DOVES LANDING CULTURAL AND NATURAL RESOURCE ASSESSMENT
FEBUARY 8, 2012

PROJECT SCOPE

The cultural and natural resource inventory project is the first step in developing Doves Landing as a passive recreation natural area. The development and management of the Dove's Landing property is based on the mission of protection of natural and cultural resources. The stewardship mission of the County will be the guiding factor in all decisions regarding the site and all planned and proposed activities. The passive recreation footprint will be limited in scope and focused on the areas of historical use and existing facilities. The County's cultural resource ethic will be a component of the management of Dove's Landing.

The inventory of existing conditions is will help guide the development of a basic master plan for public use as well as the first step towards a full resource management plan. Doves Landing is a unique resource and the County is committed to responsible stewardship of the land.

The County worked with local cultural and natural resources subject matter experts and stakeholders in order to identify the current status of the cultural and natural resources of the subject property. This assessment includes the following components:

SITE INVENTORY/ANALYSIS

1. Land Use/Comprehensive Plan
2. Cultural Resources
3. Forest
4. Flora/fauna
5. Existing Utilities
6. Hydrology
7. Topography
8. Soils/Geology
9. Viewsheds

LAND USE/COMPREHENSIVE PLAN

The land uses and zoning that surround Doves Landing have changed significantly on the past 270 years. The most drastic changes have occurred within the past 50 years. Prior to the late 1950's most of Prince William County was comprised of small farms and undeveloped land. The second half of the twentieth century has seen thousands of new homes and businesses constructed in the County. The Coles District, in which Doves Landing sits, continues to evoke a more rural context within the County. The land use around Doves Landing consists of private residences.

Today Doves Landing and its 234+ acres remain undisturbed from recent development. The County Comprehensive Land Use Plan was recently amended to identify the land that contains Doves Landing as Parks/Open Space. This designation has recently changed from governmental. The County acquired the parcels through the settlement of two court actions regarding the development of the parcels. In 1986, Omni Homes, Inc. (Omni) executed a contract to purchase a 72.68-acre parcel of unimproved land located in Prince William County and, in 1989, bought the parcel for $436,091. The property was zoned R-10, urban residential development, and Omni proposed to develop the land as Doves Landing subdivision with 106 residential lots. The property was located adjacent to an undeveloped 188-acre parcel owned by Doves Landing Associates (DLA). DLA planned to develop its property as Doves Overlook subdivision with approximately 405 residential lots. Prince William County, objected to adding a three mile extension to the water and sewer service for the Doves Overlook property. On October 6, 1993 the ensuing litigation was settled by a consent decree, in which the County paid DLA $3.7 million for Doves Overlook under a three-year lease/purchase agreement.

Omni Homes brought suit against the County as the development of Doves Landing was predicated on the development of Doves Overlook. In 1997, at the conclusion of the legal process, the Virginia Supreme Court ruled in favor of Prince William County. The County then acquired the second parcel which comprises Doves Landing.

A Comprehensive Plan Amendment has been initiated to change the land use designation from Public Lands to Parks and Open Space. The Parks, Open Space and Trails Chapter of the Comprehensive Plan includes the goal to protect and preserve environmentally sensitive land, habitat connectivity, and water resources, and areas of archaeological, historical and/or cultural significance; and to provide opportunities for residents, workers and visitors to pursue leisure activities in safe, accessible, and enjoyable parks and community recreational facilities.

The development of Doves Landing as a passive recreational natural area offers a unique opportunity to fulfill the County's goals to provide a countywide system of well-maintained and managed parks. This will allow the County to continue to strike the balance between development and infrastructure needs with the protection and conservation of land and historic sites. Open space and outdoor experiences provide a greater quality of life for our citizens. In addition, open space and corridors help

- protect stream water quality including sources of drinking water
- provide food, water and habitat for wildlife
- minimize environmental damage from development
- conserve natural and cultural resources
- provide outdoor opportunities for the community

CULTURAL RESOURCES ASSESSMENT OF THE DOVE'S LANDING PROPERTY

PRINCE WILLIAM COUNTY, VIRGINIA

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January 2013

Abstract

The Dove's Landing property consists of 250 acres acquired by Prince William County in 1997. The area will be opened to the public in the spring of 2013 for passive recreation. Infrastructure will include a gravel or paved parking lot, natural surface trails such as dirt or woodchip, and natural and cultural interpretive signs.

The purpose of this assessment it to identify avenues of future research, identify known cultural resources and offer a preliminary assessment of their eligibility for listing on the National Register of Historic Places, and identify areas of high potential for finding cultural resources. The study area consisted of the entire 250 acre property. The investigation was conducted in accordance with the most recent version of the *Virginia Department of Historic Resources* (VDHR) *Guidelines For Conducting Cultural Resource Survey In Virginia*.

Archival and historic map research identified numerous cultural resources on or potentially on the Dove's Landing property. Reconnaissance pedestrian surveys identified one historic farmstead and one cemetery on the property. Additionally, the property exhibits a high potential for finding prehistoric archaeology sites. Any new infrastructure will likely require archaeological testing and excavation before project approval.

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Introduction

Prince William County (County) acquired the bulk of the 250 acre Dove's Landing property in 1997. However, some parcels were acquired prior to 1997. The project site is located on Broad Run near the geographic center of the County. It is bordered on the east by Broad Run and on the south and west by the Occoquan River. On the north and east it is bordered by a mix of private property and Dove's Lane and Wild Acres Way (Figure 1). The County proposes to open Dove's Landing to the public for recreation. This report is the first step in assessing potential impact to cultural resources on the Dove's Landing property. Additional work may be required.

The objectives of the Cultural Resources Assessment included:

- Identification of recorded archaeological properties;
- Characterization and interpretation of identified resources;
- Appraisal of the results and comparison with existing settlement pattern models;
- Identification of exhibited high potential for finding unrecorded cultural resources; and
- Determination of the possible need for additional cultural resource studies.

The research design for the Assessment was based on the region's historic context, as well as past experience in the region in comparable settings. The investigation was conducted in accordance with the most recent version of the *Virginia Department of Historic Resources* (VDHR) *Guidelines For Conducting Cultural Resource Survey In Virginia*.

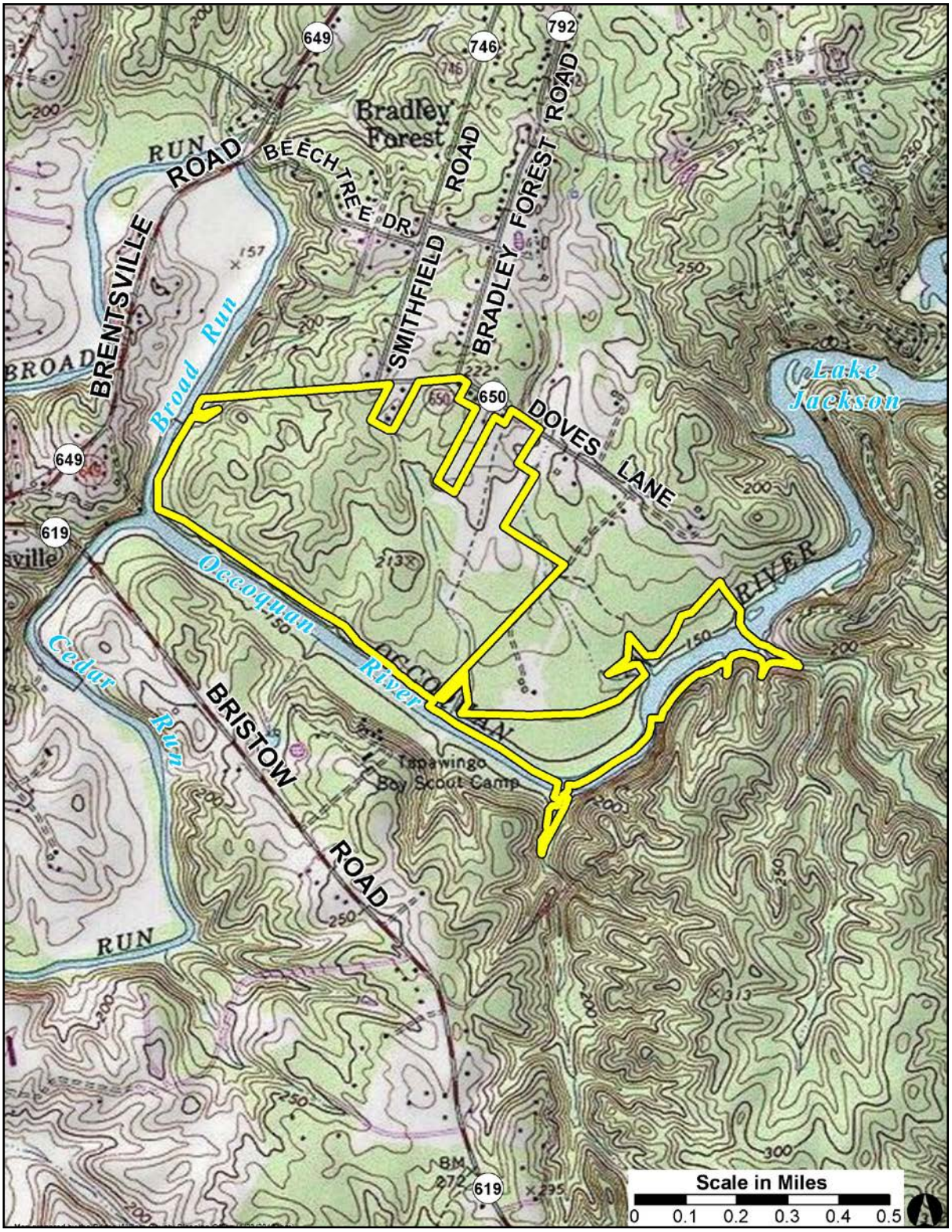

Figure 1. 1966 USGS Independent Hill 7.5 Minute Quadrangle, Photorevised 1984 showing Dove's Landing Property.

Methods

Background Research
Archival research for this investigation was conducted at the office of the County Archaeologist for Prince William County and at the Ruth E. Lloyd Information Center (RELIC) in the Bull Run Regional Library in Prince William, Virginia. Archival research focused on examination of site files and technical reports of previous investigations in the vicinity of the project area and on secondary histories of the area. Historic maps, including those listed in the *The Official Military Atlas of the Civil War* (Davis et. al. 1983), and United States Geologic Survey (USGS) maps were used to locate the existence of any historic properties. The VDHR on-line Data Sharing System was searched for locations of architectural and archaeological sites.

Field Methods
Reconnaissance pedestrian survey of select portions of the project area was performed. A site map depicting locations of above-ground features was prepared. Photographs were taken to document field conditions.

Laboratory Methods
No artifacts were collected, therefore, there was no cataloging effort. Any artifact identification was based on field observations.

Previous Investigations

Site file research was conducted at VDHR to determine if any recorded archaeological or architectural sites are present in the project area or in the vicinity. No archaeology or architectural site was previously recorded on the property. However, three archaeology sites were recorded within a one-mile radius of the project area. These sites were classified as prehistoric camp sites. None of these sites were evaluated for their eligibility for listing on the National Register of Historic Places (NRHP).

Four architectural resources were recorded within a one-mile radius of the project area. These sites include two steel truss bridges (now destroyed), a cemetery, the Sinclair Mill and an historic house. The Sinclair Mill is located on the east side of the Occoquan River across from the Dove's Landing property. The Brentsville National Register Historic District and the County's Brentsville Courthouse Historic Centre are also located within the one-mile radius.

Physical Setting

The project area is located where Broad Run and Cedar Run join to form the Occoquan River, approximately 26 miles upstream from the confluence of the Occoquan River and the Potomac River, in central Prince William County, Virginia. Project area elevations vary from 150 to 210 feet above sea level. It is bounded to the north and east by private land. To the west the boundary is formed by Broad Run and to the south the boundary is the Occoquan River. The project area is in the Broad Run and Occoquan River floodplains. At the time of the survey, the project area was forested with oak, hickory, Virginia Pine, loblolly pine, holy tree, river birch, willow, maple and sycamore. Beneath the forest canopy was poison ivy, greenbrier, grape vine, and creeping vine.

The project area is located on the interface of the Culpeper Basin and the Piedmont Plateau Physiographic Provinces. This area is formed in the residuum of sedimentary rocks of siltstone, sandstone conglomerate, and basic rocks of diabase and basalt. The mapped soil complex for the project area is the Arcola-Panoram-Nestoria. This soil complex is moderately deep, deep, and shallow soils that are well drained and have a loamy subsoil. Specific soil classifications include Arcola Silt Loam, Arcola-Nestoria Complex, Bermudian Silt Loam, Braddock Loam, Brentsville Sandy Loam, Calverton Silt Loam, Manassas Silt Loam, Meadowville, Silt Loam, Panorama Silt Loam (United States Department of Agriculture, Soil Conservation Service 1989).

Cultural Setting

Prince William County uses historic contexts developed by the Virginia Department of Historic Resources. Historic contexts provide a framework for the description and analysis of known or expected cultural resources, and the basis for evaluating the significance of those resources. These contexts are organized by geographic region, time/developmental period, and theme. The project area is located in the Northern Virginia historic context.

Prehistoric Context

Archaeologists have divided prehistoric Native American settlement in Virginia into three general periods. They include the Paleo-Indian period from circa 10,000 to 8,000 B.C., the Archaic period from circa 8,000 to 1,000 B.C., and the Woodland period from circa 1,000 B.C. to A.D. 1,600. The Archaic and Woodland eras can be further subdivided into early, middle and late periods. These periods cover the time from the earliest occupation of the region by humans until contact with people from Europe and Africa in the middle of the sixteenth century. Prehistoric sites of Virginia that date from the Paleo-Indian period (10,000 – 8000 B.C.) are poorly represented. As the climate shifted from a glacial period to a temperate one, prehistoric populations appear to have increased significantly as is evident from the increase in prehistoric sites until the Contact Period. After contact with Europeans and Africans, disease and persistent warfare devastated indigenous populations.

Paleo-Indian Period (10,000 – 8000 B.C.)

During the late Pleistocene geological period (end of the last Ice Age), the first human activity began in the eastern United States. The weather was colder than it is today, and there was much more precipitation, usually in the form of snow. The late Pleistocene was followed by a major environmental shift that was precipitated by glacial melting. This shift resulted in climatic warming and the introduction of different plant and animal species in the area. The Chesapeake Bay was not yet formed at the time of the earliest human occupation, and the Potomac River was nothing more than a narrow stream. Between 13,000 and 9,000 B.C., northern conifers were gradually replaced by cool-temperate hardwood tree species.

This geological period corresponds to the Paleo-Indian period of human occupation. For years, archaeologists adhered to a model of Paleo-Indian subsistence that included hunting Pleistocene megafauna such as mammoth and mastodon. However, recent evidence indicates that megafauna were extinct from the eastern woodlands by the time humans settled there. According to more recent subsistence models, the human populations in the Northeast extensively hunted caribou and, in the Southeast, elk and deer provided early Native Americans with meat and byproducts such as hides, bone, and sinew.

Paleo-Indian sites have been classified and dated on the basis of projectile points because these tools are made of stone and do not disintegrate so they are available for study by modern archaeologists. Additionally, the styles and shapes of these tools are characteristic of a particular time. For years, the earliest known sites in the United States were Clovis sites identified by

distinctive fluted points. Recently, sites have been found below the Clovis strata, indicating earlier occupations. Carbon dates show these sites could be as old as 25,000 B.C., although 15,000 B.C. is considered closer to the limit of human occupation. One of these potential pre-Clovis sites is the Cactus Hill site in southeastern Virginia.

In addition to projectile points, other lithic tools associated with Paleo-Indian sites in Virginia include scrapers, gravers, perforators, and hammerstones. These stone tools enabled Native Americans to hunt, process and prepare food, and to work with non-durable media that generally are not preserved in archaeological contexts, such as wood and hide. Crypto-crystalline stone (for example chert) was preferred for cutting tools. Quartz is abundant in northern Virginia and was also commonly used as a raw material for tools. Other lithic sources, such as hornfels and chert are local, but less common.

Paleo-Indian populations were mobile and exploited low relief environments for hunting and foraging. Paleo-Indian sites have been identified in the region, but they are not common in the area. Any Paleo-Indian site found would be considered significant. No Paleo-Indian sites are recorded within the project area.

Archaic Period (8000 – 1000 B.C.)

The Archaic Period is divided into three subperiods: the Early, Middle, and Late Archaic. The subperiods were subdivided to reflect changing lithic technologies and subsistence strategies.

Early Archaic Period (8000 – 6500 B.C.)

During the Early Archaic period, the climatic warming trend that began during the Paleo-Indian period continued, as did the shift from coniferous to deciduous forests. As a result, a broader range of food resources than were accessible during the Paleo-Indian period became available. Kirk and Palmer projectile points have been associated with the transitional period between the Paleo-Indian and the Early Archaic. Bifurcate-based points such as LeCroy, St. Albans and MacCorkle are also found in Virginia sites from this time period. Quartz, especially high quality quartz, was widely used at this time.

Middle Archaic Period (6500 – 3000 B.C.)

The Middle Archaic period is characterized by the production of increasingly specialized bone and lithic tools. Ground stone tools, such as those used in plant processing, appeared for the first time during this period. Additionally, transitory camps expanded into poorly drained areas of the floodplain, interior tributaries and upland locations. Swamp settings were important for resource procurement during this period. Quartz continued to be an abundant raw material used for stone tools. Projectile points include the stemmed Stanley, Guilford, and Morrow Mountain types. Middle Archaic sites are frequently found throughout Virginia, including the Coastal Plain.

Late Archaic/Transitional Period (3000 – 1000 B.C.)

Numerous Late Archaic period and Transitional period archaeological sites have been identified throughout eastern Virginia. Larger sites dating to the Late Archaic appear to reflect a continuation of the settlement pattern that emerged during the Middle Archaic, i.e., a preference for locating along streams in floodplains. Smaller foray sites were common on ridge tops and near freshwater springs. Prehistoric family groups began to join together to form bands as part of an overall adaptive strategy. Seasonal movements that were aimed at collecting a variety of food resources indicate a refinement in subsistence patterns. The transition between the Late Archaic and Early Woodland culture periods occurred due to a shift in settlement patterns in favor of riverine areas. Transitional groups were "highly mobile" and increased the trade network for specialized resources (Kinsey 1972). Witthoff (1953) noted that transitional groups relied heavily on fishing for subsistence, particularly in locales where there were seasonal anadromous fish runs.

Archaeological evidence suggests advances in technology during the Late Archaic/Transitional period, including the introduction of food preparation and storage vessels. Soapstone vessels were a precursor to ceramic vessels that appeared during the Early Woodland Period in the Mid-Atlantic and indicate a trend toward increased sedentism.

In the Coastal Plain and Piedmont areas of Virginia, many sites from this period contain artifacts typical of the Savannah River Complex. Broadspears and soapstone bowls are diagnostic of Susquehanna and Savannah River Complexes, both Late Archaic traditions, in Virginia. Sites with elements of the Savannah River Complex range from small, temporary campsites to larger, seasonal camps that include hearth features and stone platforms.

Preferred lithic materials used for tool production changed during the Transitional period. Quartzite was used in cobble form in order to produce large, sturdy flakes and cutting tools. Broadspears were not only larger than typical projectiles of the earlier Archaic periods, but were manufactured from a larger variety of lithic materials, including quartzite, rhyolite, quartz, and ferruginous sandstone (Reinhart and Hodges 1991). Variants of the Savannah River projectile type have been identified based on variations of blade width and stem type. Koens-Crispin points also date to this time frame and exhibit similarities to the Savannah River type. Perkiomen broadspear points are typical of the Transitional period and are found on the Virginia Coastal Plain and the Piedmont.

No Archaic period sites are recorded within the project area.

Woodland Period (1200 B.C. – A.D. 1600)

The Woodland Period is generally divided into the Early Woodland (1000 B.C. – A.D. 300), Middle Woodland (A.D. 300 – 900), and Late Woodland (A.D. 900 – European Contact at circa A.D. 1600). Periods are based on changes in ceramic types, lithic technologies, subsistence patterns, and social development.

Early Woodland Period (1200 B.C. – 300 A.D.)

During the Early Woodland period, many Coastal Plain sites were located on large streams and floodplains (Barse and Gardner 1982). Researchers suggest that local preference was based on the short-term adjustments to different habitats after the climatic change during the mid-Holocene period (Klein and Klatka 1991:155). This climatic change produced more stable and warmer conditions than during the previous periods of human occupation (Walker 1981:19). Oak-Hickory-Tulip Poplar forests were common. The Potomac River had expanded to its present day channel, and the Chesapeake Bay was fully formed.

One indicator of increased sedentism around 1000 B.C. is the production of fired clay pottery. Archaeological evidence at sites in Virginia shows that Early Woodland groups were making the transition from hunting and gathering to horticulture. In the Mid-Atlantic region, several varieties of cultigens and cultivars have been identified on archaeological sites (Advasio and Johnson 1981). Fish and shellfish became an important part of the diet. Advancements in subsistence strategy and technology are illustrated by new site components such as storage pits and ceramic vessels. The change in pottery technology can be observed in the transition from steatite-tempered pottery (such as Marcey Creek) to ceramics with sand and crushed rock temper. Exterior treatment on ceramics, such as cord or net-impressed exteriors, became markers in time, region and culture. Accokeek ceramics, tempered with sand and crushed quartz, appeared about 750 B.C. They are typical of the Early Woodland period.

Middle Woodland Period (A.D. 300 – 1000)

The distribution of sites in Virginia suggests that the Native American population increased during the Middle Woodland period. There is some evidence for increased reliance on horticulture for subsistence. Several models have been developed for discussing the social organization for Middle Woodland groups. These models focus on the functions of the base camp during this period. Binford describes the base camp as the hub of foray and procurement activities (1964). Blanton indicates a more advanced level of inter-tribal social organization than is suggested by Binford. He introduces the "macro-band-base-camp", which was a camp where groups from adjoining territories congregated (Blanton 1992:72).

Late Woodland Period (A.D. 1000 – 1600)

Late Woodland sites represent a more complete level of sedentism than is associated with earlier periods. In general, the number of occupation features extended and included postholes from longhouses or circular house structures, storage pits, burials, and occasional organic remains of agricultural products.

In the Virginia Piedmont Plateau, site types include foray or workshop sites, quarries, seasonal and temporary base camps, hamlets and villages. Villages were located at spots where fishing was food and soils were suitable for agriculture. Major villages that housed the tribal chiefs, called werowances (Potter 1993), were located on large estuaries of major rivers, such as the Potomac River.

The Potomac Creek site in Stafford County, Virginia, is representative of a Late Woodland agrarian village with a chiefdom-level hierarchy. This village site is situated on a fertile floodplain at Potomac Neck. The burial remains reflected the status of individuals within the village and contained both high status burials (including grave goods) and ossuaries (group burials). The status burials yielded decorative gorgets, shell maskettes and obtuse angled pipes that distinguished the Potomac Creek site from previously identified sites of the same period. The Potomac Creek complex was developed by Schmitt (1952:63) as a model for classifying Late Woodland sites with similar attributes.

In Prince William County, projectile points representative of the Late Woodland period are primarily Levanna, Clarksville, and Madison. They were very often manufactured using local quartz. Common ceramic types identified on Potomac River sites include Potomac Creek sand-tempered ware, Rappahannock shell-tempered decorated wares and Moayone sand-tempered ware. Many Late Woodland ceramic vessels were cord-marked, impressed or incised (Egloff and Potter 1982).

