 cm Mu Depleted Thick Da Sandy M MLRA Sandy G Sandy Re Stripped	pipedon (A2) stic (A3) sn Sulfide (A4) d Layers (A5) lck (A10) (LRR N) d Below Dark Surface lrk Surface (A12) lucky Mineral (S1) (LR 147, 148) leyed Matrix (S4) edox (S5) Matrix (S6)		Polyvalue Be Thin Dark Su Loamy Gleye Depleted Mat Redox Dark S Depleted Dari Redox Deprei Iron-Mangane MLRA 136 Piedmont Floor	rface (S9) d Matrix (F rix (F3) Surface (F6 k Surface ssions (F8 ese Masse b) ce (F13) (M	(MLRA 14 F2) 6) (F7)) s (F12) (L //LRA 136	RR N,	148) Coast Pro- (MLRA) Piedmon- (MLRA) Red Pare Very Sha Other (Extended) 3 Indicators of wetland here.	airie Redox (A16) A 147, 148) It Floodplain Soils (F19) A 136, 147) In Material (TF2) Illow Dark Surface (TF12) In Remarks) In Hydrophytic vegetation and hydrology must be present, sturbed or problematic.
strictive L Type; Depth (incl	ayer (if observed): hes):						Hydric Soil Presen	. /
marks:								

		Wate	Waters of the U.S. Data Sheet	ata Sheet		
Project: MCS Wilson Farm				Feature ID: W1	W1	Stream Order: 1
Date: 6/25/2013		State: MD		Photos: 4509		
Crew: ET/WMM		County: Montgomery	gomery	Last Flag Number: NA	umber: N/A	
Feature Hydrologic Class (check one):	Class (check one):					
Tidal	Perennial	ia	Intermittent (SNE			Ephemeral (SNE)
TNW (Subject to ebb and flow)	nd (Flowing year round)	nial (C)	RPW – Seasonal (must flow at least 3 months a	00	Non-RPW draini Non-RPW erosic	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	(Flowing year round)	round)	year)	00	Non-RPW with a	Non-RPW with adjacent wetland
Describe rational			Į.	0	Non-RPW wetlar	Non-RPW wetland adjacent or abutting upstream
for hydrologic class:					(outside of study area)	/ area)
Feature Description	Feature Description: (check all that apply)					
Shape (wi	Shape (with respect to top of bank)	nk)	7	Substrate	0.00	Vegetation
✓ Natural Channel Shape	Width: 8-15 ft.	Depth: 2-8"	Silts	✓ Sands	Muck	RB: Spice bush, musclewood, skunk
Artificial (man-made)	Bank Erosion/stability:	stabilit	✓ Cobbles	<	Other:	cabbage, red maple, multiflora rose
Manipulated (man-altered)	ed) Minor erosion	3	Bedrock	Concrete		
Other:	Side slope:	Side slope 1:1(to vertical)	✓ 2:1	3:1	4:1(<i>or less</i>)	LB: Spice bush, musclewood, skunk
Notes: Originates from 24" pipe culvert under Wildcat Rd.	4" pipe culvert unde	er Wildcat Rd. B	Bank depth 2-4'.	Flows into W	12.	cabbage, red maple, multiflora rose
Flow & Biological C	Flow & Biological Characteristics: (check all that apply)	all that apply)				
Surface Flow	Sui			Biologica	Biological Characteristics	is
Multiple/braided channels	els	Type: Forested	sted Width: 100+ ft.		Federally listed species	d species
Poorly/undefined channel	√	✓ Wetland fringe	inge		Fish/spawn areas	eas
Overland Sheetflow					Other environn	Other environmentally sensitive areas
Notes: Abuts W4						
Non-tidal tributary	Non-tidal tributary has: (check all that apply; include photos for each & list photo #)	ply; include photos	s for each & list p	photo #)		
Bed and Bariks			Ordinary	Water W	STEE	
✓ Yes	Clear, natural line impressed on the bank	essed on the bank	✓ Sedim	Sediment deposition	Se	Sediment sorting
No	Changes in the character of soil	er of soil	✓ Water	Water staining	✓ Sc	Scour
	Shelving		✓ Presen	Presence of litter and de	L	Observed/predicted flow events
\	Vegetation matted down, bent, or absent	n, bent, or absent	✓ Destru	Destruction of terrestrial veg.		Abrupt change in plant community
Tidal tributany has	Cohook all that annin	include photos for	and & list phot	0 4)		
High Tid	High Tide Line Wean High Water Mark indic	Mean High	Mean High Water Mark indicated	dicated by:		Chemical Characteristics
Oil or scum line along shore objects	hore objects	Survey to a	Survey to available datum		Water is clear	ar
Fine shell or debris deposits (foreshore)	osits (foreshore)	Physical markings	arkings		Water is discolored	colored
Physical markings/characteristics	acteristics	Vegetation	Vegetation lines/changes in types	types	Oily film	
Tidal gauges					Other:	
Notes:						

Date: 6/25/2013 Crew: ET/WMM		State: MD County: Montgomery	ontgomery		Photos: 4510 Last Flag N	Photos: 4510 Last Flag Number: N/A	r: N/A	ou cam Order:
Feature Hydrologic Class (check one):	ss (check one):					C		
Tidal	Perennial		Interi	Intermittent (SNE)	(E)			Ephemeral (SNE)
TNW (Subject to ebb and flow)	TNW – Perennial (Flowing year round)	und)	RPW -	RPW – Seasonal (must flow at least 3 months a	must nths a	O Non-I	PW draini PW erosio	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	RPW – Perennial (Flowing year round)	und)	year)			O Non-F	VPW with a	Non-RPW with abutting wetland Non-RPW with adjacent wetland
Describe rational						O Non-F	PW wetlan	Non-RPW wetland adjacent or abutting upstream
for nyarotogic class.						(outsi	(outside of study area)	area)
Feature Description: (check all that apply)	heck all that apply)							
Shape (with r	Shape (with respect to top of bank	9			Substr	rate		Vegetation
✓ Natural Channel Shape	Width: 10-15 ft.	Depth: 2-12"		Silts	✓ Sands	S	Muck	RB: Red maple, musclewood, spice
Artificial (man-made)	Bank Erosion/stability:	ability:	<	Cobbles	✓ Gravel	el	Other:	bush, multiflora rose, skunk
Manipulated (man-altered)	Severe erosion			Bedrock	Concrete	rete		cabbage
Other:	Side slope 1:1(to vertical)	l(to vertical)	✓ 2:1		3:1		4:1(or less)	LB: Red maple, musclewood, spice
$\it Notes$: Originates from pipe culvert under Wildcat Rd. Bank depth 2-8 ft. Crosses under Wildcat	vert under Wildcat F	ld. Bank deptl	h 2-8 ft. C	raceae IIII	der Wildca	cat Rd. downstream.	/nstream.	
Flow & Biological Characteristics: (check all that apply)	- taliant fallant al			TOSSES HIN			A CHARLES	bush, multiflora cabbage
Surface Flow	acteristics: (cneck at	l that apply)		100060 411				bush, multiflora cabbage
✓ Single channel – confined	Subsurface Flow	l that apply)		Cooco un	Biolo	gical Cha	Biological Characteristics	4.4
Multiple/braided channels	Subsurface Flow Yes	<i>I that apply</i>) ✓ Riparian corridor	corridor	000000	Biolo	gical Charact	acteristics	
Overland Sheetflow	Subsurface Flow Yes No	I that apply) Value Control Value Contr	corridor	Width: 100+ ft.	Biolo 0+ ft.	Habitat	Characteristics itat for: Federally listed species	7.0
Notes:	Subsurface Flow Yes No Unknown	Tthat apply) Variation Priparian corrider Type: Foresteder Variation Wetland fringer Priparian Pripar	corridor rested fringe	Width: 10	Biolo 0+ ft.	gical Cha Habitat Fish	Characteristics itat for: Federally listed s Fish/spawn areas Other environmen	0 5 10
Non-tidal tributary has	Subsurface Flow Yes No Unknown	I that apply) ✓ Riparian Type: For ✓ Wetland	corridor ested fringe	Width: 10	Biolo 0+ ft.	gical Cha Habitat Fedd Fish	acteristics for: for: srally listed /spawn are: ar environm	0 5 10
and Banks	Surface Flow Subsurface Flow Subsurface Flow Itiple/braided channels Orly/undefined channel Flow Subsurface Flow Yes V Riparian corridor Type: Forested Width: 100+ ft. V Wetland fringe Flow Flow Flow Width: 100+ ft. Flow Flow Flow Flow Flow Flow Flow Flow	Tthat apply) Riparian Type: For Wetland include phot	corridor rested fringe	Width: 10	Biolo 0+ ft.	gical Cha Habitat Fed Fish	racteristics for: for: srally listed /spawn are sr environn	0 5 10
	Subsurface Flow Yes No Unknown (check all that apply	Tthat apply) Riparian Type: For Wetland include phot	corridor rested fringe	Width: 10	Biolo 00+ ft. hoto #)	Hab	racteristics for: forally listed spawn arear environm	0 5 10
No Cha	Subsurface Flow Subsurface Flow A Riparian c Type: Fore el	Tthat apply) A Riparian Type: For Wetland Wetland Photosed on the banksed on the banksed The control of the control	corridor rested fringe fringe	Width: 10 Width: 10 Width: 10 Sediment	Width: 100+ ft. Width: 100+ ft. & list photo #) Sediment deposition	Hab	racteristics for: for: srally listed/spawn are ar environn	0 5 10
✓ Veg	Subsurface Flow Subsurface Flow ed Yes	Tthat apply) A Riparian Type: For Wetland :	corridor rested fringe fringe	Width: 100+ ft. Width: 100+ ft. Water staining Presence of litt	Biolo 0+ ft. 0+ ft. deposition ining of litter an	ical (Hab	racteristics for: for: spawn areas r environment Sedim Scour	0 5 10
	Subsurface Flow Subsurface Flow Mo el Ves Unknown has: (check all that apply Clear, natural line impression the character of Shelving Vegetation matted down,	Tthat apply) ✓ Riparian Type: For ✓ wetland include photograms ged on the banl of soil bent, or absent	corridor rested fringe fringe os for each	Width: 10	Biological Ch Habite Habite Fe Width: 100+ ft. Fi Fi Fi Graphoto #) & list photo #) dinary High Water Mark Sediment deposition Water staining Presence of litter and debris Destruction of terrestrial ves	ical (Habi	racteristics for: for: srally listed /spawn are. r environm Se / Sc / Ab	3 0 0 2 2
✓ Lea	Subsurface Flow Subsurface Flow Yes No Type: For Include phote Clear, natural line impressed on the bank Changes in the character of soil Shelving Vegetation matted down, bent, or absent Leaf litter disturbed	Type: For Type: For Wetland wetland of soil bent, or absent	corridor each os for each v	Width: 10 Width: 10 Water sta Presence Presence	Biological Cha Habital Width: 100+ ft.	Habi	racteristics for: for: for: srally listed /spawn are: renvironm See / Sc. Oth Ab	
Tidal tributary has: (ch	Subsurface Flow d Yes Is No Is No Clear, natural line impress Changes in the character of Shelving Vegetation matted down, Leaf litter disturbed (check all that apply; inc	Tthat apply)	corridor rested fringe fringe k V t V reach & V	Width: 100+ ft. Width: 100+ ft. Width: 100+ ft. Water staining Presence of litter a Destruction of terr Presence of wrack list photo #)	Biolo 0+ ft. 0+ ft. deposition ining of litter an on of terre of wrack l	Hab Hab	racteristics for: for: srally listed /spawn are or environm Se Ob Ab	
Tidal tributary has: (ch	Subsurface Flow Yes Yes Ves No Type: Forested Width: 100 Has: (check all that apply; include photos for each & list photos finding	Tthat apply)	corridor rested fringe fringe os for each k V k V k V Water	Width: 100+ ft.	Biolo 0+ ft. 0+ ft. igh Wate deposition ining of litter an on of terre of wrack l)	ical (Habi	racteristics for: for: srally listed /spawn are. r environm Se / Sc / Ot	
Tidal tributary has: (ch High Tide Li	Subsurface Flow Yes No Vinknown Check all that apply ar, natural line impresinges in the character ving etation matted down, flitter disturbed eck all that apply; ince objects	Tthat apply) A Riparian Type: For Type: For Wetland Wetland Sed on the band Sed photos for Mean Hig	corridor ested fringe fringe os for each k reach & I	Width: 10 Width: 10 Water sta Presence Destructi Presence Destructi Presence Dark indic datum	Biolo 0+ ft. 0+ ft. igh Wate deposition ining of litter an on of terre of wrack l) ated by:	Habi Mar	naracteristics na for: derally listed sh/spawn area ther environm Sec J Scc Abb g. Abb g. Ch	
Tidal tributary has: (check all that High Tide Line Oil or scum line along shore objects Fine shell or debris deposits (foreshore)	Subsurface Flow Yes No No Unknown (check all that apply ar, natural line impresinges in the character of litter disturbed eck all that apply; inc plects (foreshore)	Tthat apply) Variable Riparian corridor Type: Forested Variable Variable Variable Variable Variable Construction Variable Construction Variable Construction Variable Construction Variable Construction Variable Construction Construction Variable Construction Construction Variable Construction Construction Variable Construction Construction Construction Variable Construction Construction Variable Construction Cons	Riparian corridor Type: Forested Widtl Wetland fringe Wetland fringe Wetland fringe Ordina In the bank In the bank Ordina In the bank It In	Width: 10 Width: 10 Width: 10 Walter sta Presence Destructi Presence Destructi Presence Destructi Presence Dark indic	Biolo 0+ ft. 0+ ft. igh Wate deposition ining of litter an on of terre of wrack l ated by:	Habi Mar debu	at for: aderally listed specish/spawn areas ther environmentall Sedimen Sedimen Observed Abrupt c G. Abrupt c G. Other: Chemics Water is clear	
Tidal tributary has: (check a High Tide Line Oil or scum line along shore obje Fine shell or debris deposits (fore Physical markings/characteristics	Subsurface Flow Yes No Ves No Vinknown Check all that apply ar, natural line impresinges in the character of litter disturbed eck all that apply; income objects (foreshore) istics	I that apply) ✓ Riparian Type: For ✓ Wetland: For of soil Survey to Physical: Vegetatio	corridor rested fringe fringe fringe by costor each c	Riparian corridor Type: Forested Width: 100+ Wetland fringe Wetland fringe Wetland fringe Unde photos for each & list photo Ordinary High Type: Forested Width: 100+ Wetland fringe Ordinary High Forested Wist photo Ordinary High Fresence of Destruction Fresence of Presence of Photos for each & list photo #) Mean High Water Mark indicate Survey to available datum Physical markings Vegetation lines/changes in types	Biolo 0+ ft. 0+ ft. igh Wate deposition ining of litter an on of terre of wrack l) ated by:	ical (Habi	aracteristics at for: aderally listed sh/spawn are: ther environm Se Ab Oth Water is clean Water is clean Water is disco	

Project: MCS Wilson		Frank	01.01.0	· De Luca	Feeture ID	ID- WS		۱	Stream Order:
Date: 6/25/2013		State: MD			Photos: 4511	1511			Su cam Order
Crew: et/wmm		County: Montgomery	ery		Last Flag N		umber: N/A	N	
Feature Hydrologic Class (check one):	s (check one):								
Tidal	Perennial		ntermit	Intermittent (SNE				-27	Ephemeral (SNE)
TNW (Subject to ebb and (flow)	TNW – Perennial (Flowing year round)	0	PW – Se	RPW – Seasonal (must flow at least 3 months a	nust C	Non	-RPW	drainin	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	_	ınd)	year)			Non	-RPW	with at with ac	Non-RPW with abutting wetland Non-RPW with adjacent wetland
Describe rational Originates	Originates from spring. Two ephemeral channels feed upstream.	ephemeral char	inels fe	ed upst	ream.	Non (out	Non-RPW wetland adj (outside of study area)	wetland study a	Non-RPW wetland adjacent or abutting upstream (outside of study area)
Feature Description: (check all that apply)	eck all that apply)								
Shape (with res	respect to top of bank)	3	7		Substrate	te	5		Vegetation
Natural Channel Shape	Width: 8-20 ft.	Depth: 2-18"	Silts	ts	✓ Sands		Muck	웃	RB: Stiltgrass, ferns, tulip poplar, black gum,
Artificial (man-made)	Bank Erosion/stability:	==	✓ Co	Cobbles	✓ Gravel		Other:	er:	bittersweet, jewel weed, chestnut oak, skunk cabbage, musclewood, hay scented fem,
Manipulated (man-altered)	Moderate erosion	on	✓ Be	Bedrock	Concrete	ete			cinnamon fern
Other:	Side slope:✓1:	1:1(to vertical)	2:1		3:1		4:1(or less)	less)	LB: Stiltgrass, fems, tulip poplar, black gum,
$^{Notes:}$ Drains into wetland on opposite side of Wildcat Rd. through 24" pipe culvert.	opposite side of	Wildcat Rd. throu	gh 24"	pipe cu	lvert. Bank	ık depi	depth 1-10 ft.	#	bittersweet, Jewel weed, chestnut oak, skunk cabbage, musclewood, hay scented fern, cinnamon fern
Flow & Biological Chara-	Biological Characteristics: (check all that apply) ce Flow Subsurface Flow	l that apply)			Riologica		Characteristics	istics.	
Single channel - confined	Yes	✓ Riparian corridor	dor				abitat for:		
Multiple/braided channels	No	Type: Forested	100	Width: 100+ ft	+ #	Fe	Federally listed species	listed	species
Overland Sheetflow	CIRRIOWI	A Menand Hinge	C			Of I	Other environme	ironme	Other environmentally sensitive areas
Notes:									
Non-tidal tributary has: (check all that apply; include photos for each & list photo #)	check all that apply	; include photos fo	r each &	list pho	to #)				
Vec Clear	Clear natural line impressed on the hank	sed on the hank	NO CITA	dunary H	Sediment denosition	Van Brita		Cod	Sediment corting
	Changes in the character of soil	of soil	√.	Water staining	ning		<	Scour	ML.
Shelving	ing		✓ P	resence o	Presence of litter and de	debris		Obs	Observed/predicted flow events
Vege	Vegetation matted down, bent, or absent	bent, or absent	√ D	estructio	Destruction of terrestria	rial veg.		Abr	Abrupt change in plant community
✓ Leafi	Leaf litter disturbed		√ P	resence o	Presence of wrack line	1.54		Other:	er:
Tidal tributary has: (check all that apply; include photos for each & list photo #,	ck all that apply; inc	clude photos for each	h & list	photo #)					
THE STATE OF THE PARTY OF THE P	9	Wean High W	Vater Ma	Mark indicated	ited by:			Ch	Chemical Characteristics
Oil or scum line along shore objects	bjects	Survey to available datum	lable dat	mu			Water is clear	clear	
Fine shell or debris deposits (foreshore)	foreshore)	Physical markings	ings				Water is discolored	disco	lored
Physical markings/characteristics	tics	Vegetation lines/changes in types	es/chang	es in typ	es		Oily film	n	
Tidal gallges							Other:		

	T .	Wilson Farm S	Specimen T	ree Inventory	1
Tree Number	Species - Common Name	Species - Scientific Name	DBH	Condition	Comments
T1	Red maple	Acer rubrum	52	Poor	mainstem decay, deadwood, cavities
T2	Red maple	Acer rubrum	34	Fair	deadwood, broken limbs
T3	Red maple	Acer rubrum	31	Poor	decay, busted limbs, broken top
T4	Red maple	Acer rubrum	35	Fair	decay spot, broken limbs
T5	Tree of heaven	Ailanthus altissima	28	Fair	interfering branches
T6	Black walnut	Juglans nigra	35	Fair	deadwood, twin
T7	Black walnut	Juglans nigra	24	Fair	deadwood, vines
T8	Black walnut	Juglans nigra	32	Fair/poor	mainstem crack, deadwood
Т9	Black walnut	Juglans nigra	30	Poor	decay spot from injury, vines, deadwood
T10	Black walnut	Juglans nigra	26	Fair	lean, deadwood
T11	Black walnut	Juglans nigra	26	Good/fair	some deadwood
T12	Black walnut	Juglans nigra	28	Fair	deadwood, some decay
T13	Black walnut	Juglans nigra	28	Fair	deadwood
T14	Green ash	Fraxinus pennsylvanica	28	Fair	deadwood, lean
T15	Tulip poplar	Liriodendron tulipifera	41	Good/fair	minor lean, deadwood
T16	Green ash	Fraxinus pennsylvanica	25	Good/fair	included bark, deadwood, twin
T17	Northern red oak	Quercus rubra	26	Good	
T18	Tulip poplar	Liriodendron tulipifera	31	Good	
T19	Tulip poplar	Liriodendron tulipifera	24	Good	
T20	Red maple	Acer rubrum	27	Poor	mainstem decay, cavity, dying
T21	White oak	Quercus alba	31	Good	
T22	White oak	Quercus alba	37	Poor	hollow, base decay, cavity
T23	Tulip poplar	Liriodendron tulipifera	28	Good/fair	included bark
T24	Red maple	Acer rubrum	30	Poor	dying, decay
T25	Tulip poplar	Liriodendron tulipifera	27	Good	deadwood
T26	Tulip poplar	Liriodendron tulipifera	27	Fair	mainstem crack
T27	Red maple	Acer rubrum	24	Poor	cavities, suckering
T28	Tulip poplar	Liriodendron tulipifera	32	Good	vines
T29	Tulip poplar	Liriodendron tulipifera	28	Good	vines
T30	Tulip poplar	Liriodendron tulipifera	25	Fair	lean, deadwood
T31	Red maple	Acer rubrum	25	Good/fair	included bark
T32	Tulip poplar	Liriodendron tulipifera	32	Good	
T33	Tulip poplar	Liriodendron tulipifera	29	Good	
T35	Green ash	Fraxinus pennsylvanica	26	Fair/poor	busted lead, cavities
T36	Tulip poplar	Liriodendron tulipifera	26	Good	
T37	Tulip poplar	Liriodendron tulipifera	28	Good	some lean
T38	Tulip poplar	Liriodendron tulipifera	24	Good	
T39	Tulip poplar	Liriodendron tulipifera	28	Poor	major mainstem decay, hazard tree
T40	Tulip poplar	Liriodendron tulipifera	27	Good	
T41	Chestnut oak	Quercus prinus	26	Good	
T42	Chestnut oak	Quercus prinus Liriodendron tulipifera	27	Good	
T43 T44	Tulip poplar Northern red oak	Quercus rubra	29 26	Good	
T45	Chestnut oak	Quercus rubra Quercus prinus	-	Good	daadwaad
T46	Chestnut oak	Quercus prinus	26 24	Good	deadwood
T47	Chestnut oak	Quercus prinus	25	Good	
T48	Northern red oak	Quercus rubra	25	Good	some deadwood
T49	Chestnut oak	Quercus prinus	26	Fair	swollen trunk, lean, deadwood
T50	White oak	Quercus alba	24	Good	some deadwood
T51	Tulip poplar	Liriodendron tulipifera	25	Good	Some deadwood
T52	Tulip popiar	Liriodendron tulipifera	32	Good	
T53	Pignut hickory	Carya glabra	28	Fair	mainstem crack
T54	Chestnut oak	Quercus prinus	28	Fair	included bark
T55	Tulip poplar	Liriodendron tulipifera	24	Good	moraded bark
T56	Tulip poplar	Liriodendron tulipifera	26	Good	
T57	Tulip poplar	Liriodendron tulipifera	28	Good	
T58	Chestnut oak	Quercus prinus	27	Fair	deadwood
T59	Chestnut oak	Quercus prinus	30	Fair	vines, deadwood

T60	Tulip poplar	Liriodendron tulipifera	25	Good	
T61	Chestnut oak	Quercus prinus	61	Good	
T62	Chestnut oak	Quercus prinus	30	Good	
T63	Chestnut oak	Quercus prinus	29	Fair	included bark, split at DBH
T64	Tulip poplar	Liriodendron tulipifera	26	Good	
T65	Tulip poplar	Liriodendron tulipifera	26	Good	lean
T66	Tulip poplar	Liriodendron tulipifera	25	Good	
T67	Chestnut oak	Quercus prinus	24	Good/fair	twin, included bark
T68	Chestnut oak	Quercus prinus	25	Good	
T69	Chestnut oak	Quercus prinus	24	Good	
T70	Chestnut oak	Quercus prinus	28	Good	
T71	Chestnut oak	Quercus prinus	27	Good	
T72	Chestnut oak	Quercus prinus	26	Good	
T73	Northern red oak	Quercus rubra	26	Good	
T74	Tulip poplar	Liriodendron tulipifera	28	Good/fair	trunk scar
T75	Chestnut oak	Quercus prinus	31	Good	
T76	Chestnut oak	Quercus prinus	24	Good	
T77	Chestnut oak	Quercus prinus	25	Fair	twisted growth form
T78	Tulip poplar	Liriodendron tulipifera	26	Good	
T79	Northern red oak	Quercus rubra	24	Good	
T80	Tulip poplar	Liriodendron tulipifera	28	Good	
T81	Black gum	Nyssa sylvatica	24	Good/fair	curved growth form
T82	Tulip poplar	Liriodendron tulipifera	26	Good	
T83	Tulip poplar	Liriodendron tulipifera	33	Fair	split at DBH
T84	Chestnut oak	Quercus prinus	29	Good	slight lean
T85	Chestnut oak	Quercus prinus	26	Good	Silgite learn
T86	Chestnut oak	Quercus prinus	28	Fair	sooty mold
T87	Chestnut oak	Quercus prinus	24	Good	Sooty mora
T88	Chestnut oak	Quercus prinus	24	Good	
T89	Chestnut oak	Quercus prinus	26	Fair	twisted growth form
T90	Chestnut oak	Quercus prinus	24	Good	twisted growth form
T91	White oak	Quercus alba	24	Good	
T92	Chestnut oak	Quercus prinus	24	Good	
T93	Northern red oak	Quercus rubra	24	Fair/poor	base rot, deadwood
T94	Chestnut oak	Quercus prinus	25	Good	lean
T95	Tulip poplar	Liriodendron tulipifera	27	Good	lean
T96	Chestnut oak	Quercus prinus	25	Good	slight lean
T97	Pignut hickory	Carya glabra	26	Poor	lightning strike, canopy broken
T98	Tulip poplar	Liriodendron tulipifera	29	Good	lighthing strike, canopy broken
T99	Tulip poplar	Liriodendron tulipifera	37	Good/fair	deadwood, interfering branches
T100	Tulip poplar	Liriodendron tulipifera	34	Fair	multiple stems, deadwood
T100	Tulip poplar	Liriodendron tulipifera	28	Good	slight lean
T101	Tulip poplar	Liriodendron tulipifera	25	†	twisted growth form
				Fair	3
T103 T104	Tulip poplar Northern red oak	Liriodendron tulipifera Quercus rubra	28	Fair	split at DBH, trunk rot
			27	Good	included bark, colite just obere DBU
T105	Chestnut oak	Quercus prinus	30	Fair	included bark, splits just above DBH
T106	Chestnut oak	Quercus prinus	28	Good	daadwaad
T107	White oak	Quercus alba	27	Good	deadwood
T108	Tulip poplar	Liriodendron tulipifera	34	Poor	trunk cavity, stem decay
T109	Northern red oak	Quercus rubra	30	Good/fair	lots of deadwood
T110	Pignut hickory	Carya glabra	29	Fair	vines in crown, deadwood
T111	Northern red oak	Quercus rubra	26	Fair/poor	deadwood
T112	White oak	Quercus alba	25	Good	in all and hearly as 125 - 5 DDU
T113	Chestnut oak	Quercus prinus	28	Good/fair	included bark, split at DBH
T114	White oak	Quercus alba	34	Fair	deadwood, exposed root
T115	Eastern white pine	Pinus strobus	25	Good	lean
T116	Tulip poplar	Liriodendron tulipifera	28	Fair	trunk decay
T117	Tulip poplar	Liriodendron tulipifera	26	Fair	roots exposed, deadwood, edge of stream
T118	Tulip poplar	Liriodendron tulipifera	25	Fair	trunk decay, lean
T119	Eastern white pine	Pinus strobus Liriodendron tulipifera	24	Good/fair	split at 10 ft., slight lean split above DBH, trunk decay
T120	Tulip poplar		30	Good/fair	