No Woodland period sites are recorded within the project area.

Historic Context

The time periods listed in the following history are those identified by the VDHR as important historic contexts for the state and modified for this project area. The periods include: Settlement to Society (1607-1750); Colony to Nation, Early National Period, Antebellum Period (1750-1860); Civil War (1861-1865); Reconstruction and Growth (1865-1917); World War I to Present (1917- Present).

Settlement to Society (1607 – 1750)

Captain John Smith's exploration of the Potomac River (1608 to 1610) marked the first documented contact between European explorers and Native Americans in Northern Virginia. Captain Smith's journal describes his travels and maps Indian village sites along the estuaries of the Potomac River (Barbour 1986).

The earliest colonial settlements in Prince William County appeared in the 1640s and 1650s along the Potomac River. As a proprietor of jurisdictions in Virginia and a representative of the English government, Robert "King" Carter issued land grants for the area that is now Prince William County, reaching from the Coastal Plain as far west as Manassas (Works Progress Administration 1941:26). The Northern Neck, specifically the land between the Potomac and Rappahannock Rivers, was given to Thomas Lord Culpeper, and was later conveyed to his daughter, the Lady Fairfax, when it became known as the Fairfax Proprietary. Patents for large tracts along the major estuaries of the Potomac River followed.

Prince William County was formed out of Stafford County in 1731. Named for William Augustus, the Duke of Cumberland, second son of King George II, the original boundary of Prince William County included areas that later became Fairfax, Arlington, Alexandria, Loudoun, and Fauquier Counties. In 1749, Dumfries was chartered as the County's first town

and became the county seat on the banks of Quantico Creek. As the population increased, the county's boundaries were reduced until its boundaries were fixed in 1759.

Land development was based on the patent holders' experiences who were typically tobacco planters from established tidewater families. During this period, the tobacco plantations and their owners dominated the economic, judicial, and social life of Prince William County. In the 1730s, John Tayloe I began to acquire land north of Dumfries on which to build an ironworks plantation. The Potomac River and its ports, such as Dumfries and Colchester, served as transportation nodes for goods departing to and arriving from England. Roads brought goods to port and conveyed goods into the interior and among plantations and farmsteads. The King's Highway crossed Neabsco Creek just south of the project area and was one of the first roads for postal service.

Colony to Nation, Early National, and Antebellum Periods (1750 – 1860)

During the late eighteenth century, Prince William County began to shift its focus from tobacco production to grain growing and milling due to increased demand from European markets and fluctuating tobacco prices. The primary grains were wheat, oats, and corn. The production of grain necessitated the construction and use of gristmills and construction of wagons roads to bring goods to port and market. Other industries such as ironworks, timbering, and shipbuilding also developed during this time.

The African-American population in Prince William County during this period was a mix of free and enslaved people of African descent. Plantations with large slave populations were typically located in the eastern portion of Prince William County. The historical records show that a large slave community, possible including free blacks, lived in the vicinity of the project area and worked on the Neabsco Ironworks property (Kamoie 2003; Sanford et al. 1993). Maps prepared in the early nineteenth century show an increasing population and intensifying agricultural use of the land. The improved road system spurred increased settlement in Prince William County.

Civil War (1861-1865)

Prince William County was the site of several major Civil War battles. The first and second battles of Manassas and the battle of Bristoe Station occurred far to the west of the project area. Significant staged battles with thousands of troops and fortifications did not occur in the eastern portion of the County. However, the area around Dumfries did for one brief period play a critical role. Confederate forces blockaded Washington D.C. in 1861. This was accomplished by constructing artillery batteries on the west bank, the Virginia side, of the Potomac River at Cockpit Point, Freestone Point, and at Evansport. However, these batteries were located southeast of the project area. Still, troop camps were located throughout the area, and troops moved throughout the area through 1862, after which the Confederate army withdrew to the south.

Reconstruction and Growth (1865-1914)

The Civil War devastated farms and the transportation infrastructure throughout the area. The economy was in ruins and the social structure had disintegrated during the war and the subsequent reconstruction. The economic depression after the Civil War ended economic prosperity. “Farms and plantations were left untended, marketing ties were severed, and labor became a scarce commodity. The loss of slave labor in the workforce made rebuilding farms, businesses, and railroads costly. Throughout Prince William County, plantation farming was being replaced with tenant farming. As a result, small-scale farming geared to domestic consumption predominated. Both blacks and whites tended these farms (Sanford et al 1993:45). At the end of the nineteenth century, many farmers supplemented farm income with wage labor, either in lumbering or mining (Parker 1986:118 in Sanford et al 1993:45).” In the 1870s, Virginia remained one of the leading tobacco-producing states; however, the state steadily turned to corn production and dairy farming during the 1880s and 1890s (Walker 1872; Census of Manufacturers 1914). The size of agricultural establishments in Virginia steadily increased over this period while the numbers of such establishments decreased.

World War I to Present

The major impact of World War I on Prince William County was the increase of prices for farm commodities. Farmers formed a large segment of the workforce and were the basis of the local economy. The development of military installations along the Potomac River and the construction of housing for military families led to an increase in the population of rural Prince William County.

After World War II, land development in Prince William County increased, and the construction of suburban homes proceeded rapidly. New schools and churches were erected to accommodate the post-war population boom. In the late 1960s and early 1970s, the federal government expanded and large corporate offices were built in Prince William County. The addition and expansion of roadways facilitated the movement of people in and out of the county. During the last decade, commercial and residential development has been extensive throughout Prince William County due in large part to the area’s role as a bedroom community for Washington D.C. This growth trend continues to the present.

Site History

Lands in the vicinity of Dove’s Landing were likely vacant or sparsely occupied by colonists through the first half of the 1600s. Not until the 1730s does the historical record suggest land use and occupation in the vicinity of the project area.

By the nineteenth century onwards, maps of the region reveal land ownership and indicate the presence of at least two possible farmsteads in the project area. These maps also suggest potential sites of archaeological interest as well as a woodlot and two river crossing fords. Further investigation of these sites may yield information regarding how the project area was utilized and how the landscape evolved.

Prepared in 1862 at the division headquarters of General Irvin McDowell, the “McDowell Map” shows one possible farmstead belonging to Goodwin. Both tax lists and land deeds demonstrate that in August of 1847, William E. Goodwin acquired a 120 acre tract situated on the Broad and Occoquan Runs, which adjoined the lands of a Mr. John Molair and included the road leading from Brentsville to both runs. Listed as Ivy Mill in subsequent tax rolls, he resided there with his wife, Anne, for a number of years. In July 1869, this tract was deeded to F. C. Rorabaugh, who is named on the 1901 William Brown Map of the area. For a sum of three thousand dollars, Rorabaugh then sold the tract in 1914 to Charles L. Dove. The Dove family owned a majority of the 250 acres under investigation prior to selling many of their individual tracts to the Commonwealth of Virginia from 1930 through the 1970s (Figures 2-5).

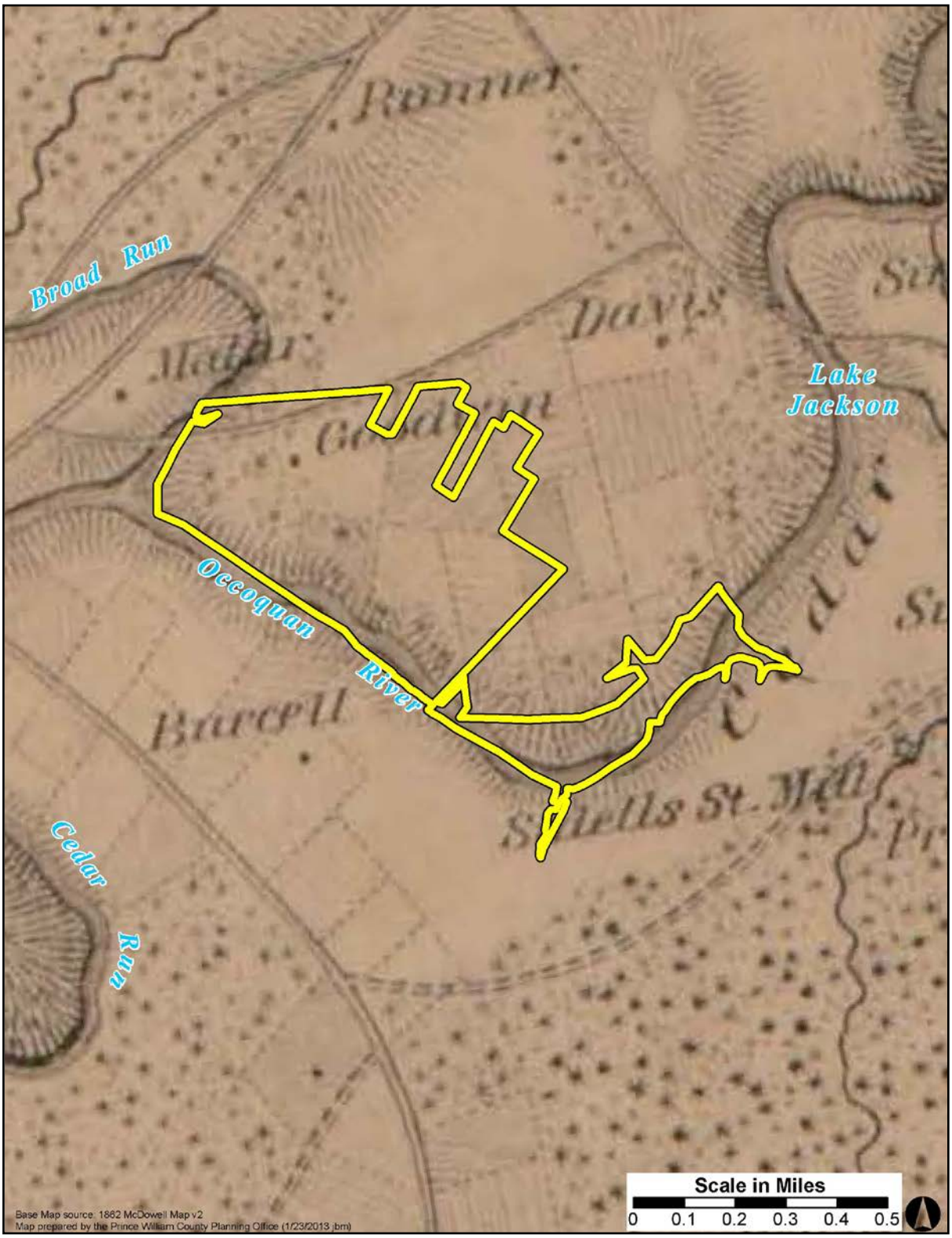

Figure 2. 1862 map showing the approximate location of Dove's Landing Property. Young, J.J., and W. Hesselbach Surveys for Military Defenses Map of Northeastern Virginia and Vicinity of Washington.

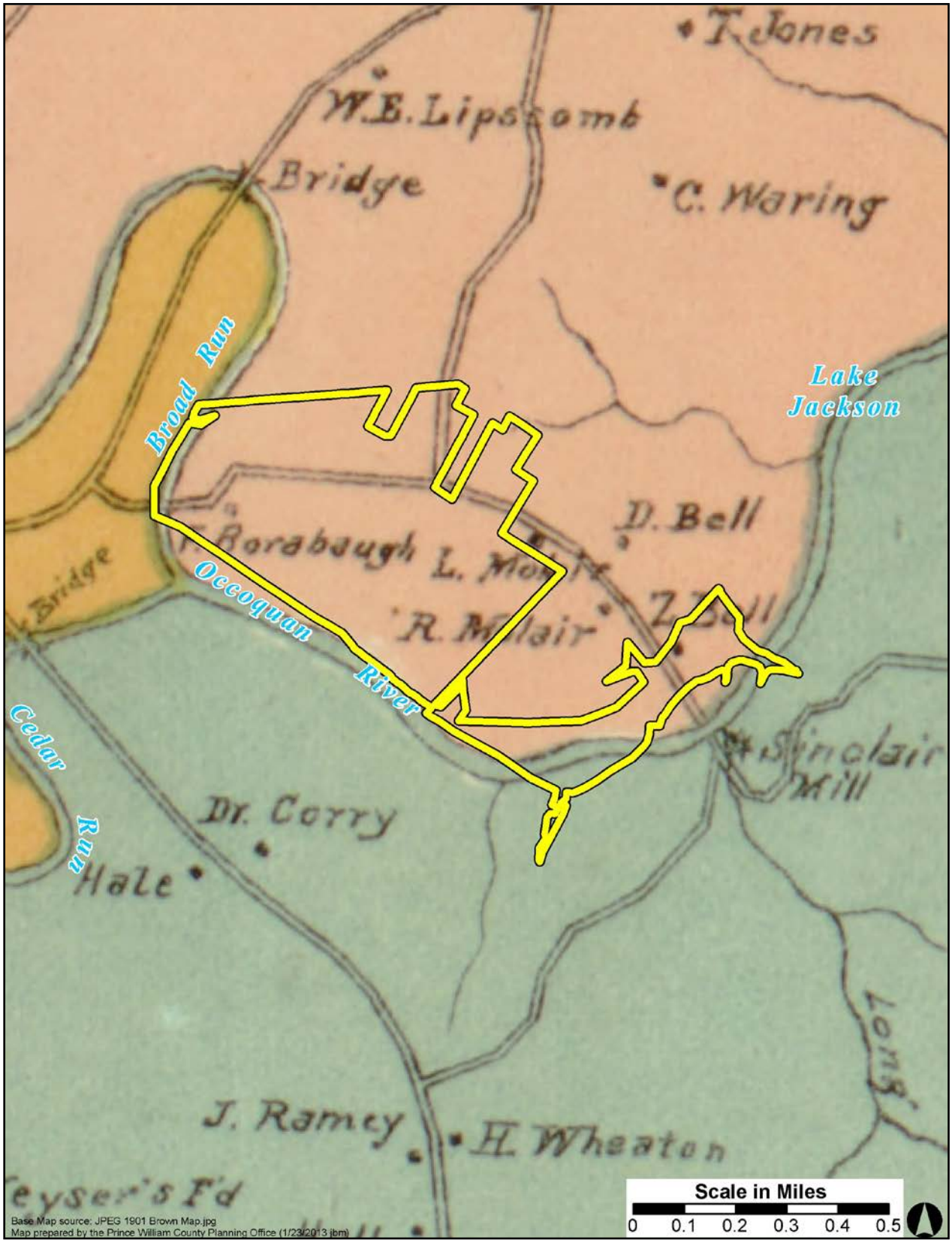

Figure 3. 1901 W.M.H. Brown Map of Prince William County showing the approximate location of Dove's Landing Property.

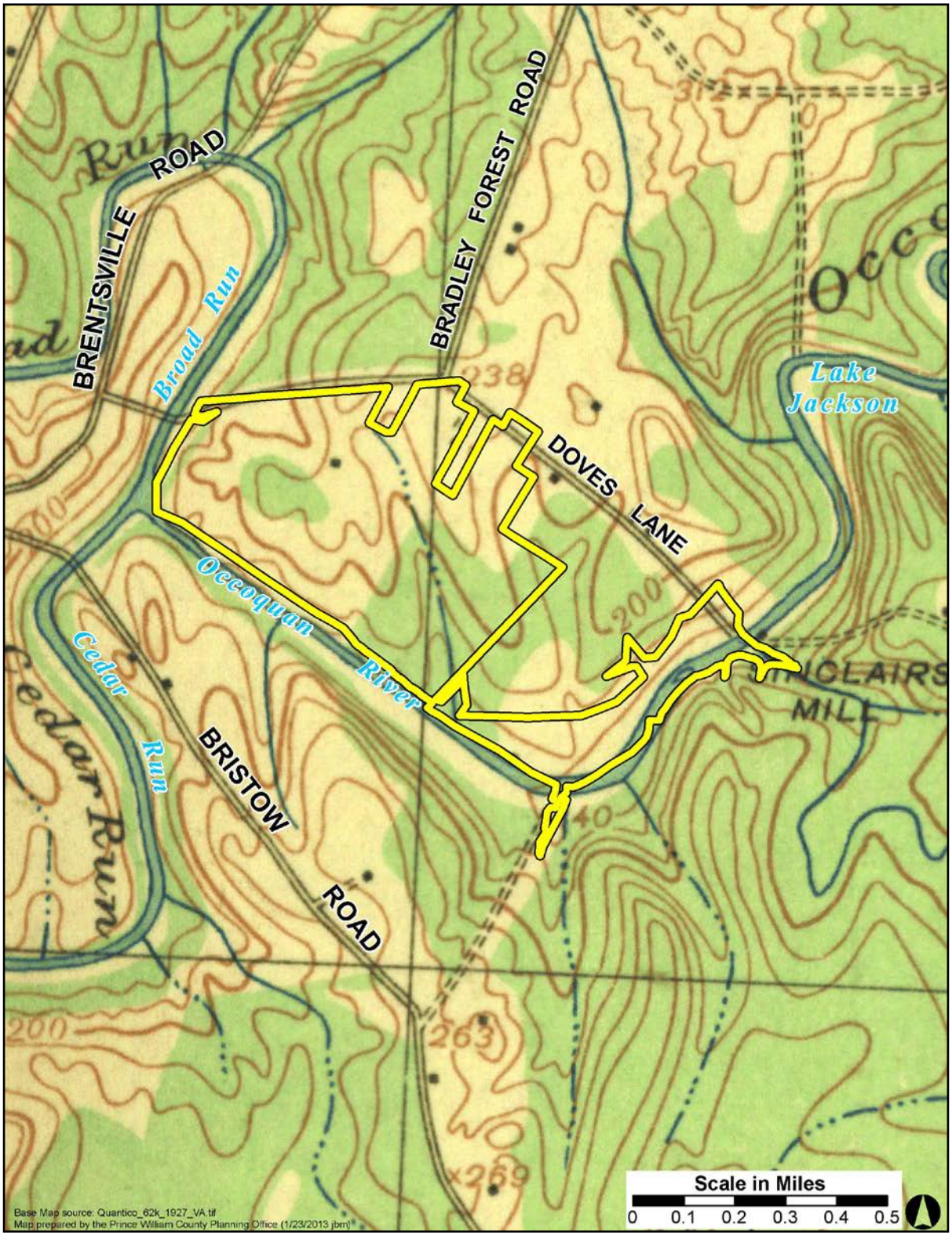

Figure 4. 1927 map showing the approximate location of Dove's Landing Property, Quantico, VA 15 Minute Topographic Quadrangle. 1925 with road revisions in 1927.

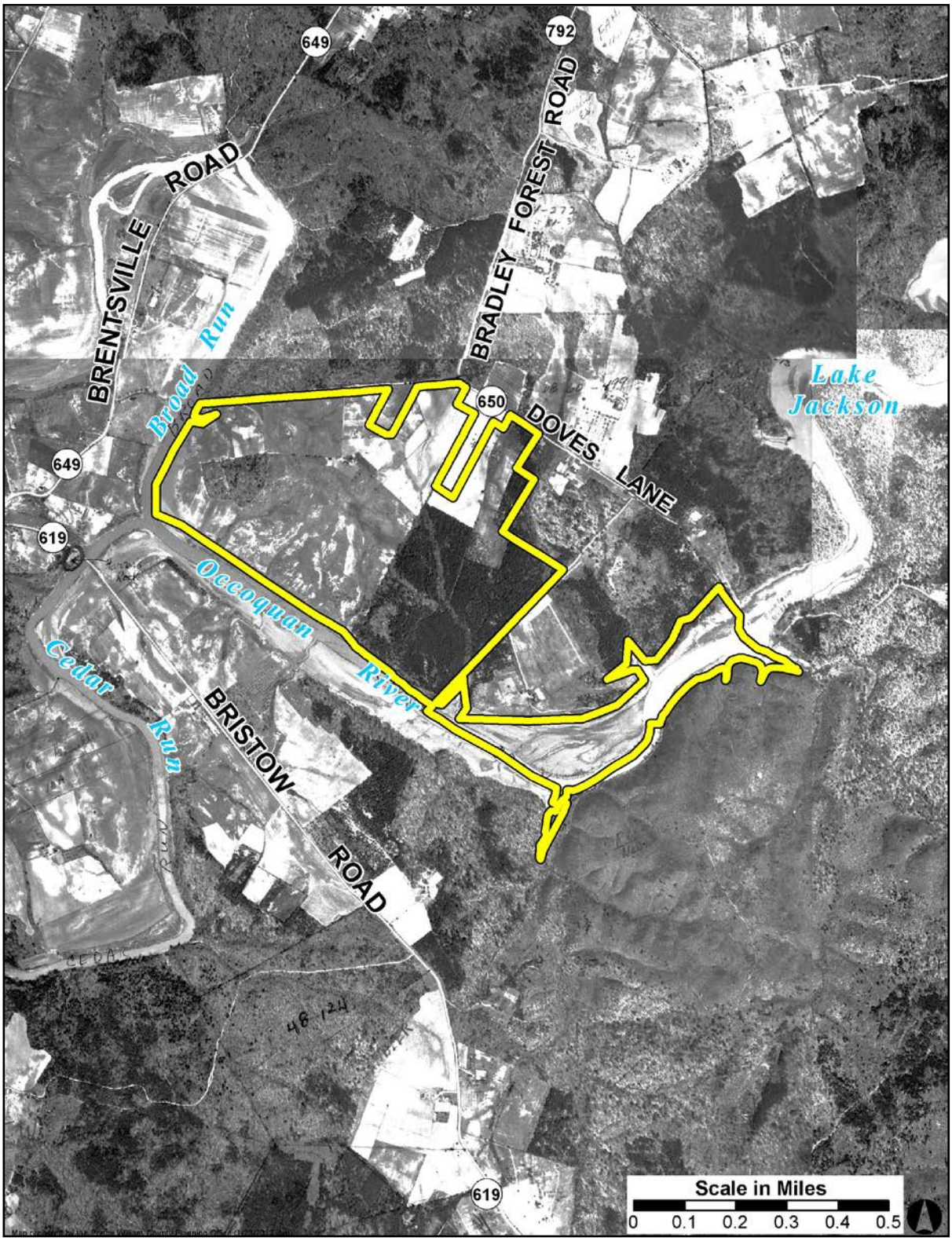

Figure 5. 1937 Aerial Photography of Prince William County. Showing Dove's Landing Property from the Soil Conservation Service, U.S. Department of Agriculture.

Field Survey Results

A pedestrian reconnaissance survey identified at least two domestic foundations, an open well, a trench of unknown function, and possible outbuildings. The farm can be seen on 1937 aerial photographs and deed research indicates it dates from the mid-twentieth century back to the 1800s. The complex covers approximately eight acres. Historic map research suggests this may be the location of the Godwin farmstead which appears on an historic map from 1862 (Figure 2). Additional archaeology and archival research will be necessary if infrastructure is proposed in the vicinity of this archaeology site.

A cemetery was also identified on the project area. It measures approximately 70 by 30 feet. Five marked burials and one possible unmarked burial were observed. There is a high potential for additional unmarked burials. Of the five marked burials the earliest date of death was 1872 and the latest was 1919. Four of the five marked burials are from the Molair family and the fifth burial is from the Hockman family. The burials are oriented east to west suggesting a Christian burial. Additional archaeology and archival research will be necessary to define the limits of burials if infrastructure is proposed in the vicinity of this cemetery.

Proposed Infrastructure

Preliminary plans propose construction of pedestrian and equestrian trails and a parking lot. The trails are planned to be natural surface of compacted dirt or wood chips. The proposed trail alignments are shown on the map below and follow existing foot paths and all-terrain-vehicle trails.

The location of the parking lot is not known at this time. Its surface will likely be gravel or asphalt. Depending on its size and amount of impervious surface, stormwater control infrastructure may be required.

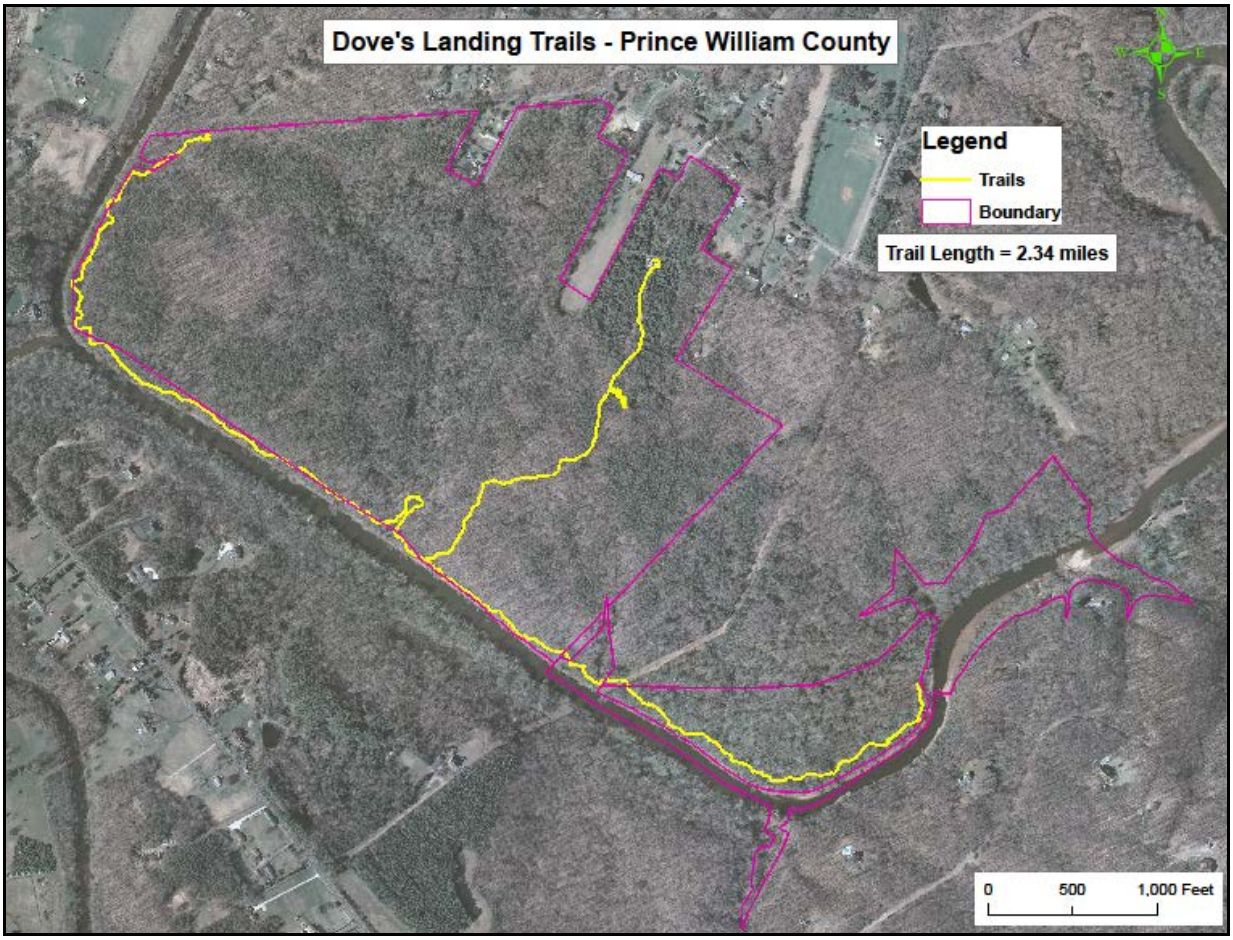

Figure 6. Proposed Trail Alignments on the Dove's Landing Property (image supplied by Prince William County Park Authority).

Conclusions and Recommendations

In conclusion, historical maps and aerial photographs show a number of historic cultural resources either located in or potentially in the project area. These historic resources include two farmsteads and possibly a third, one ford across Broad Run and one ford across the Occoquan River, fence lines, farm roads, and wood lots. Pedestrian reconnaissance survey found one historic farm complex including two cut stone foundations and a well and a cemetery.

There is the potential for finding significant prehistoric sites. The property's topography and location on Broad Run and the Occoquan River, with substantial flood plan and bluffs overlooking the rivers, are conducive to prehistoric land occupation and land use.

Having outlined the cultural and historical significance of the 250 acres at Dove's Landing, the Prince William County Historic Preservation Division, in conjunction with the Prince William County Office of Planning, proposes the following recommendations:

- Public activity and site planning for Dove's Landing should be limited to non-motorized passive recreation. Historic Preservation and Passive Recreation are mutually supporting activities. Support for passive recreation infrastructure may require additional cultural resource studies. The setting of Dove's Landing is inherently unique due to the blending of both cultural and natural resources on-site.
- The archaeology site and the cemetery should be recorded with the state.
- For the safety of visitors and the protection of cultural and historic resources on-site, protective fencing should be installed to preserve significant features on the property and ensure public safety.
- The trail network currently existing inside the 250 acres of Dove's Landing property should continue to be maintained and utilized for the purposes of passive recreation (i.e. hiking, bird watching).
- Motor vehicles and bikes should not be permitted on the trail system.
- Following selection of an area suitable for vehicle and visitor parking, a Phase I archaeological and cultural resources survey should be undertaken by the County, with no further development on-site taking place until the Phase I survey is completed.
- Continued phased archaeological surveys should be performed on site, and pursued through grant programs offered at the state and federal level. Development of public archaeology programs would also allow for additional educational and interactive recreation at Dove's Landing.

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Appendix A

Justin s. Patton, MAA, RPA, is the Prince William County Archaeologist. He has 24 years of experience in cultural resources management and archaeological research in the Mid-Atlantic, South, and Southwest regions of the United States, as well as international work in the Republic of Georgia. His professional credentials meet *The Secretary of the Interior's Standards for Archaeology* (36CFR Part 61). Mr. Patton is located in the Planning Office and liaises with the County's Architectural Review Board, Historical Commission, current and long range planners as well as land developers and their attorneys.

Mr. Patton has experience in field supervision, field direction, report writing, research design development, technical and cost proposal development, laboratory analysis, and public outreach and education programs. He received his Master's Degree in Applied Anthropology from the University of Maryland in 2001 and his Bachelor's Degree in Anthropology from Longwood College in 1988.

Robert E. Krause, Ph.D., is the Prince William County Preservationist. He has 10 years of experience as curator and historian at archives, historic sites and houses, and museums across the United States. His research expertise focused on the Great Depression and New Deal eras in the South and Southwest, and he has two published book manuscripts on Environmental and Public history. Dr. Krause has worked in historic sites and museums in Alabama, Florida, Mississippi, Oklahoma, and Virginia. Dr. Krause's professional credentials meet *The Secretary of the Interior's Standards for Historian* (36CFR Part 62). Dr. Krause is located in the Historic Preservation Division Office and serves as a liaison with the County's Planning Office, the Prince William County Historical Commission, as well as with citizens and other County agencies.

Dr. Krause has experience in artifact and exhibit curation, collections management, cultural resource management, as well as Historic Preservation planning and surveys including National Register nominations and Section 106 review process. He received his Bachelor's Degree in United States History and Southern Studies from the University of Mississippi in 2004, his Master's Degree in United States History from Oklahoma State University in 2007, and his Doctorate of Philosophy Degree in United States History from the University of Mississippi in 2010.

Doves Landing Initial Forest Inventory Summary

Rachel Habig

February 7, 2013

This document outlines the results of an initial forest inventory at Doves Landing. An initial stand delineation map and summaries of each stand's forest structure are provided as an overview of the forest resource, spread out over 227.9 acres.

Stand Delineation

The first step was stand delineation, done using ArcMAP 10. The word stand is defined as "a group of forest trees of sufficiently uniform species composition, age, and condition to be considered a homogeneous unit for management purposes" (source: http://www.dnr.state.md.us/forests/gloss.html). This method is somewhat subjective, and many different criteria can be used to designate stands. Very homogeneous groupings of trees can be denoted, but this often leads to a high number of stands for a given geographic area. Conversely, forests can be very loosely grouped together, resulting in fewer stands with much more heterogeneity. A balance is needed between variety of trees within a stand and number of stands. The more variety there is in one stand of trees results in more sample points in order to gain a representative idea of the actual composition of the forest in question. The end goal of stand delineation is simply to break down an area into segments, in order to facilitate management and understanding. The criteria used to delineate stands are determined by the potential use of the land, and the management goals of the landowner.

This inventory sought to find a balance by grouping obviously different canopy types (evergreen versus deciduous) while maintaining a minimum stand size of 5 or more acres where possible. Leaf off aerial imagery was used to highlight differences in the forest canopy. Other factors including topography and knowledge of the property were used in stand delineation as well. A total of 17 stands were created in the delineation process, but field inventory revealed that two of them could be combined. The resulting map of 16 stands is included at the end of this document.

Initial Forest Inventory

Following stand delineation 47 10^{th} acre (21.6 foot radius) plots were measured, over the entire property. The number of plots per stand varied according to stand size and anticipated heterogeneity of forest cover. For example, stand 1 is a 10.6 acre young stand of pine and cedar, and did not show much difference across the area. In contrast, stand 6 is a 39.3 acre stand ranging from the high, hilly northern edge of the property almost down to the Occoquan River. Much more variation in tree species would be expected over a larger area, and especially over an area with varied topography. None the less, the aerial imagery showed the entire stand to be a mix of pine and hardwoods, so difference potentially justifying making this into more stands could only be supported by the results of the initial inventory.

Any tree found within the plot that was over 1 inch in diameter at breast height (DBH). This means that overstory, mid-canopy, and understory trees were all cataloged, as long as they met the DBH requirement. Efforts have been made to describe all levels of the forest canopy in each stand, where evidence indicates. Due to the time of inventory (i.e., winter-leaf off conditions), some trees are listed only to the genus level. This is to avoid any misidentifications, and can be corrected during the growing season.

Stand One:
Stand one is located near the cell tower, in an upland position on the site. It encompasses 10.6 acres. Some large rusting farm equipment was found in the northern part of this stand, not far off the road to the cell tower. Also in this stand, a pile of old carpet and carpet padding was found.

This is a stand of relatively young cedar and pine trees, with a few oaks, maples, and dogwoods present as well. Cedars were by far the most common species found in stand one, representing 59.7% of the trees in the stand. Virginia pines were second, with 29.0%. It is interesting that the cedars were more numerous but smaller overall, with and average diameter of 3.8 inches (range 1-9.8inches). In contrast, Virginia pines had an average diameter of 7.1 inches, with a range of 1.9-10.4 inches. There was one large red oak in the stand, with a diameter of 22.7. This is an early succession stand, so the large red oak is probably a left over from an earlier land use, such as a pasture.

Stand Three:
Stand three is a small stand, comprising 2.1 acres, and is located on an upland position behind the houses on Shawnee Lane.

Stand three is a stand in transition, with a relatively low stocking in the overstory and several species present in the mid canopy and understory. The dominant tree species in this stand is Virginia Pine, representing 30.6% off all trees sampled in the stand. The average DBH was 10.8 inches, with a range from 5.9-21.2 inches. The remaining trees sampled include yellow poplar, making up 18% of trees. The average DBH of yellow poplar was 4.7inches, with a range from 1.8-14.1 inches. There were a couple of larger yellow poplars, but most of them were still small, found mostly in the mid-canopy. Dogwoods made up 16.3% of the trees measured, but one should remember that this is an understory species. Oaks and beech trees each made up 12.2% of trees measured, but all of them were still small trees waiting for an opening in the overstory.

Stand Four:
Stand four is a 6.1 acre block whose northern most corner touches Shawnee Lane. It is an upland site, but is somewhat wet for long periods of time.

A total of 10 tree species were recorded in this stand. The dominant tree species in stand four is also Virginia pine, representing 36.6% of trees measured. The average DBH of Virginia pine was 10.7 inches, with a range from 6.2-17.1 inches. Beech trees made up 28% of the stand, but were all rather small, with an average DBH of 2.7 inches, and a range from 1-5.5 inches. Oaks were also present at 11.8% abundance, and were also

small trees with an average diameter of 2.2 and a range from 1-3.1 inches. Dogwoods again made up a relatively large portion of the stand, with a relative abundance of 9.6%. Their DBH average was 2.8 inches with a range of 1.3. The remaining 14% of trees measured were birch, cedar, holly or yellow poplar. One interesting thing is that while there were only 2 yellow poplar trees measured, they were both rather large (10.6 and 14.9 inches DBH), and could provide a large seed source for any opening that appears due to Virginia pine dieback. This stand is still in an early successional stage, and over time the varied species currently in the understory should come to represent the composition of the mature stand.

Stand Six:
Stand six is the largest stand in Doves Landing, covering 39.3 acres. It runs from the upland areas near Doves Lane downhill almost to the Occoquan river. This is the most likely stand to be further subdivided based on the results of this initial inventory. Out of six sample plots, beeches were the only tree species found throughout the stand. Virginia pine was found in 5 of 6 plots, and one plot was located in an area with significant pine blow down.

Thirteen species of trees were measured in stand six. The most common tree species was American beech, but this tree was only found in the understory or mid canopy. It comprised 46% of trees measures, but its average DBH was only 2.3, with a range of DBHs from 1.0-5.5 inches. Therefore, the most common overstory species is still Virginia pine, with a relative abundance of 17.2%. The average DBH was 9.7 inches, with a range from 6-14.9 inches. Dogwoods were present in the understory 9.2% of the time. Yellow poplars made up 6.7% of the sample, with an average DBH of 7.7 inches and a range of 1.7-21.6 inches. They were usually found as small trees (DBH less than 4.5 inches) but also had a few large individuals. The remaining tree species found were black gums, oaks, maples holly, and ironwood. Together they made up 20.9% of trees measured, and were by and large small trees. One exception is the presence of a couple of large oak trees, including one red oak with a DBH of 31.3 inches.

Stand Eight:
Stand eight is a 9.2 acre tract in the eastern part of Doves Landing, on an upland site.

Nine species of trees were recorded in stand eight. Virginia pine was the most abundant tree, comprising 35% of the trees measured. The average DBH of Virginia pines was 8.8 inches, with a range of 4.7-19.5 inches. All of the oak species together also comprised 35%, with most individuals in the 2 inch DBH class. The smallest oak tree measured had a DBH of 1.3 inches, while the larges was 9.5 inches. Beeches also made up 26.7% of trees measured, with an average DBH of 2 inches and a range from 1-4.8 inches. The remaining 3.3% of trees were either black gum or maple trees. One thing that might account for such a uniformly small DBH stand of trees is the presence of many downed Virginia pines. Since Virginia pines are an early succession species, they die off and leave room for longer lived species to grow in. It is likely that this stand was sampled at a time when all of the pines were fairly recently removed (read: lying on the ground rather than occupying the main canopy), and the understory is beginning to recover.

Stand Nine:
Stand nine is a 23.8 tract located in the bottom land adjacent to the Occoquan River. Due to its location in a bottomland setting, one could expect to find very different species compositions that elsewhere at Doves Landing. It is also positioned at a bend in the river, meaning that it is likely to be flooded frequently, causing frequent mortality in some seedlings. Due to this stand's location on the property, it is not surprising to find a much lower stocking level than other stands. The average of trees per plot for this stand was only 5.8, compared with the highest stand (Stand Three) with 31 trees per plot, on average. This is an especially concerning statistic considering that during the inventory a potential new infestation of Emerald Ash Borer was discovered.

Only six tree species were recorded in stand nine. Of those, box elder (or ash leaved maple) was the main tree species, with 43.5% of all trees measured. Green ash, ironwood, and river birch each made up 13%. Black locust and an unknown tree species made up the remaining 17.5 % of the trees measured. All of these trees had relatively high DBHs compared with many other stands, due likely to the fact that they are big enough to survive flooding events during which smaller trees are likely to be washed away or die from anaerobic conditions. All average tree DBHs (by species) were between 10.3 and 15 inches. Of note, green ash DBH averaged 13.2 inches. This is a significant component of the sparse overstory in this stand, and will be a significant loss.

Stand Ten:
Stand ten is a bottomland stand comprised of 9.0 acres. It is also located along the Occoquan River, but does not lie within the flood plain as much as Stand nine. Also, it does not lie on a bend in the river, so it would not be affected by high water speeds during flooding events as much as stand nine. This explains the very different tree compositions found in stand ten as compared to stand nine.

Beech was the most common tree sampled in stand ten, with 28.2%. Maples (mostly silver maple) together made up 30.1%. Ironwood made up 23.1% of the population, followed by box elder, holly, sycamore and yellow poplar. In terms of size, sycamore was the largest, (represented by only one individual in the stand) with a DBH of 42.0 inches. One maple individual (20.3 inches DBH) and all three yellow poplars (16, 16.3, and 41.6 inches DBH) were also large relative to the other trees onsite. While beech trees were the most common tree found in stand ten, they were also comparatively small, with an average DBH of 3.4 inches.

Stand Eleven:
Stand eleven is likely the most mature stand in all of Doves Landing-it is the only one shown as forested in 1937 aerial photos. It is 10.5 acres in size, and is located in an upland position onsite.

The forest composition is that of a mature oak forest. Stocking levels are low, with only 6.5 trees measured per plot, on average. In contrast to stand nine, which also saw very

low stocking levels, this stand is made up of large mature trees who simply take up a lot of space. Beech was the most numerous tree found in stand eleven, but was usually very small and relegated to the understory. The rest of the plots held large oak trees, or other small understory trees like mountain laurel and red maple. The most notable oaks were a 64.6 multi-stem red oak, and a 25.2 inch white oak. Further sampling will yield more information about other overstory species and enable this stand to be classified under the Natural Communities of Virginia classification system.

Stand Twelve:
Stand twelve is a 28.0 acre area that reaches down to the Occoquan River, east of the main trail from the cell tower.
Fifty percent of the trees measured were beech, made up mostly of individuals smaller than 4.0 inches DBH, with a few individuals measuring between 9.8-10.5 inches DBH. White oaks were the second most common tree species, representing 22.9% of trees measured. In contrast to the beech trees, white oaks were most often over 4 inches in diameter, with an average DBH of 10.9 inches. One individual measured 26.5 inches DBH. Black gum, birch, dogwood, holly, red oaks, Virginia pine and yellow poplar were also found in low quantities.

Stand Thirteen:
Stand Thirteen comprises 21.0 acres, and lies in the eastern portion of Doves Landing, down the trail from the cell tower, just past stand one.

A total of eleven tree species were found in stand thirteen. Cedar was the most common tree species, making up 30.9% of trees sampled. Their average DBH was only 3.7 inches. Maples made up an additional 18.2%. Their average DBH was higher, at 6.2 inches, but this is a little misleading. Any single maple with a large DBH was actually a multi-stemmed tree, which can appear to have a large diameter but acts more like a group of little trees. Also, multi-stemmed trees are not as healthy and are prone to splitting. While these species are more numerous, several large oaks and yellow poplars were found in the overstory. This stand is beginning to show signs of becoming a mature forest.

Stand Seventeen:
Stand seventeen is a 10.8 acre stand lying next to the most mature stand (stand eleven), closer to the Occoquan River and Broad Run.

The most common tree species in stand seventeen is beech (37.7% of all trees measured), but again it is present as small trees in the understory and mid canopy. The average diameter of beech trees in this stand is 2.3 inches DBH, with a range of 1.1-5.9 inches. Virginia pine is the second most common species, with 18.8% relative abundance. Also this species has a much higher average DBH at 9.9 inches. Ironwood was also common in the understory, making up 17.0% of trees measured. Yellow poplar was not as common with only 7.5%, but was present as larger individuals (average DBH: 7.2 inches, range 3.4-15.8 inches). The main canopy was represented by Virginia pine with few

yellow poplars. Dogwood, box elder, hickory, cedar and red maples were also present in the understory and mid canopy.

Stand Twenty One:
This is a small stand of 2.15 acres, and lies along Dove's Lane next to the drive that leads to the cell tower. It is likely the site of a future parking lot for visitors of Doves Landing. There was a small-medium woodland pool in this stand, which should be taken into consideration during parking lot planning. Also, while the inventory cannot pick up every large tree, this stand possesses a few overly large mature trees that would beneficial to protect during any construction.

Seven tree species were measured in stand twenty one. The most common species is an as yet undetermined species. It represented 43.8% of the species measured, and had an average DBH of 7.1 inches. It was mostly found in the mid canopy. White oak, Virginia pine, cedar, and black gum were also found in small quantities. One black gum was measured, with a DBH of 22.9 inches. Beech were actually the second most common tree species, but as usual were small and lingered in the understory.

Stand Twenty Three:
This stand totals 7.2acres, and runs from Shawnee Drive to the cleared private land bisecting the property along Doves Lane.

Ten tree species comprise this stand, with small beech trees being the most numerous one found. The average DBH of beech trees in stand twenty three is 2.7 inches, with a range of 1.0-8.7 inches. As usually, these trees will be found mostly in the understory. 20.9% of trees found here are maples. Black gum and Virginia pine were each found to make up 11.6% of trees measured, followed by yellow poplar at 9.3%. holly, ironwood, and pignut hickory were also found in low quantities. OF note, one of the maple trees measured 34.7 inches at DBH. The overstory of this stand is made up of Virginia pine, maple and yellow poplar. Black gum might also be found in the main canopy.

Stand Twenty Four:
Stand twenty four is an 8.3 acre area along Dove's Lane and Shawnee Drive. Lots of trash was noticed in this site, including an old car.

25.7% of the trees measured in this stand are Virginia pine. The average DBH was 13.1, with a range of 9.0-17.5. Beech were the second most common tree species, with 22.9%. The average DBh of beech trees is 2.9 inches, with a range of 1.4-5.5 inches. This stand continues to show lots of beech in the understory, similar to the rest of the site. There are undoubtedly mature beech trees present at Doves Landing, but none of them happen to appear in initial inventory plots. Yellow poplar was found to make up 11.4% of sampled trees, with an average DBH of 14.3 inches, ranging from 13.0 to 17.8 inches.Black gum, oaks, dogwood, hickories, and maples were also found in low numbers in stand twenty four.

Stand Twenty Five:

Stand twenty five is a 26.1 acre stand extending from the western end of Dove's Lane into the interior of the property. It contains the old farm archeological site. It might need to be divided into more stands, especially around the farm site. The presumed old fields do not seem to be regenerating into a forest in the areas closest to the house remains, instead they are largely made up of various briars and thorny vines with few trees interspersed. Numerous dead trees also occur in the area. Also, this is the only site at Doves landing that was found to have sugarberry trees.