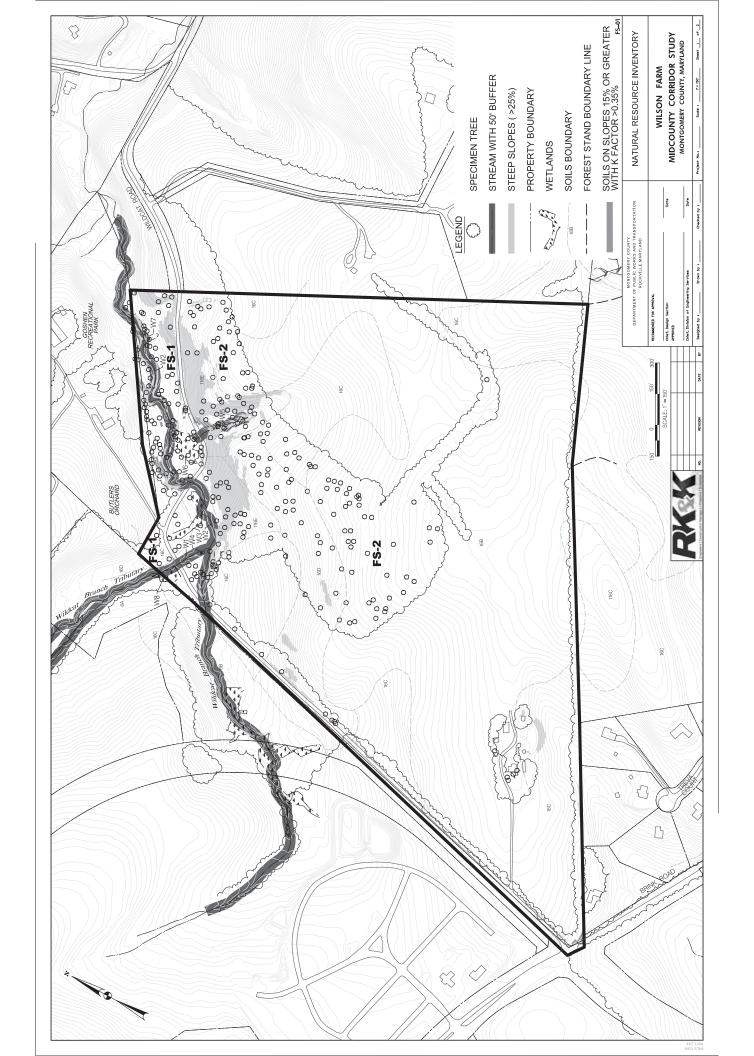
T424	- · ·	1	10	Te -	
T121	Tulip poplar	Liriodendron tulipifera	42	Fair	split, trunk decay, deadwood
T122	Tulip poplar	Liriodendron tulipifera	24	Fair	deadwood, trunk decay, split
T123	Tulip poplar	Liriodendron tulipifera	26	Fair	twin, split, trunk decay
T124	Tulip poplar	Liriodendron tulipifera	25	Good/fair	trunk decay
T125	Tulip poplar	Liriodendron tulipifera	28	Fair	trunk decay, deadwood
T126	Tulip poplar	Liriodendron tulipifera	39	Good/fair	twin, trunk decay, split above DBH
T127	White oak	Quercus alba	28	Good/fair	deadwood
T128	Tulip poplar	Liriodendron tulipifera	41	Poor	large trunk cavity, trunk rot, twisted growth
T129	Tulip poplar	Liriodendron tulipifera	33	Good/fair	trunk decay, deadwood
T130	Tulip poplar	Liriodendron tulipifera	27	Fair	twin, trunk decay, split below DBH
T131	Tulip poplar	Liriodendron tulipifera	24	Poor	severe trunk cavity, trunk decay, poison ivy v
T132	Tulip poplar	Liriodendron tulipifera	24	Good/fair	split, unusual growth form
T133	Tulip poplar	Liriodendron tulipifera	30	Good	
T134	Red maple	Acer rubrum	24	Poor	trunk decay, broken crown, vines in crown, s
T135	Tulip poplar	Liriodendron tulipifera	26	Good	
T136	Tulip poplar	Liriodendron tulipifera	27	Fair	twin, trunk decay, twisted growth form
T137	Tulip poplar	Liriodendron tulipifera	29	Fair	trunk decay, deadwood in crown
T138	Tulip poplar	Liriodendron tulipifera	24	Fair	twisted growth form
T139	White oak	Quercus alba	32	Good	minor deadwood, top of stream bank
T140	Chestnut oak	Quercus prinus	29	Fair	top of steam bank, deadwood, irregular grov
T141	White oak	Quercus alba	29	Good	
T142	Red maple	Acer rubrum	27	Poor	trunk cavity, trunk decay, suckering
T143	Tulip poplar	Liriodendron tulipifera	31	Poor	large trunk cavity, trunk decay
T144	Tulip poplar	Liriodendron tulipifera	24	Good	
T145	Tulip poplar	Liriodendron tulipifera	24	Good/fair	irregular growth form
T146	Tulip poplar	Liriodendron tulipifera	27	Good/fair	trunk decay
T147	Tulip poplar	Liriodendron tulipifera	29	Good	
T148	Tulip poplar	Liriodendron tulipifera	29	Good	
T149	Tulip poplar	Liriodendron tulipifera	29	Good/fair	exposed root, trunk decay
T150	Tulip poplar	Liriodendron tulipifera	29	Good	
T151	White oak	Quercus alba	35	Fair	deadwood in crown
T152	Tulip poplar	Liriodendron tulipifera	27	Fair/poor	trunk decay, cavity
T153	Chestnut oak	Quercus prinus	28	Good	slight lean
T154	Northern red oak	Quercus rubra	31	Good/fair	vines in crown, irregular growth form
T155	Tulip poplar	Liriodendron tulipifera	28	Good	
T156	Tulip poplar	Liriodendron tulipifera	30	Good	
T157	Tulip poplar	Liriodendron tulipifera	25	Good	
T158	Tulip poplar	Liriodendron tulipifera	24	Good	
T159	Tulip poplar	Liriodendron tulipifera	27	Good	
T160	Tulip poplar	Liriodendron tulipifera	26	Good/fair	irregular growth form
T161	Tulip poplar	Liriodendron tulipifera	24	Good	
T162	Tulip poplar	Liriodendron tulipifera	24	Good/fair	slight lean, deadwood
T163	Chestnut oak	Quercus prinus	30	Good	
T164	Tulip poplar	Liriodendron tulipifera	24	Good	
T165	Tulip poplar	Liriodendron tulipifera	26	Good	
T166		<u>'</u>			1
	Tulip poplar	Liriodendron tulipifera	26	Good	
T167	Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera	26 24	Good Good	
		•	_	_	
T167	Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera	24	Good	
T167 T168 T169	Tulip poplar Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera	24 24 27	Good Good Good	
T167 T168	Tulip poplar Tulip poplar Tulip poplar Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera	24 24	Good Good	
T167 T168 T169 T170	Tulip poplar Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera	24 24 27 24	Good Good Good Good	trunk damage, vines in crown
T167 T168 T169 T170 T171	Tulip poplar Tulip poplar Tulip poplar Tulip poplar Tulip poplar Tulip poplar	Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera Liriodendron tulipifera	24 24 27 24 27	Good Good Good	trunk damage, vines in crown
T167 T168 T169 T170 T171	Tulip poplar	Liriodendron tulipifera	24 24 27 24 27 27 24	Good Good Good Good Fair/poor	trunk damage, vines in crown
T167 T168 T169 T170 T171 T172 T173	Tulip poplar	Liriodendron tulipifera	24 24 27 24 27 24 27 24 25	Good Good Good Good Fair/poor Good	trunk damage, vines in crown
T167 T168 T169 T170 T171 T172 T173 T174 T175	Tulip poplar	Liriodendron tulipifera	24 24 27 24 27 24 25 24 25	Good Good Good Good Fair/poor Good Good Good Good	trunk damage, vines in crown
T167 T168 T169 T170 T171 T172 T173 T174	Tulip poplar	Liriodendron tulipifera	24 24 27 24 27 24 27 24 25 24	Good Good Good Good Fair/poor Good Good	trunk damage, vines in crown
T167 T168 T169 T170 T171 T172 T173 T174 T175 T176 T177	Tulip poplar	Liriodendron tulipifera	24 24 27 24 27 24 25 24 25 26 24	Good Good Good Fair/poor Good Good Good Good Good Good Good G	
T167 T168 T169 T170 T171 T172 T173 T174 T175 T176 T177	Tulip poplar Chestnut oak	Liriodendron tulipifera Quercus prinus	24 24 27 24 27 24 25 24 25 26 24 27	Good Good Good Fair/poor Good Good Good Good Good Good Good G	base cavity
T167 T168 T169 T170 T171 T172 T173 T174 T175 T176 T177 T178 T179	Tulip poplar Chestnut oak White oak	Liriodendron tulipifera Quercus prinus Quercus alba	24 24 27 24 27 24 25 24 25 26 24 27 24	Good Good Good Fair/poor Good Good Good Good Good Good Good Fair Fair	base cavity vines in crown
T167 T168 T169 T170 T171 T172 T173 T174 T175 T176 T177 T178 T179 T180	Tulip poplar Chestnut oak White oak Tulip poplar	Liriodendron tulipifera Quercus prinus Quercus alba Liriodendron tulipifera	24 24 27 24 27 24 25 24 25 26 24 27 24	Good Good Good Good Good Good Good Good	base cavity
T167 T168 T169 T170 T171 T172 T173 T174 T175 T176 T177 T178 T179	Tulip poplar Chestnut oak White oak	Liriodendron tulipifera Quercus prinus Quercus alba	24 24 27 24 27 24 25 24 25 26 24 27 24	Good Good Good Fair/poor Good Good Good Good Good Good Good Fair Fair	base cavity vines in crown

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T183	Tulip poplar	Liriodendron tulipifera	25	Good	
T184	Tulip poplar	Liriodendron tulipifera	25	Good	
T185	Tulip poplar	Liriodendron tulipifera	26	Good	
T186	Tulip poplar	Liriodendron tulipifera	28	Fair	vines in crown, trunk decay
T187	Tulip poplar	Liriodendron tulipifera	28	Good	minor trunk decay
T188	Tulip poplar	Liriodendron tulipifera	25	Fair	irregular growth form
T189	Tulip poplar	Liriodendron tulipifera	24	Good	twin
T190	Chestnut oak	Quercus prinus	25	Fair	slight lean, trunk cavity
T191	Tulip poplar	Liriodendron tulipifera	29	Good	
T192	Tulip poplar	Liriodendron tulipifera	26	Good/fair	trunk wound healed over
T193	Tulip poplar	Liriodendron tulipifera	24	Fair	trunk damage, deadwood
T194	Tulip poplar	Liriodendron tulipifera	28	Fair	lean, deadwood
T195	Tulip poplar	Liriodendron tulipifera	32	Good	
T196	Tulip poplar	Liriodendron tulipifera	26	Fair	irregular growth form
T197	Tulip poplar	Liriodendron tulipifera	30	Fair	trunk decay, lean, exposed roots, top of stre
T198	Northern red oak	Quercus rubra	29	Fair	lots of deadwood
T199	Pin oak	Quercus palustris	40	Fair/poor	twin, Trunk decay, included bark,
T200	Northern red oak	Quercus rubra	24	Fair	deadwood in crown, small base cavity
T201	Chestnut oak	Quercus prinus	24	Good	
T202	Chestnut oak	Quercus prinus	24	Good	
T203	Chestnut oak	Quercus prinus	24	Good	
T204	Chestnut oak	Quercus prinus	25	Fair	trunk decay, deadwood
T205	Chestnut oak	Quercus prinus	24	Fair	lean, deadwood
T206	Chestnut oak	Quercus prinus	24	Good/fair	deadwood, large dead branch at base
T207	Chestnut oak	Quercus prinus	27	Good	dedawood, large deda branen at base
T207	Northern red oak	Quercus rubra	29	Fair	twin, drunk decay, included bark,
T209	Chestnut oak	Quercus prinus	25	Good/fair	trunk decay
T210	Chestnut oak	Quercus prinus	36	Fair	twin, split above DBH, included bark
T210	Chestnut oak	•	31	Fair	irregular growth form, deadwood
		Quercus prinus	24	Fair	
T212	Chestnut oak	Quercus prinus	_	Fair	trunk decay, cavity
T213	White oak	Quercus alba	31		splits above DBH, included bark
T214	Chestnut oak	Quercus prinus	31	Fair	triple stem, included bark
T215	Chestnut oak	Quercus prinus	36	Fair	split above DBH, included bark
T216	Tulip poplar	Liriodendron tulipifera	28	Fair	deadwood, trunk decay
T217	Tulip poplar	Liriodendron tulipifera	29	Fair	deadwood, trunk decay, lean, broken branc
T218	Tulip poplar	Liriodendron tulipifera	25	Good	
T219	Tulip poplar	Liriodendron tulipifera	41	Fair/poor	included bark, split above DBH, trunk decay
T220	Red maple	Acer rubrum	29	Fair/poor	irregular growth form, trunk decay, suckerir
T221	Northern red oak	Quercus rubra	26	Fair/poor	severe lean, irregular growth form, deadwo
T222	Northern red oak	Quercus rubra	25	Good	
T223	Red maple	Acer rubrum	26	Good/fair	lean, split above DBH
T224	Northern red oak	Quercus rubra	28	Poor	vines in crown, dead crown
T225	White oak	Quercus alba	25	Fair/poor	split above DBH, included bark, diseased
T226	Tulip poplar	Liriodendron tulipifera	30	Good	vines
T226	Northern red oak	Quercus rubra	25	Fair	lean, included bark at trunk
T227	Tulip poplar	Liriodendron tulipifera	30	Fair/poor	dead crown
T228	Tulip poplar	Liriodendron tulipifera	26	Good	
T229	Northern red oak	Quercus rubra	28	Fair	deadwood, thin crown
T230	Chestnut oak	Quercus prinus	26	Good	
T231			1	Fair.	lana individad badi akkuudi
1431	Northern red oak	Quercus rubra	25	Fair	lean, included bark at trunk
T232	Northern red oak Chestnut oak	Quercus rubra Quercus prinus	25 24	Good/fair	deadwood
			+		
T232	Chestnut oak	Quercus prinus	24	Good/fair	
T232 T233	Chestnut oak Chestnut oak	Quercus prinus Quercus prinus	24 25	Good/fair Good	deadwood
T232 T233 T234 T235	Chestnut oak Chestnut oak Chestnut oak Chestnut oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus	24 25 28 24	Good/fair Good Fair	split just above DBH, included bark
T232 T233 T234 T235 T236	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rinus Quercus rubra	24 25 28 24 26	Good/fair Good Fair Good/fair Fair	split just above DBH, included bark trunk decay, deadwood crown dieback
T232 T233 T234 T235 T236 T237	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Northern red oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra Quercus rubra	24 25 28 24 26 26	Good/fair Good Fair Good/fair Fair Good/fair	split just above DBH, included bark trunk decay, deadwood crown dieback deadwood in crown, flared base
T232 T233 T234 T235 T236 T237 T238	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Northern red oak Northern red oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra Quercus rubra Quercus rubra Quercus rubra	24 25 28 24 26 26 24	Good/fair Good Fair Good/fair Fair Good/fair Fair Fair	split just above DBH, included bark trunk decay, deadwood crown dieback
T232 T233 T234 T235 T236 T237 T238 T239	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Northern red oak Northern red oak Northern red oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra Quercus rubra Quercus rubra Quercus rubra Quercus rubra Quercus rubra	24 25 28 24 26 26 26 24 25	Good/fair Good Fair Good/fair Fair Good/fair Fair Good/fair Good	deadwood split just above DBH, included bark trunk decay, deadwood crown dieback deadwood in crown, flared base deadwood in crown
T232 T233 T234 T235 T236 T237 T238 T239 T240	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Northern red oak Northern red oak Northern red oak Chestnut oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra	24 25 28 24 26 26 26 24 25 26	Good/fair Good Fair Good/fair Fair Good/fair Fair Good/fair Fair Good Fair	deadwood split just above DBH, included bark trunk decay, deadwood crown dieback deadwood in crown, flared base deadwood in crown cavity at trunk, deadwood
T232 T233 T234 T235 T236 T237 T238 T239 T240 T241	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Chestnut oak Northern red oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra	24 25 28 24 26 26 24 25 26 24 25	Good/fair Good Fair Good/fair Fair Good/fair Fair Good Fair Good Fair Good/fair	deadwood split just above DBH, included bark trunk decay, deadwood crown dieback deadwood in crown, flared base deadwood in crown
T232 T233 T234 T235 T236 T237 T238 T239 T240	Chestnut oak Chestnut oak Chestnut oak Chestnut oak Northern red oak Northern red oak Northern red oak Northern red oak Chestnut oak	Quercus prinus Quercus prinus Quercus prinus Quercus prinus Quercus rubra	24 25 28 24 26 26 26 24 25 26	Good/fair Good Fair Good/fair Fair Good/fair Fair Good/fair Fair Good Fair	deadwood split just above DBH, included bark trunk decay, deadwood crown dieback deadwood in crown, flared base deadwood in crown cavity at trunk, deadwood

T246 Tulip poplar Liriod T247 Tulip poplar Liriod T248 Tulip poplar Liriod T249 Tulip poplar Liriod T250 Northern red oak Quero T251 Northern red oak Quero T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T250 Northern red oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero T263 Northern red oak Quero T260 Chestnut oak Quero T261 Chestnut oak Quero T263 Northern red oak Quero	dendron tulipifera	31 26 26 31 29 24 25 33 35 27 24 25 33	Fair Good/fair Fair Fair Fair Fair Fair Fair Fair F	trunk decay, included bark irregular branching split below DBH twin, deadwood, lean, included bark vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T247 Tulip poplar Liriod T248 Tulip poplar Liriod T249 Tulip poplar Liriod T250 Northern red oak Quero T251 Northern red oak Quero T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T250 Northern red oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	dendron tulipifera	26 26 31 29 24 25 33 35 27 24 25 33 26 24	Fair Good Fair Fair Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Good/fair	split below DBH twin, deadwood, lean, included bark vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T248 Tulip poplar Liriod T249 Tulip poplar Liriod T250 Northern red oak Quero T251 Northern red oak Quero T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T250 Northern red oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero T264 Chestnut oak Quero T265 Chestnut oak Quero T266 Northern red oak Quero T267 Chestnut oak Quero T268 Northern red oak Quero T268 Northern red oak Quero T269 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero	dendron tulipifera	26 31 29 24 25 33 33 35 27 24 25 33 26 24	Good Fair Fair Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Good/fair	twin, deadwood, lean, included bark vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T249 Tulip poplar Liriod T250 Northern red oak Querc T251 Northern red oak Querc T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Querc T258 Northern red oak Querc T259 Chestnut oak Querc T260 Northern red oak Querc T261 Chestnut oak Querc T262 Chestnut oak Querc T263 Northern red oak Querc	dendron tulipifera cus rubra dendron tulipifera cus prinus cus rubra cus prinus cus rubra cus prinus	31 29 24 25 33 33 35 27 24 25 33 26 24	Fair Fair Fair Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Good/fair	lean, included bark vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T250 Northern red oak Querc T251 Northern red oak Querc T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Querc T258 Northern red oak Querc T259 Chestnut oak Querc T259 Chestnut oak Querc T260 Northern red oak Querc T261 Chestnut oak Querc T262 Chestnut oak Querc T263 Northern red oak Querc	cus rubra cus rubra dendron tulipifera cus prinus cus rubra cus prinus cus rubra cus prinus cus prinus	29 24 25 33 33 35 27 24 25 33 26 24	Fair Fair Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Good/fair	lean, included bark vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T251 Northern red oak Querc T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Querc T258 Northern red oak Querc T259 Chestnut oak Querc T260 Northern red oak Querc T261 Chestnut oak Querc T262 Chestnut oak Querc T263 Northern red oak Querc T263 Northern red oak Querc	dendron tulipifera crus prinus crus rubra crus rubra crus prinus crus ribra crus prinus	24 25 33 33 35 27 24 25 33 26 24	Fair Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Fair Good/fair	vines in crown, lean twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T252 Tulip poplar Liriod T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero T264 Chestnut oak Quero T265 Chestnut oak Quero T266 Chestnut oak Quero T267 Chestnut oak Quero T268 Northern red oak Quero	dendron tulipifera dendron tulipifera dendron tulipifera dendron tulipifera dendron tulipifera dendron tulipifera cus prinus cus rubra cus prinus cus rubra cus prinus cus prinus	25 33 33 35 27 24 25 33 26 24	Fair Fair Good/fair Fair Good/fair Fair Good/fair Fair Fair Good/fair	twin, deadwood vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T253 Tulip poplar Liriod T254 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero T263 Northern red oak Quero	dendron tulipifera dendron tulipifera dendron tulipifera dendron tulipifera dendron tulipifera cus prinus cus rubra cus prinus cus rubra cus rubra cus prinus	33 33 35 27 24 25 33 26 24	Fair Fair Good/fair Fair Good/fair Fair Fair Good/fair	vines in crown, sllit twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T254 Tulip poplar Liriod T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	dendron tulipifera dendron tulip	33 35 27 24 25 33 26 24	Fair Good/fair Fair Good/fair Fair Fair Good/fair	twin, deadwood deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T255 Tulip poplar Liriod T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	dendron tulipifera dendron tulipifera descus prinus deus prinus deus prinus deus prinus deus prinus deus prinus deus prinus	35 27 24 25 33 26 24	Good/fair Fair Good/fair Fair Fair Good/fair	deadwood irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T256 Tulip poplar Liriod T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	dendron tulipifera cus prinus cus rubra cus prinus cus rubra cus rubra cus prinus cus prinus	27 24 25 33 26 24	Fair Good/fair Fair Fair Good/fair	irregular growth form, deadwood twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T257 Chestnut oak Quero T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	cus prinus cus rubra cus prinus cus rubra cus prinus cus prinus cus prinus	24 25 33 26 24	Good/fair Fair Fair Good/fair	twin, included bark, deadwood split, canker. deadwood split, included bark sparse crown, deadwood
T258 Northern red oak Quero T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	cus rubra cus prinus cus rubra cus prinus cus prinus	25 33 26 24	Fair Fair Good/fair	split, canker. deadwood split, included bark sparse crown, deadwood
T259 Chestnut oak Quero T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	cus prinus cus rubra cus prinus cus prinus	33 26 24	Fair Good/fair	split, included bark sparse crown, deadwood
T260 Northern red oak Quero T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	cus rubra cus prinus cus prinus	26 24	Good/fair	sparse crown, deadwood
T261 Chestnut oak Quero T262 Chestnut oak Quero T263 Northern red oak Quero	cus prinus	24		
T262 Chestnut oak Quero T263 Northern red oak Quero	cus prinus		Fair	
T263 Northern red oak Quero	· · · · · · · · · · · · · · · · · · ·	24		twin, deadwood
	cus rubra	- '	Good	
T264 Tulin nonlar Liviad		25	Fair	lean, deadwood
1204 Tulip popial Liflod	dendron tulipifera	24	Good/fair	vines, deadwood
T265 Tulip poplar Liriod	dendron tulipifera	24	Good/fair	vines, thin crown
T266 Tulip poplar Liriod	dendron tulipifera	24	Fair	vines in crown
T267 Tulip poplar Liriod	dendron tulipifera	25	Good	
T268 Northern red oak Quero	cus rubra	25	Fair/poor	deadwood, crown dieback
T269 Northern red oak Quero	cus rubra	24	Good/fair	deadwood, sparse crown
T270 Northern red oak Quero	cus rubra	26	Good	
T271 Northern red oak Quero	cus rubra	26	Fair	deadwood, lean
T272 Northern red oak Quero	cus rubra	25	Good/fair	vines in crown, lean
T273 Tulip poplar Liriod	dendron tulipifera	25	Fair	deadwood, sparse crown
T274 Tulip poplar Liriod	dendron tulipifera	25	Good	
T275 Tulip poplar Liriod	dendron tulipifera	32	Good	
T276 Empress tree Paulo	ownia tomentosa	29	Poor	almost dead
T277 Tulip poplar Liriod	dendron tulipifera	24	Good/fair	lean, included bark, deadwood
T278 Tulip poplar Liriod	dendron tulipifera	26	Good/fair	sparse crown
T279 Red maple Acer r	rubrum	29	Fair	split, trunk decay
T280 Tulip poplar Liriod	dendron tulipifera	25	Good/fair	twin, included bark, deadwood
T281 Northern red oak Quero	cus rubra	26	Fair/poor	vines in crown, split, included bark
T282 Tulip poplar Liriod	dendron tulipifera	24	Fair	deadwood, sparse crown
T283 Tulip poplar Liriod	dendron tulipifera	25	Fair	irregular growth form
T284 Tulip poplar Liriod	dendron tulipifera	24	Fair	vines, deadwood
T285 Northern red oak Quero	cus rubra	29	Fair	heavy lean, irregular growth form
	dendron tulipifera	27	Good	
	dendron tulipifera	28	Fair	vines in crown, twin
	dendron tulipifera	24	Fair	vines in crown, sparse crown
	dendron tulipifera	28	Fair	sparse crown
	dendron tulipifera		Good/fair	split, included bark
	dendron tulipifera	31	Good	vines
	cus rubra	29	Fair	vines in crown
	cus palustris		Fair	lean, deadwood in crown
	dendron tulipifera	34	Good/fair	split
	cus alba	32	Good/fair	deadwood, fill around truck
	nus pennsylvanica	34	Good	
	dendron tulipifera	24	Poor	trunk wound, trunk decay, deadwood in cro
	cus rubra		Good	,,

APPENDIX D

NRI Plan



NATURAL RESOURCE INVENTORY FOR THE SNOW PROPERTY

RK&K conducted a Natural Resource Inventory at the Snow property in Damascus, Maryland, on July 2, 2013. The Snow property is a 102.75-acre site bounded on all sides by large parcels in private ownership (see NRI Plan in **Appendix D**), and located north and east of Bethesda Church Road, south of Belliston Road, and west of Ridge Road (MD 27).

The Snow property is a candidate site for forest and park mitigation, stream restoration, and/or wetland creation for the Midcounty Corridor Study (MCS) or a future Montgomery County project requiring mitigation. If purchased and reforested, the Snow property would provide an additional 24.74 acres of forest to the riparian areas of Bennett Creek and its tributary, improving water quality through the conversion of non-forest land to forest. Much of the existing forest has fair to high retention priority due to the presence of streams and/or wetlands, steep slopes, and moderate quality forest. Forest retention value rating characteristics are discussed below. Surrounding land use consists of agriculture and large-tract rural residential development. There is no Maryland Agricultural Land Preservation Easement (MALP) on this property. Natural Resource Inventory (NRI) plans are attached. See **Appendix A** for project photos.

Summary

Four forest stands, two streams, one channel, and eight wetlands were observed on the Snow property. A 39.97 acre mid-successional Chestnut Oak Association was observed in the northern, upland section of the Snow property, and an 6.28 acre mid-successional Tulip Poplar Association was noted in the floodplains of the unnamed tributary of Bennett Creek (see NRI Plan in **Appendix D**). The southern section of the Snow property is predominantly a 26.71 acre early successional Virginia pine community, with a 2.53 acre early to mid-successional Tulip Poplar Association adjacent to the stream/wetland complex of Bennett Creek, in the southwestern portion of the property. An old farm field successional community dominates the central region of the study area.

Bennett Creek tributary is associated with three abutting wetlands located in the southwestern portion of the property, five abutting wetlands located in the northern portion of the property, and an ephemeral channel in the south central portion of the property.

Background Information

Background environmental information was obtained from the USGS 7.5 minute Gaithersburg quadrangle, FEMA FIRM maps, NRCS Web Soil Survey, U.S. Fish and Wildlife National Wetland Inventory, and recent surveys of topography and property boundaries.

Topography

Snow property topography is characterized by gently to somewhat steeply sloping upland hillsides on the majority of the site, with slightly incised streams flowing through the northern and southwestern portions of the property. Elevations on the property range from 570 to 724 NGVD 88. The NRI plans in Appendix D show slopes greater than 25% and slopes greater than 15% with highly erodible soils. Highly erodible soils are defined as those having a K- (erodibility) factor greater than 0.35.

Geology and Soils

The property is located in the Piedmont physiographic province characterized by broadly undulating to rolling topography underlain by metamorphic rocks with relief increased locally by low knobs or ridges and valleys.

The Maryland Physiographic Map (2008) indicates that the Snow property is located in the Mt. Airy Upland District, characterized as a rolling upland due to the interaction of thick siltstones and quartzites with stream reaches sometimes incised and within bedrock. The Maryland Geological Survey's Geologic Map of Maryland (1968) indicates that the project area is underlain by a Precambrian tuffaceous and non-tuffaceous phyllite, slate, and quartzite. The NRCS web soils data indicates that soils at Snow property include Baile silt loam, 0-3% slopes (all hydric); Blocktown channery silt loam, 15-25% and 25-45% slopes; Brinklow-Blocktown channery silt loam, 3-8%, 8-15%, and 15-25% slopes; Glenville silt loam, 3-8% slopes; Hatboro silt loam, 0-3% slopes (all hydric); Codorus silt loam, 0-3% slopes, and Hyattstown channery silt loam, 15-25% slopes, as indicated in **Table 1** below.

Table 1. Characteristics of Soils on the Snow Property

Map Unit Symbol	Map Unit Name	K-Factor (Whole	Hydric Rating	Hydrologic Soil Group
Symbol		Soil)		Group
6A	Baile silt loam, 0-3% slopes	0.43	All Hydric	D
116D and	Blocktown channery silt loam,	0.24	Not All Hydric	С
116E	15-25% & 25-45%			
16B, 16C,	Brinklow-Blocktown	0.28	Not All Hydric	В
16D	channery silt loam, 3-8%, 8-			
	15%, & 15-25%			
5B	Glenville silt loam, 3-8%	< 0.35	Not All Hydric	С
54A	Hatboro silt loam, 0-3%,	0.49	All Hydric	D
	frequently flooded			
53A	Codorus silt loam, 0-3%	0.49	Not All Hydric	С
	slopes, occasionally flooded			
109D and	Hyattstown channery silt	0.24	Not All Hydric	С
109E	loam, 15-25% slopes, very			
	rocky			

Waters of the United States

Bennett Creek (W7), an unnamed tributary to Bennett Creek (W3), and an ephemeral non-jurisdictional channel (W9) are located on the Snow property. W7 and W3 are perennial streams receiving flow from outside the property. Bennett Creek and its tributaries are Use I-P waters. The National Wetland Inventory mapping indicates that no non-tidal wetlands were located on the Snow property (See **Appendix A**). MCDOT delineated eight wetlands on the property, which are discussed below.

Floodplains

The FEMA FIRM map for Montgomery County, Maryland, panel 24031C0065D, indicates that the portion of the property abutting the Bennett Creek tributary is located in the 500 year floodplain. The remainder of the site is not in a mapped FEMA floodplain (See **Appendix A**).

Rare, Threatened, and Endangered Species

Letters requesting information about the presence of rare, threatened or endangered species (RTE's) were sent to the MDNR-Wildlife and Heritage Services (MDNR-WHS), and MDNR-Environmental Review Unit (MDNR-ERU) on July 9, 2013. The U.S. Fish and Wildlife Service Chesapeake Bay Field Office (USFWS) website was reviewed on July 8, 2013, and it was determined that the Gaithersburg quadrangle is included on the USFWS list of USGS topographic maps where no federally proposed or listed endangered or threatened species are known to occur in Maryland. As a result, the online list request certification resource was used to generate an online certification letter.

Responses are pending from MDNR-Wildlife and Heritage Services (MDNR-WHS) and MDNR-Environmental Review Unit (MDNR-ERU). See **Appendix B** for agency correspondence.

Cultural Resources

A letter requesting information about the presence of cultural resources at the Snow property was sent to Maryland Historical Trust on July 9, 2013. A response is pending. See **Appendix B** for this correspondence.

Forest Characterization - Methods

The investigation method employed for this forest characterization was based on the *State Forest Conservation Technical Manual, Third Edition, 1997* for a Simplified Forest Stand Delineation (FSD). The State defines a forest as "a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater, and not less than 35 feet in width. 'Forest' includes (1) areas that have at least 100 trees per acre with at least 50% of those having a two-inch diameter measured at 4.5 feet above the ground, and (2) areas that have been cut but not cleared." Forest stands were characterized by their community type, successional stage, and overall forest condition. A walk-through level forest stand delineation was conducted and no plot points were recorded. Forest association designations are derived from *Maryland Forest Associations Species List* (Brush et al., 1977). Forest stand locations are shown on the NRI plans (See **Appendix D**).

The Snow property forest characterization did not include an inventory of specimen trees. Montgomery County defines specimen trees as, "trees having a diameter at breast height of 24 inches or more; trees having 75 percent or more of the diameter at breast height (dbh) of the current champion of that species; or a particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species."

Forest condition ratings are based on the following general factors. An "excellent" forest condition rating includes forest with numerous specimen trees, trees in good health, varied tree species diversity including climax forest tree species, excellent representation for all forest layers (overstory and understory trees, shrubs, and herbaceous perennials), almost no invasive plants, and ample wildlife habitat including food and cover. A "good" forest condition rating would include forest with some specimen trees, trees in good health, some tree species diversity, good representation of forest layers, very few invasive plants, and good wildlife habitat. A "fair" forest condition rating would include a forest with few or no specimen trees, trees in questionable health, little tree species diversity, absence of one forest layer, moderate presence of invasive plants, and limited wildlife habitat. A "poor" forest condition rating would include a forest with no specimen trees, many trees in poor health, little tree species diversity, absence of one or more forest layers, heavy invasive plant presence, and little to no wildlife habitat.

The forest inventory included dominant canopy and understory species, dominant canopy size class, percent canopy closure, stand successional stage, stand condition, invasive cover, downed woody debris, and forest retention value. **Table 2** lists characteristics for determining forest retention value ratings.

Table 2. Forest Retention Value Rating Characteristics

	nuc Rating Characteristics		
	Intermittent and perennial streams and their forest buffers		
	Slopes > 25%		
	Nontidal wetlands and buffers		
	Erodible soils on slopes > 25%		
High Retention Value	100-year floodplains		
mgn Ketention value	Habitat for rare, threatened and endangered		
	(RTE) species or County Watchlist Species		
	Large contiguous forest tracts especially those		
	w/ FIDS habitat		
	Forest stands w/ multiple specimen trees		
	Forest with County Green infrastructure		
	Stands with good structural diversity		
	Corridor +300' foot wide		
Moderate Retention Value	Forest stream buffers		
	Tree buffers between incompatible land uses		
	>24" dbh trees		
	Stands with poor structural diversity		
Low Retention Value	Stands with moderate to high exotic/invasive		
	plant cover		

Forest Characterization – Results

Four forest stands and several specimen trees were observed during the investigation. In the northern part of the property, a Chestnut Oak Association is designated as FS-1 on the plans and a mid-successional Tulip Poplar Association is designated as FS-2. An old farm field successional community dominates the central portion of the study area. The majority of the southern part of the property is an early successional Virginia pine forest community designated as FS-3 on the plans and the early to mid-successional Tulip Poplar Association along Bennett Creek, in the southeastern corner of the property, is designated as FS-4. These communities are summarized below.

FS1: Mid-successional Chestnut Oak Association

This 39.97 acre mid-successional forest stand is located in the northern portion of the snow property. The most common canopy tree species is *Quercus prinus* (chestnut oak). Other canopy tree species include *Quercus rubrum* (northern red oak), *Quercus alba* (white oak), *Carya glabra* (pignut hickory), and *Fraxinus pennsylvanicus* (green ash), with inclusions of *Nyssa sylvatica* (black gum), *Acer rubrum* (red maple), and *Liriodendron tulipifera* (tulip poplar). The understory is dominated by *Carpinus caroliniana* (ironwood), pignut hickory, red maple, and black gum. Trees between 12 and 20 inch dbh comprise the dominant canopy size class in FS1 with some scattered specimen trees and many trees that are nearly specimen size (20 to 23 inch dbh). The shrub, vine, and herbaceous layers are dominated by *Vaccinium corymbosum* (high bush blueberry), *Rubus phoenicolasius* (wineberry), and *Parthenocissus quinquefolia* (Virginia creeper), with some *Microstigeum vimenium* (stilt grass) and *Alliaria petiolata* (garlic mustard). Canopy closure is estimated at approximately 80-100% and downed woody debris is moderate. FS1 has a

good forest condition rating and a high Forest Retention Value due to its many trees of near specimen diameter, use as a wildlife corridor with high wildlife habitat value, and low amount of invasive plant cover.

FS2: Mid-successional Tulip Poplar Association

FS2 is a 6.28 acre mid-successional Tulip Poplar Association forest abutting Bennett Creek tributary and numerous wetlands in the northern portion of the Snow property. The dominant canopy tree species is tulip poplar. Other canopy tree species include red maple and green ash. The understory is dominated by ironwood, *Hammamelis virginiana* (American witch-hazel), *Prunus serotina* (black cherry), red maple, and *Lindera benzoin* (spicebush). Trees between 12 and 20 inch dbh comprise the dominant canopy size class in this forest stand with few specimen trees. The vine and herbaceous layers are dominated by *Dennstaedtia punctilobula* (hayscented fern), *Arisaema triphyllum* (jack-in-the-pulpit), *Symplocarpus foetidus* (skunk cabbage), Virginia creeper, and stilt grass. Canopy closure is estimated at approximately 60-80% and woody debris is moderate. FS2 has a good forest condition rating and a high Forest Retention Value due to the presence of a perennial stream within the stand, its function as a riparian buffer, its use as a wildlife corridor, and its low coverage of invasive plants.

FS-3: Early Successional Virginia Pine Community

FS-3 is a 26.71 acre early successional Virginia pine forest located in the southern portion of the snow property. The dominant canopy size class is 8 to 14 inch dbh and canopy closure varies from 60 to 80%. The dominant canopy tree species include *Pinus virginiana* (Virginia pine), *Juglans nigra* (black walnut), black cherry, and *Juniperus virginiana* (eastern red cedar), with scattered tulip poplar. This younger tree stand contains prevalent pioneer species in the understory. Dominant understory species include red cedar, *Robinia pseudoacacia* (black locust), spicebush, *Ailanthus altissima* (tree of heaven), Virginia pine, and *Sassafras albidum* (sassafras). The shrub and herbaceous layers are very thick, with dominant species including *Elaeagnus angustifolia* (Russian olive), *Smilax rotundifolia* (greenbrier), wine berry, *Rosa multiflora* (multiflora rose), *Glechoma hederacea* (ground ivy), Virginia creeper, stilt grass, and garlic mustard. Overall condition of this stand is fair, with several declining trees, one specimen tree, and high invasive plant cover. FS3 has a low retention value due to its smaller average tree size, poorer general condition, and high level of invasive plant species, including wineberry, garlic mustard, stilt grass, multiflora rose, tree of heaven and Russian olive.

FS-4: Early to Mid-successional Tulip Poplar Association

This 2.53 acre early to mid-successional Tulip Poplar Association is adjacent to Bennett Creek and its abutting wetlands located in the southwestern portion of the Snow property. The dominant size classes in this stand are 6 to 11 inch and 12 to 20 inch dbh. Dominant canopy species include tulip poplar and red maple. Dominant species in the understory include ironwood, hickory, spice bush, and witch hazel. This stand is in fair overall condition with several declining trees, high cover of invasive plants, and a high level of woody debris. The shrub and herbaceous layer is dominated by invasive species, including stilt grass and multiflora rose. The retention value of FS-4 is moderate, since it is adjacent to a stream and wetland complex, but contains trees in a declining condition with a high level of invasive species.

Old Field Successional Community

An old farm field successional community dominates the central region of the study area. In the higher elevations, the field has begun to fill in with early successional tree species. Tree density is not high enough in this area to be considered a forest, but many 15-20 year old trees are scattered throughout and includes the following dominant

species: *Diospyros virginiana* (persimmon), *Juniperus virginiana* (eastern red cedar), red maple, black walnut, tulip poplar, black cherry, *Lonicera maackii* (bush honeysuckle), multiflora rose, and *Solidago sp.* (goldenrod).

Specimen Trees

The Snow property contains approximately ten specimen trees with the majority located in the northern portion of the site. FS-1 and FS-2 contained many trees in the 21 to 23 dbh range, just below the diameter of a specimen tree. Very few specimen trees were identified within FS-3 and no specimen trees were observed in FS-4.

WETLAND DELINEATION - FIELD INVESTIGATION

Two jurisdictional waters of the U.S., one non-jurisdictional waters of the U.S., and eight wetlands were identified during the wetland delineation. Photographs of the wetlands can be found in **Appendix C**. Wetland quality evaluations are based on an evaluation of wetland functions and values, the condition of the resource, diversity of plant species, and presence of invasive plants. In addition, quality evaluations for streams are based on referencing existing DNR and Montgomery County data collected by for benthic macro-invertebrates and fish and an index of Biological Integrity (IBI) to rate stream health.

WETLAND DELINEATION-Methods

All waters of the U.S., including wetlands, in the study area were delineated by a team of environmental scientists. The applicable data form (Routine Wetland Determination for wetlands and/or the RK&K-derived Waters of the U.S. form) was completed for each delineated feature. Each delineated feature was named, the boundary points marked with pink flagging numbered consecutively and photographed. Boundary point positions were located using an iPad.

Waters of the U.S., other than wetlands, were delineated using the limits defined in 33 C.F.R. § 328. The boundaries of non-tidal waters of the U.S. other than wetlands were set at the ordinary high water mark (OHW). The OHW was determined in the field using physical characteristics established by the fluctuations of water (e.g., change in plant community, changes in the soil character, shelving) in accordance with U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05.

Wetlands were delineated in accordance with the U.S. Army Corps of Engineers 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region Version 2.0, ed. J.F. Berkowitz, J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center and supplemental guidance issued by the United States Army Corps of Engineers (USACE). Routine wetland determination methods with onsite inspection were used to determine the presence of wetlands in the study area.

Clean Water Act jurisdiction of delineated features was determined in accordance with the June 5, 2007 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following the U.S. Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States (Rapanos); and the January 19, 2001 joint guidance issued by U.S. Environmental Protection Agency and U.S. Army Corps of Engineers following U.S. Supreme Court's decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC).

WETLAND DELINEATION- Results

W1 – Forested Wetland

W1 is a large forested wetland abutting W3, a perennial unnamed tributary to Bennett Creek. Dominant vegetation includes red maple, ironwood, spicebush, American witch-hazel, skunk cabbage, and swamp smartweed (*Persicaria hydropiperoides*). There are no primary indicators of hydrology and secondary indicators include B10: Drainage Patterns and D2: Geomorphic Position. The soils in W1 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W1 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Feature W3, an RPW flowing year round. W1 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W2 – Forested Wetland

W2 is a large forested wetland abutting W3, a perennial unnamed tributary to Bennett Creek. Dominant vegetation includes red maple, tulip poplar, spicebush, American witch-hazel, skunk cabbage, and swamp smartweed. Primary indicators of hydrology include B9: Water-stained leaves and buttressed tree roots with secondary indicators including B10: Drainage Patterns and D2: Geomorphic Position. The soils in W2 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W2 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Feature W3, an RPW flowing year round. W2 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W3 – Waters of the U.S. (Bennett Creek tributary)

W3 is a perennial, unnamed tributary to Bennett Creek entering the property from the northeast and flowing to the west across the northern portion of the site. W3 is an RPW (Relatively Permanent Water) with a natural channel shape, a width of 5 to 10 feet, bank depth of 2 to 5 feet, water depth of 2-12", and banks with slopes of 3:1, 2:1, or 1:1. Channel substrate consists of silts, cobbles, sands, and gravel. The feature has well defined bed and banks with a single channel, and observed indicators of the ordinary high water mark include vegetation matted down, bent or absent; disturbed leaf litter; sediment deposition; presence of litter and debris; destruction of terrestrial vegetation; sediment sorting; and scour. The forest surrounding W3 is dominated by tulip poplar, ironwood, red maple, black cherry, pignut hickory, American witch-hazel, and fern. There are no DNR biological monitoring records for the Bennett Creek tributary. This feature provides adequate habitat for fish and benthic macroinvertebrates due to its instream cover, variety of substrates and the presence of riffle-pool sequences. Feature W3 was flowing during the field review and is jurisdictional under Rapanos guidance.

W4 – Forested Wetland

W4 is a large forested wetland on the north side of the Bennett Creek tributary (W3) originating from numerous seeps in the abutting steep slopes. An upland berm separates W4 from the stream. Dominant vegetation includes tulip poplar, ironwood, winterberry holly (*Ilex verticillata*), skunk cabbage, and shallow sedge (*Carex lurida*). Primary indicators of hydrology include A2: High water table, A3: Saturation, B7: Inundation visible on aerial imagery, and B9: Water-Stained Leaves. The soils in W4 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W4 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Feature W3, an RPW flowing year round. W4 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W5 – Forested Wetland

W5 is a large forested wetland on the north side of the Bennett Creek tributary (W3) originating from seeps in the abutting slopes. A small upland berm separates W5 from the stream. Dominant vegetation includes red maple, tulip poplar, spicebush, and skunk cabbage. Primary indicators of hydrology include A1: Surface water, A2: High water table, A3: Saturation, B2: Sediment deposits, and B7: Inundation visible on aerial imagery. The soils in W5 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W5 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W3, an RPW flowing year round. W5 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and minimal invasive species.

W6 - Forested Wetland

W6 is a small forested wetland on the north side of Bennett Creek tributary (W3) originating from slope seeps. Dominant vegetation includes red maple, ironwood, tulip poplar, and skunk cabbage. Primary indicators of hydrology include A1: Surface water, B2: Sediment deposits, and B9: Water-stained leaves. The soils in W6 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W6 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Features W3, an RPW flowing year round. W6 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and absence of invasive species.

W7 – Waters of the U.S. (Bennett Creek)

W7 is perennial stream that originates offsite to the west and flows in an easterly direction across the southern portion of the Snow property. W7 is a RPW with a natural channel shape, with a width of 5 to 20 feet, a bank depth of 2 to 5 feet, water depth of 2-12", and banks with a slopes of 3:1, 2:1 or 1:1. Channel substrate consists of cobbles, silts, sands, and gravel. The feature has well defined bed and banks, and observed indicators of the ordinary high water mark include vegetation matted down, bent, or absent; disturbed leaf litter; sediment deposition; presence of litter and debris; destruction of terrestrial vegetation; presence of a wrack line; sediment sorting; and scour. The forest surrounding W7 is dominated by tulip poplar, red maple, green ash, black walnut, spice bush, Japanese stiltgrass, multiflora rose), and swamp smartweed. Maryland DNR's Maryland Biological Stream Survey collected benthic macro-invertebrate and fish samples at a site (LMON-131-R-2003) along Bennett Creek just downstream of Feature W7 in 2003. The site had a total of 15 macroinvertebrate families, with 9 EPT taxa and 16 Dipterans, resulting in a "Fair" IBI score of 3.00. The site received a "Fair" fish IBI score of 3.67. A relatively high number of benthic fish species (3) were observed at the site, which is often associated with higher quality streams. This feature provides adequate habitat for fish and benthic macroinvertebrates due to its instream cover, variety of substrates and the presence of riffle-pool sequences. Feature W7 was flowing during the field review, and is jurisdictional under Rapanos guidance.

W8 – Forested Wetland

W8 is a forested wetland abutting Bennett Creek (W7) on its east side at the bottom of a steep slope. This wetland is located on the western boundary of the Snow property and continues off the property to the northwest. Dominant vegetation includes red maple, tulip poplar, winterberry holly, spicebush, swamp smartweed and skunk cabbage. Primary indicators of hydrology include A1: Surface water, A2: High Water Table and B9: Water-Stained Leaves. The soils in W8 meet the requirements of a Hydric Soil Indicator F3: Depleted Matrix. Feature W8 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Bennett Creek, an

RPW flowing year round. W8 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and lack of invasive species.

W9 – **Waters of the U.S.** (ephemeral channel)

W9 is an ephemeral channel in the southern portion of the property draining from east to west to Bennett Creek. Feature W9 is an ephemeral non-RPW draining uplands. The channel shape is natural with a width of 2 to 6 feet, a bank depth of 1 to 6 feet, and banks with slopes of 4:1, 2:1 or 1:1. Channel substrate consists of cobbles, silts, sands, and gravel. The feature has well defined bed and banks, and observed indicators of the ordinary high water mark include vegetation matted down, bent, or absent; disturbed leaf litter; presence of litter and debris; destruction of terrestrial vegetation; and scour. The forest surrounding W9 is dominated by tulip poplar, red maple, green ash, black walnut, spice bush, Japanese stiltgrass, multiflora rose, and swamp smartweed. Feature W9 was dry during the field review over most of its extent with a small area with standing water near its confluence with Bennett Creek. W9 is not jurisdictional under Rapanos guidance.

W10 - Forested Wetland

W10 is a large forested wetland abutting the west side of and draining to Bennett Creek. Dominant vegetation includes red maple, slippery elm (*Ulmus parvifolia*), ironwood, spicebush, shallow sedge, Jack-in-the-Pulpit, and skunk cabbage. Primary indicators of hydrology include B2: Sediment Deposits and B9: Water-stained leaves. The soils in W10 meet the requirements of Hydric Soil Indicator F3: Depleted Matrix. Feature W10 is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Bennett Creek, an RPW flowing year round. W10 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and absence of invasive species.

W11 - Forested Wetland

W11 is a large forested wetland abutting the eastern bank of Bennett Creek and continuing beyond the southern boundary of the Snow property. A small stream runs through W11. Dominant vegetation includes red maple, spicebush, jewel weed (*Impatiens capensis*), and skunk cabbage. Primary indicators of hydrology include A1: Surface Water, A2: High Water Table, A3: Saturation, and B9: Water-stained leaves. The soils in W11 meet the requirements of Hydric Soil Indicator A4: Hydrogen Sulfide. Feature W11is a USACE jurisdictional wetland since it meets the three-parameter definition of a wetland and is adjacent to Bennett Creek, an RPW flowing year round. W11 resource quality is good based on the undisturbed condition of the resource, the diversity of plant species, and absence of invasive species.

MITIGATION POTENTIAL OF THE SNOW PROPERTYPROPERTY

The Snow property is in the watershed of Bennett Creek, which drains to the Monocacy River.

Forest and Parkland Mitigation

Table 3 summarizes the acreage of impact to all parks (first row) and to the subset of Montgomery County/M-NCPPC owned parkland (second row).

Table 3: Park Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Park Impact (acres)	0	19.4	0.2	45.2	30.6	29.6	48.1	33.5	32.5
Impact to County & M-NCPPC-owned Park (acres)	0	15.4	0.2	43.3	28.7	27.7	45.5	30.9	29.9

Table 4 summarizes the acreage of impact to all forests (first row) and to the subset of forest that is on Montgomery County/M-NCPPC owned parkland (second row).

Table 4: Forest Impacts of the Midcounty Corridor Study Alternatives

Alternative	2	4 Mod	5	8A	8B	8D	9A	9B	9D
Total Forest Impact (acres)	0	31.0	2.0	57.6	52.5	61.4	72.9	67.7	76.7
Impact to Forest on County Parklands (acres)	0	8.35	2.0	41.0	26.5	25.5	43.3	28.7	27.7

Currently, 75.49 acres of the 102.75-acre Snow property is forest, leaving 27.26 acres of farm fields available to reforest. MCDOT would propose that all remaining farm fields be reforested, and the entire property conveyed to M-NCPPC. The Snow property conveyance would include the 26.71 acres of early-successional forest, 2.53 acres of early to mid-successional forest, and 46.25 acres of mid-successional forest that already exist on the property. MCDOT would appreciate M-NCPPC's consideration of mitigation credit for the preservation of existing forest. MCDOT would anticipate this property being sufficient to satisfy the following:

- The entire parkland mitigation obligation for impacts to Montgomery County/M-NCPPC parkland, including the replacement of the approximately 5 acres of non-forested parkland that will be sought for wetland mitigation, and
- But only a portion of the forest mitigation required for impacts to parkland forest.

Section 22A-12 (h) of the Montgomery County Forest Conservation Law requires legal instruments *such as* conservation easements, deed restrictions, covenants, and *other agreements, as necessary* to protect forest conservation areas. Unless notified otherwise by M-NCPPC, MCDOT assumes that the conveyance of the property to M-NCPPC would satisfy the requirement for protecting the forest, and would not require a forest conservation easement.

FIDS Habitat

Approximately 49 acres of new FIDS habitat would be created when the proposed reforestation on the Snow property matures (see **Interior Forest** figure).

Connectivity to Existing Parkland

The Snow Property is not contiguous to any existing parkland.

Water Quality Benefits

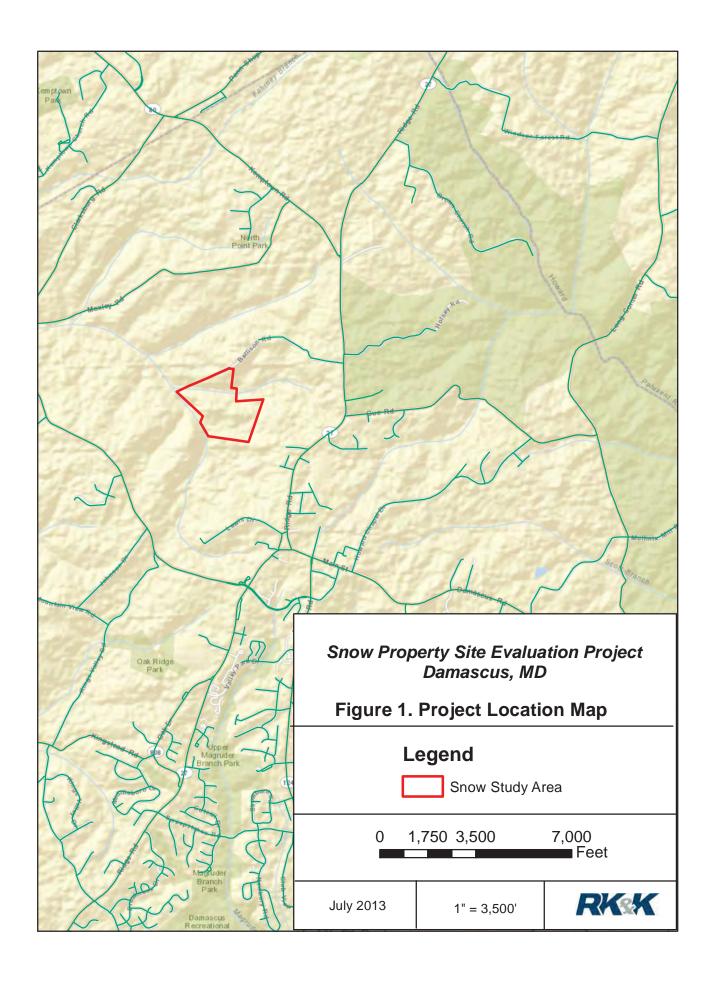
The Snow property drains to Bennett Creek, a Use I-P stream. The Snow property is no longer farmed, therefore, nutrient inputs have largely subsided. However, the reforestation of the property would stabilize the highly erodible soils and slow the runoff from the two knolls that are the predominant topographic feature within the old field successional community. The reforestation would potentially help improve the water quality and biological productivity of Bennett Creek.

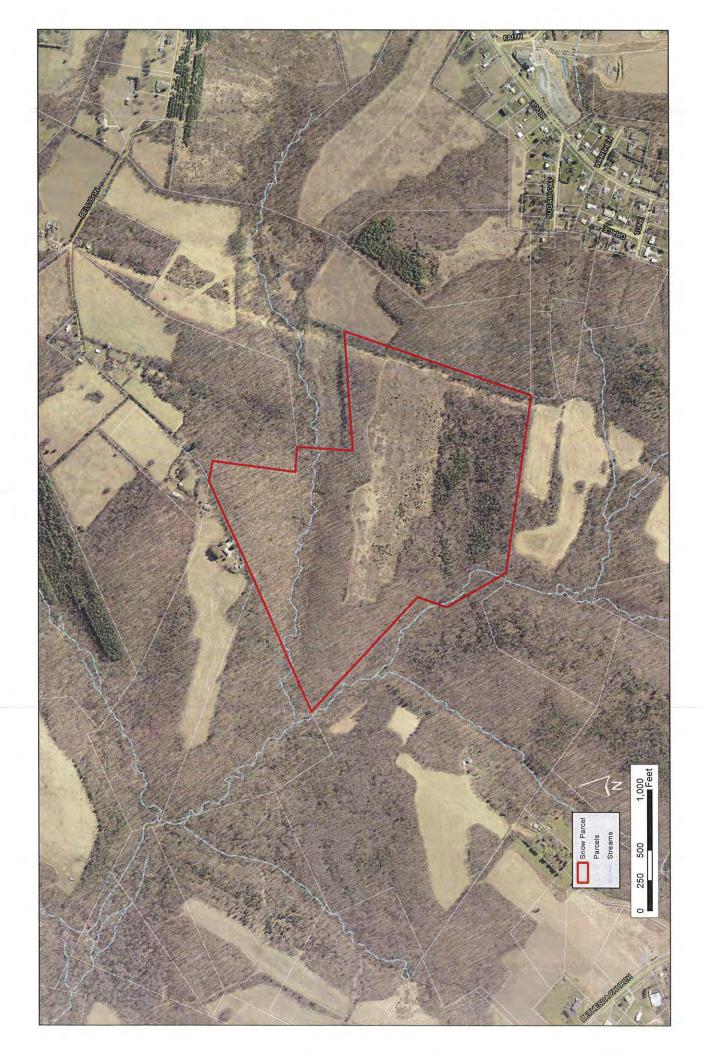
APPENDIX A

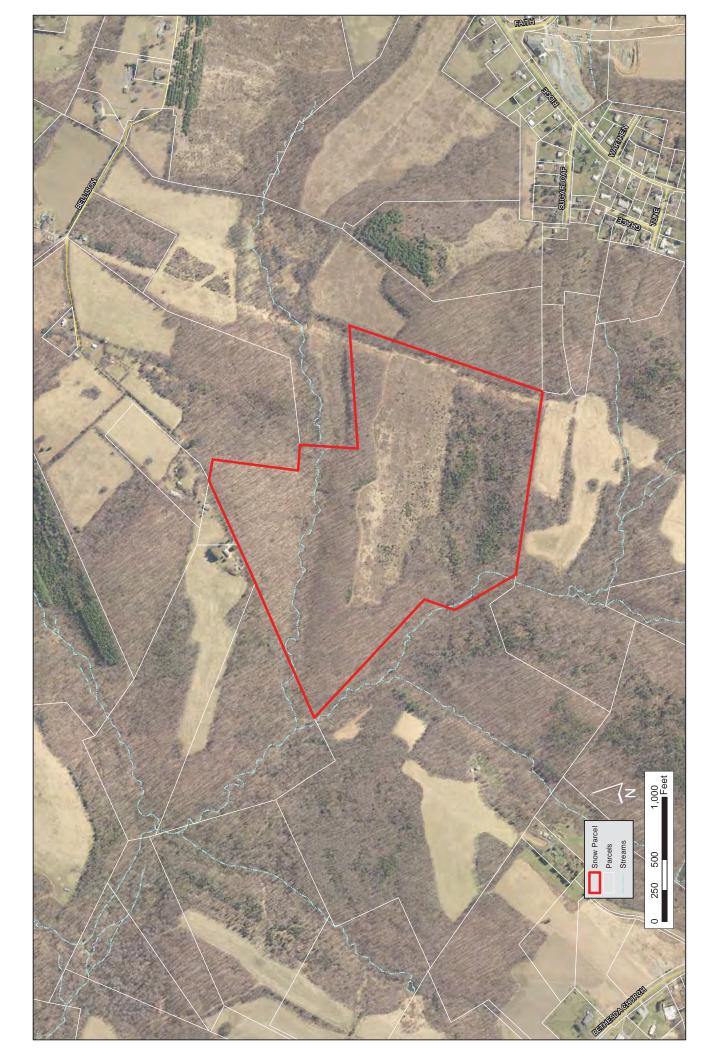
Project Map/NWI Map

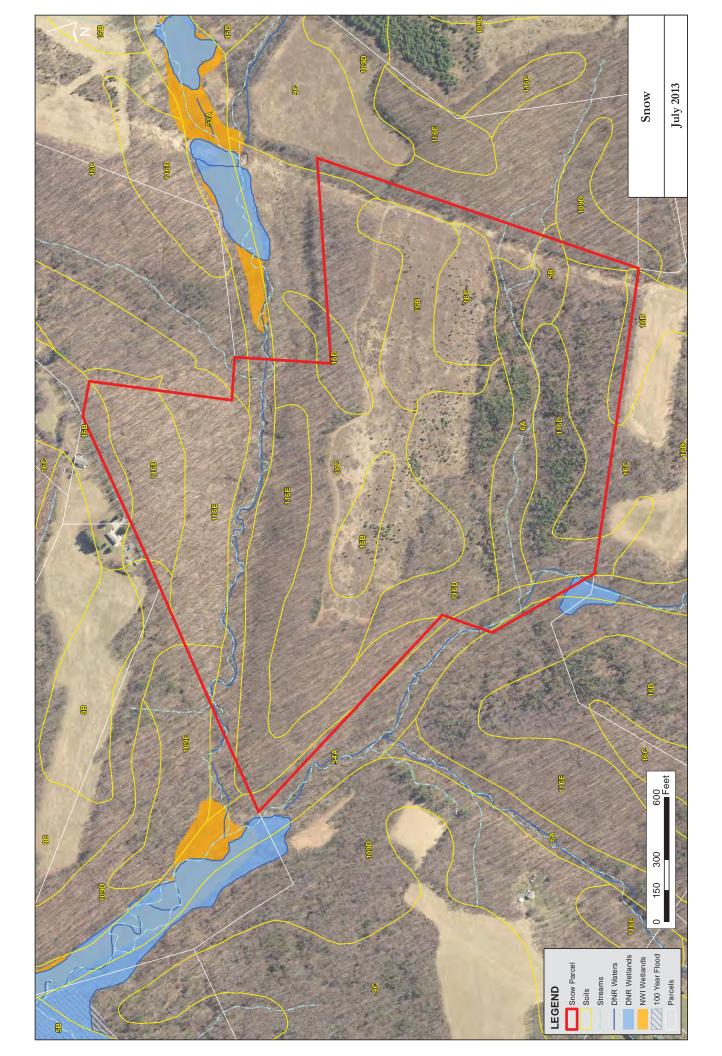
Project Photos

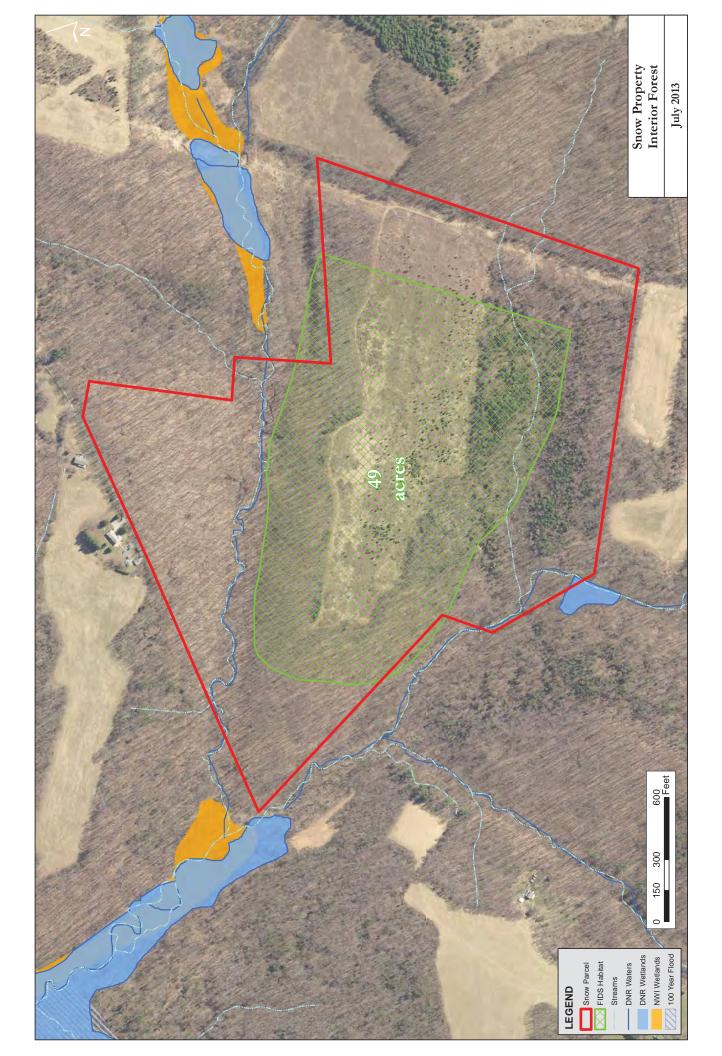
FIRM Map





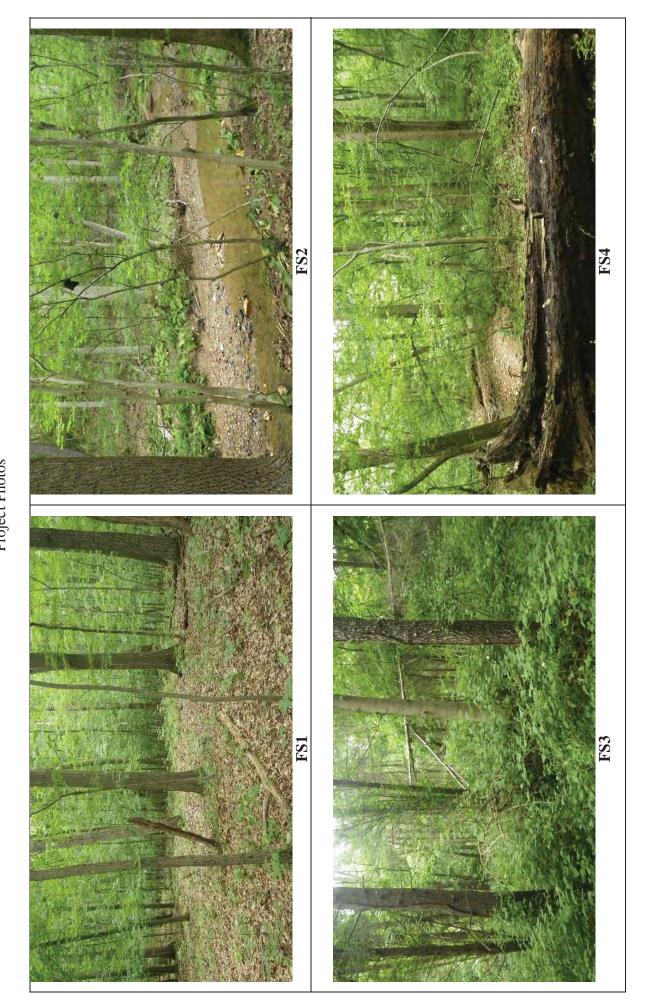












NRI – Snow Project Photos

Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD that has a 1% chance of being equaled or exceeded in any given year. The Special of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base the 1% annual chance flood (100-year flood), also known as the base flood, is the flood

Flood Elevation is the water-surface elevation of the 1% annual chance flood.

No Base Flood Elevations determined. **ZONE A**

Base Flood Elevations determined **ZONE AE**

Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood ZONE AH

Elevations determined.

Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities **ZONE AO**

also determined.

Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood ZONE AR

flood protection system under construction; no Base Flood Elevations Area to be protected from 1% annual chance flood by a Federal **ZONE A99**

determined

Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined. ZONE V

Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined, **ZONE VE**

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood. ZONE X

OTHER AREAS

Areas determined to be outside the 0.2% annual chance floodplain. ZONE X

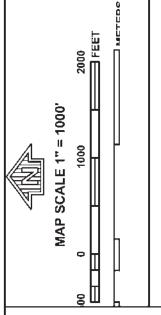
Areas in which flood hazards are undetermined, but possible. ZONE D

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary





PANEL 0065D

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY. MARYLAND

AND INCORPORATED AREAS

PANEL 65 OF 480

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

NUMBER COMMUNITY

MONTGOMERY COUNTY

SUFFIX PANE 5900

۵

Notice to User. The Map Numbor shown below should be used when placing map orders; the Community Mumber shown above should be used on first in the applications for the subject continuity.