Fourteen tree species were include in sampling of stand twenty five. Of these, beech was again the most numerous, and again it was found as small trees in the understory and mid canopy. The relative abundance of beech was 28.2%, with an average DBH of 2.9 inches, ranging from 1.0-6.7 inches. Virginia pine was recorded 12.8% of the time, and had an average DBh of 11.1 inches, ranging from 6.5-18.4 inches. Yellow poplar was present with a relative abundance of 11.5%, and and average DBH of 8.8 inches, ranging from 1.7-19.6 inches. Overall, Virginia pine and yellow poplar made up the overstory as far as this survey can tell, but a more extensive inventory will likely find other species occupying the main canopy as well. The inventory plot south of the home site contained few species that were found nowhere else in the stand. Observations noted that similar species were found north of the home site as well, and may constitute redrawing the stand map. Also, this area might be a target for restoration, as the forest does not seem to be regenerating itself here. Black gum, oaks, cedar, dogwood, elm, holly, box elder, and maples were also found in stand twenty five.

Stand Twenty Six:

This stand lies in the bottomland areas along both Broad Run and the Occoquan River, and comprises 17.8 acres. It might need to be split into two stands, depending on the outcome of any issues with the Lake Jackson Citizen's group regarding management of this site. Part of this stand, especially along Broad Run near the northern end of the property is made up of many more species that the lower parts, especially along the Occoquan. The lower portion of stand twenty six is mostly made up of box elder, with a few other bottomland species. The site is similar to stand nine in hydrology, due to its location along a bend in the river/run.

The inventory of stand twenty six found nine tree species, again being led by small beech trees (44% of sample). The average DBH of these trees is 2.8 inches, ranging from 1.0-5.9 inches. Technically box elder was the second most abundance species, with 16% of the sample, but all of those trees were found in one plot, and was the only species recorded on that plot. This also shows the very low stocking levels of the portion of stand twenty six found along the curve in the river/run. Ironwood made up 12.0% of the inventory in this stand, birch cedar hickory oaks, and a relatively large yellow poplar (11.5inches DBH) were also recorded.

Summary

The overriding theme of this document is that beeches occur almost ubiquitously as small trees in the understory. One can infer from this that at some point in the future the mature forest will contain significant amounts of beech. Other areas will have healthy oak populations, and may come to look like stand eleven, the most mature stand at Doves Landing. A couple of areas of concern exist, including the less than stellar reforestation occurring around the old farm house archeological site, and the low stocking levels along the river-especially in light of a probable emerald ash borer infestation. Several sites exist with trash, including an old car, farm equipment, and a largeish pile of old carpet and carpet padding. Overall the forest cover of Doves Landing is in the early to mid stages of reforestation following an extended period of farming and shows signs that it is a functioning forest ecosystem.

Doves Landing – Prince William County
Preliminary Vegetation Classification

Submitted to: Brendon Hanafin
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Historic Preservation Division
Prince William County Department of Public Works

Prepared by: Charles Smith
Prince William Wildflower Society

Date: December 11, 2012

Introduction

Members of the Prince William Wildflower Society and Piedmont Chapters of the Virginia Native Plant Society visited Doves Landing during 2012. Primary observations were during November and December 2012, so a significant percentage of plants were dormant and were not observed or identified. Primary identification was of woody plant species (trees and shrubs) which allowed for preliminary classification and characterization of forested vegetation communities.

Observations were made of soil conditions, vegetation community composition, slope and position in the landscape across most of the site. Data was collected on species and relative abundance of tree and shrub species in seven (7) plots representing three vegetative community types, and observations were made on one additional vegetative cover type which cannot be classified under Virginia or National vegetation classification systems:

1) Early succession mixed Virginia pine-eastern red cedar hardwood forest – This is not a true vegetative community but rather a highly disturbed vegetative cover dominated by Virginia pine and eastern red cedar with some deciduous trees on highly disturbed soils. This covers much of the site.
2) Acidic Oak-Hickory Forest (Virginia) also Piedmont Dry-Mesic Acidic Oak-Hickory Forest (National) – This was likely the dominant upland forest community over most of what is now Doves Landing prior to significant land disturbance. One very good quality and several good quality examples remain.
3) Mesic Mixed Hardwood Forest
4) Piedmont Bottomland Forest

Notes on Geology and Soils

All of the rock observed at the old house site as well as several rock outcrops were composed on Triassic Basin sandstone, an acidic sedimentary rock found in the piedmont

of Virginia and Maryland. This is the same stone seen in foundations and building around Manassas, Ben Lomond Manor House, the Stone House at Manassas National Battlefield Park and the Smithsonian Castle building on the National Mall. The presence of Triassic Basin sandstone as the dominant underlying rock fixes Doves Landing as a Virginia Piedmont landscape with relatively shallow, acidic soils. The presence and regular occurrence of characteristic Triassic Basin species such as black walnut (Juglans nigra), hackberry (Celtis occidentalis) and coralberry (Symphoricarpos orbiculatus) bolsters this observation.

Occoquan River Floodplain

I believe that the floodplain along the Occoquan River is elevated by many feet of sediment deposition since the construction of the Lake Jackson Dam. In November and December 2012 the lake level remained down and the Occoquan River water elevation was about ten (10) feet below the elevation where there is a combination of a bench and bank indicating the typical elevation of the stream when the lake is at full pool. The channel is extremely steep from the bench down to the channel bottom – approximately a 1 to 1 or 45 degree slope. The exposed channel and the sediments along the bank are composed of fine silts. The floodplain forest is disturbed and of low quality. It is possible that there is 10 feet or more of sediment accumulated at the edge of the channel getting shallower as the further away from the channel you get until the floodplain ends. Older trees are visible near the outer edges of the floodplain where the pre-Lake Jackson elevations are still visible.

I walked at least 60 percent of the floodplains of Broad Run and the Occoquan River within the Doves Landing Property. West of where the powerline easement crosses the property (just before the big bend in the river to the northeast on the east end of the property) the floodplain varies in width from about 50 to 150 feet. In this area I observed very little topographic change in the form of levees, chutes or toe-of-slope wetlands. In free-flowing streams the floodplain elevation is often highest at or near the bank where flood waters quickly drop the heaviest and largest quantity of sediments. Further from the bank there are often secondary flow channels ranges from a few inches to several feet deep which carry floodwater. Between these secondary flow channels and chutes the elevation varies. Finally, floodplains typically have wetlands that form at the toe-of-slope to the uplands and/or within the secondary flow channels. The Broad Run and Occoquan River floodplain generally lacked these features, which reinforced the impression that this is not a free-flowing system but one highly modified by the pool of Lake Jackson so that floodwaters flow evenly with little erosive force and distribute sediment evenly across the floodplain.

One of the consequences of this condition is the apparent lack of vernal pools which would provide breeding habitat for invertebrates and vertebrates such as mole salamanders, frogs and toads. One wetland was observed in the eastern end of the floodplain near the previously mentions powerline easement. However, this wetland was within an intermittent stream channel dominated by black willow and may not provide standing pools for breeding habitat.

Plot #	Latitude	Longitude	Vegetative Community Type
1	N38 41.285	W-77 28.688	Acidic Oak-Hickory Forest
2	N38 41.319	W-77 28.739	Mesic Mixed Hardwood Forest
3	N38 41.357	W-77 29.181	Piedmont Bottomland Forest
4	N38 41.266	W-77 29.241	Acidic Oak-Hickory Forest
5	N38 40.930	W-77 28.598	Piedmont Bottomland Forest
6	N38 41.029	W-77 28.728	Mesic Mixed Hardwood Forest
7	N38 41.076	W-77 28.774	Acidic Oak-Hickory Forest

Plot 1

Community Type: Acidic Oak Hickory Forest
Condition: Fair
Deer Browse Level: Moderate
Invasives Species Cover: 5 to 10% of plot

This plot is in the north central portion of the park. The overall vegetation condition is fair. It would be good if the deer browse and non-native invasive species cover were lower. This stand is heavily oak dominant, is likely 40 to 60 years old and shows moderate soil disturbance resulting in relatively low invasives cover and moderate species diversity. It is likely that this site was cut over in the mid to late 20th century and either went through succession from old field and pine-cedar forest or was deciduous forest prior to cut over (given the moderate diversity of this stand while the stand immediately to the north and east was heavily disturbed and has very low species diversity.).

Plot 2

Community Type: Mesic Mixed Hardwood Forest
Condition: Fair
Deer Browse Level: Heavy
Invasives Species Cover: 10 to 20% of plot

This plot was located on a side slope less than 100 feet from an intermittent stream that drains the north-central portion of the site. The forest stand is less than 60 years old evidenced by the remaining Virginia pine co-dominant with tulip tree. Larger tulip trees (20 to 40 inch diameter breast height) near and adjacent to the stream indicate that the 20th century land use practices disturbed uplands and side slopes but generally retained trees along stream courses. American beech is dominant in the understory demonstrating the stress on the system by heavy deer browse which is limiting regeneration to beech

which is a non-preferred species by deer. The relatively good diversity in the herbaceous layer indicates that despite clearing, this site underwent moderate soil disturbance in the 20th century.

Plot 3

Community Type:	Piedmont Floodplain Forest
Condition:	Poor
Deer Browse Level:	Heavy
Invasives Species Cover:	10 to 20% of plot

This plot was located in the floodplain of the Occoquan River just downstream of the confluence of Cedar Run and Broad Run. Ash-leaved maple completely dominates the overstory with river birch and tulip tree also well represented but not co-dominant. The shrub layer and understory are in poor condition. There is little to no recruitment or regeneration. Survey work needs to be done in the spring and summer to compile data on herbaceous species especially grasses, sedges, rushes and forbs. The forest appears to be less than 60 years old and may be growing on sediments that accumulated after construction of the Lake Jackson dam (see notes on this elsewhere in this write-up)

Plot 4

Community Type:	Acidic Oak Hickory Forest
Condition:	Fair
Deer Browse Level:	Severe
Invasives Species Cover:	0 to 1% of plot

This plot is in the oldest, most mature forest stand on the site. This forest shows up as a woodlot on the older maps of the site. The largest age class of trees are oaks in the 30 to 32” diameter breast height range and tulip trees up to 40” diameter breast height. The forsest is very oak dominant with northern red oak, white oak and black oak forming the majority. Tulip tree and scattered hickories have been present in the stand since it began growing approximately 150 years ago. This age is evidenced by the size and branching patterns of the largest trees which are uniform both in diameter and branching pattern. Branching in these oldest trees is between halfway to two-thirds of the way up, indicating that the trees where in a fairly crowded condition when young but were released from some competition when they reached about 30 to 40 feet in height. At this point they grew in a fairly spreading branch pattern until they encountered each other. This would indicate that either the area was deciduous forest that was cut over all at once with intermittent smaller trees left standing which outgrew newer seedlings and saplings, or the area succeeded in pine forest that was evenly colonized by oak, tulip tree and hickory. It is more likely that the stand was deciduous forest that was cut over sometime around the Civil War and then was left to grow almost undisturbed from then on.

The southern portion of the stand was cut over about 80 years ago but the soil was not disturbed and the stumps left in place, resulting in a very uniform resprouting from the

stumps in that portion of the forest, with the southern most trees growing out over a field that was present 80 years ago close to the floodplain for the Occoquan River.

This stand has some of the worst deer browse in the park. The mast producing trees likely attract deer in the fall where they eat the seeds and seedlings. Regeneration consists almost solely of widely dispersed American beech – and not even many of them. This condition is very problematic. The remaining forest is legacy forest – meaning that is has no future beyond the existing tree stand due to the almost complete lack of regeneration due primarily to deer browse.

This site would benefit from protection from land disturbing activities combined with a significant reduction of the deer herd followed by a forest burn to stimulate regeneration.

Another interesting note within this forest stand is the presence of a few large eastern hemlocks. This species is found along the Bull Run-Occoquan River basin further east, but the presence in the oldest forest stand of this otherwise heavily disturbed landscape may indicate that eastern hemlock had a larger presence in forests in this region prior to massive land conversion for agriculture.

Plot 5

Community Type:	Piedmont Floodplain Forest
Condition:	Poor
Deer Browse Level:	Heavy
Invasives Species Cover:	20 to 50% of plot

This plot is located toward the eastern end of the park in the Occoquan River floodplain. This site appears to be located on sediments deposited after the construction of the Lake Jackson dam as discussed elsewhere in this report.

Also note that the condition of the forest on the opposite bank of the river is in much better overall condition with what appears to be a hardwood dominant forest with lower overall soil disturbance but even-aged trees with little to no recruitment indicating lower 20^{th} century soil disturbance but selective tree removal and recent severe browse by white-tailed deer. It should be noted that the southern (right) bank of the Occoquan River at this location is on the outside of a bend. Outside banks tend to be higher, and it is very possible that far less sediment deposition has occurred on that side. As where the northern (left) bank of the river in the park where this plot was assessed is on the inside of the bend which would have been lower and you would expect to see more sediment deposition there.

Another aspect of this forest is that although ash-leaved maple is still dominant, there were more tulip tree, some sycamore, both slippery and American elm and black walnut in the overstory. The presence of tulip tree in both floodplain plots and especially the presence of black walnut in plot 5 are indicators of a levee forest condition where the floodplain is elevated high enough above the groundwater table that species that are not

wet-tolerant can thrive.

Plot 6

Community Type:	Mesic Mixed Hardwood Forest
Condition:	Fair
Deer Browse Level:	Severe
Invasives Species Cover:	1 to 5% of plot

This plot located in the southeastern portion of the property had low diversity with remnant Virginia pines and tulip tree with the largest tree being about 18 inches in breast height diameter. American beech was subordinate in the overstory, but completely dominated the understory with 60 young trees counted within the plot. The understory also included American holly, oaks and tulip trees. The stand had low invasive plant species cover but severe deer browse. Ground cover was sparse and included Christmas fern, running pine (clubmoss), partridgeberry and cranefly orchid. Judging by the size and mixture of pines and tulip trees, the stand is approximately 40 years of age and despite the low species diversity does not show signs of heavy soil disturbance in the late 20th century.

Plot 7

Community Type:	Acidic Oak Hickory Forest
Condition:	Fair
Deer Browse Level:	Severe
Invasives Species Cover:	0 to 1% of plot

This plot is located in the south central portion of the property. It was dominated by red and white oaks with the largest age class measuring about 15” in diameter breast height and with a lower number of tulip trees up to 18” in diameter breast height. There are a few remnant pine trees. The presence of pine combined with the size of the oaks indicates that the stand is likely about 60 years old. The soil appears to be in fairly good condition with little evidence of heavy disturbance in the 20th century with no visible invasive species. Groundcover was very limited to common greenbriar and Christmas fern.

General Management Recommendations

- Prevent additional human land disturbance to upland hardwood forest stands with low invasive species cover especially in the Acidic Oak-Hickory Forest stands in the large woodlot (plot 4) and the younger stands (plots 1 and 7 and the central portions of the park). Past human land disturbance continues to impact the site through low- quality vegetative communities and poor soils which limit recovery. Continued land disturbance from ATV activity and erosive stream flows should be reduced and prevented in higher quality vegetative areas. Trails should be located so as to avoid higher quality vegetative areas and be constructed

sustainably along rather than up and down slopes.

- The fair condition rating of the Acidic Oak-Hickory Forest stands is due mostly to the almost complete lack of regeneration and understory because of over-browsing by white-tailed deer. A deer herd reduction program should be instituted with the ultimate goal of lower deer numbers to within the ecological carrying capacity for eastern forests – approximately 15 deer for every 640 acres.
- In conjunction with controlling human land disturbance and deer, assess the feasibility of controlling non-native invasive plant species where control may result in recovery of native plant species. It should be noted that control of invasive plant species on highly disturbed soils and in the presence of heavy to severe deer browse can be difficult.
- Continued surveys should be conducted to improve plant occurrence and vegetative community characterization and distribution, vertebrate species occurrence and distribution, and to begin making site restoration recommendations. Herpetelogical surveys are feasible and would assist in locating potential breeding pool locations so that surrounding critical habitat zones can be protected (ideally at least 750 feet from the edge of active vernal pools).

This assessment is only preliminary and should be followed by continued and targeted data collection to improve knowledge and accuracy of observations and to better guide management decisions.

FLORA/FAUNA

Flora and fauna refer to plant and wildlife, respectively. The term is often used to refer to the indigenous plant and wildlife of a geographical region. Both are collective terms, referring to groups of plant or wildlife specific to a region or a time period. The Doves landing parcel is located in the piedmont region of Virginia with plant and animal population indicative to the Piedmont. As 95% of the land is forested, the plant and animal life reflects the existing condition. The significant riparian and wetlands areas also determine the existing communities.

The existing plant list for Doves Landing has been developed by volunteers and is heavily skewed towards spring plants. Additional surveys will be undertaken to more fully identify seasonal plant species. There are significant populations of non-native species. These species complete for survival with native species and should be eradicated as time and resources allow**.** **Appendix BLANK** lists species that have been surveyed.

The indigenous fauna are comprised of animal species commonly found in the Piedmont and in Prince William County. There is a potential for endangered species on the property. According to The U.S. Fish and Wildlife Service two such species could occupy the project area. The Dwarf wedgemussel (Alasmidonta heterodon) is listed by the USFWS as endangered as is the harperella (Ptilimnium nodosum. Ground reconnaissance has not identified either species but development should avoid areas where they could be found.

The complete list of potential fauna is listed in **Appendix BLANK**. The forest survey indicates that there is a fair to significant amount of plant damage related to the overpopulation of White tail Deer in the project area. This damage is not unique to this parcel and a county wide approach to the issue should be developed.

Scientific Name	Common Name	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7
Acer negundo L. var. negundo	ash-leaf maple, box elder							
Acer rubrum L. var. rubrum	red maple	X						
Ailanthus altissima (P. Miller) Swingle **	tree of heaven							
Albizia julibrissin Durazz. **	mimosa or silktree							
Allium vineale L. **	wild garlic							
Alnus serrulata (Ait.) Willd.	smooth alder							
Amelanchier arborea (Michx. f.) Fernald	common serviceberry		X					
Aronia melanocarpa (Michx.) Elliott	black chokeberry							
Asimina triloba (L.) Dunal	pawpaw							
Asplenium platyneuron (L.) B.S.P.	ebony spleenwort							
Athyrium filix-femina (L.) Roth ex Mert. var. asplenioides (Michx.) Farw.	common ladyfern							
Berberis thunbergii DC **	Japanese barberry							
Betula nigra L.	river birch							
Boehmeria cylindrica (L.) Sw.	smallspike false nettle							
Botrychium sp.	grapefern							
Campsis radicans (L.) Seem. ex Bureau	trumpet creeper, trumpet vine							
Carex flaccosperma Dewey	green-gray sedge							
Carex pensylvanica Lam.	Pennsylvania sedge							
Carex sp.	sedge							
Carpinus caroliniana Walt.	American hornbeam, ironwood		X	X	X	X	X	
Carya alba (L.) Nutt. ex Ell.	mockernut hickory							
Carya cordiformis (Wangenh.) K. Koch	bitternut hickory							
Carya glabra (P. Miller) Sweet	pignut hickory	X						
Carya ovata	shagbark hickory							
Celastrus orbiculatus Thunb. **	oriental bittersweet							
Celtis occidentalis L.	common hackberry							
Chimaphila maculata (L.) Pursh	striped prince's pine or striped wintergreen							
Cinna arundinacea L.	sweet woodreed							
Cornus florida L.	flowering dogwood	X	X					
Corylus americana Walt.	American hazelnut							
Danthonia spicata (L.) Beauv. ex Roemer & J.A. Schultes	poverty oatgrass							
Dichanthelium clandestinum (L.) Gould	deer tongue							
Dichanthelium sp.	panic grass							

Diospyros virginiana L.	persimmon							
Diphasiastrum digitatum (Dill. ex A. Braun) Holub or Lycopodium digitatum	fan clubmoss							
Elaeagnus umbellata Thunb. var. parvifolia (Royle) Schneid. **	autumn olive		X					
Elymus hystrix L. var. hystrix	bottlebrush grass							
Elymus sp.	wild rye							
Elymus virginicus L.	Virginia wild rye							
Epifagus virginiana (L.) W.Barton	beechdrops							
Euonymus alatus (Thunb.) Sieb. **	burning bush							
Euonymus americanus L.	American euonymous or strawberry bush							
Euonymus fortunei	winter creeper							
Fagus grandifolia Ehrhart	American beech	X	X		X	X	X	X
Fraxinus pennsylvanica Marshall	green ash							
Glechoma hederacea L. **	ground ivy							
Goodyera pubescens (Willd.) R.Br. ex Aiton f.	downy rattlesnake plantain							
Ilex opaca Aiton var. opaca	American holly	X						
Juglans nigra L.	black walnut							
Juncus tenuis Willd.	poverty rush							
Juniperus virginiana L. var. virginiana	eastern red cedar							
Ligustrum sinense Louriere **	Chinese privet							
Liquidambar styraciflua L.	sweetgum							
Liriodendron tulipifera L.	American tulip tree or tulip tree	X	X	X	X	X	X	X
Lonicera japonica Thunb. **	Japanese honeysuckle	X						
Lonicera maackii (Rupr.) Maximowicz **	Amur honeysuckle							
Microstegium vimineum (Trin.) A. Camus **	Nepalese browntop or Japanese stiltgrass							
Miscanthus sinensis Anderss. **	Chinese silvergrass							
Mitchella repens L.	partridgeberry							
Nyssa sylvatica Marshall	blackgum	X						
Panicum dichotomiflorum Michx.	fall panicgrass							
Pinus virginiana Miller	Virginia pine		X				X	X
Platanus occidentalis L.	American sycamore		X			X		
Polystichum acrostichoides (Michx.) Schott	Christmas fern						X	X
Populus grandidentata Michx.	bigtooth aspen							
Prunus serotina Ehrhart ssp. serotina	black cherry							
Pyrus calleryana **	callery pear or Bradford pear							

Quercus alba Linnaeus	white oak				X		X	X
Quercus falcata Michaux	southern red oak	X			X			
Quercus palustris Muenchhausen	pin oak							
Quercus phellos Linnaeus	willow oak	X						
Quercus rubra Linnaeus var. rubra	northern red oak				X			X
Quercus stellata Wangenheim	post oak							
Quercus velutina Lamarck	black oak		X		X			
Rhus copallinum L.	winged or shining sumac							
Robinia pseudoacacia L.	black locust							
Rosa multiflora Thunb. ex Murr. **	multiflora rose	X						
Rubus phoenicolasius Maxim. **	wine rasberry or wineberry							
	blackberry - undetermined							
Rubus sp.	species							
Salix nigra Marsh.	black willow							
Sassafras albidum (Nutt.) Nees	sassafras							
Smilax glauca Walt.	cat greenbriar							
Smilax rotundifolia L.	roundleaf greenbriar	X	X					X
Stellaria media (L.) Vill. **	common chickweed							
Symphoricarpos orbiculatus Moench	coralberry							
Tipularia discolor (Pursh) Nutt	Crane-fly orchid						X	
Toxicodendron radicans (L.) Kuntze var. radicans	poison ivy							
Tridens flavus (L.) A.S. Hitchc. var. flavus	purpletop							
Tsuga canadensis (L.) Carriere	eastern hemlock							
Ulmus americana L.	American elm					X		
Ulmus rubra Muhl.	slippery elm					X		
Vaccinium sp.	blueberry							
Viburnum acerifolium L.	maple-leaf viburnum		X					
Viburnum dilatatum**	Linden viburnum	X	X					
Viburnum plicatum*	doublefile							
Viburnum prunifolium L.	smooth blackhaw viburnum	X	X					
Vinca minor L. **	periwinkle							
Vitis sp.	grape							