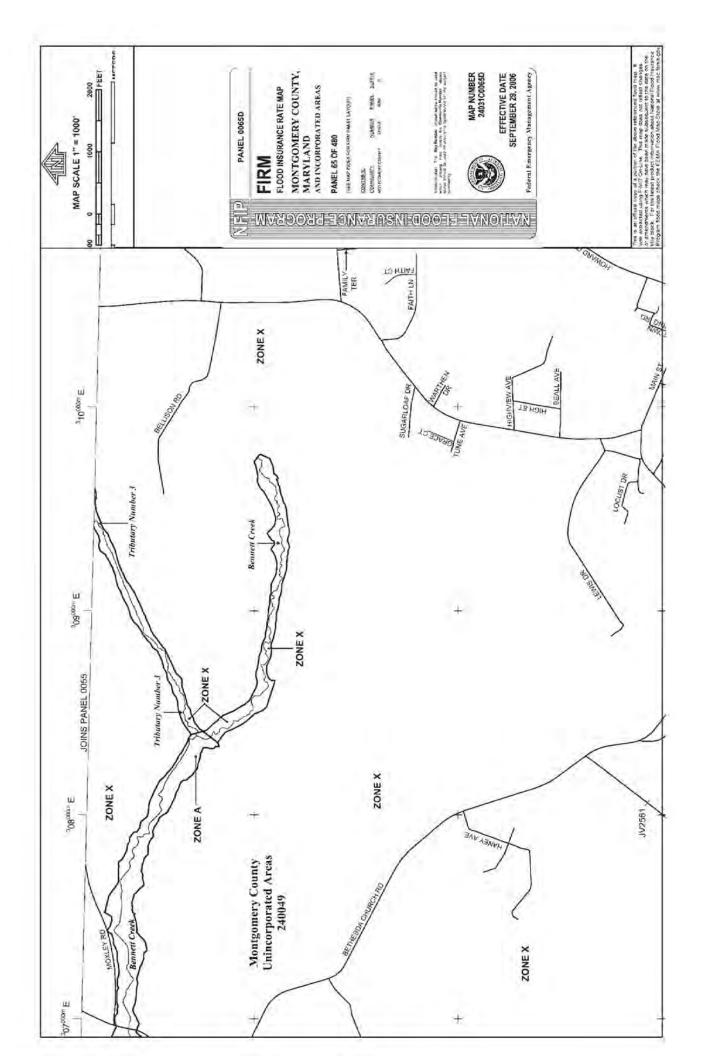
MAP NUMBER 24031C0065D

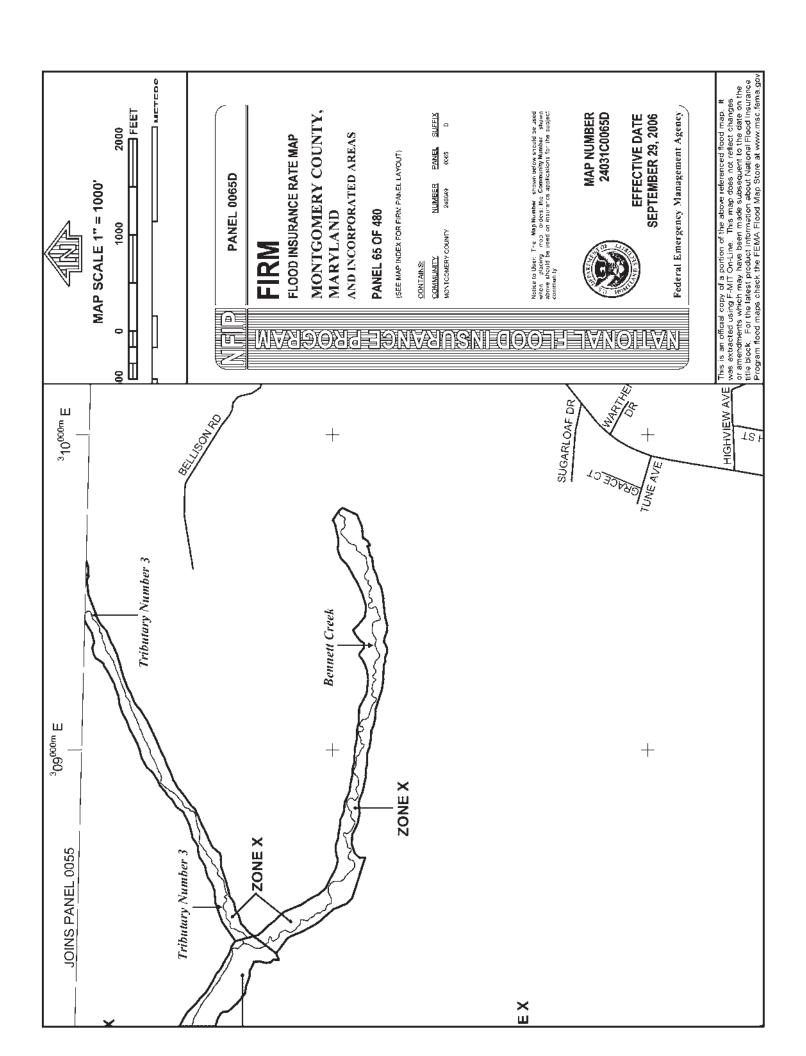
EFFECTIVE DATE

SEPTEMBER 29, 2006

Federal Emergency Management Agency

Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance





APPENDIX B

Agency Correspondence



June 12, 2013

Mr. Roland Limpert
Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, Maryland 21401

Project: Site Evaluation -- Wilson Farm and Bethel Church

Subject: Request for Project Area Fisheries Resources Information

Dear Mr. Limpert:

We are providing site evaluation planning services to the Montgomery County Department of Transportation, Transportation and Design Section for the Wilson Farm and Bethel Church properties. These sites abut each other and are being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study project in Germantown, Montgomery County, MD. The 105 acre Wilson Farm and the 120 acre Bethel Church property are located north of Brink Road, east of Wildcat Road, and west of Davis Mill Road. The Midcounty Corridor Study project may result in minor impacts to nontidal Waters of the U.S. and may require both state and federal permit authorizations (Section 404/401).

We are requesting information regarding the potential presence of state fisheries resources within or near the project area. Project location maps are enclosed for each site to aid your review.

If you have any questions concerning this project, please contact me at wmorgante@rkk.com (410) 462-9174. Thank you for your assistance.

Sincerely,

Rummel, Klepper & Kahl, LLP

William Morgante Project Scientist

Enclosure

cc: Rick Adams (RK&K)
Paul Wettlaufer (RK&K)

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: May 30, 2013

PROJECT NAME AND LOCATION: Site Evaluation-Wilson Farm and Bethel Church
Germantown, Montgomery County Maryland (maps enclosed)

Germantown, Montgomery County Mar	yland (maps enclosed)
NAME OF STREAM(S) (and MDE Use Classification) WITHIN THE STUDY A I'wo unnamed tributaries to Wildcat Branch, Use III-P (Wilson Farm) I'wo unnamed tributaries to Great Seneca Creek, Use I-P (Bethel Church)	REA:
SUB-BASIN (6 digit watershed): 02-14-02	
DNR RESPONSE (sections below to be completed by MD DNR):	
Generally, no instream work is permitted in Use I streams during the period o 15, inclusive, during any year.	f March 1 through June
Where presence of yellow perch has been documented in the vicinity of an insequence of yellow perch has been documented in the vicinity of an insequence and the property of t	
Generally, no instream work is permitted in Use III streams during the period April 30, inclusive, during any year.	of October 1 through
Generally, no instream work is permitted in Use IV streams during the period 31, inclusive, during any year.	of March 1 through May
Other applicable site specific time of year restriction information:	
ADDITIONAL FISHERIES RESOURCE NOTES:	
ADDITIONAL COMMENTS ON BEST MANAGEMENT PRACTICES:	
MD DNR, Environmental Ro	eview Unit signature
XXXXX	
DATE:	

PHONE: 410-260-8334

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: May 30, 2013

PROJECT NAME AND LOCATION: Site Evaluation-Wilson Farm and Bethel Church
Germantown, Montgomery County Maryland (maps enclosed)

NAME OF STREAM(S) (and MDE Use Clas Two unnamed tributaries to Wildcat Bran Two unnamed tributaries to Great Seneca	ch, Use III-P (Wilson Farm)
SUB-BASIN (6 digit watershed): 02-14-02	,
DNR RESPONSE (sections below to	be completed by MD DNR):
Generally, no instream work is permitted 15, inclusive, during any year.	d in Use I streams during the period of March 1 through June
	en documented in the vicinity of an instream project area, se I and Certain Use II waters during the period of February 15
Generally, no instream work is permitted April 30, inclusive, during any year.	d in Use III streams during the period of October 1 through
Generally, no instream work is permitted 31, inclusive, during any year.	d in Use IV streams during the period of March 1 through May
Other applicable site specific time of year	ar restriction information:
ADDITIONAL FISHERIES RESOURCE NO	OTES:
ADDITIONAL COMMENTS ON BEST MA	ANAGEMENT PRACTICES:
	MD DNR, Environmental Review Unit signature
	DATE:

PHONE: 410-260-8334



United States Department of the Interior

U.S. Fish & Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401 410/573 4575



Online Certification Letter

Project:	Site	Evaluation	- Wilson	Farm	& Bethel	Church	
							- /

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (http://www.fws.gov/chesapeakebay/EndSppWeb/ELEMENTS/listreq.html) are the USGS topographic map areas where no federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington, D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map(s)

Gaithersburg		10 100 100 100 11 11 11 11 11 11 11 11 1	antingan	
				2

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize

loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche Field Supervisor



Martin O'Malley, Governor Anthony G. Brown, Lt. Governor Joseph P. Gill, Secretary Frank W. Dawson III, Deputy Secretary

June 25, 2013

William Morgante Rummel, Klepper, and Kahl, LLP 81 Mosher St. Baltimore, MD 21217

RE: Environmental Review for Wilson Farm and Bethel Church, Germantown, possible mitigation sites for Mid Country Corridor Study project, north of Brink Road east of Wildcat Rd. and west of Davis Mill Rd., Montgomery County, MD.

Dear Mr. Morgante:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne,

Environmental Review Coordinator Wildlife and Heritage Service

MD Dept. of Natural Resources

ER# 2013.0908.mo



Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

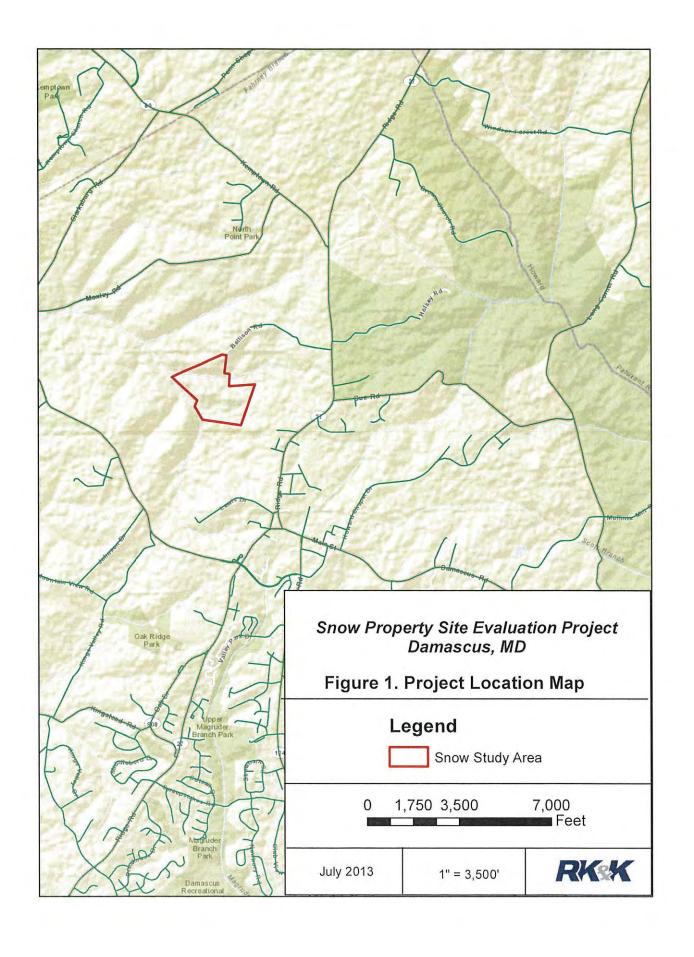
DATE OF REQUEST: July 9, 2013

PROJECT NAME AND LOCATION: Site Evaluation - Snow Property

Damascus, Montgomery County Maryland (maps enclosed)

	seeds, resoluting country remaining (maps encrosed)
NAME OF STREAM(S) (and MDE Use Clas Bennett Creek (Use I-P) Unnamed tributary to Bennett Creek (Use	
SUB-BASIN (6 digit watershed): 02-14-03	
DNR RESPONSE (sections below to	be completed by MD DNR):
Generally, no instream work is permitted 15, inclusive, during any year.	d in Use I streams during the period of March 1 through June
	en documented in the vicinity of an instream project area, se I and Certain Use II waters during the period of February 15
Generally, no instream work is permitted April 30, inclusive, during any year.	d in Use III streams during the period of October 1 through
Generally, no instream work is permitted 31, inclusive, during any year.	d in Use IV streams during the period of March 1 through May
Other applicable site specific time of year	ar restriction information:
ADDITIONAL FISHERIES RESOURCE NO	OTES:
ADDITIONAL COMMENTS ON BEST MA	ANAGEMENT PRACTICES:
	MD DNR, Environmental Review Unit signature

	·
	DATE:





July 9, 2013

Mr. Roland Limpert
Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, Maryland 21401

Project: Site Evaluation -- Snow Property

Subject: Request for Project Area Fisheries Resources Information

Dear Mr. Limpert:

We are providing site evaluation planning services to the Montgomery County Department of Transportation for the Snow property. This site is being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study project. The 103-acre Snow property is located in Damascus, Maryland, west of MD Route 27/Ridge Road. The northeastern corner of the property is adjacent to Bellison Road.

We are requesting information regarding the potential presence of state fisheries resources within or near the project area. Project location maps are enclosed for the site to aid your review.

If you have any questions concerning this project, please contact me at msigrist@rkk.com (410) 462-9174. Thank you for your assistance.

Sincerely,

Rummel, Klepper & Kahl, LLP

Madeline Sigrist

Environmental Scientist

Enclosure

cc: Rick Adams (RK&K)
Paul Wettlaufer (RK&K)



July 9, 2013

Ms. Lori Byrne
Wildlife and Heritage Division
Department of Natural Resources
580 Taylor Avenue
Tawes State Office Building, E-1
Annapolis, Maryland 21401

Project: Site Evaluation - Snow Property

Subject: Request for State Listed Rare, Threatened and Endangered Species Information

Dear Ms. Byrne:

We are providing site evaluation planning services to the Montgomery County Department of Transportation for the Snow property. This site is being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study project. The 103-acre Snow property is located in Damascus, Maryland, west of MD Route 27/Ridge Road. The northeastern corner of the property is adjacent to Bellison Road.

We are requesting information regarding the potential presence of Maryland listed rare, threatened or endangered species within or near the project area. Project location maps are enclosed to aid your review.

If you have any questions concerning this project, please contact me at msigrist@rkk.com (410) 462-9174. Thank you for your assistance.

Sincerely,

Rummel, Klepper & Kahl, LLP

Madeline Sigrist

Environmental Scientist

Enclosure

cc: Rick Adams (RK&K)
Paul Wettlaufer (RK&K)



July 9, 2013

Mr. J. Rodney Little State Historic Preservation Officer Maryland Historic Trust 100 Community Place Crownsville, Maryland 21032-2023

ATTN: Ms. Elizabeth Cole

Project: Snow Property Site Evaluation

Damascus, MD

Subject: Request for Cultural Resource Information

Dear Ms. Cole:

On behalf of the Montgomery County Department of Transportation, Rummel, Klepper & Kahl, LLP is providing site evaluation planning services for the 103-acre Snow property adjacent to Bellison Road in Damascus, Maryland. The aim of the project is to determine the extent and condition of the forest stands and the portion of Bennett Creek and its tributary on the Snow property. This site is being considered for forest, park, stream, and/or wetland mitigation as part of the Midcounty Corridor Study (MCS) project, however the Snow property is not in the Area of Potential Effect of the MCS. The enclosed maps show the location of the current project area.

We are requesting information regarding the presence of any important cultural resources in the project area. If you have any questions concerning this project and/or the information requested, please contact me at 410-462-9125. Thank you for your assistance.

Sincerely,

Rummel, Klepper and Kahl, LLP

Madeline Signist

Environmental Scientist

Enclosures: Project Location Map

Aerial Map

cc: Rick Adams & Paul Wettlaufer - RK&K

APPENDIX C

Forest Stand Summary Sheets

Waters of the U.S. Data Sheet

Wetland Data Sheets

FOREST STAND ANALYSIS BETHEL CHURCH - ALFS-1)

Date: 5/20/13

Crew: ET, winn

					VEX
				COMMUNITY	TYPE OF
					ADEA*
Do1205-14 8	BULLENSMAN	WALNUT S	THE HEAVEN SO THE HEAVEN S SASSAFIAS S	(Dominan Species and Approx.	EXISTING VEGETATION
	*		6-12"	Size (dbh) & Age	
	*	24 over	TAR LOUAGE TOWN HS,	General Conditions	STAND CHARACTERISTICS
			LOW REMAINS	NOTES	NOTES

Area measured to the nearest 1/10 acre.

りおからましる

Forest Stand ID: FS1			Project: N	MidCounty- Snow
Owner/Applicant: Mont	Co		State: Mc	
Date: 7/2/13	Prepared by: MBS	S/ESG	Photos: 45	558-4559, 4565-4568, 4574-4576, 4579-4581, 4587-4594
Type of Community: Oak-	hickory Forest			Forest Stand Area:
Stand Successional Stage:		Mid	Mature	Percent Canopy Closure: 80-100
		Existing V	/egetation	
Dominant Species in Cano	py: S	ize Class:	Notes:	
Chestnut oak, northern oak, pignut hickory, greinclusions of black gum and red maple.	en ash, with	2-6" 6-11" 12-20' 20-30' >30"	, borde	e scattered specimen trees (NE), several erline (20-23")
Dominant Species in Unde	erstory:		Notes:	
Muscle wood, pignut hi		lack gum	100	
Dominant Species in Herb Stilt grass, high bush b creeper Downed Woody Debris:				eies Present;
High Medium Low	High Medium Low	1.0,000	유민하는 이 존개하는 경기를	rass, garlic mustard
General Stand Conditions Stand in good condition		er, and tre	ees health	y.

Forest Stand ID: FS	2	Project: MidC	ounty- Snow
Owner/Applicant: M		State: Md	County: Mont
Date: 7/2/13	Prepared by: MBS/ESG	Photos: 4560-	4564, 4569-4571, 4573

Type of Community: Tulip	poplar Association		Forest Stand Area:
Stand Successional Stage:	☐ Early ✓ Mid	Mature	Percent Canopy Closure: 60-80
	Exis	ting Vegetation	
Dominant Species in Canon Tulip poplar, red maple,	green ash Size C 2 4 1 2 2	lass: Notes:	: number of Specimen Trees, some erline (20-23")
Dominant Species in Under	rstory:	Notes:	
Musclewood, witch haze spice bush	∍l, black cherry, red ma	ıple,	
Dominant Species in Herba fern sp., jack-in-the pulp creeper, stilt grass	pit, skunk cabbage, Virg		
Downed Woody Debris: High Medium Low	Invasive Species Cover: High Medium Low		vasives: some multiflora rose, garlic
General Stand Conditions:			
Overall stand in good co invasive cover, trees an		the stream ba	anks and includes numerous wetlands; lov

Forest Stand ID: FS3		Project:	MidC	County- Snow
Owner/Applicant: Mont	Со	State: N		County: Mont
Date: 7/2/13	Prepared by: MBS/ESC	Photos:	4596-	4600, 4606-4608, 4610-4613
Type of Community: Virg	inia Pine		For	est Stand Area:
Stand Successional Stage	Early Mid	Mature	Per	cent Canopy Closure: 60-80
	Existin	g Vegetation		
Dominant Species in Can black cherry, black wa pine, red cedar, scatte	Inut, Virginia red tulip poplar 2-6 6-1 12-	" (8-1 1" 20" 30"		e class)
Dominant Species in Und Red cedar, black locus va pine, sassafras	erstory: st, spice bush, tree of heav	en, Mores area	abun	ndant understory than other forested
	baceous Layer: reeper, blackberry, multiflo berry, garlic mustard, Russ		:	
Downed Woody Debris:	Invasive Species Cover:	Invasive Spe	cies Pr	resent:
High Medium Low	High Medium Low	Wine berry	, garlio	c mustard, stilt grass, multiflora rose, Russian olive
General Stand Condition	s:			
Younger stand with pr declining trees; 1 spec	evalent pioneer species in cimen tree noted; higher in	understory vasive cove	stand r.	in fair condition with several

Forest Stand ID: FS4		Project	MidC	County- Snow
Owner/Applicant: Mont	Co	State: N		County: Mont
Date: 7/2/13	Prepared by: MBS/ES	G Photos:	4601	
Type of Community: Tulip	o poplar Assoc		For	rest Stand Area:
Stand Successional Stage:		Mature	Per	rcent Canopy Closure: 60-70
	Existin	ng Vegetation		
Dominant Species in Cano				
Tulip poplar, red maple	✓ 6-1 ✓ 12-	11" -20" -30"	specin	men trees
Dominant Species in Unde	erstory:	Note	s:	
Musclewood, hickory, s	spicebush, witch hazel			
Dominant Species in Herb Multiflora rose, greenb		Note	S:	
Downed Woody Debris: High Medium Low	Invasive Species Cover: V High Medium Low	Invasive Sp Stilt grass		
General Stand Conditions Fair condition with seve stream/wetland comple	eral declining trees, high i	nvasives, h	igh wo	oody debris; adjacent to

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: 165 SNOW City/County: MoraT ____ Sampling Date: 7 _____ State: MD Sampling Point: Investigator(s): KOH , WH H Section, Township, Range:_ Subregion (LRR or MLRA): MLRA 148 _____ Long: ____ Codneys silt loam Soil Map Unit Name: ___ NWI classification: _ Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes _____ No Are Vegetation _____, Soil _____, or Hydrology _____ 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? Is the Sampled Area Hydric Soil Present? No within a Wetland? Wetland Hydrology Present? Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) __ High Water Table (A2) Hydrogen Sulfide Odor (C1) X Drainage Patterns (B10) __ Saturation (A3) X Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) ___ Water Marks (B1) Presence of Reduced Iron (C4) ___ Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) __ Thin Muck Surface (C7) Drift Deposits (B3) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) ✓ Geomorphic Position (D2) __ Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes ____ No X Depth (inches): > D Surface Water Present? Yes ____ No _X_ Depth (inches): > 1 ~ Water Table Present? Yes ____ No _ Depth (inches): > 1 > Saturation Present? Wetland Hydrology Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: · BATH SIDIS OF BRANCH MEK +ib.

% Cover 40	Species?	Status FAC FAC	Total Number of Dominant
			Percent of Dominant Species That Are OBL, FACW, or FAC: (B) (B)
90 20% of 200	= Total Cov total cover:	er _	Prevalence Index worksheet:
			Column Totals: (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
80	Total Cove		1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
75 70 T	_ \' _	OBL FACW FACW	Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators 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 or equal to 3.28 ft (1 m) tall.
95 = 20% of to			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.
	Total Cove		Hydrophytic Vegetation Present? Yes No
	80 = 20% of 20% of 10 = 20% of	Cover Species? YO Y HO Y 10 Solution of total covers 20% of total covers 25 Y 70 Y	90 = Total Cover 8 20% of total cover: 18 80 = Total Cover 16 25

Sampling Point- W

(inches)	Matrix		th needed to docur	x Feature:	S				3.00
0-7	Color (moist)	%	Color (moist)	%	_Type ¹	Loc2	Texture		Remarks
	1048 4/2	100					Clay lo	61/1-1	
4-10	2,54 5/1	70	10 YR 4/6	30	C	PL	5,14,0	By loa	450
0-11	2.546/1	100					Gravel		
							0.000	-	
				-	_	_			
_		-							
		-		-					
				-					
ype: C=Co	ncentration, D=Deple	etion, RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: PL	=Pore Linia	ng M=Matrix
yarıc Soil II	ndicators:						Indica	tors for Pr	oblematic Hydric Soils
_ Histosol ((A1) ipedon (A2)		Dark Surface	(S7)			2		10) (MLRA 147)
_ Histic Epi _ Black His			Polyvalue Bel	ow Surfac	e (S8) (MI	_RA 147,	148) C	oast Prairie	Redox (A16)
	Sulfide (A4)		Thin Dark Sur Loamy Gleyed	tace (59) d Matrix (F	(MLRA 14	17, 148)	D:	(MLRA 147	7, 148)
Stratified	Layers (A5)		X Depleted Matr	ix (F3)	-1		_ PI	(MLRA 136	odplain Soils (F19)
	k (A10) (LRR N)		Redox Dark S						Dark Surface (TF12)
	Below Dark Surface rk Surface (A12)	(A11)	Depleted Dark	Surface	(F7)				n in Remarks)
	ucky Mineral (S1) (LF	R N	Redox Depres Iron-Mangane	sions (F8) - (540) (L	DD 11			
MLRA	147, 148)		MLRA 136		s (F12) (L	RR N,			
_ Sandy Gle	eyed Matrix (S4)		Umbric Surfac		MLRA 136	, 122)	3India	cators of hy	drophytic vegetation and
_ Sandy Re			Piedmont Floo	dplain So	ils (F19) (I	MLRA 14	3) wet	land hydrolo	ogy must be present,
	Matrix (S6) ayer (if observed):		Red Parent Ma	aterial (F2	1) (MLRA	127, 147	unle	ess disturbe	d or problematic.
Type:	ayer (ii observed):								
Depth (inch	nes).		-				20 10 10 10 10 10 10 10 10 10 10 10 10 10		V
	1007.						Hydric Soil F	Present?	Yes No
emarks;									10

WETLAND DETERMINATION DATA FORM -	- Eastern Mountains and Piedmont Region
Project/Site: YCS SNOW City/C	County: MONT Sampling Date: 7 2 13
	State: MO Sampling Point: W2
nvestigator(s): VSA W M M Section	on Township, Range:
andform (hillslope, terrace, etc.): Hoodplan Local reli	ief (concave convex none): 0000
Subregion (LRR or MLRA): MLRA 148 Lat:	Long:
Soil Map Unit Name: (0 loves SIT 106 m	Datum:
are climatic / hydrologic conditions on the site typical for this time of year? Y	
re Vegetation, Soil, or Hydrology significantly disturb	
Are Vegetation, Soil, or Hydrology naturally problems	
SUMMARY OF FINDINGS – Attach site map showing sam	ipling point locations, transects, important features, etc
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes No	Is the Sampled Area within a Wetland? Yes No
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
X Surface Water (A1) True Aquatic Plants (I	
High Water Table (A2) Hydrogen Sulfide Odd Saturation (A3) ✓ Oxidized Rhizosphere	
Water Marks (B1) — Presence of Reduced	- 19 min -
Sediment Deposits (B2) Recent Iron Reduction	
Drift Deposits (B3) Thin Muck Surface (C	27) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Ren	
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)	Geomorphic Position (D2)
✓ Water-Stained Leaves (B9)	Shallow Aquitard (D3) Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	71
Surface Water Present? Yes X No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No _k Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre-	vious inspections), if available
D	
Remarks: BOTTESSTO THE E MOTS	
· ABUTTILI & BELINETT GOOK M.b.	

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AND CONTROL OF ACT AND CONTROL OF ACT	Sampling Point: WZ minance Test worksheet:	ant Indicator	Dominant	Absolute % Cover	ree Stratum (Plot size: 20 R)
Total Number of Dominant Species Across All Stratus: Percent of Dominant Species Across All Stratus: Percent of Dominant Species Across All Stratus: Solver of India Cover 20% of Iotal Cover 1 Solver of India Cover 20% of Iotal Cover 1 Solver of India Cover 20% of Iotal Cove	IA-ODI FACILI FIG	0.	Species		
Total Number of Dominant Species Across All Strate: Percent of Dominant Species			Y	20	LIRIODENDROW TILIMPERA
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% of total cover. 50% of total cover. 50% of total cover. 70	/ _	1-1-1-1		-5	PRUTUS SEROTIAL
That Are OSE, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by: OSE, species X 2 = FACW species X 3 = FACW species X 4 = UPL species X 5 = Column Totals: (A) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1. Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% of total cover: Solve o					
Prevalence Index worksheet: Total % Cover of Multiply by: OBL species x1 = FACW species x2 = FACW species x3 = FACU species x3 = FACU species x4 = UPL species x5 = Column Totals: (A) Prevalence Index species x3 = FACU species x3 = FACU species x4 = UPL species x5 = Column Totals: (A) Prevalence Index species x3 = FACU species x3 = FACU species x3 = FACU species x3 = FACU species x4 = UPL species x5 = Column Totals: (A) Prevalence Index species x3 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index worksheet: Total % Cover of Multiply by: OBL species x1 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x4 = UPL species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x4 = UPL species x5 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x5 = Column Totals: (A) Frevalence Index species x1 = FACU species x1	cent of Dominant Species				
Prevalence Index worksheet: Total % Cover of: Multiply by: Obl. species	at Are OBL, FACW, or FAC: 014 (A/B				
Solve of total cover: 27 20% of total cover: 28 20% of total cover: 29 20% of total cover: 20% of total cover: 30% of total cover: 45 20% of total cover: 30% of total cove	valence Index worksheet:				
Solve of total cover: 273 20% of total cover: 45 20% of total cover:	Total % Cover of: Multiply by:	Cover	Total Cov	55 :	
FAC species x3 = FACU species x4 = UPL species x5 = Column Totals: (A) Prevalence Index = BIA = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% of total cover: 50% of total cover: 45 20% of total cover: 18 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% at an indicator of the problematic index is x3.0¹ - 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explications) indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree - Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub - Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft tall. Hydrophytic Vegetation Yes No - Vegetation Present? Yes No - Vegetation Present? Yes No - Vegetation Present?	L species x 1 =			5 20% of	
FACU species					
UPL species x 5 = Column Totals: (A) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is 50% 3 - Prevalence Index is 53.0° 4 - Morphological Adaptations' (Provide su data in Remarks or on a separate sheet — Problematic Hydrophytic Vegetation' (Explication Adaptations or four Vegetation' (Explication)		FACH	4		
Column Totals:	OU species x 4 =	FACU	4	_20_	HODISAIR IS ALCHANDED
Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0' 4 - Morphological Adaptations' (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explanation) Problematic Hydrophytic Vegetation (Explanation) Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines in all methods of size, and woody plants is sist than 3.28 ft tall. Woody Vine Stratum (Plot size: 50% of total cover: 50% of total cover: 20% of total cover: 70 = Total Cover 20% of total cover: Yes No Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explanation) 1 - Rapid Test for Hydrophytic Vegetation (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explanation) 1 - Rapid Test for Hydrophytic Vegetation (Explanation) 2 - Definitions of Four Vegetation (Dehn), regard height. Sapling/Shrub – Woody plants, excluding vines in all methods of the problematic in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explanation) 1 - All herbaceous (non-woody) plants, excluding vines of size, and woody vines greater than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft tall. Hydrophytic Vegetation Present? Yes No	. species x 5 =				3
Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0' 4 - Morphological Adaptations' (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Explanation) Problematic Hydrophytic Vegetation (Explanation) Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines in a 3.2 mit than 3 in. DBH and greater than or equal to 3.2 mit than 3 in. DBH and greater than or equal to 3.2 mit than 3 in. DBH and greater than 2.28 ft tall. Woody Vine Stratum (Plot size: 50% of total cover: 50% of total cover: 20% of total cover: 70 = Total Cover 20% of total cover: Yes No Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Yes No Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Yes No	umn Totals: (A) (B)				
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is £3.0' 4 - Morphological Adaptations' (Provide sudata in Remarks or on a separate sheet Problematic Hydrophytic Vegetation' (Explainment) (Explainment) (Explainment) (Explainment) (Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree — Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub — Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2t more in diameter and plants are sheet by the second plants are sheet by the sheet by the second plants are sheet by the sheet by the second plants are she	Provolence (adam = D/A				
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ' 4 - Morphological Adaptations' (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation (Expl. Volume Stratum (Plot size: 5 V					
Signature Sig	- 14 M ; I T (1 M)				
3 - Prevalence Index is \$3.0¹ 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Expl. 108L) 1					
50% of total cover: 45 20% of total cover: 8 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Explain Nydrophytic Vegetation² (
data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Explainment of Hydrophytic Vegetation² (Explainmen					100
Problematic Hydrophytic Vegetation (Explication of Hydrophytic Vegetation of Hydrophytic Vegetat	그는 병하실 , 이 지금 보고 하면요? 그렇게 그렇게 되었다면 그렇게 하고 있는데 바로 하면 하다고 않다.	/er:/8	otal cover:	20% of t	-10
'Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 im) tall. Herb – All herbaceous (non-woody) plants, regard fize, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Total Cover	그리 아들이 아내리를 살아보고 있다면 하면 하는데 살아내면 하는데	Pin i	W		
Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 in) tall. Herb – All herbaceous (non-woody) plants, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Woody vine – All woody vines greater than 3.2 height. Hydrophytic Vegetation Present? Yes No	Troblematic Trydrophytic vegetation (Explain)	_ UBL		40	
be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 m) tall. Herb – All herbaceous (non-woody) plants, regard fisize, and woody plants less than 3.28 fit tall. Woody Vine Stratum (Plot size:) Folial Cover	icators of hydric soil and wotland hydrology must	_ UBL		-50	
Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	resent, unless disturbed or problematic.				
Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 m) tall. Herb – All herbaceous (non-woody) plants, regard fixed, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Hydrophytic Vegetation Present? Yes No	nitions of Four Vegetation Strata:				
more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes X No					
height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.26 m) tall. Herb – All herbaceous (non-woody) plants, regards size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.26 height. Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Yes No	e in diameter at breast height (DBH), regardless of				
Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.26 m) tall. Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	ht.				
than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regards of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	ling/Shrub – Woody plants, excluding vines, less				
Herb – All herbaceous (non-woody) plants, regards of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	3 in. DBH and greater than or equal to 3.28 ft (1				
Herb – All herbaceous (non-woody) plants, regards size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Herb – All herbaceous (non-woody) plants, regards size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	all.				
50% of total cover:	o - All herbaceous (non-woody) plants, regardless			an	
Woody vine – All woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No	ze, and woody plants less than 3.28 ft tall.				50% of total cover:
height. Hydrophytic Vegetation Present? No No	dy vine - All woody vines greater than 3.28 ft in	er:/_6	otal cover:_	_ 20% 01 10	
Hydrophytic Vegetation Present? Yes No	nt.				
Hydrophytic Vegetation Present? Yes No		3			
Hydrophytic Vegetation Present? Yes No		3		-	
Vegetation Present? Yes No No			_		
= Total Cover Present? Yes No					
50% of total cover: 20% of total cover:	A CONTRACTOR OF THE CONTRACTOR		Talal O		
emarks: (Include photo numbers here or on a separate sheet.)	162 NO				50% of total cover
America (merces prove numbers here or on a separate street.)		si	tai cover		
				166(.)	

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((Note: 4

trail.

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Depth Matrix	Redox Features	nfirm the absence of indicators.)
inches) Color (moist) %		Z Texture Remarks
	70	clay love as
6-127 754 512 7	5 751R516 25 C PI	Litt clay la a
		C LIFE C PD MA
ype: C=Concentration, D=Depletion,	RM=Reduced Matrix, MS=Masked Sand Grains.	21
ydric Soil Indicators:	mark, mo masked band Grants.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
_ Histic Epipedon (A2)	Polyvalue Below Surface (S8) (MLRA	147, 148) Coast Prairie Redoy (A16)
_ Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 14	(MLRA 147, 148)
Hydrogen Sulfide (A4)Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
_ 2 cm Muck (A10) (LRR N)	Depleted Matrix (F3)Redox Dark Surface (F6)	(MLRA 136, 147)
_ Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)Other (Explain in Remarks)
_ Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	() (2.00.10	
_ Sandy Gleyed Matrix (S4)	MLRA 136)	1
_ Sandy Redox (S5)	Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA	, , regetation and
_ Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127,	wetland hydrology must be present, unless disturbed or problematic.
estrictive Layer (if observed):		smoss distances of problematic.
Type:		
Type: Depth (inches):		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
Type: Depth (inches):		Hydric Soil Present? Yes No
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Type: Depth (inches):		Hydric Soil Present? Yes No No
Type: Depth (inches):		Hydric Soil Present? Yes No No
Type:		Hydric Soil Present? Yes No No
Type: Depth (inches):		Hydric Soil Present? Yes No No

Sheet
Data
U.S.
of the
Waters

					reature ID: wo	NO		offically Officer.
Date: 7/2/13		State: MD			Photos: 3325			
Crew: WMM. KJH		County: Mo			Last Flag Number:	umber:		
Feature Hydrologic Class (check one):	ss (check one):	•			0			
Tidal	Perennial		Intermi	Intermittent (SNE))		E	Ephemeral (SNE)
TNW (Subject to ebb and flow)	TNW – Perennial (Flowing year round)	O (pui	PW – S low at le	RPW – Seasonal (must flow at least 3 months a	00	Non-RPW (draining	Non-RPW draining uplands (not jurisdictional) Non-RPW erosional feature (not jurisdictional)
	RPW – Perennial (Flowing year round)	(pui	year)		00	Non-RPW	with ab	Non-RPW with abutting wetland Non-RPW with adjacent wetland
Describe rational substantia for hydrologic class:	substantial flow at time of inventory	nventory			0	Non-RPW wetland adj (outside of study area)	wetland study a	Non-RPW wetland adjacent or abutting upstream (outside of study area)
Feature Description: (check all that apply)	neck all that apply)							
Shape (with re	Shape (with respect to top of bank)	(3			Substrate			Vegetation
Natural Channel Shape	Width: 5-10'	Depth: 2-5'	✓ Si	Silts		Muck		RB: Tulip poplar, red maple, cherry,
Artificial (man-made) Manipulated (man-altered)	Bank Erosion/stability: Moderately unstable	tability: stable	ŭ ŭ >	Cobbles V Bedrock	/ Gravel	Other:		spice bush, hickory, carpinus, witch hazel, fern sp.
Other:	Side slope: \(\simeq 1:1\)(to verti	1(to vertical)	7:1	>	3:1	[4:1(or less)		LB: Same as RB
Notes: Bennett Creek tributary, bank depth 2-5'	ry, bank depth 2-	5'						
Flow & Biological Characteristics: (check all that apply)	eteristics: (check a	ll that apply)						
Surface Flow	Subsurface Flow				Biological	Biological Characteristics	ristics	A
Single channel – confined	Yes	✓ Riparian corridor	×.			Habitat for:		
Multiple/braided channels	No >	Type: Forest		Width: >100'		Federally listed species	listed s	pecies
Poorly/undefined channel Overland Sheetflow	Unknown	✓ Wetland fringe	5.6			Fish/spawn areas Other environmen	vn areas	Fish/spawn areas Other environmentally sensitive areas
Notes: Moderate bank erosion throughout reach. 3-5	n throughout rea	ch. 3-5' tall.						
Non-tidal tributary has: (check all that apply; include photos for each & list photo #)	(check all that appl	y; include photos fo	r each	& list phote	(# (
Bed and Banks			Ore	dinary Hig	Ordinary High Water Mark	irk		
Yes Clear	Clear, natural line impressed on the bank	ssed on the bank	>	Sediment deposition	eposition	^	Sedi	Sediment sorting
No	Changes in the character of soil	ofsoil		Water staining	ing	^	☐ Scour	Jr.
Shelving	ving		/	Presence of	Presence of litter and debris	bris	Obs	Observed/predicted flow events
V Vege	Vegetation matted down, bent, or	, bent, or absent	<u> </u>	Destruction	Destruction of terrestrial veg.	veg.	Abr	Abrupt change in plant community
✓ Leaf	Leaf litter disturbed			Presence of	Presence of wrack line		Other:	er:
Tidal tributary has: (check all that apply; include photos for each & list photo #)	ck all that apply; in	clude photos for ea	ch & lis	t photo #)				
High Tide Line	ال	Mean High Water		Mark indicated by:	ed by:		Che	Chemical Characteristics
Oil or scum line along shore objects	objects	Survey to available datum	ilable da	ıtum		Water is clear	s clear	
Fine shell or debris deposits (foreshore)	(foreshore)	Physical markings	cings			Water is discolored	s discol	ored
Physical markings/characteristics	stics		nes/chan	ges in type.	S	Oily film	ш	
Tidal gauges						Other:		

WETLAND DETER	MINATION DATA FORM	- Eastern Mountai	ns and Piedmont Region	
Project/Site: MCS - SNow				7/2/17
Applicant/Owner: ML DOT			State: Nampling Point	
Investigator(s): 14 H M	Secti			1_VV 4
Landform (hillslope, terrace, etc.):	HdaM locals	liof (concave, convey, no	201 AOM A	7
Subregion (LRR or MLRA): MLRA 12	Localle Localle	nier (concave, convex, no	Slop	e (%):
Soil Map Unit Name: Co doro			NWI classification:	
Are climatic / hydrologic conditions on the s				
Are Vegetation, Soil, or Hyd				No
Are Vegetation, Soil, or Hyd	lrology naturally problem	natic? A & (If needed,	explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Atta	ch site map showing sar	npling point locati	ons, transects, important fe	atures, etc.
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes No	
Remarks:	14 1/2 14 14 14 14 14 14 14 14 14 14 14 14 14			
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators (minimum of t	wo required)
Primary Indicators (minimum of one is req	uired; check all that apply)		Surface Soil Cracks (B6)	wo requirea)
X Surface Water (A1)	True Aquatic Plants	(B14)	Sparsely Vegetated Concave S	Jurface (B8)
K High Water Table (A2)		dor (C1)	Drainage Patterns (B10)	unace (Bo)
★ Saturation (A3)		res on Living Roots (C3)	Moss Trim Lines (B16)	
Water Marks (B1)	Presence of Reduce		Dry-Season Water Table (C2)	
Sediment Deposits (B2)	Recent Iron Reduction	on in Tilled Soils (C6)	Crayfish Burrows (C8)	
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation Visible on Aerial Ima	agery (C9)
Algal Mat or Crust (B4)	Other (Explain in Re	marks)	Stunted or Stressed Plants (D1	The state of the s
Iron Deposits (B5)			Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)	
Water-Stained Leaves (B9)			Microtopographic Relief (D4)	
Aquatic Fauna (B13)			FAC-Neutral Test (D5)	
Field Observations:	AL AL	1.0		
	No Depth (inches):			
	No Depth (inches):	Common Company (Common Common	1	
Saturation Present? Yes	No Depth (inches):	Wetland	Hydrology Present? Yes	No
Describe Recorded Data (stream gauge, r	nonitoring well, aerial photos, pre	evious inspections), if av	ailable:	
Remarks: PFIGTOS 330-3	23.7			
10111111	rett (reck tri)			
0 14201440 126V	rett livick IVI	D		

Tree Stratum (Plot size: 26 P) 1. PRUHUS SEROTUM	- Absolute <u>% Cover</u>	Dominant Species?	Status	Dominance Test worksheet: Number of Dominant Species	5	
2. LIRO ALLOFON TUUPITEIN	- Un	-	FACU	That Are OBL, FACW, or FAC:	-	(A)
3. CATEINUS CATOLIAIRUM	40	4	FAC	Total Number of Dominant Species Across All Strata:	6	(B)
4,						(0)
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	832	(A/E
6		-		Prevalence Index worksheet:		
	90	= Total Cov		Total % Cover of:	Multiply by:	
50% of total cover:	15 20% of	total cover:	er IS	OBL species x		
Sapling/Shrub Stratum (Plot size: 20 12)	2070 01	total cover.		FACW species x		
1. ILEU MERTICINATA	217	V	FACIN	FAC species x		
2. Candal Carolingoup		1	CAL	FACU species x		
			THU			
3,				UPL species x :		
4				Column Totals: (A)	_ (B)
5				Prevalence Index = B/A =		
5				Hydrophytic Vegetation Indicat		_
7	-			1 - Rapid Test for Hydrophyt		
3	-			2 - Dominance Test is >50%		
9	-/1			3 - Prevalence Index is ≤3.01		
7	=	Total Cove	er ~			
50% of total cover: _ d	20% of	total cover:	X	4 - Morphological Adaptation		
Herb Stratum (Plot size:)				data in Remarks or on a s	and the second of the second o	
1. CATEN lurida	15	Y	OBL	Problematic Hydrophytic Veg	getation¹ (Explai	in)
2. FAISC MATTLE (Boehmerra Cylva	(Ca) 10		PALW			
3. STANDED MATERIAL POPULATION	75	Y	OBL	Indicators of hydric soil and wetla	and hydrology m	nust
4. rading (Agrostis argantea)	5		EACW	be present, unless disturbed or pr		
5. RUBIN'S PROCENICORSPUS	5		TUCAA	Definitions of Four Vegetation	Strata:	
		-		Tree - Woody plants, excluding v	ines 3 in (7.6 c	cm) o
				more in diameter at breast height	(DBH), regardle	ess of
				height.		
3,				Sapling/Shrub - Woody plants, e	excluding vines	loce
)	. —			than 3 in. DBH and greater than o	or equal to 3.28	ft (1
0				m) tall.		-111
11				Herb - All herbaceous (non-wood	dv) plants regar	dlace
	_60 =	Total Cove	er	of size, and woody plants less that	in 3.28 ft tall.	uless
50% of total cover: 30	20% of t	otal cover:_	12	W		Sir.
Woody Vine Stratum (Plot size:)				Woody vine – All woody vines gr height.	eater than 3.28	ft in
1			1	noight.		
3						
4,						
				Hydrophytic		
3				Vegetation	227	
F00/ - [1.1-1		Total Cove		Present? Yes	No	
50% of total cover:		otal cover:_				
Remarks: (Include photo numbers here or on a separate	sheet.)					

(1) 1 (ZAS ((7.00 (Care (1 1 (par (7 47) (an (Marie Com (Path 1 (and 1 1000

(Cold

(Carl

epth Matrix nches) Color (moist) %	Redox Features Color (moist) % Type Loc²	
5-1 2.54 5/2 100		Clay lann
-7 7,54 5/1 100		Sandy lour Grovel
		Service Contracted
REFUSAL D 7	, ii	
AUTOSAL 10 /	·	· —— ————
pe: C=Concentration, D=Depletion, RN	M=Reduced Matrix, MS=Masked Sand Grains.	2.
dric Soil Indicators:	Treesess matrix, mo-masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils
Histosol (A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Below Surface (S8) (MLRA 14	7, 148) Coast Prairie Redox (A16)
Black Histic (A3) Hydrogen Sulfide (A4)	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)	— Piedmont Floodplain Soils (F19)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)	(MLRA 136, 147)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)Other (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MI DA 147 148)	A 41 D A 4 D D	
MLRA 147, 148) Sandy Gleved Matrix (S4)	MLRA 136)	4
MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)	Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6)	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	148) wetland hydrology must be present,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed):	Umbric Surface (F13) (MLRA 136, 122)	148) wetland hydrology must be present
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	148) wetland hydrology must be present,
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) trictive Layer (if observed): ype: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches):	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) strictive Layer (if observed): Type: Depth (inches): narks:	Umbric Surface (F13) (MLRA 136, 122)Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present, unless disturbed or problematic.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: MLS - 500 W City/County: MOST. __ Sampling Date: 7 Applicant/Owner: MC No T State: MS Sampling Point: Section, Township, Range: Investigator(s): KJH 113 HIM Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): None Subregion (LRR or MLRA): MLRA Long: ____ Sift la Am _____ NWI classification: Soil Map Unit Name: Co Do &u S Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No Are Vegetation _____, Soil _____, or Hydrology _____ 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 No Is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) ___ True Aquatic Plants (B14) _ Sparsely Vegetated Concave Surface (B8) High Water Table (A2) _ Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) __ Crayfish Burrows (C8) __ Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) __ Water-Stained Leaves (B9) Microtopographic Relief (D4) __ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes _X No ____ Depth (inches): 17-Surface Water Present? Yes X No Depth (inches): Water Table Present? Yes / No ____ Depth (inches): Saturation Present? Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available Remarks: PHOTOS 3333-3334 WETLAND ABUTMY & Bennett Hib

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: W5

1. Acev rubrum	50 20 16	Species?	Status FACU FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by:
50% of total cover: 40 Sapling/Shrub Stratum (Plot size: 10) 1. Lindera benzoia 2	20% of	<u>+</u>	from	OBL species x 1 = FACW species x 2 = FAC species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
8	40 : 2 20% of 8 0	= Total Covertotal cover:_	0BL	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:
5	80 =			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 or equal to 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.
2	= 20% of t	Total Cover		Hydrophytic Vegetation Present? Yes No
the separate sil	561.7			

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Depth	Matrix	600 acts 200	Pode	v Easture	muicator	or confirm	m the absence of ind	icators.)
(inches)	Color (moist)	_ %	Color (moist)	x Feature %	Type	Loc ²	Texture	Domestic
0-5	2.545/1	80	104R 5/6	20	C	PL	Silt loam	Remarks
5-12	7,54 5/1	90	104P5/6	10	C	PI	5:1+10cm	
			1000		\ 		211110000	
		_						
				_	_			
-	-							
				7	_			
Type: C=Co	oncentration, D=Depl	etion RM=		-141				
lydric Soil I	ndicators:	CHOTI, THE	riveduced Matrix, MS	- Wasked	Sand Gra	ains.	² Location: PL=Pore	Lining, M=Matrix.
_ Histosol	(A1)		Dark Surface	(S7)				r Problematic Hydric Soils ³ :
	ipedon (A2)		Polyvalue Bel		ce (S8) (N	ILRA 147.	2 cm Mul	ck (A10) (MLRA 147) airie Redox (A16)
Black His			Thin Dark Sur	face (S9)	(MLRA 1	47, 148)		A 147, 148)
	n Sulfide (A4) Layers (A5)		Loamy Gleyer	d Matrix (I	F2)			t Floodplain Soils (F19)
	ck (A10) (LRR N)		Medical Material Medical Me		6)		(MLRA	136, 147)
Depleted	Below Dark Surface	(A11)	Depleted Dark	Surface	(F7)		Very Sha	llow Dark Surface (TF12) plain in Remarks)
_ Thick Da	rk Surface (A12)		Redox Depres	sions (F8	3)		Other (E)	cpiairi iri Remarks)
_ Sandy M	ucky Mineral (S1) (L. 147, 148)	RR N,	Iron-Mangane	se Masse	es (F12) (L	RR N,		
Sandy GI	eyed Matrix (S4)		MLRA 136				2	
Sandy Re	edox (S5)		Umbric Surface Piedmont Floor	e (F I3) (I Idolain Sc	VILRA 13	5, 122) (MI DA 44)	Indicators o	of hydrophytic vegetation and
_ Stripped	Matrix (S6)		Red Parent M	aterial (F2	21) (MLRA	127, 147	4.1	drology must be present, urbed or problematic.
	ayer (if observed):					2.325.47.70	diness dist	arbed or problematic.
Туре:	N. S.V.		-					4.0
Depth (incl	nes):		_				Hydric Soil Presen	t? Yes No
Remarks:								

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: City/County: MONT Sampling Date: ML DOT Applicant/Owner. State: MD Sampling Point: W Investigator(s): 454 451 H M Section, Township, Range:_ Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): NOV Subregion (LRR or MLRA): MLRA 48 Lat: _ Long: ____ __ NWI classification: _ Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 🙏 Are "Normal Circumstances" present? Yes Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? 📈 5 (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 No Is the Sampled Area Hydric Soil Present? No within a Wetland? Wetland Hydrology Present? Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) ___ True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) X High Water Table (A2) Hydrogen Sulfide Odor (C1) __ Drainage Patterns (B10) X Saturation (A3) X Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) __ Crayfish Burrows (C8) __ Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Market Geomorphic Position (D2)

Market Geomorphic Position (D Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Microtopographic Relief (D4) _ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes X No ___ Depth (inches): Yz Surface Water Present? Water Table Present? Yes _ X No _ _ Depth (inches): X No ____ Depth (inches): Saturation Present? Wetland Hydrology Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: . ABOTTING Branch (reck trib.

Plot size: 20)	- Absolute <u>% Cover</u> 2 0	Dominant Species?	Status FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)
Carpines carolinea	20		FAC	Total Number of Dominant Species Across All Strata: (B)
				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/E
	40	= Total Cove	er	Prevalence Index worksheet:
sapling/Shrub Stratum (Plot size:) Liveadyndran tulipifera Carpinal en ralitiana	30	. 1	FACU	FACW species x 2 = FAC species x 3 =
			FAC	FACU species x 4 = UPL species x 5 = Column Totals: (A) (B)
				Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
		Total Cove		1 - Rapid Test for Hydrophytic Vegetation ∑ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0'
erb Stratum (Plot size:) Symplocarpus foetidus Moss Sp. Vibernem dentalem	20% of t	total cover:_	081	4 - Morphological Adaptations¹ (Provide supportin data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must
			FAC	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.
0				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
50% of total cover: 27.5 500 of total cover: 27.5		Total Covertotal cover:_	- 11	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.
		_		Torgin.
				Hydrophytic Vegetation
		Total Cover		Present? Yes No

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Depth	Matrix		Pode		or or confirm	n the absence of ind	licators.)
(inches)	Color (moist)	%	Color (moist)	x Features	Loc²	Texture	B
0-4	2.54 4/1	100		70 170		The section of the last of the	Remarks
1-17	7.54 5/1	70	104R 5/6	35		Silt loam	
2-15	F - 2 1 - /]	70	1014 3/8	30 0	PL	Silty clay	
		-					
_		_					
							
			The state of the s				
Type: C=Co	ncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked Sand	Grains.	² Location: PL=Pore	Lining, M=Matrix.
Histosol (600 200	25.50		Indicators for	or Problematic Hydric Soils ³
	ipedon (A2)		Dark Surface	(S7)		`2 cm Mu	ick (A10) (MLRA 147)
Black His			Polyvalue Bel	low Surface (S8)	(MLRA 147,		rairie Redox (A16)
	Sulfide (A4)		Loamy Gleye	rface (S9) (MLR	147, 148)		A 147, 148)
	Layers (A5)		Z Depleted Mat			Piedmon	nt Floodplain Soils (F19)
	k (A10) (LRR N)		Redox Dark S				A 136, 147)
	Below Dark Surface	e (A11)		k Surface (F7)			allow Dark Surface (TF12) xplain in Remarks)
	rk Surface (A12)		Redox Depres	ssions (F8)		00101 (E	Apiairi ii Nemarks)
	ucky Mineral (S1) (L	RR N,	Iron-Mangane	ese Masses (F12	(LRR N,		
	147, 148)		MLRA 136	5)			
_ Sandy Gir	eyed Matrix (S4)		Umbric Surfac	ce (F13) (MLRA	136, 122)	3Indicators	of hydrophytic vegetation and
Cond. Da			Piedmont Flor	odplain Soils (F1	9) (MLRA 14	8) wetland by	ydrology must be present,
_ Sandy Re			D-d D			A CONTRACTOR	, or broading
Sandy Re Stripped N	Matrix (S6)		Red Parent M	aterial (F21) (ML	RA 127, 147	A CONTRACTOR	turbed or problematic.
Sandy Re Stripped Nestrictive La			Red Parent M	aterial (F21) (ML	RA 127, 147	A CONTRACTOR	sturbed or problematic.
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Sandy Re Stripped Mestrictive La Type: Depth (inch	Matrix (S6) ayer (if observed):		Red Parent M	aterial (F21) (ML	RA 127, 147) unless dis	sturbed or problematic.
Sandy Re Stripped Mestrictive La Type: Depth (inch	Matrix (S6) ayer (if observed):		Red Parent M	aterial (F21) (ML	RA 127, 147) unless dis	sturbed or problematic.
Sandy Re Stripped Mestrictive La Type: Depth (inch	Matrix (S6) ayer (if observed):		Red Parent M	aterial (F21) (ML	RA 127, 147) unless dis	sturbed or problematic.

Waters of the U.S. Data Sheet

State: MD	riolect: MID COON! I						
Hydrologic Class (check one): State County: Mo Flowing in summer Flowing year round Flowing in summer Flowing in summer Flowing in summer Flowing in summer Flowing year round Flowing in summer Flowing year round Flowing in summer Flowing Flowing in summer Flowing Flowi	Date: 7/2/13		State: MD		Photos: 334		
Perennial RPW - Seasonal (must O Non-RPW draining page year round) RPW - Seasonal (must O Non-RPW with about perennial flow at least 3 months a O Non-RPW with about perennial flow at least 3 months a O Non-RPW with about perennial flow at least 3 months a O Non-RPW with about perennial flow at least 3 months a O Non-RPW with about apply) Substrate Controle Courside of study at material perennial flow at least 3 months Controle Courside of study at material perennial flow at least 3 months Controle Co	Crew: WMM, KJH		County: Mo		Last Flag	lumber:	
Perennia Perennial Powat least 3 months a O Non-RPW with ab O Non-RPW O Non-RPW with ab O Non-RPW O Non-R	Feature Hydrolog	ic Class (check one):					
Perennial RPW - Seasonal (must agreer round) Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Tidal	Perenni	al	Intermittent (S	(NE)		Ephemeral (SNE)
Courside of study a	TNW (Subject to ebb flow)	06	(pu	RPW – Seasonal flow at least 3 m year)	(must O onths a O	Non-RPW dr Non-RPW er Non-RPW wi	aining uplands (not jurisdictional) sional feature (not jurisdictional) th abutting wetland
O Non-RPW wetland (outside of study a substrate	Commence of the last	(Flowing year r	nd)	2000	0	Non-RPW wi	th adjacent wetland
Pof bank Substrate Substrate Pof bank Substrate Cobbles	F-101	ving in summer			0	Non-RPW we (outside of st	tland adjacent or abutting upstream udy area)
Substrate Substrate Substrate Substrate Substrate	Feature Descripti	on: (check all that apply)					
Erosion/stability: Tately unstable Iope-[A] 1:1(to vertical) Check all that apply) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that all all all all all all all all all a	Shape (1	with respect to top of ban	(K)		Substrate		Vegetation
Cobbles Cobb	✓ Natural Channel Shap	e Width: 5-20'			✓ Sands	Much	
Check all that apply) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that apply; include photos for each & list photo #) Check all that water Mark indicated by: Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply; include photos for each & list photo #) Chemic apply app	Artificial (man-made)	A.	stability:	✓ Cobbles Redrock	/ Gravel		
Check all that apply Check all that apply Check all that apply Type: Forest	Other:		:1(to vertical)		3:1		LB:
Surface Flow Subsurface Flow A Riparian corridor Biological Characterist	Notes: Bennett creek, k	ank depth 2-5'					
Surface Flow Rechannel - Confined Yes Type: Forest Width: >100' Habitat for: Ultiple/braided channels V No Type: Forest Width: >100' Federally lise Ordinary High Water Mark Tidal tributary has: (check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving Check all that apply; include photos for each & list photo #) Shelving	Flow & Biological	Characteristics: (check of	all that apply)				
Pederally list ordined Yes Type: Forest Width: >100' Federally list orly/undefined channels You Type: Forest Width: >100' Fish/spawra Fi	Surface Flow	Subsurface Flow			Biologica	I Characteris	tics
ultiple/braided channels	Single channel – confi		✓ Riparian cor	ridor	H	abitat for:	
Other environ Clear, natural line impressed on the bank Check all that apply; include photos for each & list photo #) Same Banks Check all that apply; include photos for each & list photo #) Same Banks Chear, natural line impressed on the bank Chear Sedimary High Water Mark Chear Shelving Chear Chea	Multiple/braided chan	>	Type: Forest		100,	Federally li	sted species
Non-tidal tributary has: (check all that apply; include photos for each & list photo #) Shelving Changes in the character of soil Changes Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Line Check all that apply; include photos for each & list photo #) High Tide Lin	Poorly/undefined char			ge		Fish/spawn	areas
Non-tidal tributary has: (check all that apply; include photos for each & list photo #) Ordinary High Water Mark 1 and Banks Clear, natural line impressed on the bank ✓ Sediment deposition ✓ 2 Shelving ✓ Vegetation matted down, bent, or absent ✓ Destruction of terrestrial veg. ✓ ✓ Vegetation matted down, bent, or absent ✓ Destruction of terrestrial veg. ✓ ✓ Leaf litter disturbed ✓ Presence of wrack line ✓ Tidal tributary has: (check all that apply; include photos for each & list photo #) ✓ High Tide Line Mean High Water Mark indicated by: ✓ I or scum line along shore objects Survey to available datum ✓ I e shell or debris deposits (foreshore) Physical markings ✓ Vegetation lines/changes in types ✓ Other:	Overland Sheetflow					Other envir	onmentally sensitive areas
Non-tidal tributary has: (check all that apply; include photos for each & list photo #) Sedimary High Water Mark Clear, natural line impressed on the bank Clear, natural line inspection Clear, natural debris Clear, natural line inspection Clear, natural debris Clear, natural line inspection Clear, natural debris Clear, natural	Notes: Moderate bank	erosion throughout rea					
Sudding Clear, natural line impressed on the bank A Sediment deposition Clear, natural line impressed on the bank A Sediment deposition Clear, natural line impressed on the bank A Sediment deposition A Shelving Shelving A Shelving	Non-tidal tributar	y has: (check all that app	ly; include photos J	for each & list p.	hoto #)		
Clear, natural line impressed on the bank A Sediment deposition A	Synes due dos			Ordinary	High Water M	ark	
Changes in the character of soil Water staining	✓ Yes	Clear, natural line impre		✓ Sedime	nt deposition	1	Sediment sorting
Shelving Shelving Vegetation matted down, bent, or absent V Destruction of terrestrial veg. Italian tributary has: (check all that apply; include photos for each & list photo #) Fligh Tide Line Mcan High Water Mark indicated by: Among the shell or debris deposits (foreshore) Physical markings Mater is displayed and markings/characteristics Vegetation lines/changes in types Oily film other: Other:	No	Changes in the character	r of soil	Water s	taining	<i>></i>	Scour
✓ Vegetation matted down, bent, or absent ✓ Destruction of terrestrial veg. Tidal tributary has: (check all that apply; include photos for each & list photo #) High Tide Line Mcan High Water Mark indicated by: I or scum line along shore objects Survey to available datum Water is classed in water is classed by: ne shell or debris deposits (foreshore) Physical markings Water is displayed at water is displayed at water is displayed at water is displayed and water is displayed		Shelving		/ Presenc	e of litter and de	bris	Observed/predicted flow events
Tidal tributary has: (check all that apply; include photos for each & list photo #) Tidal tributary has: (check all that apply; include photos for each & list photo #) Nean High Water Mark indicated by: I or scum line along shore objects I or		Vegetation matted dowr	1, bent, or absent		tion of terrestria	li veg.	Abrupt change in plant community
Tidal tributary has: (check all that apply; include photos for each & list photo #) High Tide Line Mean High Water Mark indicated by: Chemical I or scum line along shore objects Survey to available datum Water is clear as shell or debris deposits (foreshore) Physical markings Water is discolored ysical markings/characteristics Vegetation lines/changes in types Oily film dal gauges Other:	>	Leaf litter disturbed		✓ Presenc	e of wrack line		Other:
High Tide Line Mean High Water Mark indicated by: Chemical I or scum line along shore objects Survey to available datum Water is clear ne shell or debris deposits (foreshore) Physical markings Water is discolored ysical markings/characteristics Vegetation lines/changes in types Oily film dal gauges Other:	Tidal tributary ha	s: (check all that apply; ir	iclude photos for e	ach & list photo	(#)		
l or scum line along shore objects le shell or debris deposits (foreshore) ysical markings/characteristics dal gauges Survey to available datum Physical markings Vegetation lines/changes in types	acons design a mare a mare principal principal	Ce Line	7 0	Vater Mark ind	icated by:		
ne shell or debris deposits (foreshore) Physical markings ysical markings/characteristics Vegetation lines/changes in types dal gauges	Oil or scum line along	shore objects	Survey to av	ailable datum		Water is	slear
ysical markings/characteristics	Fine shell or debris de	posits (foreshore)	Physical mar	kings		Water is o	iscolored
dal gauges	Physical markings/cha	racteristics	Vegetation li	ines/changes in t	ypes	Oily film	
Notes	Tidal gauges			The Corn		Other:	
	Notes:						

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region Project/Site: City/County: __ Sampling Date: State: MD Sampling Point: W Applicant/Owner: Investigator(s): _ Section, Township, Range: Landform (hillslope, terrace, etc.): _ Local relief (concave, convex, none): \(\lambda \) Subregion (LRR or MLRA): MLRA 149 Datum: HATBORD SILL LOAM Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? \$\int 0\$ Are "Normal Circumstances" present? Yes Are Vegetation _____, Soil _____, or Hydrology _____ 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? Is the Sampled Area Hydric Soil Present? Yes within a Wetland? Wetland Hydrology Present? Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) ✓ High Water Table (A2) Hydrogen Sulfide Odor (C1) __ Drainage Patterns (B10) ✓ Saturation (A3) √ Oxidized Rhizospheres on Living Roots (C3) __ Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) ___ Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) __ Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) ✓ Water-Stained Leaves (B9) Microtopographic Relief (D4) _ Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes X No ____ Depth (inches): Surface Water Present? Yes _ 1/2 No ____ Depth (inches): Water Table Present? X No ____ Depth (inches): Saturation Present? Wetland Hydrology Present? Yes_ (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: · Abuttha Benorth Creck

19 10 .	Absolute	Dominant		Dominance Test worksheet:
Free Stratum (Plot size:)		Species?	-	Number of Dominant Species
ACER RUBRUM	80	-7	FAC	That Are OBL, FACW, or FAC: (A)
MENDENDING TUMPIFIERS	_20		EACH	Total Number of Dominant
3				Species Across All Strata: (B)
				Persont of Device of Co.
				Percent of Dominant Species That Are OBL, FACW, or FAC:832 (A/
·				Prevalence Index worksheet:
	100 :	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:	20	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 10 ()		. 1	_	FACW species x 2 =
LLEX VEYTILLAMA	30	4	FACW	FAC species x 3 =
Linder of Building		1	FACW	FACU species x 4 =
				UPL species x 5 =
<u> </u>				Column Totals: (A) (B
A				B. C.
				Prevalence Index = B/A =
·				Hydrophytic Vegetation Indicators:
· · · · · · · · · · · · · · · · · · ·				1 - Rapid Test for Hydrophytic Vegetation
				Z 2 - Dominance Test is >50%
Total Control of the	90 =	Total Cove	er -	3 - Prevalence Index is ≤3.0¹
50% of total cover: 45	20% of t	otal cover:	18	4 - Morphological Adaptations (Provide supporting
lerb Stratum (Plot size:)				data in Remarks or on a separate sheet)
SAMPLIOLARIUS PORTIDUS		4	OBL	Problematic Hydrophytic Vegetation (Explain)
. Persicoria hydropiperoides		1	OBL	To me and the second se
LIJOUR BENTOIN	10		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Four Vegetation Strata:
				beinitions of Four Vegetation Strata:
				Tree - Woody plants, excluding vines, 3 in. (7.6 cm) of
				more in diameter at breast height (DBH), regardless o height.
				Sapling/Shrub - Woody plants, excluding vines, less
0.				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
1.				
	100 -	Total Cove		Herb - All herbaceous (non-woody) plants, regardless
50% of total cover: 50		otal cover:_		of size, and woody plants less than 3.28 ft tall.
/oody Vine Stratum (Plot size:)	_ 2070 01 10	star cover		Woody vine - All woody vines greater than 3.28 ft in
			-	height.