* denotes mildly invasive non-native species
** denotes highly invasive non-native species

Flora Checklist of Prince William County (From Digital Atlas of Virginia Flora) - Source PWWS March 2010

Scientific Name	Common Name	Family	Family Name	Plants at Doves Landing as observed through December 2012 (Denoted by X) by members of Virginia Native
Acer negundo L. var. negundo	ash-leaf maple, box elder	Aceraceae	maple	X
Acer rubrum L. var. rubrum	red maple	Aceraceae	maple	X
Ailanthus altissima (P. Miller) Swingle **	tree of heaven	Simaroubaceae	quassia	X
Albizia julibrissin Durazz. **	mimosa or silktree	Fabaceae	pea	X
Allium vineale L. **	wild garlic	Liliaceae	lily	X
Alnus serrulata (Ait.) Willd.	smooth alder	Betulaceae	birch	X
Amelanchier arborea (Michx. f.) Fernald	common serviceberry	Rosaceae	rose	X
Aronia melanocarpa (Michx.) Elliott	black chokeberry	Rosaceae	rose	X
Asimina triloba (L.) Dunal	pawpaw	Annonaceae	pawpaw	X
Asplenium platyneuron (L.) B.S.P.	ebony spleenwort	Aspleniaceae	spleenwort	X
Athyrium filix-femina (L.) Roth ex Mert. var. asplenioides (Michx.) Farw.	common ladyfern	Dryopteridaceae	wood fern family	X
Berberis thunbergii DC **	Japanese barberry	Berberidaceae	barberry	X
Betula nigra L.	river birch	Betulaceae	birch	X
Boehmeria cylindrica (L.) Sw.	smallspike false nettle	Urticaceae	nettle	X
Botrychium sp.	grapefern	Ophioglossaceae	adder's tongue	X
Campsis radicans (L.) Seem. ex Bureau	trumpet creeper, trumpet vine	Bignoniaceae	trumpet creeper	X
Carex flaccosperma Dewey	green-gray sedge	Cyperaceae	sedge	X
Carex pensylvanica Lam.	Pennsylvania sedge	Cyperaceae	sedge	X
Carex sp.	sedge	Cyperaceae	sedge	X
Carpinus caroliniana Walt.	American hornbeam, ironwood	Betulaceae	birch	X
Carya alba (L.) Nutt. ex Ell.	mockernut hickory	Juglandaceae	walnut	X
Carya cordiformis (Wangenh.) K. Koch	bitternut hickory	Juglandaceae	walnut	X
Carya glabra (P. Miller) Sweet	pignut hickory	Juglandaceae	walnut	X
Carya ovata	shagbark hickory	Juglandaceae	walnut	X
Celastrus orbiculatus Thunb. **	oriental bittersweet	Celastraceae	staff vine or bittersweet	X
Celtis occidentalis L.	common hackberry	Ulmaceae	elm	X
Chimaphila maculata (L.) Pursh	striped prince's pine or striped wintergreen	Pyrolaceae	wintergreen	X
Cinna arundinacea L.	sweet woodreed	Poaceae	grass	X
Cornus florida L.	flowering dogwood	Cornaceae	dogwood	X
Corylus americana Walt.	American hazelnut	Betulaceae	birch	X
Danthonia spicata (L.) Beauv. ex Roemer & J.A. Schultes	poverty oatgrass	Poaceae	grass	X

Dichanthelium clandestinum (L.) Gould	deer tongue	Poaceae	grass	X
Dichanthelium sp.	panic grass	Poaceae	grass	X
Diospyros virginiana L.	persimmon	Ebenaceae	ebony	X
Diphasiastrum digitatum (Dill. ex A. Braun) Holub or Lycopodium digitatum	fan clubmoss	Lycopodiaceae	club-moss	X
Elaeagnus umbellata Thunb. var. parvifolia (Royle)	autumn olive	Elaeagnaceae	oleaster	X
Elymus hystrix L. var. hystrix	bottlebrush grass	Poaceae	grass	X
Elymus sp.	wild rye	Poaceae	grass	X
Elymus virginicus L.	Virginia wild rye	Poaceae	grass	X
Epifagus virginiana (L.) W.Barton	beechdrops	Orobanchaceae	broom-rape	X
Euonymus alatus (Thunb.) Sieb. **	burning bush	Celastraceae	staff vine or bittersweet	X
Euonymus americanus L.	American euonymous or strawberry bush	Celastraceae	staff vine or bittersweet	X
Euonymus fortunei	winter creeper	Celastraceae	staff vine or bittersweet	X
Fagus grandifolia Ehrhart	American beech	Fagaceae	beech	X
Fraxinus pennsylvanica Marshall	green ash	Oleaceae	olive	X
Glechoma hederacea L. **	ground ivy	Lamiaceae	mint	X
Goodyera pubescens (Willd.) R.Br. ex Aiton f.	downy rattlesnake plantain	Orchidaceae	orchid	X
Ilex opaca Aiton var. opaca	American holly	Aquifoliaceae	holly	X
Juglans nigra L.	black walnut	Juglandaceae	walnut	X
Juncus tenuis Willd.	poverty rush	Juncaceae	rush	X
Juniperus virginiana L. var. virginiana	eastern red cedar	Juncaceae	rush	X
Ligustrum sinense Louriere **	Chinese privet	Oleaceae	olive	X
Liquidambar styraciflua L.	sweetgum	Hamamelidaceae	witch hazel	X
Liriodendron tulipifera L.	American tulip tree or tulip tree	Magnoliaceae	magnolia	X
Lonicera japonica Thunb. **	Japanese honeysuckle	Caprifoliaceae	honeysuckle	X
Lonicera maackii (Rupr.) Maximowicz **	Amur honeysuckle	Caprifoliaceae	honeysuckle	X
Microstegium vimineum (Trin.) A. Camus **	Nepalese browntop or Japanese stiltgrass	Poaceae	grass	X
Miscanthus sinensis Anderss. **	Chinese silvergrass	Poaceae	grass	X
Mitchella repens L.	partridgeberry	Rubiaceae	madder	X
Nyssa sylvatica Marshall	blackgum	Cornaceae	dogwood	X
Panicum dichotomiflorum Michx.	fall panicgrass	Poaceae	grass	X
Pinus virginiana Miller	Virginia pine	Pinaceae	pine	X
Platanus occidentalis L.	American sycamore	Platanaceae	plane-tree	X
Polystichum acrostichoides (Michx.) Schott	Christmas fern	Dryopteridaceae	wood fern family	X
Populus grandidentata Michx.	bigtooth aspen	Salicaceae	willow	X
Prunus serotina Ehrhart ssp. serotina	black cherry	Rosaceae	rose	X
Pyrus calleryana **	callery pear or Bradford pear	Rosaceae	rose	X

Quercus alba Linnaeus	white oak	Fagaceae	beech	X
Quercus falcata Michaux	southern red oak	Fagaceae	beech	X
Quercus palustris Muenchhausen	pin oak	Fagaceae	beech	X
Quercus phellos Linnaeus	willow oak	Fagaceae	beech	X
Quercus rubra Linnaeus var. rubra	northern red oak	Fagaceae	beech	X
Quercus stellata Wangenheim	post oak	Fagaceae	beech	X
Quercus velutina Lamarck	black oak	Fagaceae	beech	X
Rhus copallinum L.	winged or shining sumac	Anacardiaceae	cashew	X
Robinia pseudoacacia L.	black locust	Fabaceae	pea	X
Rosa multiflora Thunb. ex Murr. **	multiflora rose	Rosaceae	rose	X
Rubus phoenicolasius Maxim. **	wine rasberry or wineberry	Rosaceae	rose	X
Rubus sp.	blackberry - undetermined species	Rosaceae	rose	X
Salix nigra Marsh.	black willow	Salicaceae	willow	X
Sassafras albidum (Nutt.) Nees	sassafras	Lauraceae	laurel	X
Smilax glauca Walt.	cat greenbriar	Smilacaceae	catbriar	X
Smilax rotundifolia L.	roundleaf greenbriar	Smilacaceae	catbriar	X
Stellaria media (L.) Vill. **	common chickweed	Caryophyllaceae	pink	X
Symphoricarpos orbiculatus Moench	coralberry	Caprifoliaceae	honeysuckle	X
Tipularia discolor (Pursh) Nutt	Crane-fly orchid	Orchidaceae	orchid	X
Toxicodendron radicans (L.) Kuntze var. radicans	poison ivy	Anacardiaceae	cashew	X
Tridens flavus (L.) A.S. Hitchc. var. flavus	purpletop	Poaceae	grass	X
Tsuga canadensis (L.) Carriere	eastern hemlock	Pinaceae	pine	X
Ulmus americana L.	American elm	Ulmaceae	elm	X
Ulmus rubra Muhl.	slippery elm	Ulmaceae	elm	X
Vaccinium sp.	blueberry	Ericaceae	heath	X
Viburnum acerifolium L.	maple-leaf viburnum	Adoxaceae	muskroot	X
Viburnum dilatatum**	Linden viburnum	Adoxaceae	muskroot	X
Viburnum plicatum*	doublefile	Adoxaceae	muskroot	X
Viburnum prunifolium L.	smooth blackhaw viburnum	Adoxaceae	muskroot	X
Vinca minor L. **	periwinkle	Apocynaceae	dogbane	X
Vitis sp.	grape	Vitaceae	grape	X

* denotes mildly invasive non-native species
** denotes highly invasive non-native species

WOODY PLANTS

DOVES LANDING
9113 Doves landing Rd.,
Brentsville, VA

Carrie Blair
Middleburg, VA
April 7, 2012

1	Ash, White	Fraxinus	americana
2	Beech, American	Fagus	grandifolia
3	Black Cherry	Prunus	serotina
4	Black Gum	Nyssa	sylvatica
5	Black Locust	Robinia	pseudoacacia
6	Black Walnut	Juglans	nigra
7	Box Elder	Acer	negundo
8	Dogwood	Cornus	florida
9	Eastern Red Cedar	Juniperus	virginiana
10	Hackberry	Celtis	occidentalis
11	Hickory, Mockernut	Carya	tomentosa/alba
12	Hickory, Pignut	Carya	glabra
13	Holly, American	Ilex	opaca
14	Ironwood	Carpinus	caroliniana
15	Maple, Red	Acer	rubrum
16	Oak, Northern Red	Quercus	rubra
17	Oak, Southern Red	Quercus	falcata
18	Oak, White	Quercus	alba
19	Pawpaw	Asimina	triloba
20	Sassafras	Sassafras	albidum
21	Sycamore	Plantanus	occidentalis
22	Tulip Poplar	Liriodendron	tulipifera

SHRUBS

23	Autumn Olive *	Elaeagnus	umbellata
24	Blackhaw Viburnum	Viburnum	prunifolium
25	Multiflora Rose *	Rosa	multiflora
26	Privet *	Ligustrum	vulgare
27	Spicebush	Lindera	benzoin
28	Sumac	Rhus	

VINES, CANES

29	Blackberry	Rubus	
30	Grape	Vitis	
31	Greenbrier	Smilax	rotundifolia
32	Oriental bittersweet *	Celastrus	orbiculatus
33	Poisin Ivy	Rhus	radicans
34	Wineberry *	Rubus	phoenicolasius
35	Wintercreeper *	Euonymous	fortunei
36	Japanese Honeysuckle	Lonicera	japonica

* - Non Native Innvasive Species

Flora Checklist of Prince William County (From Digital Atlas of Virginia Flora) - Source PWWS March 2010

Scientific Name	Common Name	Family	Family Name	Carrie Blair Plant List April 2012 (Denoted by X)	Plants at Doves Landing as observed November through December 2012 (Denoted by X)
					Multiple Field Visits by members of Virginia Native Plant Society - Participants Included: Nancy Vehrs, Harry Glasgow and Charles Smith
Abutilon theophrasti Medik. *	velvetleaf	Malvaceae	mallow		
Acalypha gracilens Gray	slender threeseed mercury	Euphorbiaceae	spurge		
Acalypha rhomboidea Raf.	common threeseed mercury	Euphorbiaceae	spurge		
Acalypha virginica L.	Virginia threeseed mercury	Euphorbiaceae	spurge		
Acer negundo L. var. negundo	ash-leaf maple, box elder	Aceraceae	maple	X	X
Acer platanoides L. **	Norway maple	Aceraceae	maple		
Acer rubrum L. var. rubrum	red maple	Aceraceae	maple	X	X
Acer saccharinum L.	silver maple	Aceraceae	maple		
Acer saccharum Marshall var. saccharum	sugar maple	Aceraceae	maple		
Achillea millefolium L. var. occidentalis DC. *	yarrow	Asteraceae	aster		
Acorus calamus L.	common sweet flag	Acoraceae	sweet flag		
Adiantum pedatum L.	northern maidenhair fern	Pteridaceae	maidenhair fern		
Agalinis auriculata (Michx.) Blake	earleaf false floxglove	Scrophulariaceae	figwort		
Agalinis fasciculata (Ell.) Raf.	beach false foxglove or fascicled agalinis	Scrophulariaceae	figwort		
Agalinis obtusifolia Raf.	tenlobe false foxglove or blunt-leaved agalinis	Scrophulariaceae	figwort		
Agalinis purpurea (L.) Pennell	purple false faxglove or smooth purple agalinis	Scrophulariaceae	figwort		
Agalinis tenuifolia (Vahl) Raf. var. tenuifolia	slenderleaf false foxglove or slenderleaf agalinis	Scrophulariaceae	figwort		
Agastache nepetoides (L.) Kuntze	yellow giant hyssop	Lamiaceae	mint		
Ageratina altissima (L.) King & H.E. Robins.	tall thoroughwort or white snakeroot	Asteraceae	aster		
Ageratina aromatica (L.) Spach	small white snakeroot	Asteraceae	aster		
Agrimonia gryposepala Wallr.	tall hairy agrimony or common agrimony	Rosaceae	rose		
Agrimonia microcarpa Wallr.	smallfruit agrimony	Rosaceae	rose		
Agrimonia parviflora Ait.	harvestlice or small-flowered agrimony	Rosaceae	rose		
Agrimonia pubescens Wallr.	soft agrimony or downy agrimony	Rosaceae	rose		
Agrimonia rostellata Wallr.	beaked agrimony	Rosaceae	rose		
Agrostemma githago L. *	purple cockle or corn cockle	Caryophyllaceae	pink		
Agrostis gigantea Roth **	redtop	Poaceae	grass		
Agrostis hyemalis (Walt.) B.S.P.	winter bentgrass	Poaceae	grass		
Agrostis perennans (Walt.) Tuckerman var. perennans	upland bentgrass	Poaceae	grass		
Ailanthus altissima (P. Miller) Swingle **	tree of heaven	Simaroubaceae	quassia		X
Aira caryophyllea L. *	silver hairgrass	Poaceae	grass		
Aira elegans Willd. ex Kunth *	annual silver hairgrass	Poaceae	grass		
Albizia julibrissin Durazz. **	mimosa or silktree	Fabaceae	pea		X
Aletris farinosa L.	white colicroot	Liliaceae	lily		
Alisma subcordatum Rafinesque	American water plantain	Alismataceae	water plantain		
Alliaria petiolata (Bieberstein) Cavara & Grande **	garlic mustard	Brassicaceae	mustard		
Allium canadense L. var. canadense	meadow garlic or wild onion	Liliaceae	lily		

Allium vineale L. **	wild garlic	Liliaceae	lily	X
Alnus serrulata (Ait.) Willd.	smooth alder	Betulaceae	birch	X
Alyssum alyssoides (Linnaeus) Linnaeus *	yellow alyssum	Brassicaceae	mustard	
Amaranthus albus L.	tumbleweed	Amaranthaceae	amaranth	
Amaranthus cannabinus (L.) J.D. Sauer	water hemp	Amaranthaceae	amaranth	
Amaranthus hybridus L. *	pigweed	Amaranthaceae	amaranth	
Amaranthus spinosus L. *	spiny amaranth	Amaranthaceae	amaranth	
Ambrosia artemisiifolia L.	common ragweed	Asteraceae	aster	
Ambrosia trifida L. var. trifida	great ragweed	Asteraceae	aster	
Amelanchier arborea (Michx. f.) Fernald	common serviceberry	Rosaceae	rose	X
Amelanchier laevis Wieg.	Allegheny serviceberry	Rosaceae	rose	
Ammannia coccinea Rottb.	valley redstem or toothcup	Lythraceae	loosestrife	
Amorpha fruticosa L.	wild indigo bush or desert false indigo	Fabaceae	pea	
Ampelopsis brevipedunculata (Maxim.) Trautv. **	porcelainberry or amur peppervine	Vitaceae	grape	
Amphicarpa bracteata (L.) Fern.	hog peanut	Fabaceae	pea	
Anagallis arvensis L. ssp. arvensis *	scarlet pimpernel	Primulaceae	primrose	
Andropogon gerardii Vitman	big bluestem	Poaceae	grass	
Andropogon glomeratus (Walt.) B.S.P.	bushy bluestem	Poaceae	grass	
Andropogon gyrans Ashe	Elliot's bluestem	Poaceae	grass	
Andropogon virginicus	broomsedge bluestem	Poaceae	grass	
Anemone quinquefolia L. var. quinquefolia	wood anemone	Ranunculaceae	buttercup	
Anemone virginiana L. var. virginiana	tall thimbleweed	Ranunculaceae	buttercup	
Angelica venenosa (Greenway) Fern.	hairy angelica	Apiaceae	parsley	
Antennaria neglecta Greene	field pussytoes	Asteraceae	aster	
Antennaria parlinii Fern. ssp. parlinii	Parlin's pussytoes	Asteraceae	aster	
Antennaria plantaginifolia (L.) Richards.	plantain-leaved pussytoes	Asteraceae	aster	
Antennaria solitaria Rydb.	solitary or singlehead pussytoes	Asteraceae	aster	
Antennaria virginica Stebbins	shale barren pussytoes	Asteraceae	aster	
Anthemis arvensis L.	dogfennel or corn chamomile	Asteraceae	aster	
Anthemis cotula L.	mayweed or dogfennel	Asteraceae	aster	
Anthoxanthum odoratum L. ssp. odoratum *	sweet vernal grass	Poaceae	grass	
Apios americana Medik.	groundnut	Fabaceae	pea	
Aplectrum hyemale (Muhl. ex Willd.) Torrey	Adam and Eve or puttyroot	Orchidaceae	orchid	
Apocynum androsaemifolium L.	spreading dogbane	Apocynaceae	dogbane	
Apocynum cannabinum L.	Indian hemp	Apocynaceae	dogbane	
Aquilegia canadensis L.	red columbine	Ranunculaceae	buttercup	
Arabidopsis thaliana (Linnaeus) Heynhold *	mouse-eared cress	Brassicaceae	mustard	
Arabis canadensis Linnaeus	sicklepod	Brassicaceae	mustard	
Arabis laevigata (Muhlenberg ex. Willdenow) Poiret var. laevigata	smooth rock cress	Brassicaceae	mustard	
Arabis lyrata Linnaeus	lyre-leaved rock cress	Brassicaceae	mustard	
Aralia nudicaulis L.	wild or false sarsaparilla	Araliaceae	ginseng	
Aralia spinosa L.	devil's walking stick	Araliaceae	ginseng	
Arctium minus Bernh.	common burdock	Asteraceae	aster	
Arenaria serpyllifolia L. var. serpyllifolia	thyme-leaved sandwort	Caryophyllaceae	pink	
Arisaema dracontium (L.) Schott	green dragon	Araceae	arum	
Arisaema triphyllum (L.) Schott ssp. triphyllum	Jack-in-the-pulpit	Araceae	arum	
Aristida dichotoma Michx. var. curtissii Gray	churchmouse threeawn	Poaceae	grass	
Aristida dichotoma Michx. var. dichotoma	churchmouse threeawn	Poaceae	grass	
Aristida longespica Poir.	slimspike threeawn	Poaceae	grass	
Aristida oligantha Michx.	prairie threeawn	Poaceae	grass	
Aristolochia serpentaria L.	Virginia snakeroot	Aristolochiaceae	birthwort	
Arnoglossum atriplicifolium (L.) H.E. Robins.	pale Indian plantain	Asteraceae	aster	
Aronia arbutifolia (L.) Ell.	red chokeberry	Rosaceae	rose	

Aronia melanocarpa (Michx.) Elliott	black chokeberry	Rosaceae	rose		X
Aronia prunifolia (Marsh.) Rehder	purple chokeberry	Rosaceae	rose		
Arrhenatherum elatius (L.) J. & K. Presl var. elatius **	tall oatgrass	Poaceae	grass		
Artemisia annua L. *	wormwood	Asteraceae	aster		
Artemisia vulgaris L. var. vulgaris **	mugwort	Asteraceae	aster		
Arthraxon hispidus (Thunb.) Makino **	small carp grass	Poaceae	grass		
Aruncus dioicus (Walt.) Fernald	bride's feather	Rosaceae	rose		
Asarum canadense L.	wild ginger	Aristolochiaceae	birthwort		
Asclepias amplexicaulis J.E.Smith	blunt-leaved or clasping milkweed	Asclepiadaceae	milkweed		
Asclepias incarnata L.	swamp milkweed	Asclepiadaceae	milkweed		
Asclepias incarnata L. ssp. pulchra (Ehrh. ex Willd.) Woods.	swamp milkweed	Asclepiadaceae	milkweed		
Asclepias purpurascens L.	purple milkweed	Asclepiadaceae	milkweed		
Asclepias quadrifolia Jacq.	four-leaved milkweed	Asclepiadaceae	milkweed		
Asclepias rubra L.	red milkweed	Asclepiadaceae	milkweed		
Asclepias syriaca L.	common milkweed	Asclepiadaceae	milkweed		
Asclepias tuberosa L. ssp. tuberosa	butterfly weed	Asclepiadaceae	milkweed		
Asclepias variegata L.	redring milkweed or white milkweed	Asclepiadaceae	milkweed		
Asclepias verticillata L.	whorled milkweed	Asclepiadaceae	milkweed		
Asclepias viridiflora Raf.	green milkweed	Asclepiadaceae	milkweed		
Asimina triloba (L.) Dunal	pawpaw	Annonaceae	pawpaw	X	X
Asparagus officinalis L. *	garden asparagus	Liliaceae	lily		
Asplenium platyneuron (L.) B.S.P.	ebony spleenwort	Aspleniaceae	spleenwort		X
Asplenium rhizophyllum L.	walking fern	Aspleniaceae	spleenwort		
Asplenium trichomanes L. ssp. trichomanes	maidenhair spleenwort	Aspleniaceae	spleenwort		
Athyrium filix-femina (L.) Roth ex Mert. var. asplenioides (Michx.) Farw.	common ladyfern	Dryopteridaceae	wood fern family		X
Aureolaria flava (L.) Farwell	smooth yellow false foxglove	Scrophulariaceae	figwort		
Aureolaria laevigata (Raf.) Raf.	entireleaf yellow false foxglove	Scrophulariaceae	figwort		
Aureolaria pedicularia (L.) Raf.	fernleaf yellow false foxglove	Scrophulariaceae	figwort		
Aureolaria virginica (L.) Pennell	downy yellow false foxglove	Scrophulariaceae	figwort		
Baccharis halimifolia L.	groundsel or eastern baccharis	Asteraceae	aster		
Baptisia tinctoria (L.) R. Br. ex Ait. f.	yellow wild indigo or horseflyweed	Fabaceae	pea		
Barbarea verna (Miller) Ascherson *	early winter cress	Brassicaceae	mustard		
Barbarea vulgaris R. Brown *	late winter cress or yellow rocket	Brassicaceae	mustard		
Bartonia virginica (L.) BSP	yellow bartonia	Gentianaceae	gentian		
Belamcanda chinensis (L.) DC.	blackberry lily	Iridaceae	iris		
Berberis thunbergii DC **	Japanese barberry	Berberidaceae	barberry		X
Betula nigra L.	river birch	Betulaceae	birch		X
Bidens alba (L.) DC.	common beggarticks	Asteraceae	aster		
Bidens aristosa (Michx.) Britt.	tickseed sunflower	Asteraceae	aster		
Bidens bipinnata L.	Spanish needles	Asteraceae	aster		
Bidens cernua L.	nodding bur marigold	Asteraceae	aster		
Bidens comosa (Gray) Wiegand	threelobe beggar ticks	Asteraceae	aster		
Bidens frondosa L.	beggar ticks	Asteraceae	aster		
Bidens laevis (L.) B.S.P.	large bur marigold	Asteraceae	aster		
Boehmeria cylindrica (L.) Sw.	smallspike false nettle	Urticaceae	nettle		X
Bolboschoenus novae-angliae (Britton) S.G. Smith	marsh bullrush	Cyperaceae	sedge		
Botrychium biternatum (Sav.) Underwood	sparselobe grapefern	Ophioglossaceae	adder's tongue		
Botrychium dissectum Spreng.	cutleaf grapefern	Ophioglossaceae	adder's tongue		
Botrychium sp.	grapefern	Ophioglossaceae	adder's tongue		X
Botrychium virginianum (L.) Sw.	rattlesnake fern	Ophioglossaceae	adder's tongue		
Brachyelytrum erectum (Schreb. ex Spreng.) Beauv.	bearded shorthusk	Poaceae	grass		
Bromus inermis Leyss. ssp. inermis var. inermis *	smooth brome	Poaceae	grass		
Bromus japonicus Thunb. ex Murr. *	Japanese brome	Poaceae	grass		

Bromus pubescens Sprengel	hairy woodland brome	Poaceae	grass	
Bromus racemosus L. *	bald brome	Poaceae	grass	
Bromus sterilis L. *	poverty brome	Poaceae	grass	
Bromus tectorum L. **	cheatgrass	Poaceae	grass	
Broussonetia papyrifera (L.) L'Her. ex Vent. **	paper mulberry	Moraceae	mulberry	
Buchnera americana L.	American bluehearts	Scrophulariaceae	figwort	
Buglossoides arvensis (L.) I.M. Johnston	corn gromwell	Boraginaceae	borage	
Bulbostylis capillaris (L.) Clarke in Hook.	hair-like sedge	Cyperaceae	sedge	
Cabomba caroliniana A. Gray	Carolina fanwort	Cabombaceae	fanwort	
Calamagrostis coarctata (Torrey) Eaton	arctic reedgrass	Poaceae	grass	
Callitriche heterophylla Pursh ssp. heterophylla	large water starwort	Callitrichaceae	water starwort	
Callitriche terrestris Raf.	terrestrial water starwort	Callitrichaceae	water starwort	
Calystegia sepium (L.) R. Br.	hedge false bindweed	Convolvulaceae	morning glory	
Calystegia spithamaea (L.) Pursh	low false bindweed	Convolvulaceae	morning glory	
Camelina microcarpa Andrzejowski ex. A. P. DeCandolle *	small-fruited false flax	Brassicaceae	mustard	
Campanula aparinoides Pursh	marsh bellflower	Campanulaceae	bellflower	
Campanula rapunculoides L. *	creeping bellflower	Campanulaceae	bellflower	
Campsis radicans (L.) Seem. ex Bureau	trumpet creeper, trumpet vine	Bignoniaceae	trumpet creeper	X
Capsella bursa-pastoris (Linnaeus) Medicus *	shepard's purse	Brassicaceae	mustard	
Cardamine angustata O. E. Schulz	slender toothwort	Brassicaceae	mustard	
Cardamine bulbosa (Schreber ex. Muhlenberg) Britton, Sterns & Poggenberg	spring cress	Brassicaceae	mustard	
Cardamine concatenata (Michaux) O. Schwarz	cutleaf toothwort	Brassicaceae	mustard	
Cardamine hirsuta Linnaeus *	bitter cress	Brassicaceae	mustard	
Cardamine pensylvanica Muhlenberg ex Willdenow	Pennsylvania bittercress	Brassicaceae	mustard	
Carduus acanthoides L. *	plumeless thistle	Asteraceae	aster	
Carduus nutans L. ssp. macrolepis (Peterm.) Kazmi **	musk or nodding plumeless thistle	Asteraceae	aster	
Carex aggregata Mackenzie	glomerate sedge	Cyperaceae	sedge	
Carex albicans Willd. ex Sprengel	whitetinge sedge	Cyperaceae	sedge	
Carex albolutescens Schweinitz	greenish-white sedge	Cyperaceae	sedge	
Carex amphibola s.l.	ambiguous sedge	Cyperaceae	sedge	
Carex amphibola Steudel	eastern narrowleaf sedge	Cyperaceae	sedge	
Carex atlantica Bailey ssp. atlantica	Atlantic sedge	Cyperaceae	sedge	
Carex austrina Mackenzie	southern sedge	Cyperaceae	sedge	
Carex blanda Dewey	charming sedge	Cyperaceae	sedge	
Carex bromoides Schk. ex Willd.	brome-like sedge	Cyperaceae	sedge	
Carex bushii Mackenzie	Bush's sedge	Cyperaceae	sedge	
Carex buxbaumii Wahlenb.	Buxbaum's sedge	Cyperaceae	sedge	
Carex caroliniana Schweinitz	Carolina sedge	Cyperaceae	sedge	
Carex cephalophora Muhl. ex Willd.	head bearing sedge	Cyperaceae	sedge	
Carex crebriflora Wiegand	coastal plain sedge	Cyperaceae	sedge	
Carex crinita Lam. var. crinita	drooping sedge	Cyperaceae	sedge	
Carex debilis Michaux	weak sedge	Cyperaceae	sedge	
Carex digitalis Willd.	slender woodland sedge	Cyperaceae	sedge	
Carex digitalis Willd. var. digitalis	slender woodland sedge	Cyperaceae	sedge	
Carex festucacea Schk. ex Willd.	fescue sedge	Cyperaceae	sedge	
Carex flaccosperma Dewey	green-gray sedge	Cyperaceae	sedge	X
Carex folliculata L.	pubescent sedge	Cyperaceae	sedge	
Carex frankii Kunth	Frank's sedge	Cyperaceae	sedge	
Carex glaucodea Tuckerman ex Olney	blue sedge	Cyperaceae	sedge	
Carex gracilescens Steudel	slender sedge	Cyperaceae	sedge	
Carex gracillima Schw.	very slender sedge	Cyperaceae	sedge	
Carex granularis Muhl. ex Willd.	granular sedge	Cyperaceae	sedge	
Carex grayi Carey	Gray's sedge	Cyperaceae	sedge	

Carex gynandra Schweinitz	nodding sedge	Cyperaceae	sedge	
Carex hirsutella Mackenzie	hairy-leaved sedge	Cyperaceae	sedge	
Carex intumescens Rudge	greater bladder sedge	Cyperaceae	sedge	
Carex jamesii Schweinitz	James' sedge	Cyperaceae	sedge	
Carex kraliana Naczi & Bryson	broad looseflower sedge	Cyperaceae	sedge	
Carex laevivaginata (Kukenth.) Mackenzie	smoothsheath sedge	Cyperaceae	sedge	
Carex laxiculmis Schweinitz var. laxiculmis	spreading sedge	Cyperaceae	sedge	
Carex laxiflora Lam.	broad looseflower sedge	Cyperaceae	sedge	
Carex leavenworthii Dewey	Leavenworth's sedge	Cyperaceae	sedge	
Carex leptalea Wahlenb.	bristlystalked sedge	Cyperaceae	sedge	
Carex louisianica Bailey	Louisiana sedge	Cyperaceae	sedge	
Carex lupulina Willd.	hop sedge	Cyperaceae	sedge	
Carex lurida Wahlenb.	shallow sedge	Cyperaceae	sedge	
Carex meadii Dewey	Mead's sedge	Cyperaceae	sedge	
Carex muehlenbergii Schk. ex Willd.	Muhlenberg's sedge	Cyperaceae	sedge	
Carex nigromarginata Schweinitz var. nigromarginata	black-edge sedge	Cyperaceae	sedge	
Carex normalis Mackenzie	greater straw sedge	Cyperaceae	sedge	
Carex oligocarpa Willd.	richwoods sedge	Cyperaceae	sedge	
Carex pellita Willd.	woolly sedge	Cyperaceae	sedge	
Carex pensylvanica Lam.	Pennsylvania sedge	Cyperaceae	sedge	X
Carex planispicata Naczi	flat-spiked sedge	Cyperaceae	sedge	
Carex platyphylla Carey	broad-leafed sedge	Cyperaceae	sedge	
Carex prasina Wahlenb.	drooping sedge	Cyperaceae	sedge	
Carex retroflexa Muhl. ex Willd.	reflexed sedge	Cyperaceae	sedge	
Carex rosea Schk. ex Willd.	rosy sedge	Cyperaceae	sedge	
Carex scabrata Schweinitz	eastern rough sedge	Cyperaceae	sedge	
Carex scoparia Schk. ex Willd. var. scoparia	broom sedge	Cyperaceae	sedge	
Carex seorsa Howe in Gordinier & Howe	weak stellate sedge	Cyperaceae	sedge	
Carex sp.	sedge	Cyperaceae	sedge	X
Carex sparganioides Muhl. ex Willd.	bur-reed sedge	Cyperaceae	sedge	
Carex squarrosa L.	squarrose sedge	Cyperaceae	sedge	
Carex stipata Muhl. ex Willd. var. maxima Chapman ex Boott	stalkgrain sedge	Cyperaceae	sedge	
Carex stipata Muhl. ex Willd. var. stipata	awlfruit sedge	Cyperaceae	sedge	
Carex striatula Michaux	lined sedge	Cyperaceae	sedge	
Carex stricta Lam. in J. Lam., et al	upright sedge	Cyperaceae	sedge	
Carex styloflexa Buckley	bent sedge	Cyperaceae	sedge	
Carex swanii (Fernald) Mackenzie	Swan's sedge	Cyperaceae	sedge	
Carex torta Boott in Tuckerman	twisted sedge	Cyperaceae	sedge	
Carex tribuloides Wahlenb. var. tribuloides	blunt broom sedge	Cyperaceae	sedge	
Carex umbellata Schk. ex Willd.	parasol sedge	Cyperaceae	sedge	
Carex vestita Willd.	velvet sedge	Cyperaceae	sedge	
Carex virescens Muhl. ex Willd.	ribbed sedge	Cyperaceae	sedge	
Carex vulpinoidea Michaux	fox sedge	Cyperaceae	sedge	
Carex willdenowii Schk. ex Willd.	Willdenow's sedge	Cyperaceae	sedge	
Carpinus caroliniana Walt.	American hornbeam, ironwood	Betulaceae	birch	X
Carya alba (L.) Nutt. ex Ell.	mockernut hickory	Juglandaceae	walnut	X
Carya cordiformis (Wangenh.) K. Koch	bitternut hickory	Juglandaceae	walnut	X
Carya glabra (P. Miller) Sweet	pignut hickory	Juglandaceae	walnut	X
Carya ovalis (Wangenh.) Sarg.	red hickory	Juglandaceae	walnut	
Carya ovata	shagbark hickory	Juglandaceae	walnut	X
Castanea dentata (Marshall) Borkhausen	American chestnut	Fagaceae	beech	
Castanea pumila (Linnaeus) P. Miller	Allegheny chinkapin	Fagaceae	beech	
Catalpa speciosa (Warder) Warder ex Engelm.	catalpa	Bignoniaceae	trumpet creeper	
Caulophyllum thalictroides (L.) Michx.	blue cohosh	Berberidaceae	barberry	

Ceanothus americanus L.	New Jersey tea	Rhamnaceae	buckthorn	
Celastrus orbiculatus Thunb. **	oriental bittersweet	Celastraceae	staff vine or bittersweet	X
Celastrus scandens L.	climbing bittersweet	Celastraceae	staff vine or bittersweet	
Celtis occidentalis L.	common hackberry	Ulmaceae	elm	X
Celtis tenuifolia Nutt.	dwarf hackberry	Ulmaceae	elm	
Cenchrus tribuloides L.	sanddune sandbur	Poaceae	grass	
Centaurea biebersteinii DC. **	spotted knapweed	Asteraceae	aster	
Centaurea cyanus L. *	cornflower	Asteraceae	aster	
Centaurea nigrescens Willd. *	Tyrol knapweed	Asteraceae	aster	
Cephalanthus occidentalis L.	common buttonbush	Rubiaceae	bedstraw	
Cerastium arvense L. ssp. strictum Gaudin	field chickweed	Caryophyllaceae	pink	
Cerastium fontanum Baumg. ssp. vulgare (Hartman) Greuter & Burdet *	mouse-ear chickweed	Caryophyllaceae	pink	
Cerastium glomeratum Thuill. *	sticky mouse-ear chickweed	Caryophyllaceae	pink	
Cerastium nutans Raf. var. nutans	nodding chickweed	Caryophyllaceae	pink	
Ceratophyllum demersum L.	coon's tail	Ceratophyllaceae	hornwort	
Cercis canadensis L. var. canadensis	eastern redbud	Fabaceae	pea	
Chaenorrhinum minus (L.) Lange *	dwarf snapdragon or lesser toadflax	Scrophulariaceae	figwort	
Chaerophyllum procumbens (L.) Crantz var. procumbens	spreading chervil	Apiaceae	parsley	
Chaerophyllum tainturieri Hook. var. tainturieri	wild chervil	Apiaceae	parsley	
Chamaecrista fasciculata (Michx.) Greene var. fasciculata	partridge pea	Fabaceae	pea	
Chamaecrista nictitans (L.) Moench var. nictitans	sensitive partridge pea	Fabaceae	pea	
Chamaelirium luteum (L.) Gray	fairywand	Liliaceae	lily	
Chamaesyce maculata (L.) Small	spotted sandmat	Euphorbiaceae	spurge	
Chamaesyce nutans (Lagasca y Segura) Small	eyebane	Euphorbiaceae	spurge	
Chasmanthium laxum (L.) Yates	slender woodoats	Poaceae	grass	
Cheilanthes lanosa (Michx.) D.C. Eat.	hairy lipfern	Pteridaceae	maidenhair fern	
Chelone glabra L.	white turtlehead	Scrophulariaceae	figwort	
Chenopodium album L. *	lambsquarters	Chenopodiaceae	goosefoot	
Chenopodium ambrosioides L. var. ambrosioides *	Mexican tea	Chenopodiaceae	goosefoot	
Chenopodium pumilio R. Br. *	clammy goosefoot	Chenopodiaceae	goosefoot	
Chimaphila maculata (L.) Pursh	striped prince's pine or striped wintergreen	Pyrolaceae	wintergreen	X
Chimaphila umbellata (L.) W. Barton ssp. cisatlantica (Blake) Hulten	pipsissewa	Pyrolaceae	wintergreen	
Chionanthus virginicus L.	white fringe tree	Oleaceae	olive	
Chloris virgata Sw.	feather fingergrass	Poaceae	grass	
Chrysogonum virginianum L. var. virginianum	green and gold	Asteraceae	aster	
Chrysopsis mariana (L.) Ell.	Maryland golden aster	Asteraceae	aster	
Chrysosplenium americanum Schwein. ex Hook.	American golden saxifrage	Saxifragaceae	saxifrage	
Cichorium intybus L. *	chicory	Asteraceae	aster	
Cicuta maculata L.	water hemlock or spotted water hemlock	Apiaceae	parsley	
Cimicifuga racemosa L. var. racemosa or Actaea racemosa	black bugbane	Ranunculaceae	buttercup	
Cinna arundinacea L.	sweet woodreed	Poaceae	grass	X
Circaea lutetiana L. ssp. canadensis (L.) Ascherson & Magnus	broadleaf enchanter's nightshade	Onagraceae	evening primrose	
Cirsium arvense (L.) Scop. **	Canada thistle	Asteraceae	aster	
Cirsium discolor (Muhl. ex Willd.) Spreng.	field thistle	Asteraceae	aster	
Cirsium pumilum (Nutt.) Spreng.	pasture thistle	Asteraceae	aster	
Cirsium vulgare (Savi) Ten. **	bull thistle	Asteraceae	aster	
Claytonia virginica L.	Virginia spring beauty	Portulacaceae	purslane	
Clematis ochroleuca Ait.	curlyheads	Ranunculaceae	buttercup	
Clematis terniflora DC. **	sweet autumn virgin's bower	Ranunculaceae	buttercup	

Clematis virginiana L.	virgin's bower or devil's darning needles	Ranunculaceae	buttercup	
Clinopodium calamintha (L.) Stace *	lesser calamint	Lamiaceae	mint	
Clinopodium vulgare L.	wild basil	Lamiaceae	mint	
Clitoria mariana L.	Atlantic pigeonwings or butterfly pea	Fabaceae	pea	
Collinsonia canadensis L.	horsebalm	Lamiaceae	mint	
Comandra umbellata (L.) Nuttall ssp. umbellata	bastard toadflax	Santalaceae	sandalwood	
Commelina communis L. **	Asiatic dayflower	Commelinaceae	spiderwort	
Commelina virginica L.	Virginia dayflower	Commelinaceae	spiderwort	
Comptonia peregrina (L.) Coult.	sweet fern	Myricaceae	bayberry	
Conium maculatum L. **	poison hemlock	Apiaceae	parsley	
Conoclinium coelestinum (L.) DC.	mistflower	Asteraceae	aster	
Conopholis americana (L.) Wallroth	American cancer-root or squawroot	Orobanchaceae	broom-rape	
Convolvulus arvensis L. **	field bindweed	Convolvulaceae	morning glory	
Conyza canadensis (L.) Cronq. var. canadensis	Canadian horseweed	Asteraceae	aster	
Corallorhiza odontorhiza (Willd.) Nuttall var. odontorhiza	autumn coralroot	Orchidaceae	orchid	
Corallorhiza wisteriana Conrad	spring coralroot	orchidaceae	orchid	
Coreopsis tripteris L.	tall coreopsis	Asteraceae	aster	
Coreopsis verticillata L.	whorled tickseed	Asteraceae	aster	
Cornus amomum P. Mill. ssp. amomum	silky dogwood	Cornaceae	dogwood	
Cornus florida L.	flowering dogwood	Cornaceae	dogwood	X
Cornus foemina P. Mill.	stiff dogwood	Cornaceae	dogwood	
Coronilla varia L. **	crown vetch	Fabaceae	pea	
Corydalis flavula (Raf.) DC	yellow corydalis	Fumariaceae	fumitory	
Corylus americana Walt.	American hazelnut	Betulaceae	birch	X
Corylus cornuta Marsh. ssp. cornuta	beaked hazelnut	Betulaceae	birch	
Crataegus crus-galli L.	cockspur hawthorn	Rosaceae	rose	
Crataegus macrosperma Ashe	bigfruit hawthorn	Rosaceae	rose	
Crataegus pruinosa (Wendl. f.) K. Koch	waxyfruit hawthorn	Rosaceae	rose	
Crataegus uniflora Muenchh.	dwarf hawthorn	Rosaceae	rose	
Crotalaria sagittalis L.	arrowhead rattlebox	Fabaceae	pea	
Croton glandulosus L. var. septentrionalis Muell.-Arg.	vente conmigo	Euphorbiaceae	spurge	
Cruciata pedemontana (Bellardi) Ehrend	piedmont bedstraw	Rubiaceae	madder	
Cryptotaenia canadensis (L.) DC.	Canadian honewort	Apiaceae	parsley	
Cucurbita pepo L.	field pumpkin	Cucurbitaceae	gourd	
Cunila origanoides (L.) Britt.	dittany	Lamiaceae	mint	
Cuphea viscosissima Jacq.	blue waxweed or clammy cuphea	Lythraceae	loosestrife	
Cuscuta campestris Yunker	western field dodder	Cuscutaceae	dodder	
Cuscuta gronovii Willd.	common dodder	Cuscutaceae	dodder	
Cuscuta pentagona Engelm.	fiveangled dodder	Cuscutaceae	dodder	
Cynodon dactylon (L.) Pers. var. dactylon *	Burmudagrass	Poaceae	grass	
Cynoglossum virginianum L. var. virginianum	wild comfrey	Boraginaceae	borage	
Cyperus croceus Vahl	Baldwin's flatsedge	Cyperaceae	sedge	
Cyperus echinatus (L.) Wood	globe flatsedge	Cyperaceae	sedge	
Cyperus erythrorhizos Muhlenberg	red-rooted sedge	Cyperaceae	sedge	
Cyperus esculentus L. var. esculentus	edible nut sedge	Cyperaceae	sedge	
Cyperus filicinus Vahl.	slender flatsedge	Cyperaceae	sedge	
Cyperus flavescens L.	yellowish sedge	Cyperaceae	sedge	
Cyperus iria L. *	ricefield flatsedge	Cyperaceae	sedge	
Cyperus lancastriensis Porter ex Gray	manyflower flatsedge	Cyperaceae	sedge	
Cyperus lupulinus (Sprengel) Marcks	Great Plains flatsedge	Cyperaceae	sedge	
Cyperus odoratus L. var. odoratus	fragrant flatsedge	Cyperaceae	sedge	
Cyperus pseudovegetus Steudel	marsh flatsedge	Cyperaceae	sedge	
Cyperus strigosus L.	strawcolored flatsedge	Cyperaceae	sedge	
Cypripedium acaule Aiton	moccasin flower or pink lady's slipper	Orchidaceae	orchid	