	_			
	_			
				Hydrophytic
	_			Vegetation
24072		Total Cover		Present? Yes No No
50% of total cover:		otal cover:_		
emarks: (Include photo numbers here or on a separate she	1 199			

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(all 100 A white trong.

REL.

Pepth	cription: (Describe Matrix		Pos	lox Features		or commi	the absence of the	ilcators.)	
inches)	Color (moist)	%	Color (moist)	%	_Type	Loc ²	+cano	W	
0-41	7.54 (4)	100					Texture	Remark	S
11-0-1	7,5Y 5/1		INVESTIGATION			-	Silt locum		
45 0	4101 3/1	65	104R 5/6	35		PL	Sundy loan	i	
					_	_			
		-		_					
			-						
ype: C=Cc	oncentration, D=Depl indicators:	etion, RM=	Reduced Matrix, M	IS=Masked	Sand Gra	ins.	² Location: PL=Pore	Lining, M=Matri	х.
							Indicators f	or Problematic I	Hydric Soils3:
_ Histosol	(A1) pipedon (A2)		Dark Surfac				2 cm Mu	ick (A10) (MLRA	147)
Black His			Polyvalue B	elow Surfac	e (S8) (M	LRA 147,		rairie Redox (A16	3)
	n Sulfide (A4)		Thin Dark S Loamy Gley	urface (S9)	(MLRA 14	47, 148)		A 147, 148)	
	Layers (A5)		Depleted Ma	eu Mainx (F	(2)		Piedmor	nt Floodplain Soil	s (F19)
	ck (A10) (LRR N)		Redox Dark		3)			A 136, 147)	
Depleted	Below Dark Surface	(A11)	Depleted Da				very Sn	allow Dark Surfac xplain in Remark	ce (TF12)
_ Thick Da	rk Surface (A12)		Redox Depr				Office (E	xpiain in Remark	.s)
_ Sandy M	ucky Mineral (S1) (LI	RR N,	Iron-Mangar			RR N,			
	147, 148)		MLRA 13	36)					
	leyed Matrix (S4) edox (S5)		Umbric Surfa	ace (F13) (N	ILRA 136	, 122)	3Indicators	of hydrophytic ve	egetation and
Stripped	Matrix (S6)		Piedmont Flo	oodplain So	ils (F19) (MLRA 148) wetland h	ydrology must be	present,
	ayer (if observed):		Red Parent I	viateriai (F2	1) (MLRA	127, 147)	unless dis	turbed or probler	natic.
Type:	es in capations								
Depth (incl	hes)		-						
marks:	1103/.						Hydric Soil Preser	it? Yes X	No
4 6	FUCAL C. F	1							

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Princis 12024 County; No.						Feature ID: W9	ID: W9		Stream Order: 1
County: Mo Class (cleck one): Cob and TNW - Perennial RPW - Seasonal (must one): Cleving year round	Date: 7/2/13			State: MD		Photos: 3	351,3352		
Perennial	Crew: WMM, KJH			County: Mo		Last Fla	g Number:		
Committee Comm	Feature Hydro	logic Class (chec	k one):						
TNW - Perennial TNW - Perennial Grow at least 3 months a Growing year round) Grow at least 3 months a Grow Grow Grow Grow Grow areas of standing pools, seep in channel near trib to BC. Grow Grow With ad Grow Grow Grow Grow Grow Grow Grow Grow	Tidal		Perennial		itermitten			E	phemeral (SNE)
Region	TNW (Subject to	0	W – Perennial	Q	W - Seaso		4	draining	uplands (not jurisdictional)
Flowing year round Mostly dry, few areas of standing pools, seep in channel near trib to BC. O Non-RPW with and provided of study and the spect to top of bank	(woll	PPI	W - Perennial	na)	w at icast.) IIIOIIIIIs a	Non-RPW	with ah	at leature (not fur isaicnonal)
Mostly dry, few areas of standing pools, seep in channel near trib to BC. Outside of study a riphton: (check all that apply) Shape		(Fic	w – i cicinilai owing year rou	nd)	(m		Non-RPW	with adj	acent wetland
Substrate Substrate Substrate Substrate Shape Width: 2-6" Cobbles Variable Moderately unstable Moderately unstable Moderately unstable Moderately unstable A 2:1 A 3:1 A 4:1(or less)		lostly dry, few are	eas of standir		nannel nea	ur trib to BC.	Non-RPW (outside o	wetland f study ar	adjacent or abutting upstream ea)
Width: 2-6° ✓ Silts ✓ Sands Muck Bank Erosion/stability: ✓ Cobbles ✓ Gravel Other: Bank Erosion/stability: ✓ Cobbles ✓ Gravel Other: Bank Erosion/stability: ✓ Cobbles ✓ Gravel Other: Side slope	Feature Descr	iption: (check all	that apply)						
Width: 2-6' Depth: 0.5'-6' V Silts V Gravel Other: Bank Erosion/stability: Cobbles V Gravel Other: Side slope: Varical V 2:1 3:1 V 4:1 (or less) Subsurface Flow V Subsurface Flow Type: Forest Width: >100' Habital for: Subsurface Flow V Side slope; Variation corridor Type: Forest Width: >100' Federally listed slip Other environme	Shar	e (with respect to	o top of bank			Substra	te		Vegetation
Bank Erosion/stability: Cobbles Concrete Concrete Side slopes I I I I I I I I I	✓ Natural Channel S	nape	idth: 2-6'		✓ Silts	Sands			RB: Tulip poplar red maple green a
Side slope I:1(to vertical)	Artificial (man-ma		ink Erosion/sta	ability:	✓ Cobbi	>			black walnut, spice bush, jap
haracteristics: (check all that apply) Subsurface Flow Subsurface Flow Subsurface Flow A Yes	Manipulated (man		delatery uns	ומחום			E	T	B:
haracteristics: (check all that apply) Subsurface Flow Yes Type: Forest Width: >100' Habitat for: Inknown Wetland fringe Fish/spawn and throughout reach. 3-5' tall. Clear, natural line impressed on the bank Character of soil Shelving Check all that apply; include photos for each & list photo #) Check all that apply include photos for each & list photo #) Check all that apply include photos for each	Other:	Sic	de slope: 1:1	(to vertical)	2:1	3:1	✓ 4:1(0		Lb. Same as RB
Riparian corridor Riparian corridor Type: Forest Width: >100' Federally list Wetland fringe 3-5' tall. Ordinary High Water Mark on the bank Sediment deposition Nater staining Sediment deposition on the bank Sediment deposition on the bank Sediment deposition Nater is displayed at the photos for each & list photo #) Nean High Water Mark indicated by: Olyphore and the bank Sediment by the sediment in the bank Sediment by the sediment by	Notes: bank depth: ().5-6'	ice. (chock all	that annly				H	
Riparian corridor Type: Forest Width: >100' Federally lis 3-5' tall. Ordinary High Water Mark on the bank Sediment deposition Nesence of wrack line Oly film Vegetation lines/changes in types Other:	Surface Flow	Suber	Irface Flow	(fadda mar		Biolog	ical Charact	Pristics	
Type: Forest Width: >100' Fish/spawns 3-5' tall. on the bank Ordinary High Water Mark on the bank Sediment deposition water staining Colluter and debris on the bank Sediment deposition water staining Colluter and debris Nesence of wrack line Resence of wrack line Nesence A list photo #) Nean High Water Mark indicated by: Nean High Water Mark indicated by: Nean High Water Mark indicated by: Nesence of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Nesence Of wrack line Ordinary High Water is classified by: Ordinary High Water Water is classified by: Ordinary High Water is classified by: Ordinary High Water is classified by: Ordinary High Water Water is classified by: Ordinary High Water Water is classified by: Ordinary High Water Water Water is classified by: Ordinary High Water Water Water is classified by: Ordinary High Water Water Water is classified by:	/ Sinole channel - c	H	50	-	or		Hahitat for		
3-5' tall. 3-5' tall. 3-5' tall. ordinary High Water Mark on the bank on the b	Multiple/braided c	L	0	7		1: >100'	Federall	y listed s	pecies
3-5' tall. ordinary High Water Mark on the bank on the	Poorly/undefined of		nknown	Wetland fringe			Fish/spa	wn areas	
3-5' tall. clude photos for each & list photo #) Ordinary High Water Mark on the bank on the	Overland Sheetflo	×					Other er	ivironme	ntally sensitive areas
ibutary has: (check all that apply; include photos for each & list photo #) Clear, natural line impressed on the bank Changes in the character of soil Shelving Changes in the character of soil Shelving Check all that apply; include photos for each & list photo #) Tary has: (check all that apply; include photos for each & list photo #) Shelving Nean High Water Mark indicated by: Realong shore objects Survey to available datum Physical markings Oily film Other:	Notes: Moderate bar	nk erosion throu	ughout reac						
Ordinary High Water Mark Clear, natural line impressed on the bank Changes in the character of soil Shelving ✓ Vegetation matted down, bent, or absent ✓ Leaf litter disturbed A Leaf litter disturbed A Leaf litter disturbed A Destruction of terrestrial veg. Igh Tide Line Shore objects A Survey to available datum Physical markings Nater is diagolated by: Nean High Water Mark indicated by: Survey to available datum Nean High Water is diagolated by: Nean High Water Mark indicated by: Survey to available datum Nater is diagolated by: Nean High Water is diagolated by: Survey to available datum Nean High Water is diagolated by: Survey to available datum Negetation lines/changes in types Oily film Other:	Non-tidal tribu	tary has: (check	all that apply,	; include photos for	each & lis	st photo #)			
in the character of soil	Bed and Banks				Ording	nry High Water	Mark		
in the character of soil Water staining Water staining Value	✓ Yes	Clear, natura	al line impress		Sedi	ment deposition		Sedi	ment sorting
In matted down, bent, or absent If that apply; include photos for each & list photo #) If that apply; include photos for each & list photo #) It shore) Survey to available datum Shore) Water is classhore) Only film Other:	No	Changes in t	the character of	of soil	Wate	er staining		Scor	ır
r disturbed If that apply; include photos for each & list photo #) Cts Shore) No matted down, bent, or absent If that apply; include photos for each & list photo #) Survey to available datum Shore) Vegetation lines/changes in types Other:		Shelving			/ Pres	ence of litter and	l debris	Obse	erved/predicted flow events
It that apply; include photos for each & list photo #) That apply; include photos for each & list photo #) The man High Water Mark indicated by: All that apply; include photos for each & list photo #)		✓ Vegetation r	matted down,	bent, or absent		ruction of terres	trial veg.	Abru	upt change in plant community
Il that apply; include photos for each & list photo #) Mean High Water Mark indicated by: Chemical Survey to available datum Shore) Physical markings Physical markings Vegetation lines/changes in types Oily film Other:		✓ Leaf litter di	isturbed		Pres	ence of wrack li	Je [Othe	ır:
cts Nean High Water Mark indicated by: Chemical shore) Survey to available datum shore) Physical markings Water is discolored Negetation lines/changes in types Oily film Other:	Tidal tributary	has: (check all ti	hat apply; inc	lude photos for eac	h & list ph	oto #)			
shore) Survey to available datum Shore) Physical markings Vegetation lines/changes in types	DI Marine	Tide Line		Mean High Wa	ter Mark	indicated by:		Che	mical Characteristics
shore)	Oil or scum line al	ong shore objects		Survey to avail	able datum		Water	is clear	
Vegetation lines/changes in types	Fine shell or debria	deposits (foresho	ore)	Physical marki	ngs		Water	is discol-	ored
	Physical markings,	characteristics		Vegetation line	s/changes	in types	Oily f	ılm	
	Tidal gauges						Other		

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region SHOW ____ City/County: ___ MOST. Project/Site: Sampling Date: 7/2/12 MC DOT Applicant/Owner: State: Mb Sampling Point: W10 Investigator(s): _____ Section, Township, Range:_ Landform (hillslope, terrace, etc.): Subregion (LRR or MLRA): MLRA 149 Long: ___ Soil Map Unit Name: HAT BORD SIT TO AM NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? $ightharpoonup Are "Normal Circumstances" present? Yes _____ No$ Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Yes No Yes No within a Wetland? Wetland Hydrology Present? Yes Remarks: HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) __ True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) __ Drainage Patterns (B10) Hydrogen Sulfide Odor (C1) Saturation (A3) _X Oxidized Rhizospheres on Living Roots (C3) ___ Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) __ Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) __ Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) ___ Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) __ Iron Deposits (B5) Market Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) ★ Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Yes ____ No ___ Depth (inches): Surface Water Present? Water Table Present? Yes ____ No _ X Depth (inches): 7 1711 Saturation Present? Yes ____ No _X Depth (inches): 7/2/ Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available Remarks: ABUTTING Benneth Creek Strong

Tree Stratum (Plot size: 10 2) 1. ALER PUBLIC TO			Indicator	Dominance Test worksheet:	-
A-180 KURDUM	% Cover	Species?	Status	Number of Dominant Species	
(1) (4)	70	Y	FAC		(A)
VLMIS paruitalia	30	4	BACU		(, ₁)
				Total Number of Dominant Species Across All Strata:	(B)
				1	(D)
				Percent of Dominant Species That Are OBL, FACW, or FAC:	
				THAT ARE OBL, FACW, OF FAC:	(A/B
				Prevalence Index worksheet:	
	100	= Total Cov	er er	Total % Cover of: Multiply by:	
50% of total cover: _50	20% of	total cover:	20	OBL species x 1 =	
apling/Shrub Stratum (Plot size: / 0 / /)	- William			FACW species x 2 =	
LINDELA BROZDIN	30	Y	FACW	FAC species x 3 =	
CALDINUS CNIBILADA	20	V	FAC	FACU species x 4 =	
POSA multiflora	16		FACU	UPL species x 5 =	
			,	Column Totals:(A)	/DV
			-	Column Fotals (A)	(B)
				Prevalence Index = B/A =	
				Hydrophytic Vegetation Indicators:	
·		-	-	1 - Rapid Test for Hydrophytic Vegetation	
	-			× 2 - Dominance Test is >50%	
	10			3 - Prevalence Index is ≤3.0¹	
30	_60 =	Total Cove	er ₁₇	4 - Morphological Adaptations ¹ (Provide suppo	rting
	20% of	total cover:	16	data in Remarks or on a separate sheet)	nung
Herb Stratum (Plot size:	15	M	Frank	Problematic Hydrophytic Vegetation¹ (Explain)	
1. JACK IN PULPET (AVISARMA Triphylle	M/ >	1	FACH	roblematic rivolophytic vegetation (Explain)	
SYMPLO CAMPUS forthus		Y	OBL		
		- 1	-000	Madicators of budge 11 d 11 - 11	
		4	DBL	Indicators of hydric soil and wetland hydrology mu-	st
			OBL	be present, unless disturbed or problematic.	st
			08L	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:	
			08L	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in, (7.6 cm	n) or
			08L	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata:	n) or
			DBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.	n) or s of
			DBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, le	n) or s of
			DBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.	n) or s of
0			DBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, le than 3 in. DBH and greater than or equal to 3.28 ft m) tall.	n) or s of ess (1
0			OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, le than 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardless	n) or s of ess (1
0	20 =		OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.	n) or s of ess (1
0	20 =	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft.	n) or s of ess (1
01	20 =	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.	n) or s of ess (1
	20 = 20% of t	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft.	n) or s of ess (1
5	20 = 20% of t	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft.	n) or s of ess (1
5	20 = 20% of t	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft.	n) or s of ess (1
0	20 = 20% of t	Total Cove	OBL	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft height.	n) or s of ess (1
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		Total Covers_	081	be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height. Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than or equal to 3.28 ft m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft height.	n) or s of ess (1

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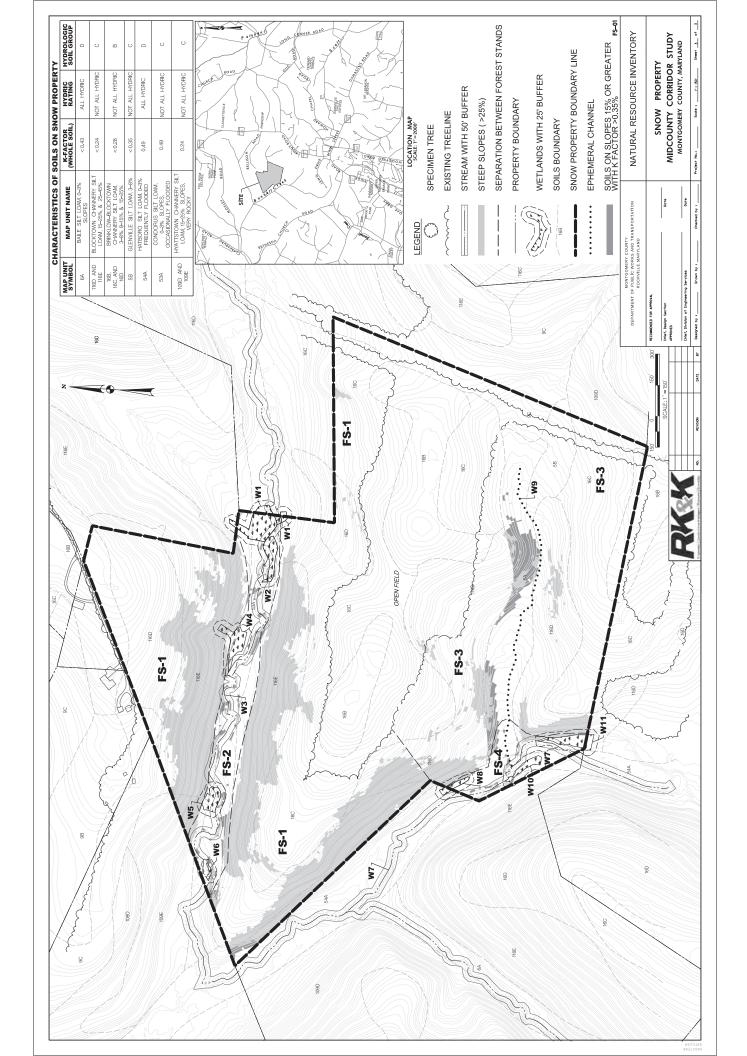
(tal)

Depth Matrix	depth needed to document the indicator or con Redox Features	firm the absence of indicators.)
(inches) Color (moist) %	Color (moist) % Type Loc	Texture Remarks
0-7 254 5/1 8	0 104R 5/6 20 C PL	coll
7-12 7.54 6/3 8	5 1048 5/6 15 C PL	Sandy Junio
		Sant y Con-
		- <u> </u>
lype: G=Concentration, D=Depletion, lydric Soil Indicators:	RM=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
_ Histosol (A1)	Dark Surface (S7)	Indicators for Problematic Hydric Soils ³ :
Histic Epipedon (A2)	Dark Surface (S7)Polyvalue Below Surface (S8) (MLRA 1	2 cm Muck (A10) (MLRA 147)
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 146	47, 148) Coast Prairie Redox (A16) 8) (MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
_ Stratified Layers (A5)	Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N)Depleted Below Dark Surface (A11	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
_ Thick Dark Surface (A12)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	
_ Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (MLRA 136, 122)	The state of the s
Sandy Redox (S5) Stripped Matrix (S6)	Piedmont Floodplain Soils (F19) (MLRA	(148) wetland hydrology must be present,
destrictive Layer (if observed):	Red Parent Material (F21) (MLRA 127,	147) unless disturbed or problematic.
Type:		
Depth (inches):		Hydric Soil Present? Yes X
emarks:		Hydric Soil Present? Yes No

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MLS -526W City/C	county:Sampling Date: 7/2/13
	State: MD Sampling Point: WI
	on, Township, Range:
Landform (hillslope, terrace, etc.): Hoodplom Local reli	
Are climatic / hydrologic conditions on the site typical for this time of year? Y	es No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distur	
Are Vegetation, Soil, or Hydrology naturally problems	
SUMMARY OF FINDINGS – Attach site map showing sam	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No Yes No	Is the Sampled Area within a Wetland? Yes No
HYDROLOGY	Secondary Indicators (minimum of two required)
Water Marks (B1) Presence of Reduced Sediment Deposits (B2) Recent Iron Reduction Drift Deposits (B3) Thin Muck Surface (Content of the content of the conte	Surface Soil Cracks (B6) B14) Sparsely Vegetated Concave Surface (B8) or (C1) Drainage Patterns (B10) es on Living Roots (C3) Moss Trim Lines (B16) d Iron (C4) Dry-Season Water Table (C2) on in Tilled Soils (C6) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Field Observations: Surface Water Present? Yes No Depth (inches): Your Notation Present? Yes No Depth (inches): Notation Present? Yes No Depth (inches): Notation Present? Yes No Depth (inches): Observation Present. Yes No Depth (inches): Obs	Wetland Hydrology Present? Yes X No
Remarks: PIGOTO 3357 . ABUTTING Beauch Ereck	

	Appointe	Dominant	Indicator	Dominance Test worksheet:		
1. RED MAP LE	% Cover	Species?	Status	Number of Dominant Species	4	700
2			_	Total Number of Dominant Species Across All Strata:	4	(A)
45				Percent of Dominant Species	Inne	(B)
3				That Are OBL, FACW, or FAC: Prevalence Index worksheet:	100%	(A/E
To the state of th	20	Total Cov	er ,	Total % Cover of:	Multiply by:	
50% of total cover:	20% of	total cover:	4	OBL species x	1 =	
Sapling/Shrub Stratum (Plot size: 10 1 2)		v.I		FACW species x 2	2 =	
LINDERA BRIZDIW	20		FACW	FAC species x 3	3 =	
·				FACU species x 4	1 =	
				UPL species x 5	5 =	-
		=		Column Totals:(A)		_ (B)
				Prevalence Index = B/A =		1
				Hydrophytic Vegetation Indicat		
				1 - Rapid Test for Hydrophyti	c Vegetation	
				X 2 - Dominance Test is >50%		
	20 -	Total Cove		3 - Prevalence Index is ≤3.01		
50% of total cover:	20% of to	otal cover	4	4 - Morphological Adaptations	s1 (Provide sun	porting
erb Stratum (Plot size:)		o.u. 00101	_	data in Remarks or on a s	eparate sheet)	, , , , , ,
SYMPLOLARPUS Fortidus	15	V	NBI	Problematic Hydrophytic Veg		n)
IMPATIONS CAPENSIC	5	V	Great		ctation (Explai	(1)
CARCAL INTELLEGICAL			FACW	Indicators of hydrig soil and water		
Hal Begd leasted bourthurbs	10		UBL	¹ Indicators of hydric soil and wetla be present, unless disturbed or pre-	ind hydrology n	nust
Creeping Jeney (HSIMAChia	10			Definitions of Four Vegetation S		
	10	-	FACW			
	-	-		Tree – Woody plants, excluding vi more in diameter at breast height	nes, 3 in. (7.6 d	cm) or
		_	- R	height.		
			_	Sapling/Shrub - Woody plants, e	voludina ul	
				than 3 in. DBH and greater than or	regual to 3 28	less ft /1
		_		m) tall.		
50% 11.1. 21.6		Total Cover	10	Herb – All herbaceous (non-wood) of size, and woody plants less than	y) plants, regard	dless
50% of total cover: 37-5 body Vine Stratum (Plot size:)	_ 20% of to	tal cover:_	15	Woody vine – All woody vines gre		ft in
				height.		
			->-			
				activities and a second		
				Hydrophytic Vegetation		
	= 7	Total Cover		D	No	
50% of total cover:	20% of to			163 2	110	
emarks: (Include photo numbers here or on a separate she	et l					





MidCounty Corridor Study Park Mitigation Sites Potential Forest and

M-NCPPC - Parks Department July 15, 2013



Purpose of Presentation

- Present three potential mitigation sites for forest and park impacts
- Obtain Parks Department feedback on potential mitigation sites



Project Schedule

- Draft EER available for public review May 2, 2013
- Joint Permit Application submitted to Corps and MDE April 30, 2013
- Public Hearing August 7, 2013
- Project team meeting September 15, 2013



Why Consider Mitigation Sites Now?

- Conceptual mitigation required to concur on a Preferred Alternative
- Difficult to find properties of this size
- Sites could mitigate for MCS, other DOT projects, or MS4 permit



http://www.montgomerycountymd.gov/midcountycorridorstudy

Potential Park Impacts

Alternative	2	4 Mod	2	8 A	8B	8D	9 A	9B	9 D
M-NCPPC Parkland Impacts (acres)	0	15.4	0.2	43.3	28.7	27.2	45.5	30.9	29.9
Total Forest Impacts (acres)	0	31.0	2.0	57.6	52.5	61.4	72.9	67.7	76.7
Total Forested M-NCPPC Parkland Impacts (acres)	0	8.35	2.0	41.0	26.5	25.5	43.3	28.7	27.7



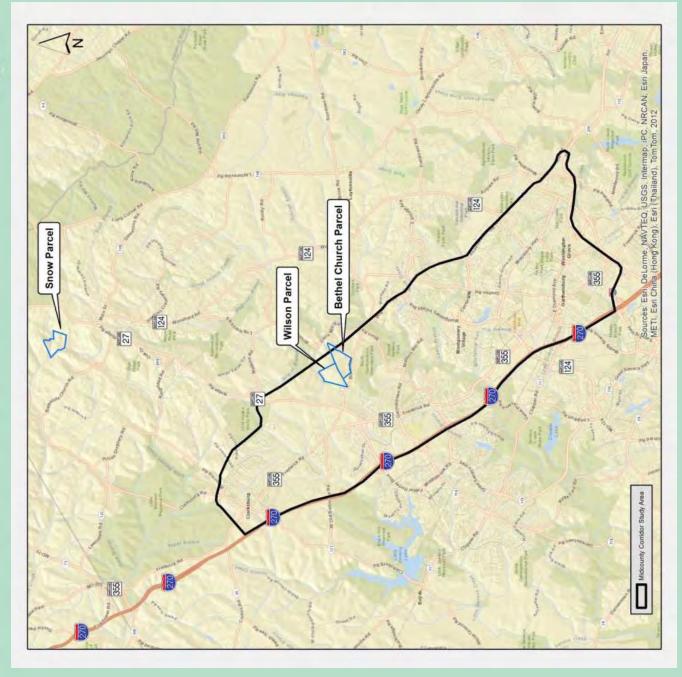
http://www.montgomerycountymd.gov/midcountycorridorstudy



Site Overview

Three sites being investigated:

- Bethel Church
 Property
- Wilson Property
- Snow Property



http://www.montgomerycountymd.gov/midcountycorridorstudy



Bethel Church

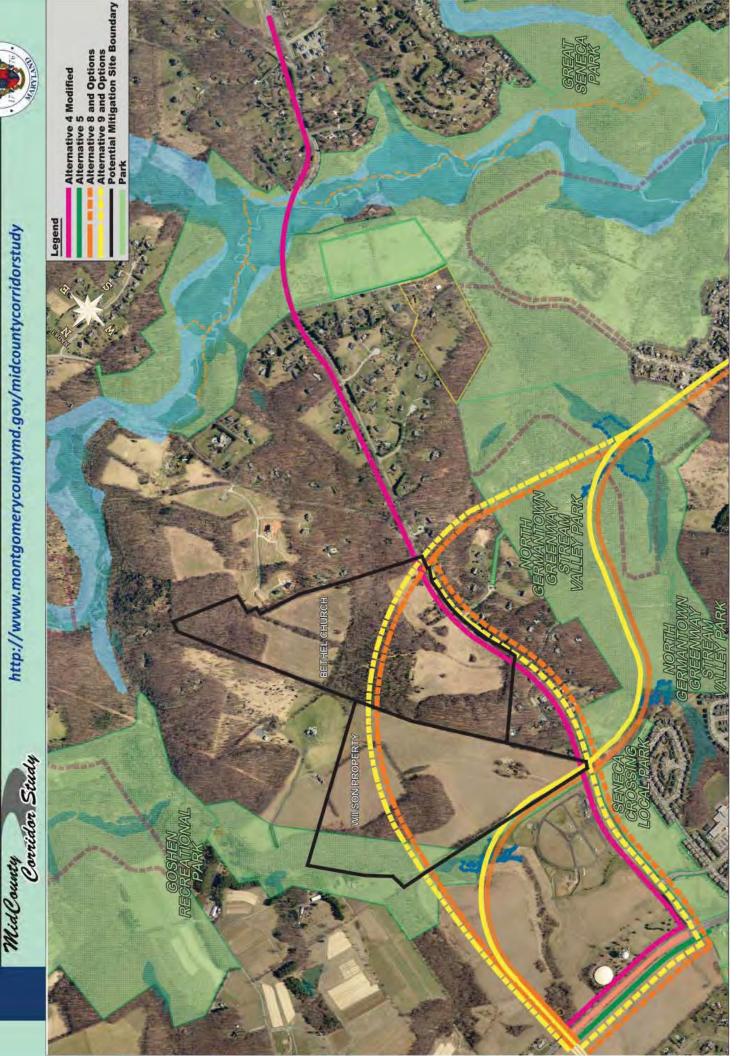
Property

- 119-acre site, 66 acres forested
- Wilson property and residents of Wildcat Road
- Brink Road forms southern boundary
- Residences on Davis Mill Road located at the eastern boarder
- Residences on Treva Court located at the western boarder
- Surrounding land use is large-tract rural residential development and agriculture
- Located near the North Germantown Greenway





http://www.montgomerycountymd.gov/midcountycorridorstudy

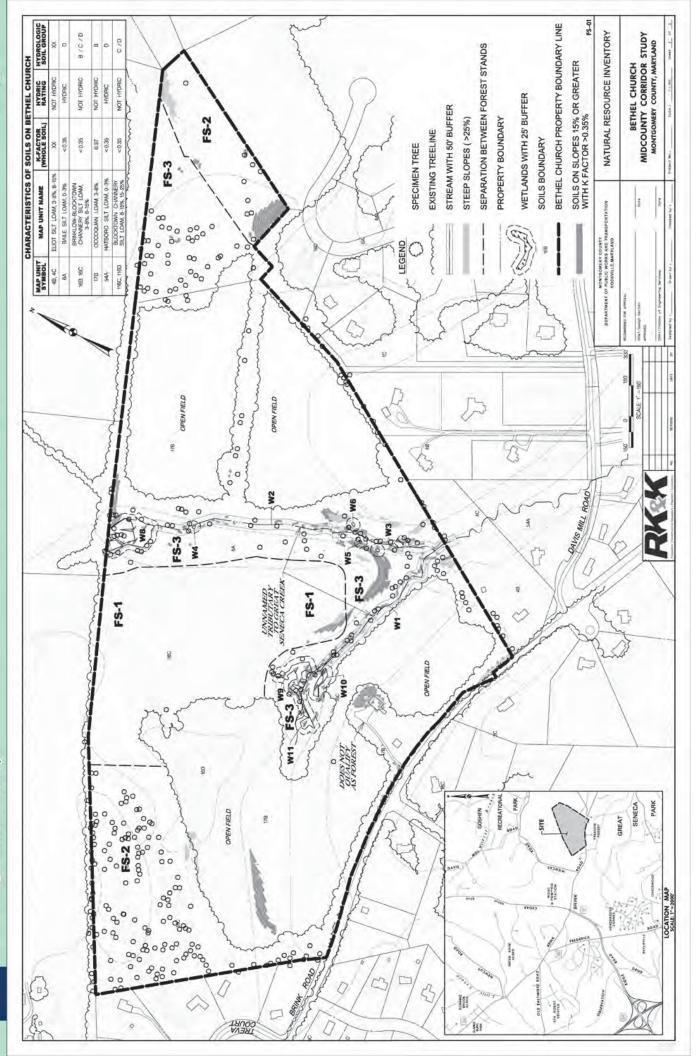




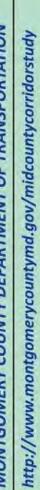




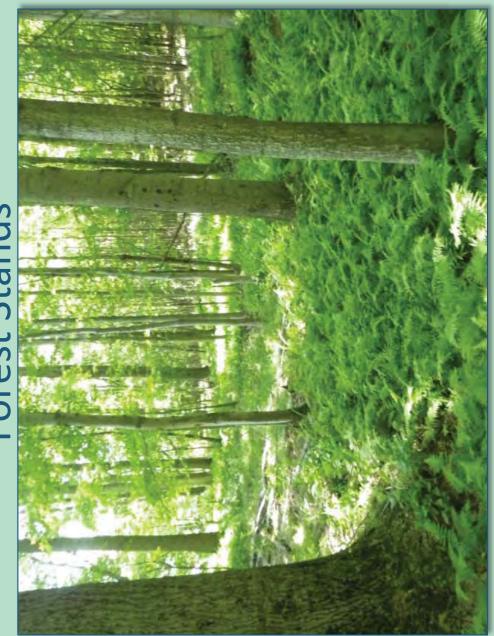
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Midlounty Corridor Study





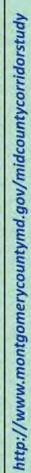


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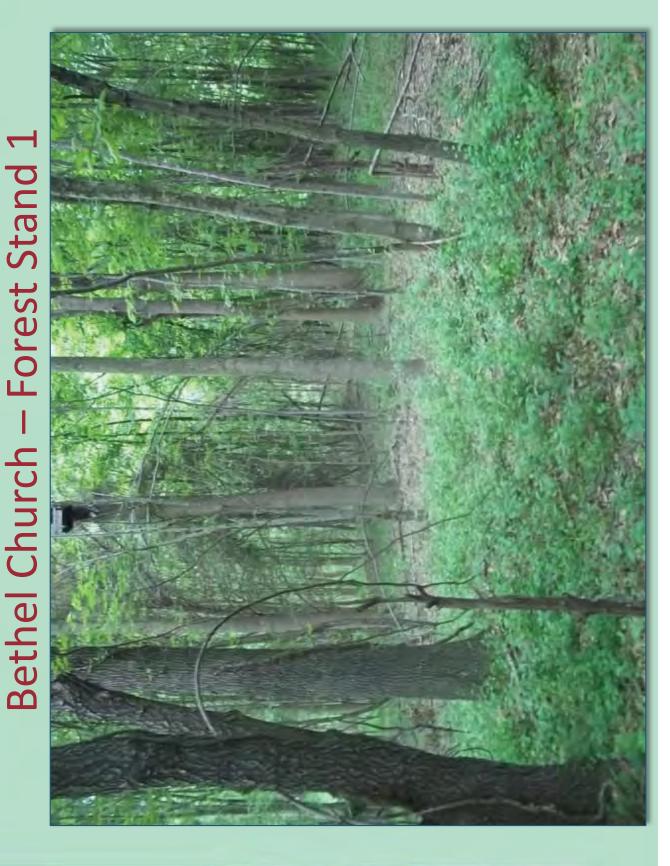
Forest Retention Value Rating Characteristics

	Intermittent and perennial streams and their forest buffers
	Slopes > 25%
	Nontidal wetlands and buffers
9	Erodible soils on slopes > 25%
nign Ketention	100-year floodplains
אסומע אסומע	Habitat for rare, threatened and endangered (RTE) species or County Watchlist Species
	Large contiguous forest tracts especially those w/ FIDS habitat
	Forest stands w/ multiple specimen trees
	Forest with County Green infrastructure
	Stands with good structural diversity
	Corridor +300′ foot wide
	Forest stream buffers
verención value	Tree buffers between incompatible land uses
	>24" dbh trees
Low Retention	Stands with poor structural diversity
Value	Stands with moderate to high exotic/ invasive plant cover





Corridor Study

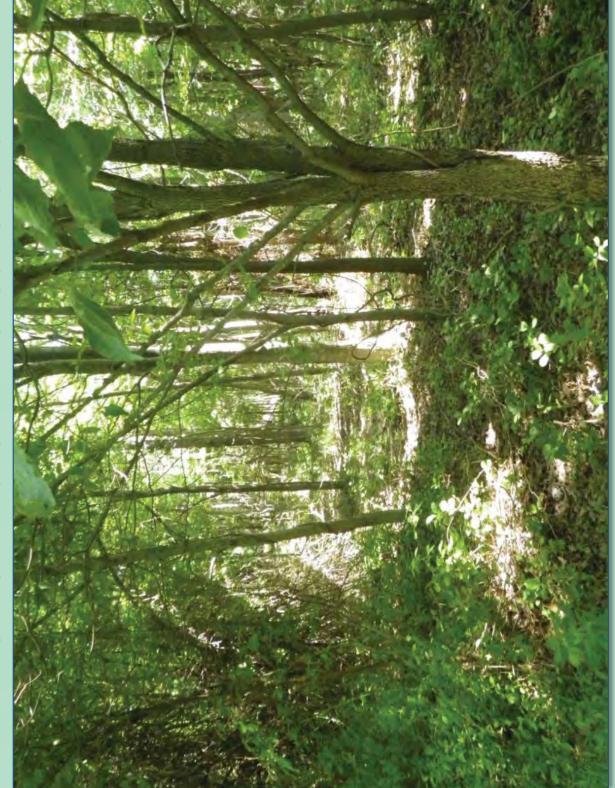


Corridor Study











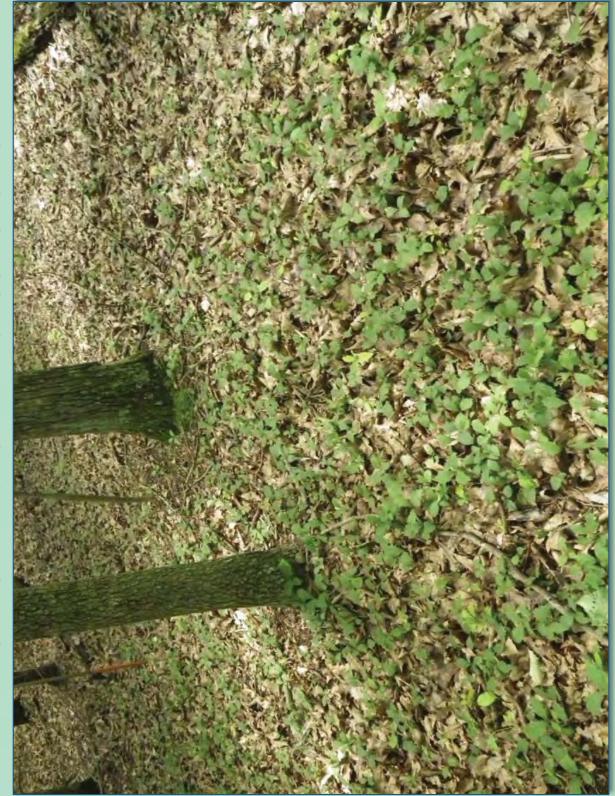
Corridor Study





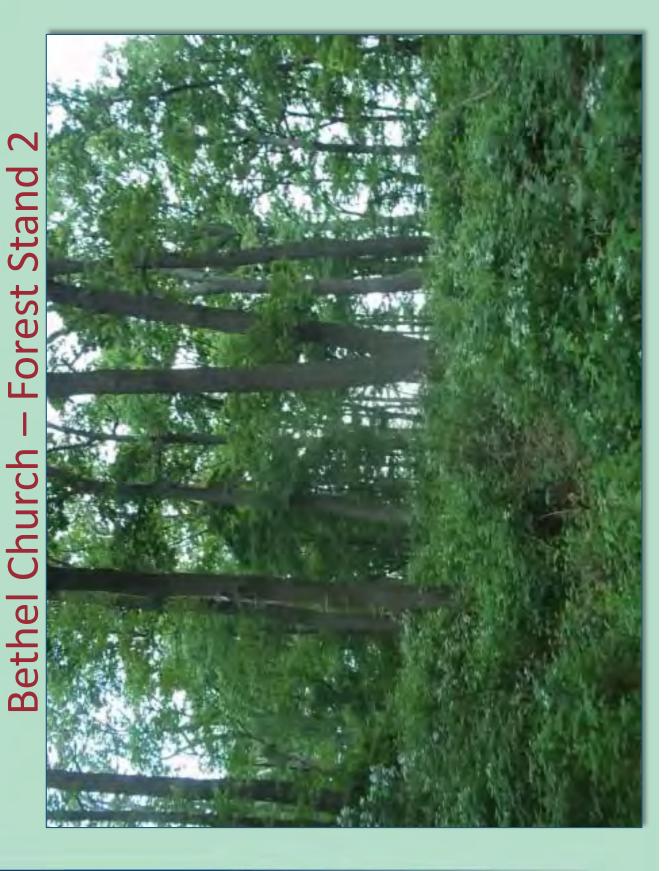




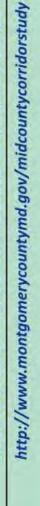


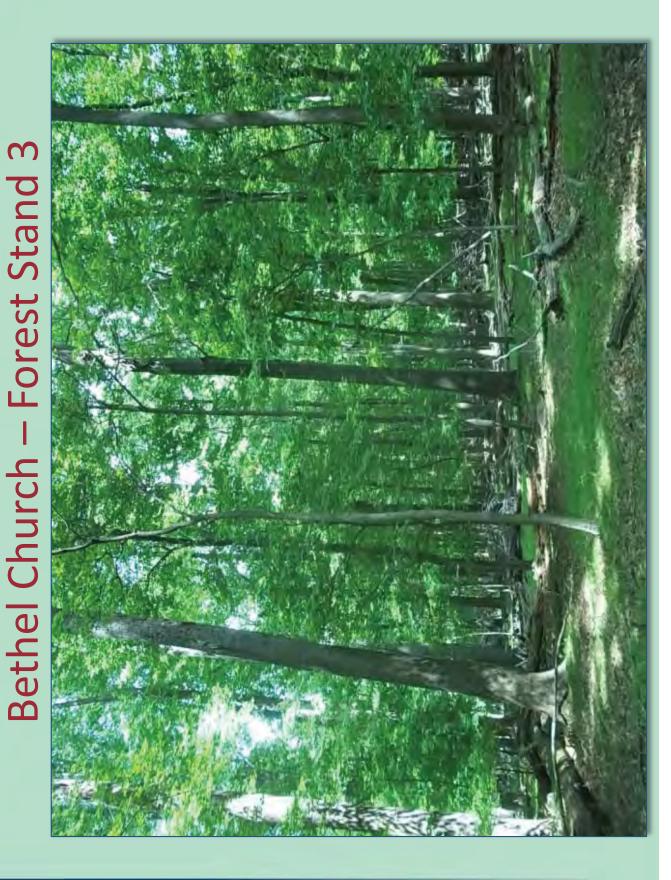


Corridor Study





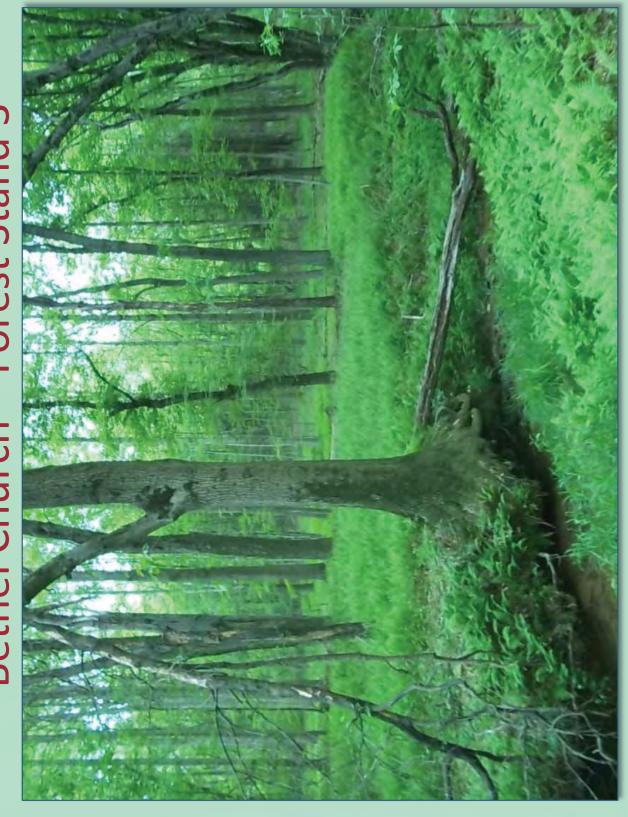








Corridor Study







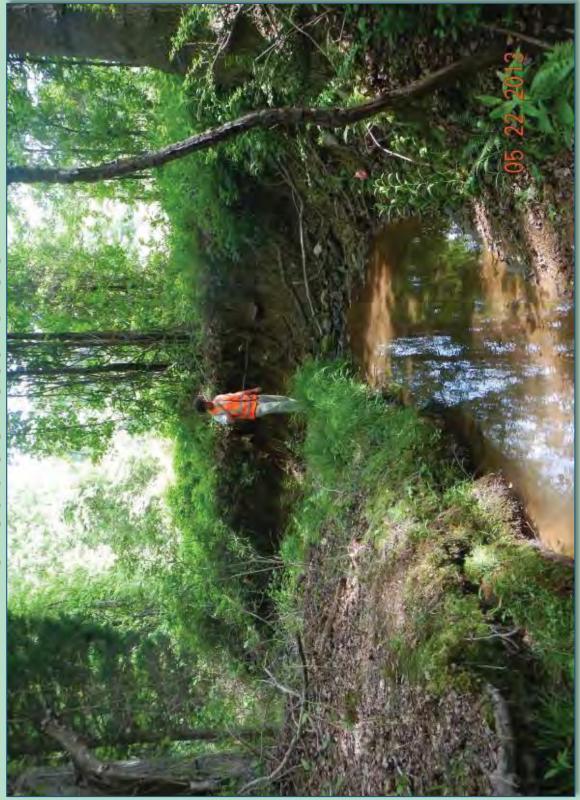
Bethel Church Wetlands and Waterways





ial county Corridor Study

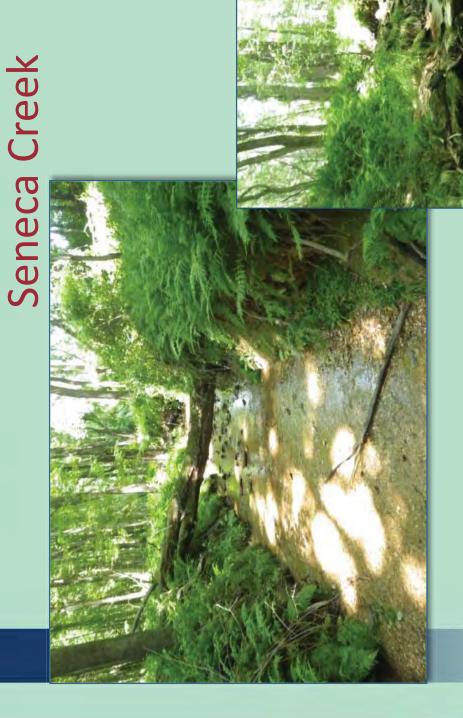
Bethel Church – W1: Tributary to **Great Seneca Creek**

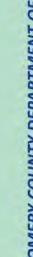






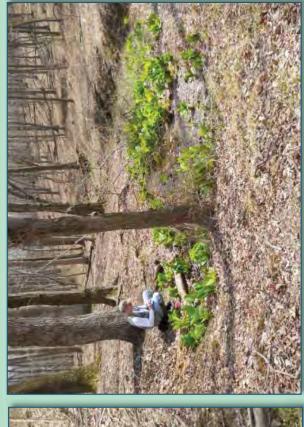
Bethel Church – W2: Tributary to Great











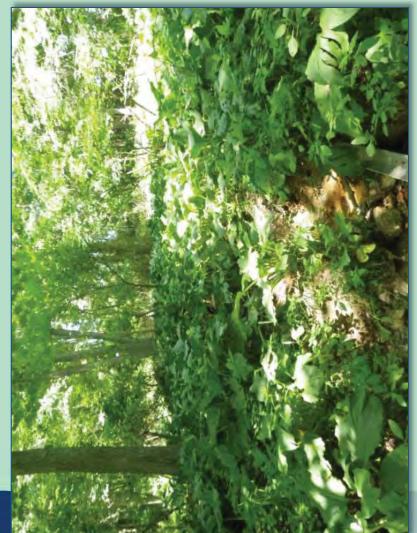












Bethel Church – W8



Bethel Church – W9-W10 MidCounty Corridor Study







Bethel Church – W11

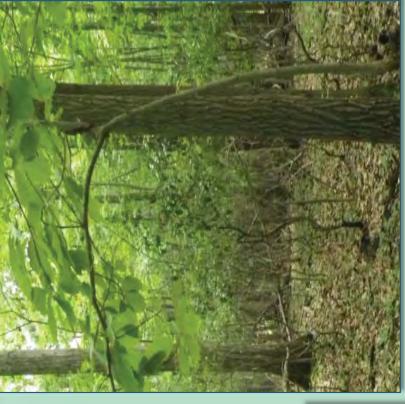






Bethel Church -Unique Features

- Located near the North Germantown Greenway
- **Unique Plants**
- Good wildlife habitat









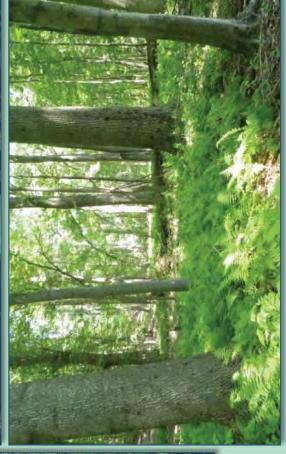


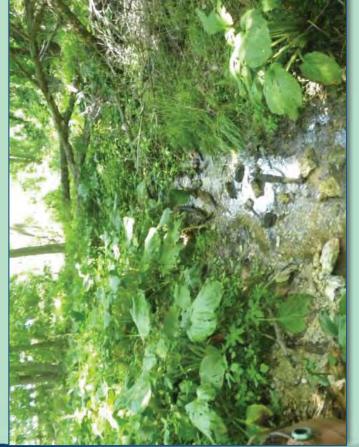


Unique Features Bethel Church -

- Seep fed wetlands
- 397 Specimen Trees

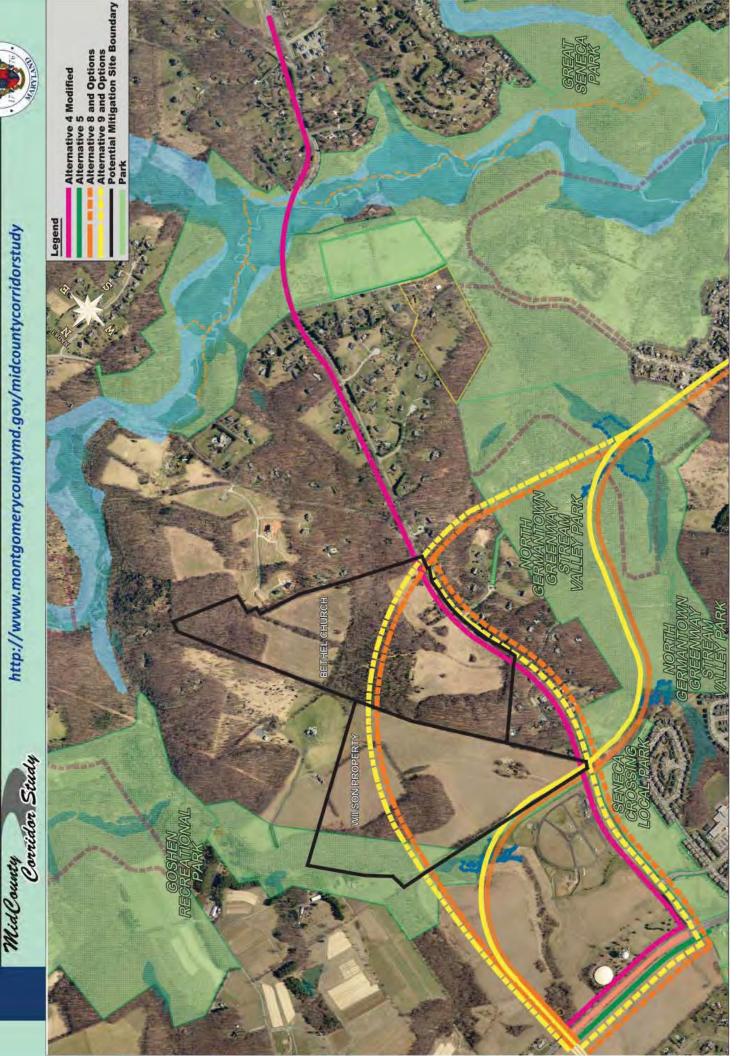








http://www.montgomerycountymd.gov/midcountycorridorstudy







http://www.montgomerycountymd.gov/midcountycorridorstudy

Bethel Church – Forest Mitigation Potential

Parcel Area

Reforestation Potential

119 acres

Potential FIDS

Habitat

Preservation

Forest



Interior Forest with Option D

July 2013



http://www.montgomerycountymd.gov/midcountycorridorstudy

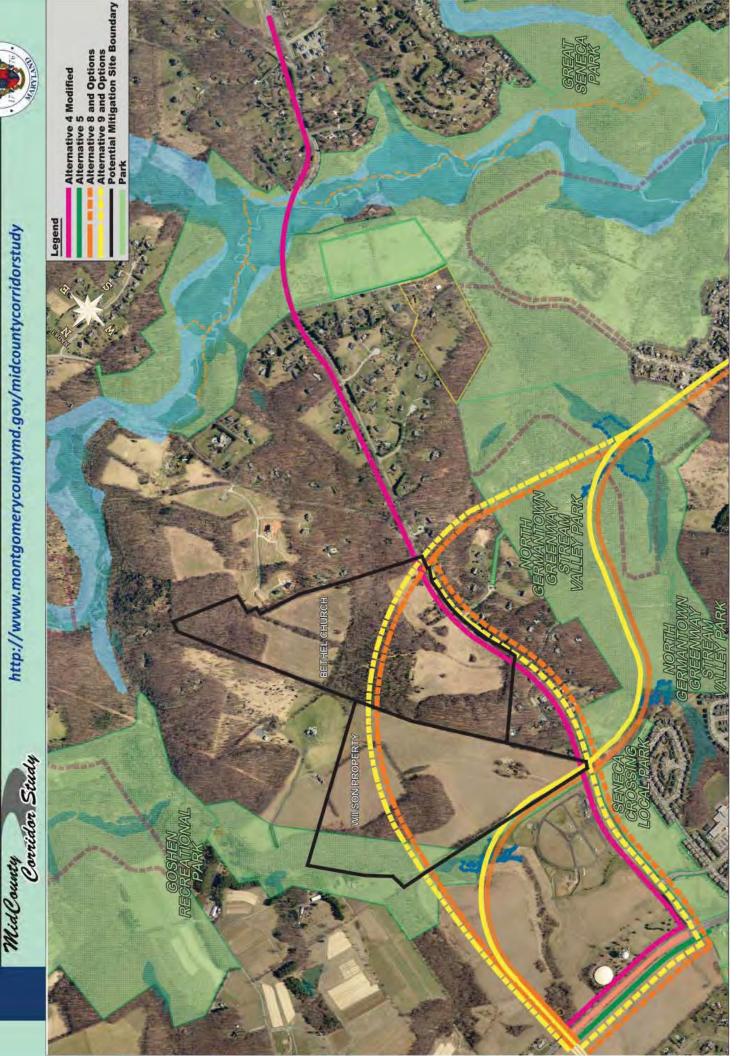
Wilson Property

- 105-acre site, 34 acres forested
- Northeast of Brink Road and Wildcat Road intersection
- Bounded on the north by an unnamed tributary to Wildcat Branch
- Residences on Treva Court and the Bethel Church property at southern boundary
- Residences at 22001 and 22005 Wildcat Road at east boundary
- To the west, bounded by Wildcat
- Surrounding land use agriculture, large-tract rural
 residential development, and a
 cemetery
- Located opposite the Seneca Crossing Local Park





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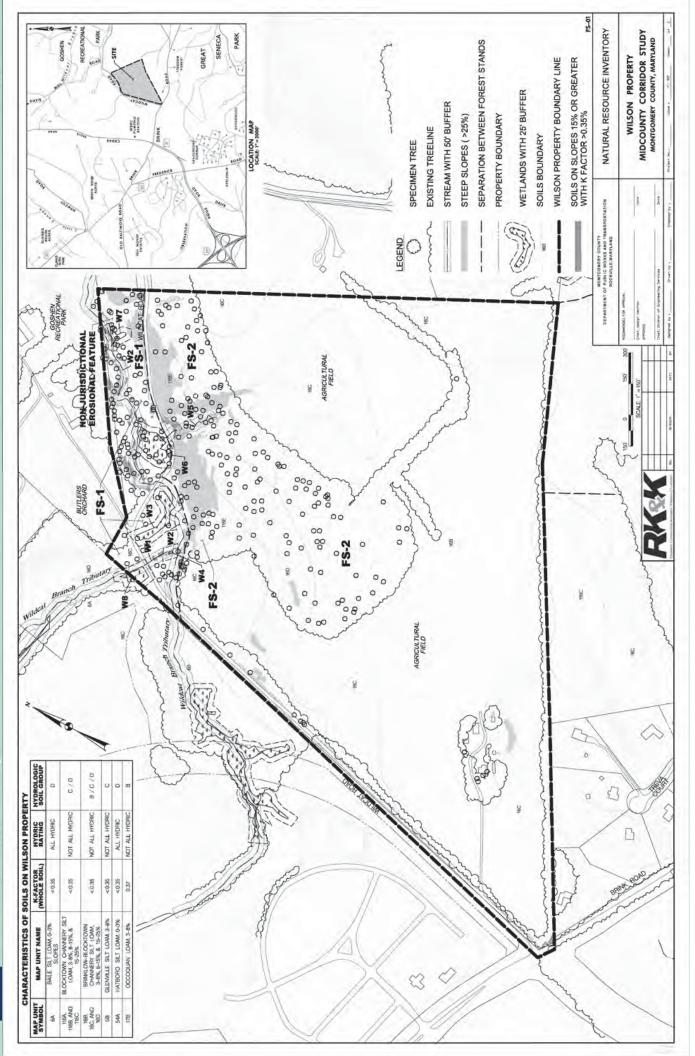






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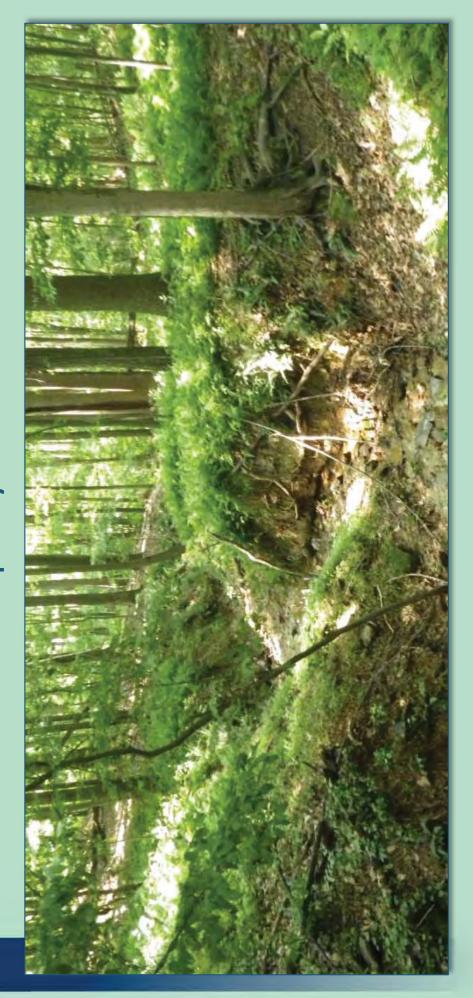




MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

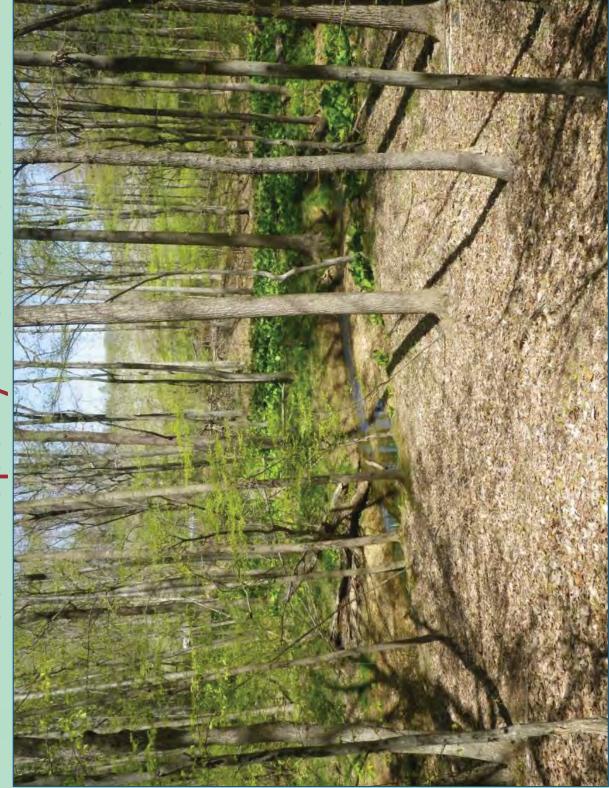


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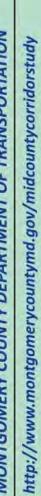