Cypripedium parviflorum Salisb.	lesser yellow lady's slipper	Orchidaceae	orchid	
Cystopteris protrusa (Weatherby) Blasdell	lowland bladderfern	Dryopteridaceae	wood fern	
Dactylis glomerata L. ssp. glomerata **	orchardgrass	Poaceae	grass	
Danthonia spicata (L.) Beauv. ex Roemer & J.A. Schultes	poverty oatgrass	Poaceae	grass	X
Datura stramonium L. *	jimsonweed	Solanaceae	nightshade	
Datura wrightii Regel	sacred thorn-apple	Solanaceae	nightshade	
Daucus carota L. *	Queen Anne's lace	Apiaceae	parsley	
Decodon verticillatus (L.) Ell.	swamp loosestrife	Lythraceae	loosestrife	
Dendrolycopodium obscurum (L.) A. Haines or Lycopodium obscurum	rare clubmoss	Lycopodiaceae	club-moss	
Dennstaedtia punctilobula (Michx.) T. Moore	eastern hayscented fern	Dennstaedtiaceae	bracken	
Deparia acrostichoides (Sw.) M. Kato	silver false spleenwort	Dryopteridaceae	wood fern	
Deschampsia flexuosa (L.) Trin. var. flexuosa	wavy hairgrass	Poaceae	grass	
Desmodium canadense	showy ticktrefoil	Fabaceae	pea	
Desmodium ciliare (Muhl. ex Willd.) DC. var. ciliare	hairy small-leaf ticktrefoil	Fabaceae	pea	
Desmodium glabellum (Michx.) DC.	Dillenius' ticktrefoil	Fabaceae	pea	
Desmodium glutinosum (Muhl. ex Willd.) Wood	pointedleaf ticktrefoil	Fabaceae	pea	
Desmodium laevigatum (Nutt.) DC.	smooth ticktrefoil	Fabaceae	pea	
Desmodium marilandicum (L.) DC.	smooth small-leaf ticktrefoil	Fabaceae	pea	
Desmodium nudiflorum (L.) DC.	nakedflower ticktrefoil	Fabaceae	pea	
Desmodium nuttallii (Schindl.) Schub.	Nuttall's ticktrefoil	Fabaceae	pea	
Desmodium obtusum (Muhl. ex Willd.) DC.	stiff ticktrefoil	Fabaceae	pea	
Desmodium paniculatum (L.) DC.	panicledleaf ticktrefoil	Fabaceae	pea	
Desmodium pauciflorum (Nutt.) DC.	fewflower ticktrefoil	Fabaceae	pea	
Desmodium perplexum Schub.	perplexed ticktrefoil	Fabaceae	pea	
Desmodium rotundifolium DC.	prostrate ticktrefoil	Fabaceae	pea	
Dianthus armeria L. *	Deptford pink	Caryophyllaceae	pink	
Dicentra cucullaria (L.) Bernh.	Dutchman's breeches	Fumariaceae	fumitory	
Dichanthelium acuminatum (Sw.) Gould & C.A. Clark	tapered rosette grass	Poaceae	grass	
Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. fasciculatum (Torr.) Freckmann	western panicgrass	Poaceae	grass	
Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. lindheimeri (Nash) Gould & C.A. Clark	Lindheimer's panicgrass	Poaceae	grass	
Dichanthelium boscii (Poir.) Gould & C.A. Clark	Bosc's panicgrass	Poaceae	grass	
Dichanthelium clandestinum (L.) Gould	deer tongue	Poaceae	grass	X
Dichanthelium columbianum (Scribn.) Freckmann	hemlock rosette grass	Poaceae	grass	
Dichanthelium commutatum (J.A. Schultes) Gould	variable panicgrass	Poaceae	grass	
Dichanthelium commutatum (J.A. Schultes) Gould ssp. ashei (Pearson ex Ashe) Freckman & Lelong	variable panicgrass	Poaceae	grass	
Dichanthelium commutatum (J.A. Schultes) Gould var. commutatum	variable panicgrass	Poaceae	grass	
Dichanthelium depauperatum (Muhl.) Gould	starved panicgrass	Poaceae	grass	
Dichanthelium dichotomum (L.) Gould	cypress panicgrass	Poaceae	grass	
Dichanthelium laxiflorum (Lam.) Gould	openflower rosette grass	Poaceae	grass	
Dichanthelium linearifolium (Scribn.) Gould	slimleaf panicgrass	Poaceae	grass	
Dichanthelium microcarpon (Muhl. ex Elliott) Mohlenbrock	cypress panicgrass	Poaceae	grass	
Dichanthelium polyanthes (Schultes) Mohlenbrock	roundseed panicgrass	Poaceae	grass	
Dichanthelium scoparium (Lam.) Gould	velvet panicum	Poaceae	grass	
Dichanthelium sp.	panic grass	Poaceae	grass	X
Dichanthelium sphaerocarpon (Ell.) Gould	roundseed panicgrass	Poaceae	grass	
Dichanthelium yadkinense (Ashe) Mohlenbrock	cypress panicgrass	Poaceae	grass	
Digitaria filiformis (L.) Koeler var. filiformis	slender crabgrass	Poaceae	grass	
Digitaria ischaemum (Schreb.) Muhl. **	smooth crabgrass	Poaceae	grass	
Diodia teres Walt.	poorjoe	Rubiaceae	madder	

Dioscorea polystachya Turczaninow **	Chinese yam	Dioscoreaceae	yam	
Dioscorea villosa L. var. villosa	wild yam	Dioscoreaceae	yam	
Diospyros virginiana L.	persimmon	Ebenaceae	ebony	X
Diphasiastrum digitatum (Dill. ex A. Braun) Holub or Lycopodium digitatum	fan clubmoss	Lycopodiaceae	club-moss	X
Dipsacus fullonum L. *	Fuller's teasel	Dipsacaceae	teasel	
Doellingeria infirma (Michx.) Greene	corn-leaved aster	Asteraceae	aster	
Doellingeria umbellata (P. Mill) Nees	flat-topped white aster	Asteraceae	aster	
Draba verna Linnaeus *	whitlow grass	Brassicaceae	mustard	
Drosera rotundifolia L.	roundleaf sundew	Droseraceae	sundew	
Dryopteris carthusiana (Vill.) H.P. Fuchs	spinulose woodfern	Dryopteridaceae	wood fern family	
Dryopteris cristata (L.) Gray	crested woodfern	Dryopteridaceae	wood fern family	
Dryopteris intermedia (Muhl. ex Willd.) Gray	intermediate woodfern	Dryopteridaceae	wood fern family	
Dryopteris marginalis (L.) Gray	marginal woodfern	Dryopteridaceae	wood fern family	
Duchesnea indica (Andr.) Focke *	Indian or false strawberry	Rosaceae	rose	
Dulichium arundinaceum (L.) Britton	threeway sedge	Cyperaceae	sedge	
Echinochloa crus-galli (L.) Beauv. *	barnyard grass	Poaceae	grass	
Echinochloa muricata (Beauv.) Fern. var. muricata	rough barnyard grass	Poaceae	grass	
Echinocystis lobata (Michx.) Torrey & A. Gray	wild cucumber	Cucurbitaceae	gourd	
Echium vulgare L. *	viper's blugloss	Boraginaceae	borage	
Eclipta prostrata (L.) L.	false daisy	Asteraceae	aster	
Elaeagnus umbellata Thunb. var. parvifolia (Royle) Schneid.	autumn olive	Elaeagnaceae	oleaster	X
Eleocharis engelmannii Steudel	Engelmann's spikerush	Cyperaceae	sedge	
Eleocharis erythropoda Steudel	creeping spikerush	Cyperaceae	sedge	
Eleocharis obtusa (Willd.) Schultes	blunt spikerush	Cyperaceae	sedge	
Eleocharis quadrangulata (Michaux) R. & S.	four-angled spikerush	Cyperaceae	sedge	
Eleocharis smallii Britton (palustris)	common or marsh spikerush	Cyperaceae	sedge	
Eleocharis tenuis (Willd.) Schultes	doghair, kill cow	Cyperaceae	sedge	
Elephantopus carolinianus Raeusch.	elephant's foot	Asteraceae	aster	
Elephantopus nudatus Gray	hairy elephant's foot	Asteraceae	aster	
Elephantopus tomentosus L.	woolly elephant's foot	Asteraceae	aster	
Eleusine indica (L.) Gaertn. *	Indian goosegrass	Poaceae	grass	
Ellisia nyctelea (L.) L.	Aunt Lucy	Hydrophyllaceae	waterleaf	
Elodea canadensis Michx.	Canadian waterweed	Hydrocharitaceae	frog-bit	
Elodea nuttallii (Planchon) St. John	western waterweed	Hydrocharitaceae	frog-bit	
Elymus glabriflorus (Vasey ex L.H. Dewey) Scribn. & C.R. Ball	Virginia wild rye	Poaceae	grass	
Elymus hystrix L. var. hystrix	bottlebrush grass	Poaceae	grass	X
Elymus macgregorii Brooks & Campbell	early wild rye	Poaceae	grass	
Elymus repens (L.) Gould **	quackgrass	Poaceae	grass	
Elymus riparius Wieg.	river wild rye	Poaceae	grass	
Elymus sp.	wild rye	Poaceae	grass	X
Elymus virginicus L.	Virginia wild rye	Poaceae	grass	X
Epifagus virginiana (L.) W.Barton	beechdrops	Orobanchaceae	broom-rape	X
Epigaea repens L.	trailing arbutus	Ericaceae	heath	
Epilobium coloratum Biehler	purpleleaf willowherb	Onagraceae	evening primrose	
Equisetum arvense L.	field horsetail	Equisetaceae	horsetail	
Equisetum hyemale L. ssp. affine (Engelm.) Calder & R.L. Taylor	scouringrush horsetail	Equisetaceae	horsetail	
Eragrostis capillaris (L.) Nees	lace grass	Poaceae	grass	
Eragrostis cilianensis (All.) Vignola. ex Janchen *	stink grass	Poaceae	grass	
Eragrostis curvula (Schrad.) Nees **	weeping lovegrass	Poaceae	grass	
Eragrostis hypnoides (Lam.) B.S.P.	teal lovegrass	Poaceae	grass	
Eragrostis pilosa (L.) Beauv. *	Indian lovegrass	Poaceae	grass	
Eragrostis spectabilis (Pursh) Steud.	purple lovegrass	Poaceae	grass	

Erechtites hieraciifolia (L.) Raf. ex DC. var. hieraciifolia	pilewort or fireweed	Asteraceae	aster		
Erigenia bulbosa (Michx.) Nutt.	harbinger of spring	Apiaceae	parsley		
Erigeron annuus (L.) Pers.	daisy fleabane	Asteraceae	aster		
Erigeron philadelphicus L. var. philadelphicus	common fleabane	Asteraceae	aster		
Erigeron pulchellus Michx. var. pulchellus	Robin's plantain	Asteraceae	aster		
Erigeron strigosus Muhl. ex Willd.	prairie fleabane	Asteraceae	aster		
Eriocaulon parkeri B.L.Robinson	estuary pipewort	Eriocaulaceae	pipewort		
Erodium cicutarium (L.) L'Her. ex Ait. ssp. cicutarium *	redstem stork's bill	Geraniaceae	geranium		
Eryngium aquaticum L. var. aquaticum	rattlesnakemaster	Apiaceae	parsley		
Erythronium americanum Ker-Gawl. ssp. americanum	dogtooth violet	Liliaceae	lily		
Erythronium umbilicatum Parks & Hardin ssp. umbilicatum	dimpled troutlily	Liliaceae	lily		
Euonymus alatus (Thunb.) Sieb. **	burning bush	Celastraceae	staff vine or bittersweet		X
Euonymus americanus L.	American euonymous or strawberry bush	Celastraceae	staff vine or bittersweet		X
Euonymus atropurpureus Jacq. var. atropurpureus	eastern wahoo or hearts-bustin'-with-love	Celastraceae	staff vine or bittersweet		
Euonymus fortunei	winter creeper	Celastraceae	bittersweet	X	X
Eupatorium album L.	white boneset	Asteraceae	aster		
Eupatorium altissimum L.	three veined boneset	Asteraceae	aster		
Eupatorium fistulosum Barratt	trumpetweed or hollow-stem Joe Pye weed	Asteraceae	aster		
Eupatorium hyssopifolium L.	hyssop-leaved boneset	Asteraceae	aster		
Eupatorium maculatum L. var. maculatum	spotted Joe Pye weed	Asteraceae	aster		
Eupatorium perfoliatum L. var. perfoliatum	common boneset	Asteraceae	aster		
Eupatorium pilosum Walt.	rough boneset	Asteraceae	aster		
Eupatorium pubescens Muhl. ex Willd.	hairy or round-leaved boneset	Asteraceae	aster		
Eupatorium purpureum L.	sweet-scented Joe Pye weed	Asteraceae	aster		
Eupatorium serotinum Michx.	late flowering boneset	Asteraceae	aster		
Eupatorium sessilifolium L.	upland boneset	Asteraceae	aster		
Eupatorium torreyanum Short and Peter	hyssop-leaved or Torrey's thoroughwort	Asteraceae	aster		
Euphorbia corollata L.	flowering spurge	Euphorbiaceae	spurge		
Euphorbia cyparissias L. *	cypress spurge	Euphorbiaceae	spurge		
Euphorbia dentata Michx. var. dentata	toothed spurge	Euphorbiaceae	spurge		
Euphorbia spathulata Lam.	warty spurge	Euphorbiaceae	spurge		
Eurybia divaricata (L.) Nesom	white wood aster	Asteraceae	aster		
Eurybia schreberi (Nees) Nees	Schreber's aster	Asteraceae	aster		
Euthamia graminifolia (L.) Nutt. var. graminifolia	flat-topped goldenrod	Asteraceae	aster		
Fagus grandifolia Ehrhart	American beech	Fagaceae	beech	X	X
Fallopia convolvulus (L.) A. Love or Polygonum convolvulus *	black bindweed	Polygonaceae	smartweed		
Fallopia japonica (Houtt.) Ronse Decraene or Polygonum japonica **	Japanese knotweed	Polygonaceae	smartweed		
Fallopia sachalinense (F. Schmidt) Ronse Decraene or Polygonum s sachalinense *	giant knotweed	Polygonaceae	smartweed		
Fallopia scandens (L.) Holub or Polygonum scandens	climbing false buckwheat	Polygonaceae	smartweed		
Festuca arundinacea Schreb. **	tall fescue	Poaceae	grass		
Festuca subverticillata (Pers.) Alexeev	nodding fescue	Poaceae	grass		
Filago vulgaris Lam. *	common cudweed or common cottonrose	Asteraceae	aster		
Fimbristylis autumnalis (L.) R. & S.	slender fimbry	Cyperaceae	sedge		
Floerkea proserpinacoides Willd.	false mermaidweed	Limnanthaceae	meadow foam		
Forsythia x intermedia *	showy forsythia	Oleaceae	olive		
Fragaria virginiana Duchesne	Virginia strawberry	Rosaceae	rose		
Fraxinus americana L.	white ash	Oleaceae	olive	X	
Fraxinus nigra Marshall	black or hoop ash	Oleaceae	olive		
Fraxinus pennsylvanica Marshall	green ash	Oleaceae	olive		X

Fraxinus profunda (Bush) Bush	pumpkin ash	Oleaceae	olive	
Galactia volubilis (L.) Britt.	downy milkpea	Fabaceae	pea	
Galearis spectabilis (L.) Raf.	showy orchis	Orchidaceae	orchid	
Galinsoga parviflora Cav. *	Peruvian daisy	Asteraceae	aster	
Galinsoga quadriradiata Ruiz & Pavon *	raceweed	Asteraceae	aster	
Galium aparine L.	cleavers bedstraw or stickywilly	Rubiaceae	madder	
Galium circaezans Michx.	licorice bedstraw	Rubiaceae	madder	
Galium concinnum Torr. & Gray	shining bedstraw	Rubiaceae	madder	
Galium latifolium Michx.	purple bedstraw	Rubiaceae	madder	
Galium mollugo L. *	false baby's breath	Rubiaceae	madder	
Galium obtusum Bigelow var. obtusum	bluntleaf bedstraw	Rubiaceae	madder	
Galium obtusum Bigelow var. var. filifolium (Wieg.) Fern.	bluntleaf bedstraw	Rubiaceae	madder	
Galium pilosum Ait.	hairy bedstraw	Rubiaceae	madder	
Galium tinctorium (L.) Scop.	stiff marsh bedstraw	Rubiaceae	madder	
Galium triflorum Michx.	fragrant bedstraw	Rubiaceae	madder	
Gamochaeta purpurea (L.) Cabrera	spoonleaf purple everlasting or purple cudweed	Asteraceae	aster	
Gaultheria procumbens L.	eastern teaberry	Ericaceae	heath	
Gaura biennis L.	biennial beeblossom	Onagraceae	evening primrose	
Gaylussacia baccata (Wangenh.) K. Koch	black huckleberry	Ericaceae	heath	
Gaylussacia frondosa (L.) Torr. & Gray ex Torr.	blue huckleberry	Ericaceae	heath	
Gentiana clausa Raf.	bottle or closed gentian	Gentianaceae	gentian	
Gentiana saponaria L.	harvestbells	Gentianaceae	gentian	
Gentiana villosa L.	striped gentian	Gentianaceae	gentian	
Geranium carolinianum L. var. carolinianum	Carolina geranium	Geraniaceae	geranium	
Geranium columbinum L. *	longstalk cranesbill	Geraniaceae	geranium	
Geranium dissectum	cutleaf cranesbill	Geraniaceae	geranium	
Geranium maculatum L.	spotted or wild geranium	Geraniaceae	geranium	
Geum canadense Jacquin var. canadense	white avens	Rosaceae	rose	
Geum virginianum L.	cream avens	Rosaceae	rose	
Glechoma hederacea L. **	ground ivy	Lamiaceae	mint	X
Gleditsia triacanthos L.	honeylocust	Fabaceae	pea	
Glyceria melicaria (Michx.) F.T. Hubbard	melic mannagrass	Poaceae	grass	
Glyceria septentrionalis A.S. Hitchc.	floating mannagrass	Poaceae	grass	
Glyceria striata (Lam.) A.S. Hitchc.	fowl mannagrass	Poaceae	grass	
Goodyera pubescens (Willd.) R.Br. ex Aiton f.	downy rattlesnake plantain	Orchidaceae	orchid	X
Gratiola neglecta Torr.	clammy hedgehyssop	Scrophulariaceae	figwort	
Gratiola viscidula Pennell	Short's hedgehyssop	Scrophulariaceae	figwort	
Hackelia virginiana (L.) I.M.Johnston	Virginia stickseed	Boraginaceae	borage	
Hamamelis virginiana L.	witch hazel	Hamamelidaceae	witch hazel	
Hedeoma pulegioides (L.) Pers.	American pennyroyal	Lamiaceae	mint	
Hedera helix L. **	English ivy	Araliaceae	ginseng	
Helenium autumnale L. var. autumnale	autumn sneezeweed	Asteraceae	aster	
Helenium flexuosum Raf.	sneezeweed	Asteraceae	aster	
Helianthemum canadense (L.) Michx.	longbranch frostweed	Cistaceae	rock rose	
Helianthus atrorubens L.	purple disk flower	Asteraceae	aster	
Helianthus decapetalus L.	thin-leaved sunflower	Asteraceae	aster	
Helianthus divaricatus L.	woodland sunflower	Asteraceae	aster	
Helianthus giganteus L.	giant sunflower	Asteraceae	aster	
Helianthus grosseserratus Martens	sawtoothed sunflower	Asteraceae	aster	
Helianthus laevigatus Torr. & Gray	smooth sunflower	Asteraceae	aster	
Helianthus maximiliani Schrad.	Maximilian's sunflower	Asteraceae	aster	
Helianthus microcephalus Torr. & Gray	small-headed sunflower	Asteraceae	aster	
Helianthus strumosus L.	rough-leaved sunflower	Asteraceae	aster	

Helianthus tuberosus L.	Jeruselum artichoke	Asteraceae	aster		
Heliopsis helianthoides (L.) Sweet var. helianthoides	smooth oxeye, false sunflower	Asteraceae	aster		
Hemerocallis fulva (L.) L. *	orange daylily	Liliaceae	lily		
Hepatica americana (DC.) Ker-Gawl.	roundlobe hepatica	Ranunculaceae	buttercup		
Hesperis matronalis Linnaeus **	dame's rocket	Brassicaceae	mustard		
Heteranthera dubia (Jacquin) MacMillan	grassleaf mudplantain	Pontederiaceae	water-hyacinth		
Heteranthera reniformis Ruiz & Pavon	kidneyleaf mudplantain	Pontederiaceae	water-hyacinth		
Heuchera americana L. var. americana	American alumroot	Saxifragaceae	saxifrage		
Heuchera pubescens Pursh	downy alumroot	Saxifragaceae	saxifrage		
Hexastylis virginica (L.) Small	Virginia heartleaf	Aristolochiaceae	birthwort		
Hibiscus moscheutos L.	crimsoneyed rosemallow	Malvaceae	mallow		
Hibiscus syriacus L. **	rose of Sharon	Malvaceae	mallow		
Hibiscus trionum L. *	flour of an hour	Malvaceae	mallow		
Hieracium caespitosum Dumort. *	meadow hawkweed	Asteraceae	aster		
Hieracium gronovii L.	hairy hawkweed	Asteraceae	aster		
Hieracium paniculatum L.	panicled hawkweed	Asteraceae	aster		
Hieracium pilosella L. var. pilosella *	mouse ear hawkweed	Asteraceae	aster		
Hieracium scabrum Michx. var. scabrum	rough hawkweed	Asteraceae	aster		
Hieracium venosum L.	rattlesnake hawkweed	Asteraceae	aster		
Holcus lanatus L. **	common velvetgrass	Poaceae	grass		
Holosteum umbellatum L. *	jagged chickweed	Caryophyllaceae	pink		
Hordeum pusillum Nutt.	little barley	Poaceae	grass		
Houstonia caerulea L.	azure bluet	Rubiaceae	madder		
Houstonia longifolia Gaertn.	longleaf summer bluet	Rubiaceae	madder		
Houstonia purpurea L.	Venus' pride	Rubiaceae	madder		
Houstonia tenuifolia	narrow-leaved houstonia	Rubiaceae	madder		
Humulus japonicus **	Japanese hops	Cannabaceae	hemp		
Huperzia lucidula (Michx.) Trevisan	shining clubmoss	Lycopodiaceae	club-moss		
Hybanthus concolor (T.F. Forst.) Spreng.	eastern greenviolet	Violaceae	violet		
Hydrangea arborescens L.	wild hydrangea	Hydrangeaceae	hydrangea		
Hydrilla verticillata (L.f.) Royle **	waterthyme or hydrilla	Hydrocharitaceae	frog-bit		
Hydrocotyle americana L.	water pennywort	Apiaceae	parsley		
Hydrocotyle ranunculoides L. f.	floating water pennywort	Apiaceae	parsley		
Hydrophyllum virginianum L.	eastern waterleaf	Hydrophyllaceae	waterleaf		
Hylotelephium telephioides (Michx.) H. Ohba	Allegheny stonecrop	Crassulaceae	stonecrop		
Hylotelephium telephium (L.) H. Ohba	witch's moneybags	Crassulaceae	stonecrop		
Hypericum canadense L.	lesser Canadian St. Johnswort	Clusiaceae	St. Johnswort		
Hypericum crux-andreae (L.) Crantz	St. Peterswort	Clusiaceae	St. Johnswort		
Hypericum gentianoides (L.) B.S.P.	orangegrass	Clusiaceae	St. Johnswort		
Hypericum gymnanthum Engelm. & A. Gray	clasping St. Johnswort	Clusiaceae	St. Johnswort		
Hypericum hypericoides (L.) Crantz var. hypericoides	St. Andrew's cross	Clusiaceae	St. Johnswort		
Hypericum mutilum L.	dwarf St. Johnswort	Clusiaceae	St. Johnswort		
Hypericum perforatum L. *	common St. Johnswort	Clusiaceae	St. Johnswort		
Hypericum prolificum L.	shrubby St. Johnswort	Clusiaceae	St. Johnswort		
Hypericum punctatum Lam.	spotted St. Johnswort	Clusiaceae	St. Johnswort		
Hypochaeris radicata L. *	hairy cat's ear	Asteraceae	aster		
Hypoxis hirsuta (L.) Coville	common goldstar or yellow star grass	Liliaceae	lily		
Ilex opaca Aiton var. opaca	American holly	Aquifoliaceae	holly	X	X
Ilex verticillata (L.) Gray	winterberry holly	Aquifoliaceae	holly		
Impatiens capensis Meerburg	jewelweed, spotted touch-me-not	Balsaminaceae	touch-me-not		
Ionactis linariifolius (L.) Greene	flaxleaf whitetop aster	Asteraceae	aster		
Ipomoea coccinea L. **	redstar	Convolvulaceae	morning glory		
Ipomoea hederacea Jacq. **	ivyleaf morning glory	Convolvulaceae	morning glory		
Ipomoea lacunosa L.	whitestar	Convolvulaceae	morning glory		