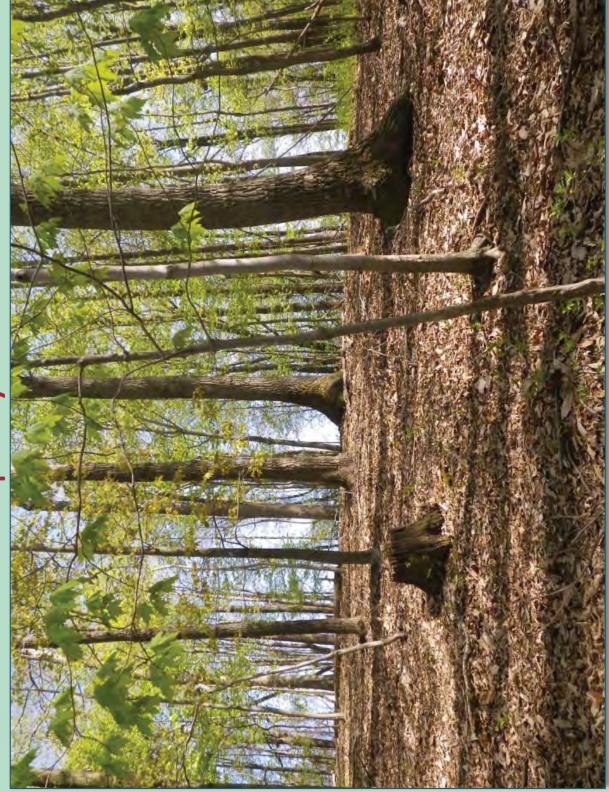






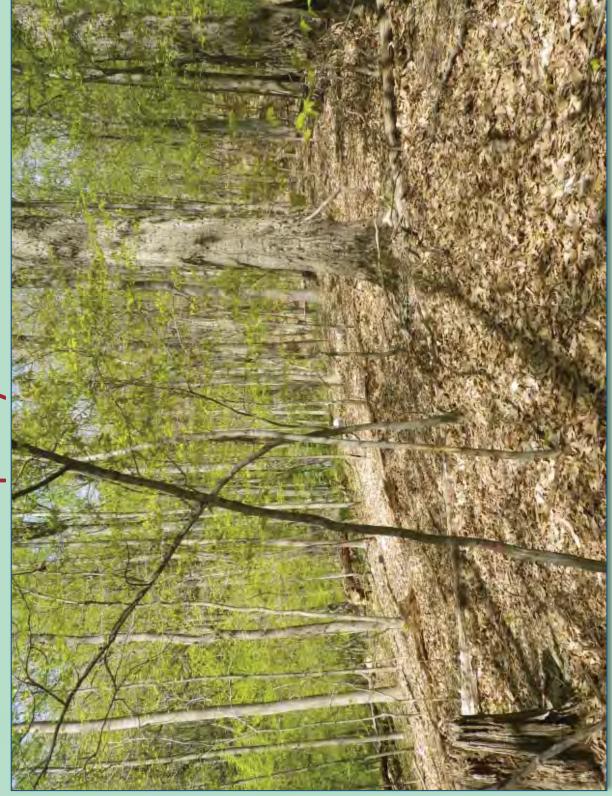


Corridor Study



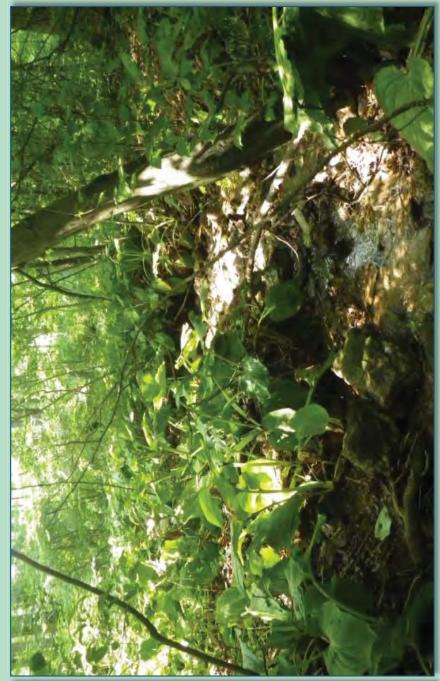








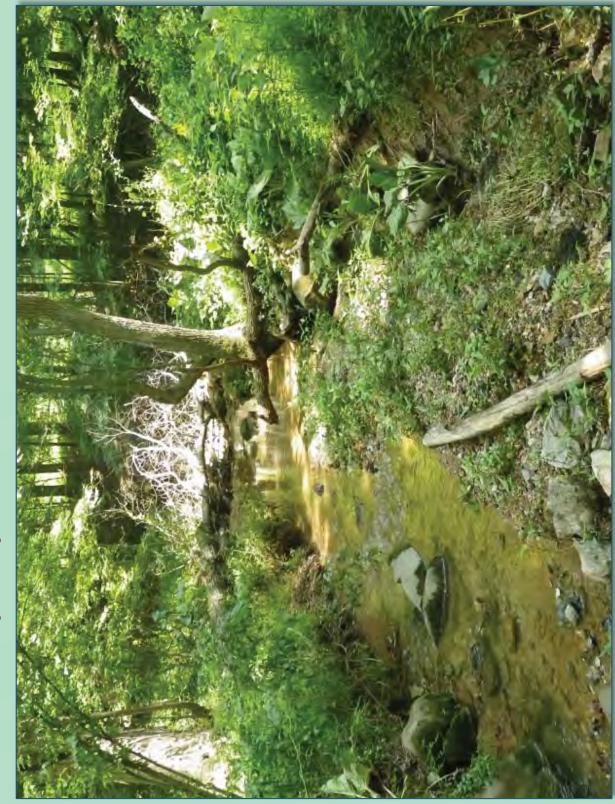
Wilson Property Wetlands and Waterways

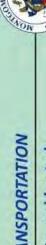






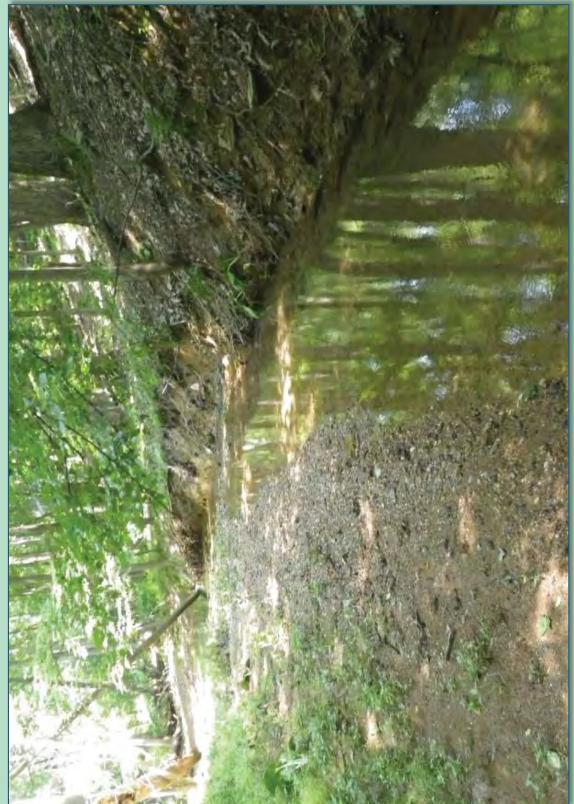
Wilson Property - W1: Wildcat Branch Tributary







Wilson Property – W2: Wildcat Branch Tributary





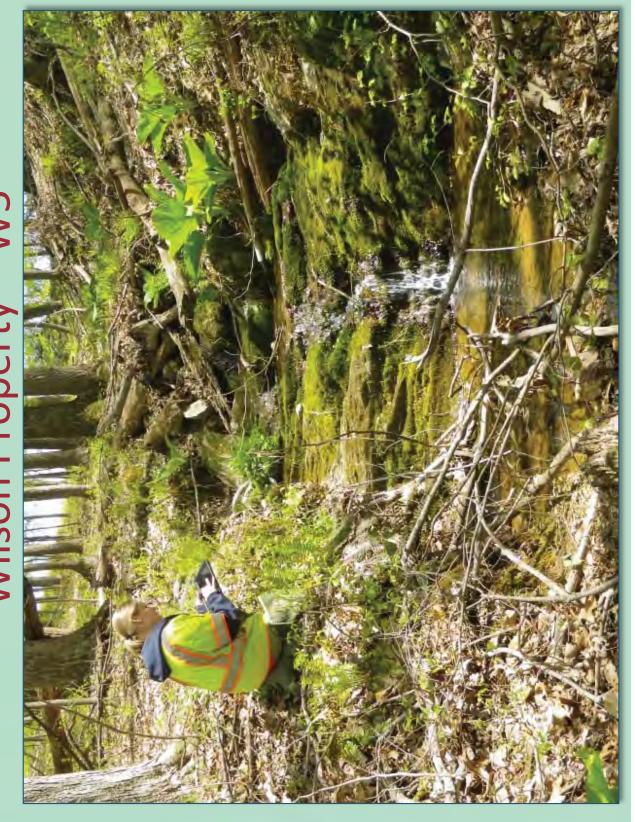
county Corridor Study

Wilson Property - W3 & W4



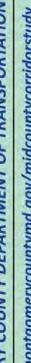


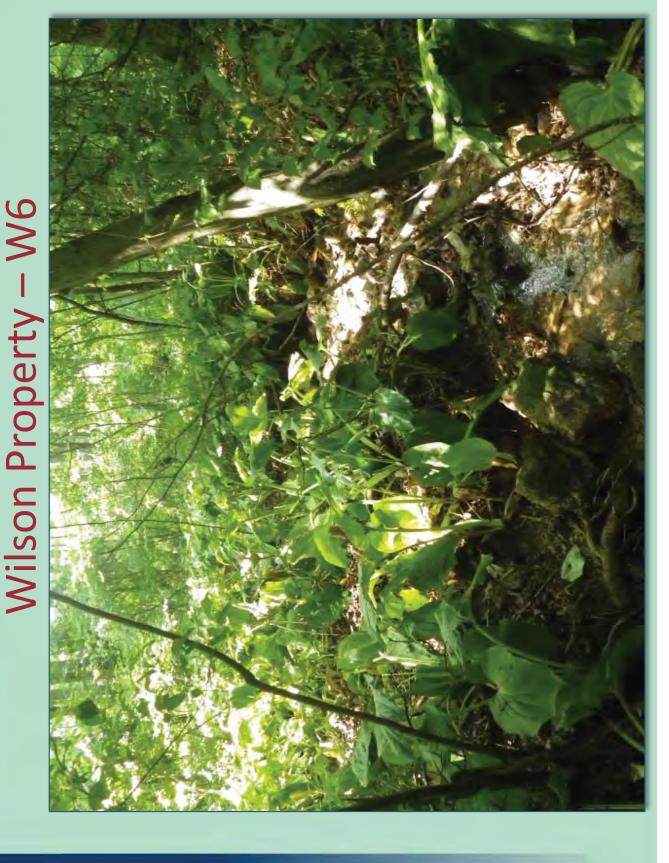
Wilson Property – W5









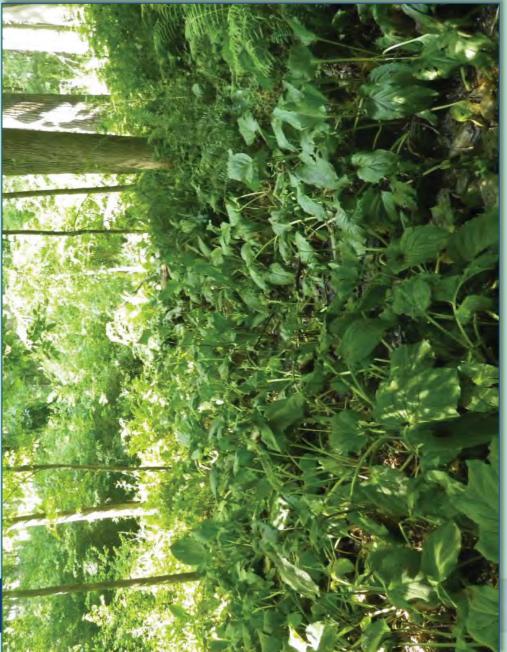






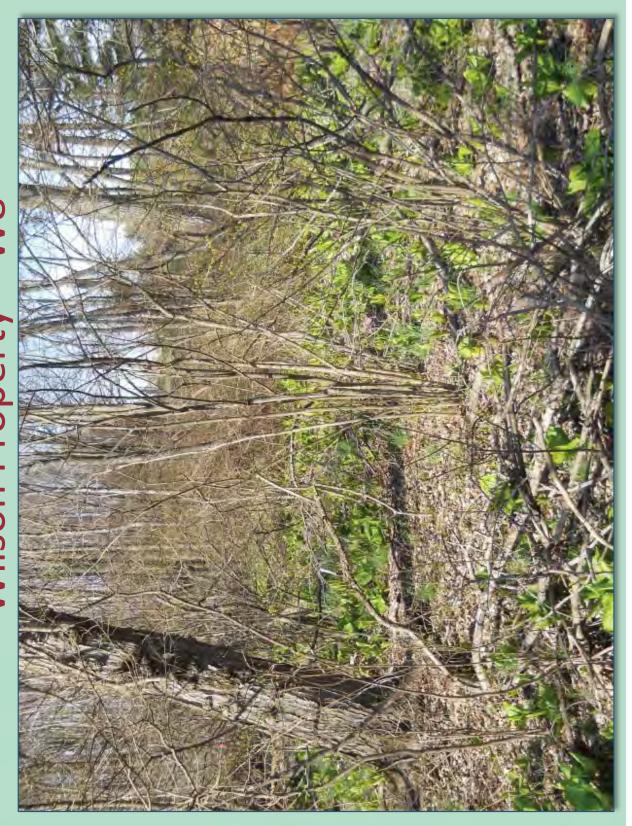




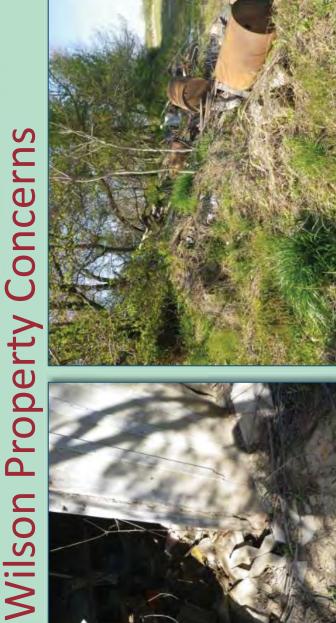




Wilson Property – W8















MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION



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Wilson Property Unique Features

- Proximity to North
 Germantown Greenway &
 Goshen Recreation Park
- Wetland Seeps & Unique Stream Features
- Use III-P tributaries to Wildcat Branch









Wilson Property Unique Features

- 298 Specimen Trees
- Good wildlife habitat

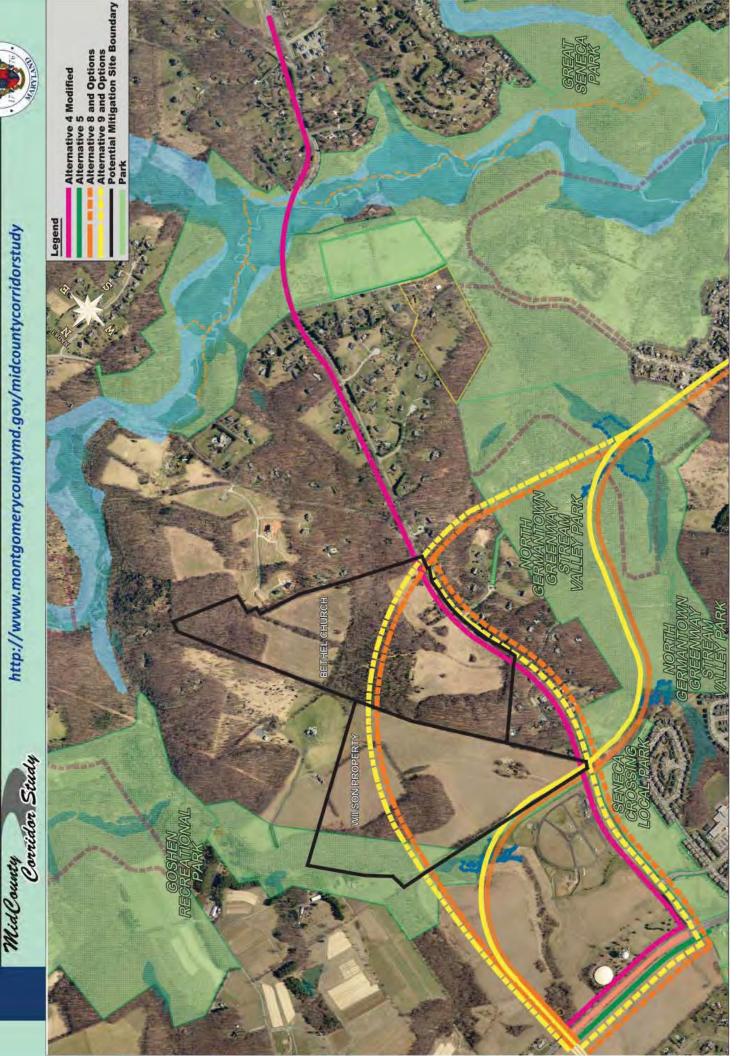






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http://www.montgomerycountymd.gov/midcountycorridorstudy

MidCounty Consider Study Wilson Property -Forest Mitigation









Snow Property

- 103-acre site, 75 acres forested
- Located west of Ridge
 Road (MD 27) and south of
 Bellison Road.
- Bounded on all sides by large privately owned parcels
- Understand M-NCPPC is considering acquiring adjacent parcels
- Surrounding land use consists of agricultural and large-tract rural residential development

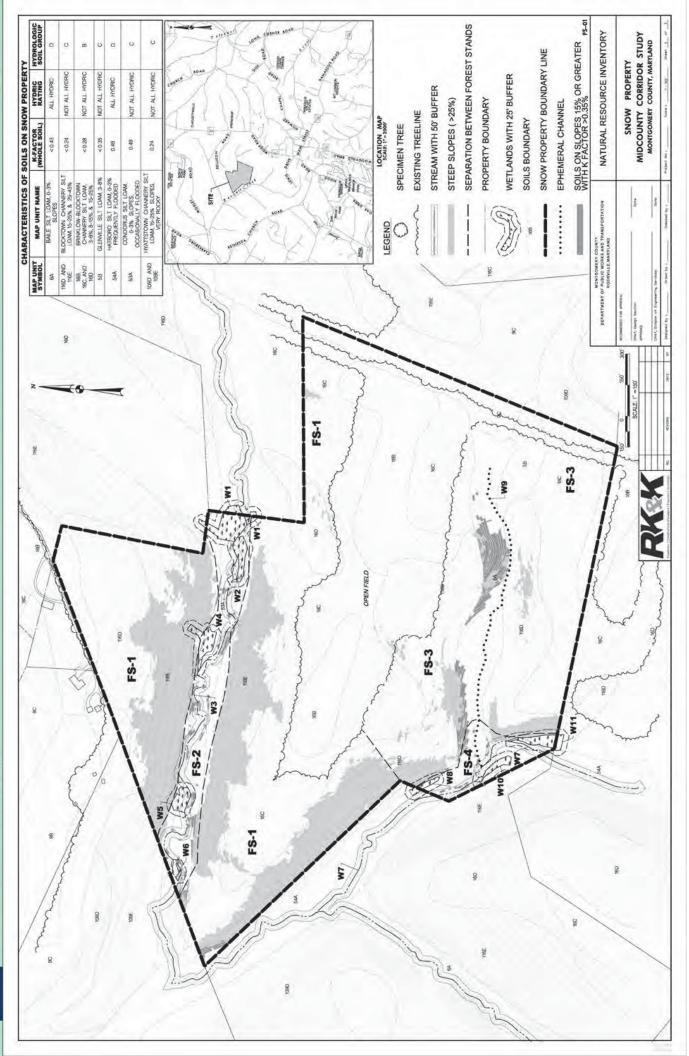




MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

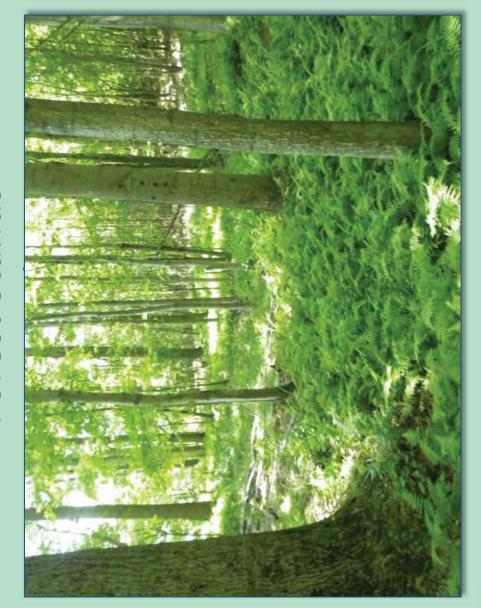
http://www.montgomerycountymd.gov/midcountycorridorstudy







Snow Property Forest Stands



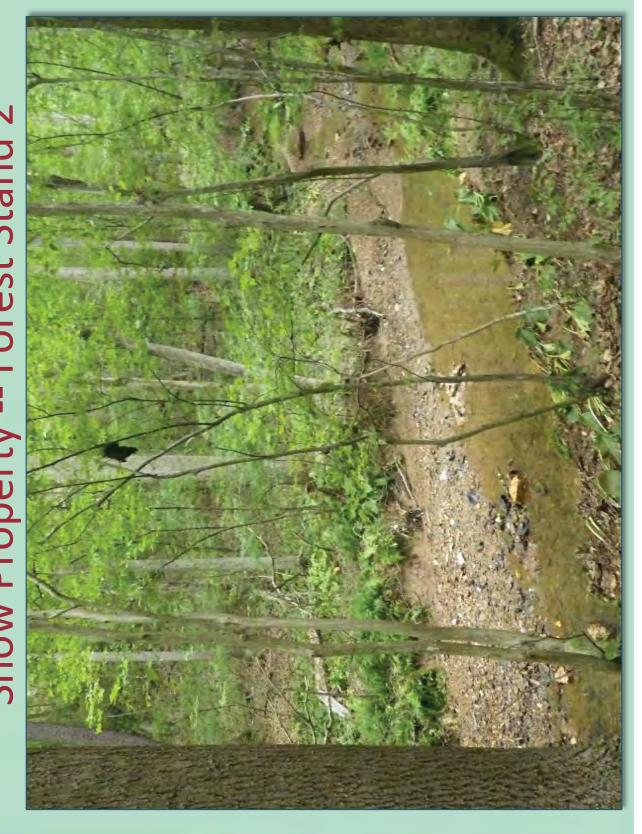


Snow Property -- Forest Stand 1



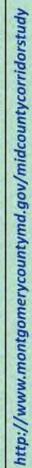


Snow Property -- Forest Stand 2 http://www.montgomerycountymd.gov/midcountycorridorstudy









Corridor Study

Snow Property -- Forest Stand 3



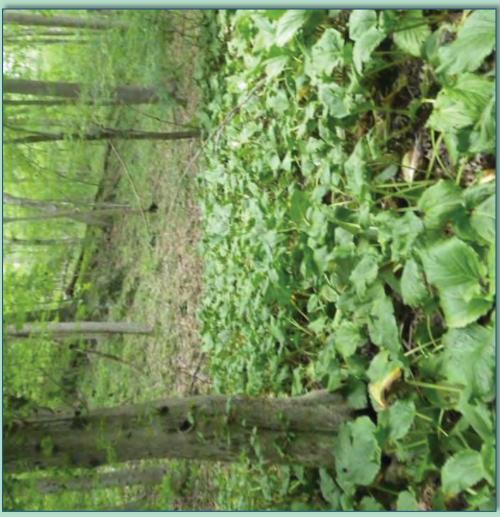
Snow Property -- Forest Stand 4













Snow Property - W1-2









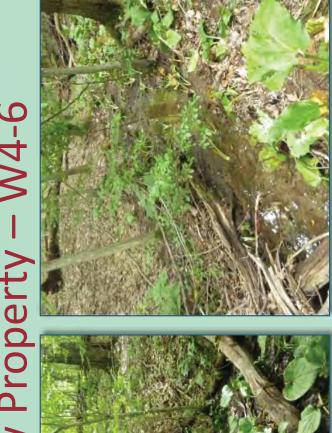


Snow Property – W3:Bennett Creek Tributary





MidCounty Corridor Study















Snow Property – W8-11





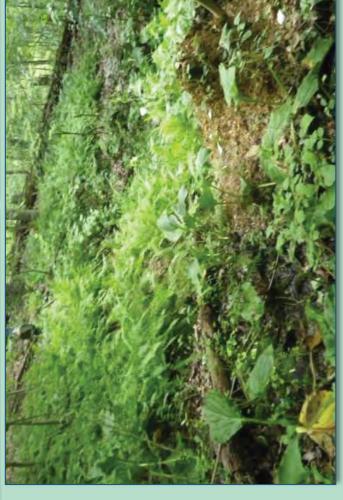


Unique Features MidCounty Corridor Study Snow Property

- Wetlands originating from slope seeps
- **Unusual Plants**
- Good wildlife habitat

















MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION



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Snow Property – Forest Mitigation Potential

Parcel Area

Reforestatio n Potential

103 acres

27 acres

Forest Preservation

76 acres

46 acres – mid-succession 3 acres – early/mid-succession 27 acres – early-succession

49 acres

FIDS Habitat

Potential

Snow Property Interior Forest

July 2013





Summary of Mitigation Potential

	Bethel Church Property	ch Property	Wilson	Wilson Property	
	w/Opt D	w/o Opt D	w/ Opt D	w/o Opt D	A LOCAL TO
Acreage to be Conveyed to M-NCPPC	109	119	93	105	103
Reforestation Potential	47	51	64	71	27
Forest	42 Mid Suc 18 Early Suc	43 Mid Suc 23 Early Suc	29 Mid Suc	34 Mid Suc	46 Mid Suc 3 Early-Mid Suc 27 Early Suc
	60 Total	66 Total	29 Total	34 Total	76 Total
Potential FIDS Habitat	37	55	28	09	49
Watershed	Tributaries to Great Seneca Creek, Use I-P	Great Seneca I-P	Wildcat Bran	Wildcat Branch, Use III-P	Bennett Creek, Use I-P

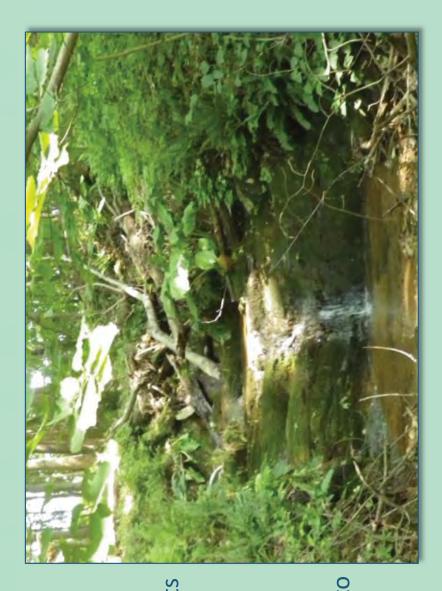




FEEDBACK

Next Steps:

- Review Mitigation Site Reports and provide comments/input by August 15
- MCDOT cannot ensure that a preferred site will be selected
- Agency input is helpful prior to negotiations for site acquisition
- Negotiations would likely begin late summer/early fall



Potential mitigation sites for M-83 project impacts to M-NCPPC parkland



M-NCPPC Montgomery Parks September 5, 2013



Staff Proposal

Property Name	Size	Master Plan Designation
River Road Shale Barrens (Goldberg and Wilmot Properties)	89.18 acres	Legacy Open Space
Hyattstown Forest (Signal Knob)	69.46 acres	Legacy Open Space
Limestone Corridor of Broad Run	263.17 acres	Legacy Open Space
Broad Run (Beverly Properties)	519.29 acres	Legacy Open Space

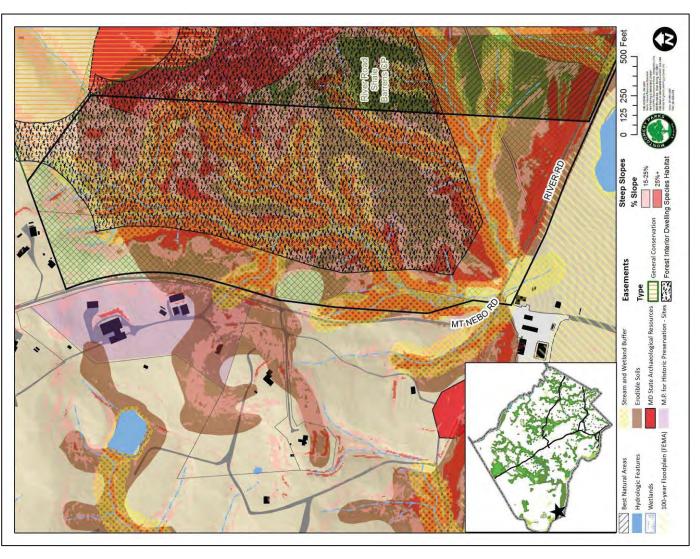


River Road Shale Barrens

Quantitative Information

- 89.18 acres
- 15,406 ft. of Streams
- 42.38 acres Stream Buffer
- 87.06 acres Forest
- 54.12 acres Forest Interior Dwelling Species Habitat
- 1 possible archaeological resource

- Unique plant community supported by shale bedrock
- Known locations of rare, threatened, endangered or watch-list species
- Expands existing Best Natural Area
- Completes Conservation Park experience with space for trailheads and parking

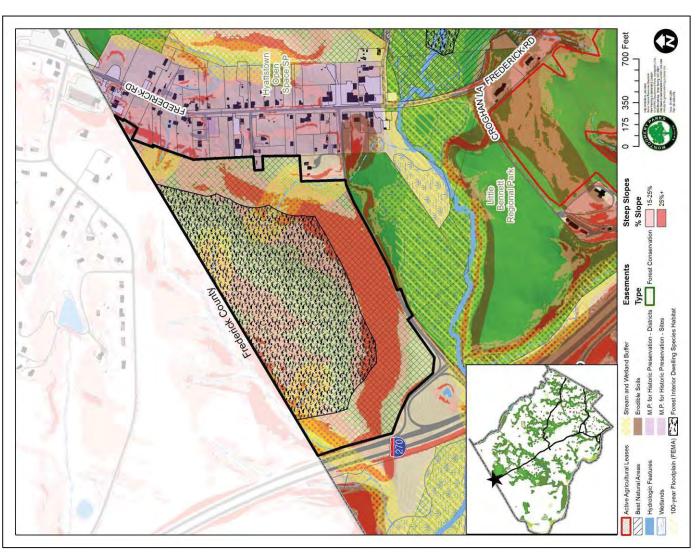




Hyaltstown Forest Quantitative Information

- 69.46 acres
- 1,825 ft. of Streams
- 13.97 acres Stream Buffer
- 66.20 acres Forest
- 37.64 acres Forest Interior
 Dwelling Species Habitat

- Excellent upland forest community
- Known locations of rare, threatened, endangered or watch-list species
- Abundant anecdotal evidence for presence of significant cultural resources



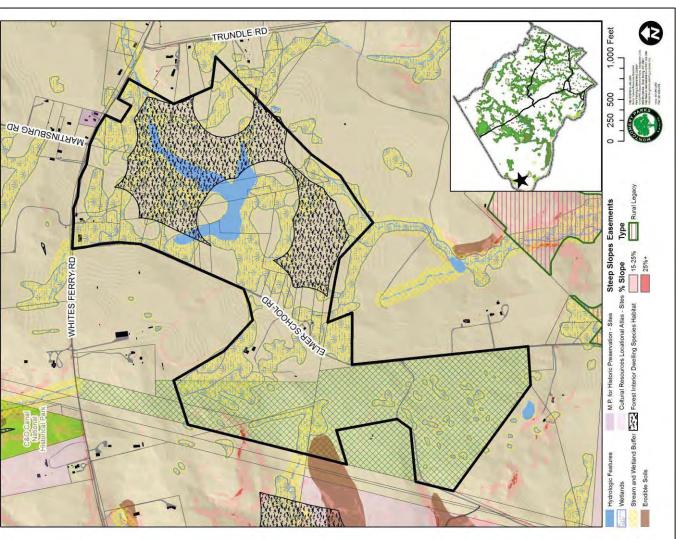


Limestone Corridor

Quantitative Information

- 263.17 acres
- 1,323 ft. of Streams
- 8.31 acres Stream Buffer
- 101.34 acres Wetlands
- 129.76 acres Wetland Buffer
- 235.23 acres Forest
- 57.34 acres Forest Interior Dwelling Species Habitat

- Unique plant and wetland community supported by limestone bedrock
- Known locations of rare, threatened, endangered or watch-list species
- Trail connection to C&O Canal & Broad Run





Broad Run

Quantitative Information

- 519.29 acres
- 31,982 ft. of Streams
- 100.53 acres Stream Buffer
- 21.26 acres Wetlands
- 28.58 acres Wetland Buffer
- 335.75 acres Forest
- 183.17 acres Forest InteriorDwelling Species Habitat
- 1-2 Historic Sites Listed on the Locational Atlas of Historic Sites

- Continues acquisition up the stream valley from existing parkland
- Provides connectivity for planned trail system