Ipomoea pandurata (L.) G.F.W. Mey.	man-of-the-earth	Convolvulaceae	morning glory		
Ipomoea purpurea (L.) Roth **	tall morning glory	Convolvulaceae	morning glory		
Iris cristata Solander ex Aiton	dwarf crested iris	Iridaceae	iris		
Iris pseudacorus L. **	paleyellow iris	Iridaceae	iris		
Iris versicolor	blue flag iris or harlequin blueflag	Iridaceae	iris		
Iris virginica L.	Virginia or southern blue flag iris	Iridaceae	iris		
Isatis tinctoria Linnaeus	Dyer's woad	Brassicaceae	mustard		
Isoetes appalachiana Brunton and Britton	Appalachian quillwort	Isoetaceae	quillwort		
Isoetes engelmannii A. Braun	Appalachian quillwort	Isoetaceae	quillwort		
Isoetes valida (Engelm.) Clute	strong quillwort	Isoetaceae	quillwort		
Isotria medeoloides (Pursh) Raf.	small whorled pagonia	Orchidaceae	orchid		
Isotria verticillata (Muhl. ex Willd.) Raf.	large whorled pagonia	Orchidaceae	orchid		
Itea virginica L.	Virginia sweetspire	Grossulariaceae	gooseberry		
Iva annua L. var. annua	annual marsh elder	Asteraceae	aster		
Iva xanthifolia Nutt.	bur-reed marsh elder	Asteraceae	aster		
Jeffersonia diphylla (L.) Pers.	twinleaf	Berberidaceae	barberry		
Juglans nigra L.	black walnut	Juglandaceae	walnut	X	X
Juncus acuminatus Michx.	tapertip rush	Juncaceae	rush		
Juncus biflorus Ell.	bog rush	Juncaceae	rush		
Juncus brachycarpus Engelm.	whiteroot rush	Juncaceae	rush		
Juncus bufonius L.	toad rush	Juncaceae	rush		
Juncus canadensis J. Gay ex Laharpe	Canadian rush	Juncaceae	rush		
Juncus dichotomus Ell.	forked rush	Juncaceae	rush		
Juncus diffusissimus Buckl.	slimpod rush	Juncaceae	rush		
Juncus effusus L.	common rush	Juncaceae	rush		
Juncus marginatus Rostk.	grassleaf rush	Juncaceae	rush		
Juncus roemerianus Scheele	needlegrass rush	Juncaceae	rush		
Juncus scirpoides Lam.	needlepod rush	Juncaceae	rush		
Juncus secundus Beauv. ex Poir.	lopsided rush	Juncaceae	rush		
Juncus subcaudatus (Engelm.) Coville & Blake var. subcaudatus	woodland rush	Juncaceae	rush		
Juncus tenuis Willd.	poverty rush	Juncaceae	rush		X
Juniperus virginiana L. var. virginiana	eastern red cedar	Juncaceae	rush		X
Justicia americana (L.)Vahl	American water willow	Acanthaceae	acanthus		
Kalmia latifolia L.	mountain laurel	Ericaceae	heath		
Kickxia elatine (L.) Dumort. *	sharpleaf cancerwort	Scrophulariaceae	figwort		
Kochia scoparia (L.) Schrader *	kochia or fireweed	Chenopodiaceae	goosefoot		
Kosteletzkya virginica (L.) K. Presl ex Gray	Virginia saltmarsh mallow	Malvaceae	mallow		
Krigia dandelion (L.) Nutt.	potato dwarf dandelion	Asteraceae	aster		
Krigia virginica (L.) Willd.	Virginia dwarf dandelion	Asteraceae	aster		
Kummerowia stipulacea (Maxim.) Makino *	Korean clover	Fabaceae	pea		
Kummerowia striata (Thunb.) Schindl. *	Japanese clover	Fabaceae	pea		
Kyllinga pumila Michaux	low spikesedge	Cyperaceae	sedge		
Lactuca biennis (Moench) Fern.	tall blue lettuce	Asteraceae	aster		
Lactuca canadensis L.	wild lettuce	Asteraceae	aster		
Lactuca floridana (L.) Gaertn.	Florida blue lettuce	Asteraceae	aster		
Lactuca hirsuta Muhl. ex Nutt.	hairy lettuce	Asteraceae	aster		
Lactuca saligna L. *	willow lettuce	Asteraceae	aster		
Lactuca serriola L. *	prickly leaf lettuce	Asteraceae	aster		
Lamium amplexicaule L. *	henbit	Lamiaceae	mint		
Lamium purpureum L. *	purple dead nettle	Lamiaceae	mint		
Laportea canadensis (L.) Weddell	Canadian woodnettle	Urticaceae	nettle		
Lathyrus latifolius L. *	perennial pea or everlasting sweet pea	Fabaceae	pea		
Lechea pulchella Raf.	Leggett's pinweed	Cistaceae	rock rose		

Lechea pulchella Raf. var. pulchella	Leggett's pinweed	Cistaceae	rock rose	
Lechea racemulosa Michx.	Illinois pinweed	Cistaceae	rock rose	
Leersia oryzoides (L.) Sw.	marsh cutgrass	Poaceae	grass	
Leersia virginica Willd.	whitegrass or Virginia whitegrass	Poaceae	grass	
Lemna valdiviana Phil.	valdivia	Lemnaceae	duckweed	
Leonurus cardiaca L. ssp. cardiaca *	motherwort	Lamiaceae	mint	
Lepidium campestre (Linnaeus) R. Brown *	field peppergrass	Brassicaceae	mustard	
Lepidium virginicum Linnaeus var. virginicum	Virginia peppergrass	Brassicaceae	mustard	
Lespedeza bicolor Turcz. **	shrub lespedeza	Fabaceae	pea	
Lespedeza capitata Michx.	roundhead lespedeza	Fabaceae	pea	
Lespedeza cuneata (Dum.-Cours.) G. Don **	Chinese or sericea lespedeza	Fabaceae	pea	
Lespedeza hirta (L.) Hornemann	hairy lespedeza	Fabaceae	pea	
Lespedeza hirta (L.) Hornemann ssp. hirta	hairy lespedeza	Fabaceae	pea	
Lespedeza intermedia (S. Wats.) Britt.	wand bush clover	Fabaceae	pea	
Lespedeza procumbens Michx.	trailing bush clover or trailing lespedeza	Fabaceae	pea	
Lespedeza repens (L.) W. Bart.	creeping bush clover	Fabaceae	pea	
Lespedeza violacea (L.) Pers.	violet lespedeza	Fabaceae	pea	
Lespedeza virginica (L.) Britt.	slender lespedeza	Fabaceae	pea	
Leucanthemum vulgare Lam. *	oxeye daisy	Asteraceae	aster	
Leucojum aestivum L. ssp. aestivum *	summer snowflake	Liliaceae	lily	
Leucothoe racemosa (L.) Gray	swamp doghobble	Ericaceae	heath	
Liatris squarrosa (L.) Michx. var. squarrosa	rough-leaved blazing star	Asteraceae	aster	
Ligustrum obtusifolium Sieb.& Zucc. *	border privet	Oleaceae	olive	
Ligustrum sinense Louriere **	Chinese privet	Oleaceae	olive	X
Ligustrum vulgare L. *	European privet	Oleaceae	olive	
Lilium canadense L.	Canada lily	Liliaceae	lily	
Lilium superbum L.	turk's-cap lily	Liliaceae	lily	
Linaria vulgaris P. Mill. *	butter and eggs	Scrophulariaceae	figwort	
Lindera benzoin (L.) Blume	spicebush	Lauraceae	laurel	
Lindernia dubia (L.) Pennell var. anagallidea (Michx.) Cooperrider	yellowseed false pimpernel	Scrophulariaceae	figwort	
Lindernia dubia (L.) Pennell var. dubia	yellowseed false pimpernel	Scrophulariaceae	figwort	
Linum medium (Planch.) Britton var. texanum (Planch.) Fern.	stiff yellow flax	Linaceae	flax	
Linum striatum Walt.	ridged yellow flax	Linaceae	flax	
Linum virginianum L.	woodland flax	Linaceae	flax	
Liparis liliifolia (L.) L.C.Rich. ex Ker-Gawl.	lily-leaved twayblade	Orchidaceae	orchid	
Liquidambar styraciflua L.	sweetgum	Hamamelidaceae	witch hazel	X
Liriodendron tulipifera L.	American tulip tree or tulip tree	Magnoliaceae	magnolia	X
Lithospermum canescens (Michx.) Lehm.	corn gromwell	Boraginaceae	borage	
Lobelia cardinalis L. var. cardinalis	cardinal flower	Campanulaceae	bellflower	
Lobelia inflata L.	Indian tobacco	Campanulaceae	bellflower	
Lobelia puberula Michaux	downy lobelia	Campanulaceae	bellflower	
Lobelia siphilitica L. var. siphilitica	great blue lobelia	Campanulaceae	bellflower	
Lobelia spicata Lam.	pale spiked lobelia	Campanulaceae	bellflower	
Lolium perenne	Italian ryegrass	Poaceae	grass	
Lonicera japonica Thunb. **	Japanese honeysuckle	Caprifoliaceae	honeysuckle	X
Lonicera maackii (Rupr.) Maximowicz **	Amur honeysuckle	Caprifoliaceae	honeysuckle	X
Lonicera morrowii Gray **	Marrow's honeysuckle	Caprifoliaceae	honeysuckle	
Lonicera sempervirens L.	trumpet honeysuckle	Caprifoliaceae	honeysuckle	
Lonicera tatarica L. **	Tartarian honeysuckle	Caprifoliaceae	honeysuckle	
Lotus corniculatus L. **	birdsfoot trefoil	Fabaceae	pea	
Lotus tenuis Waldst. & Kit. ex Willd. *	narrowleaf birdsfoot trefoil	Fabaceae	pea	
Ludwigia alternifolia L.	seedbox	Onagraceae	evening primrose	
Ludwigia decurrens Walter	wingleaf primrose-willow	Onagraceae	evening primrose	

Ludwigia leptocarpa (Nuttall) Hara	anglestem primrose-willow	Onagraceae	evening primrose	
Ludwigia palustris (L.) Elliott	marsh seedbox	Onagraceae	evening primrose	
Ludwigia peploides (H.B.K.) Raven var. glabrescens (Kuntze)Shinners *	floating primrose-willow	Onagraceae	evening primrose	
Lupinus perennis L. ssp. perennis	sundial lupine	Fabaceae	pea	
Luzula acuminata Raf.	hairy woodrush	Juncaceae	rush	
Luzula bulbosa (Wood) Smyth & Smyth	bulbous woodrush	Juncaceae	rush	
Luzula echinata (Small) F.J. Hermann	hedgehog woodrush	Juncaceae	rush	
Luzula multiflora (Ehrhart) Lejeune ssp. multiflora	common woodrush	Juncaceae	rush	
Lycopodiella appressa (Chapman) Cranfill	southern bog clubmoss	Lycopodiaceae	club-moss	
Lycopodiella inundata (L.) Holub	inundated clubmoss	Lycopodiaceae	club-moss	
Lycopodium clavatum L.	running clubmoss	Lycopodiaceae	club-moss	
Lycopus americanus Muhl. ex W. Bart.	American water horehound	Lamiaceae	mint	
Lycopus rubellus Moench	taperleaf water horehound	Lamiaceae	mint	
Lycopus virginicus L.	Virginia water horehound	Lamiaceae	mint	
Lyonia ligustrina (L.) DC. var. ligustrina	maleberry	Ericaceae	heath	
Lysimachia ciliata L.	fringed loosestrife	Lythraceae	loosestrife	
Lysimachia nummularia L. **	creeping jenny	Lythraceae	loosestrife	
Lysimachia quadrifolia L.	fourflower yellow loosestrife	Lythraceae	loosestrife	
Lysimachia terrestris (L.) B.S.P.	earth loosestrife	Lythraceae	loosestrife	
Lythrum salicaria L. **	purple loosestrife	Lythraceae	loosestrife	
Maclura pomifera (Raf.) Schneid. *	osage orange	Moraceae	mulberry	
Magnolia grandiflora	southern magnolia	Magnoliaceae	magnolia	
Magnolia virginiana L.	sweetbay	Magnoliaceae	magnolia	
Maianthemum canadense Desf.	Canada mayflower	Liliaceae	lily	
Maianthemum racemosum (L.) Link ssp. racemosum	false solomon's seal or feathery false lily-of-the-valley	Liliaceae	lily	
Malaxis unifolia Michaux	green adder's-mouth orchid	Orchidaceae	orchid	
Malus angustifolia (Aiton) Michx.	southern crab apple	Rosaceae	rose	
Malus coronaria (L.) P. Mill.	sweet crab apple	Rosaceae	rose	
Malus pumila P. Mill. **	paradise apple	Rosaceae	rose	
Malva neglecta Wallroth *	common mallow	Malvaceae	mallow	
Matricaria discoidea DC. *	pineapple weed	Asteraceae	aster	
Medeola virginiana L.	Indian cucumber	Liliaceae	lily	
Medicago lupulina L. *	black medic	Fabaceae	pea	
Medicago sativa L. *	alfalfa	Fabaceae	pea	
Melica mutica Walt.	twoflower melicgrass	Poaceae	grass	
Melilotus albus Medikus **	white sweet clover	Fabaceae	pea	
Melilotus officinalis (L.) Lam. **	yellow sweet clover	Fabaceae	pea	
Menispermum canadense L.	common moonseed	Menispermaceae	moonseed	
Mentha arvensis L.	wild mint	Lamiaceae	mint	
Mentha x piperita L. *	peppermint	Lamiaceae	mint	
Mertensia virginica (L.) Pers. ex Link	Virginia bluebells	Boraginaceae	borage	
Microstegium vimineum (Trin.) A. Camus **	Nepalese browntop or Japanese stiltgrass	Poaceae	grass	X
Microthlaspi perfoliatum(Linnaeus) F. K. Meyer *	claspleaf pennycress	Brassicaceae	mustard	
Mikania scandens (L.) Willd.	climbing hempweed	Asteraceae	aster	
Mimulus alatus Aiton	sharpwing monkeyflower	Scrophulariaceae	figwort	
Mimulus ringens L.	Allegheny monkeyflower	Scrophulariaceae	figwort	
Mirabilis nyctaginea (Michx.) MacM. *	heartleaf four o'clock	Nyctaginaceae	four o'clock	
Miscanthus sinensis Anderss. **	Chinese silvergrass	Poaceae	grass	X
Mitchella repens L.	partridgeberry	Rubiaceae	madder	X
Mitella diphylla L.	twoleaf miterwort	Saxifragaceae	saxifrage	
Mollugo verticillata L. *	green carpetweed	Molluginaceae	carpet-weed	
Monarda punctata L. var. punctata	dotted horsemint	Lamiaceae	mint	

Monotropa hypopithys L.	pinesap	Ericaceae	heath	
Monotropa uniflora L.	Indianpipe	Ericaceae	heath	
Morus alba L. **	white mulberry	Moraceae	mulberry	
Morus rubra L.	red mulberry	Moraceae	mulberry	
Muhlenbergia frondosa (Poir.) Fern.	wirestem muhly	Poaceae	grass	
Muhlenbergia mexicana (L.) Trin.	Mexican muhly	Poaceae	grass	
Muhlenbergia schreberi J.F. Gmel.	nimblewill	Poaceae	grass	
Muhlenbergia sobolifera (Muhl. ex Willd.) Trin.	rock muhly	Poaceae	grass	
Muhlenbergia sylvatica (Torr.) Torr. ex Gray	woodland muhly	Poaceae	grass	
Muhlenbergia tenuiflora (Willd.) B.S.P.	slender muhly	Poaceae	grass	
Murdannia keisak (Hasskarl) Handel-Mazzetti **	watermoving herb	Commelinaceae	spiderwort	
Muscari neglectum Guss. ex Ten. *	starch grape hyacinth	Liliaceae	lily	
Myosotis discolor Pers. *	changing forget-me-not	Boraginaceae	borage	
Myosotis laxa Lehm.	small forget-me-not	Boraginaceae	borage	
Myosotis macrosperma Englem.	white forget-me-not	Boraginaceae	borage	
Myosotis scorpioides L.	forget-me-not	Boraginaceae	borage	
Myosotis stricta Link ex Roemer & J.A.Schultes	strict forget-me-not	Boraginaceae	borage	
Myosotis verna Nutt.	spring forget-me-not	Boraginaceae	borage	
Myrica cerifera L.	wax myrtle	Myricaceae	bayberry	
Myriophyllum aquaticum (Vell.) Verdc. **	parrot feather watermilfoil	Haloragaceae	water milfoil	
Myriophyllum spicatum L. **	Eurasian watermilfoil	Haloragaceae	water milfoil	
Najas gracillima (A. Braun ex Engelm.) Magnus	slender waternymph	Najadaceae	water-nymph	
Narcissus poeticus L. *	poet's narcissus	Liliaceae	lily	
Nelumbo lutea Willd.	American lotus	Nelumbonaceae	lotus-lily	
Nepeta cataria L. *	catnip	Lamiaceae	mint	
Nuphar advena (Aiton) W.T. Aiton or N. lutea	spatterdock or yellow pond lily	Nymphaeaceae	water lily	
Nuttallanthus canadensis (L.) D.A. Sutton	Canada toadflax	Scrophulariaceae	figwort	
Nyssa sylvatica Marshall	blackgum	Cornaceae	dogwood	X
Obolaria virginica L.	Virginia pennywort	Gentianaceae	gentian	
Oenothera biennis L. complex	common evening primrose	Onagraceae	evening primrose	
Oenothera fruticosa L. ssp. fruticosa	narrowleaf evening primrose	Onagraceae	evening primrose	
Oenothera fruticosa L. ssp. glauca (Michx.) Straley	narrowleaf evening primrose	Onagraceae	evening primrose	
Oenothera laciniata Hill	cutleaf evening primrose	Onagraceae	evening primrose	
Onoclea sensibilis L.	sensitive fern	Dryopteridaceae	wood fern	
Ophioglossum vulgatum L.	southern adderstongue	Ophioglossaceae	adder's tongue	
Opuntia humifusa (Raf.) Raf. var. humifusa	prickly pear cactus	Cactaceae	cactus	
Ornithogalum umbellatum L. *	sleepydick or Star of Bethlehem	Liliaceae	lily	
Orobanche uniflora L.	oneflowered broomrape	Orobanchaceae	broom-rape	
Orontium aquaticum L.	goldenclub	Araceae	arum	
Osmorhiza longistylis (Torr.) DC.	sweet chervil	Apiaceae	parsley	
Osmunda cinnamomea L. var. cinnamomea	cinnamon fern	Osmundaceae	royal fern	
Osmunda claytoniana L.	interrupted fern	Osmundaceae	royal fern	
Osmunda regalis L. var. spectabilis (Willd.) Gray	royal fern	Osmundaceae	royal fern	
Ostrya virginiana (P.Mill.) K.Koch	hop hornbeam	Betulaceae	birch	
Oxalis florida Salisbury ssp. florida	yellow wood sorrel	Oxalidaceae	wood sorrel	
Oxalis fontana L. var. fontana *	wood sorrel (Scandinavian)	Oxalidaceae	wood sorrel	
Oxalis grandis	great wood sorrel	Oxalidaceae	wood sorrel	
Oxalis stricta L.	common yellow oxalis	Oxalidaceae	wood sorrel	
Oxalis violacea L.	violet wood sorrel	Oxalidaceae	wood sorrel	
Oxypolis rigidior (L.) Raf.	cowbane	Apiaceae	parsley	
Packera anonyma (Wood) W.A. Weber & A. Love	Small's ragwort	Asteraceae	aster	
Packera aurea (L.) A. & D. Love	golden ragwort	Asteraceae	aster	
Packera paupercula (Michx.) A. & D. Love	balsam ragwort or balsam groundsel	Asteraceae	aster	
Panax quinquefolius L.	ginseng	Araliaceae	ginseng	

Panax trifolius L.	dwarf ginseng	Araliaceae	ginseng	
Panicum anceps Michx.	beaked panicgrass	Poaceae	grass	
Panicum capillare L. ssp. capillare	witchgrass	Poaceae	grass	
Panicum dichotomiflorum Michx.	fall panicgrass	Poaceae	grass	X
Panicum philadelphicum Bernh. ex Trin.	Philidelphia panicgrass	Poaceae	grass	
Panicum rigidulum Nees	redtop panicgrass	Poaceae	grass	
Panicum verrucosum Muhl.	warty panicgrass	Poaceae	grass	
Panicum virgatum L.	switch grass	Poaceae	grass	
Papaver dubium L. *	blindeyes	Papaveraceae	poppy	
Parietaria pensylvanica Muhl. ex Willd.	Pennsylvania pellitory	Urticaceae	nettle	
Paronychia canadensis (L.) Wood	forked chickweed	Caryophyllaceae	pink	
Paronychia fastigiata (Raf.) Fern.	hairy forked nailwort	Caryophyllaceae	pink	
Parthenocissus quinquefolia (L.) Planch.	Virginia creeper	Vitaceae	grape	
Paspalum floridanum Michx.	Florida paspal	Poaceae	grass	
Paspalum laeve Michx.	field paspalum	Poaceae	grass	
Paspalum repens P.J. Bergius	water paspalum	Poaceae	grass	
Paspalum setaceum Michx.	thin paspalum	Poaceae	grass	
Passiflora incarnata L.	purple passionflower	Passifloraceae	passion flower	
Paulownia tomentosa (Thunb.) Steud. **	princesstree	Scrophulariaceae	figwort	
Peltandra virginica (L.) Schott	green arrow arum	Araceae	arum	
Penstemon canescens (Britt.) Britt.	eastern gray beardtongue	Scrophulariaceae	figwort	
Penstemon digitalis Nutt. ex Sims	talus slope penstemon	Scrophulariaceae	figwort	
Penstemon hirsutus (L.) Willd.	hairy beardtongue	Scrophulariaceae	figwort	
Penstemon laevigatus (L.) Aiton	eastern smooth beardtongue	Scrophulariaceae	figwort	
Penstemon pallidus Small *	pale beardtongue	Scrophulariaceae	figwort	
Penthorum sedoides L.	ditch stonecrop	Crassulaceae	stonecrop	
Perilla frutescens (L.) Britt. **	Perilla or beefsteak plant	Lamiaceae	mint	
Persicaria arifolia (L.) Haraldson	halberdleaf tearthumb	Polygonaceae	smartweed	
Persicaria hydropiper (L.) Spach	marshpepper knotweed	Polygonaceae	smartweed	
Persicaria hydropiperoides (Michx.) Small	swamp smartweed	Polygonaceae	smartweed	
Persicaria longiseta (Bruijn) Kitagawa *	bristly lady's-thumb	Polygonaceae	smartweed	
Persicaria maculosa Gray *	redshank	Polygonaceae	smartweed	
Persicaria orientalis (L.) Spach *	kiss me over the garden gate	Polygonaceae	smartweed	
Persicaria pensylvanica (L.) Gomez	Pennsylvania smartweed	Polygonaceae	smartweed	
Persicaria perfoliata (L.) H. Gross **	Asiatic tearthumb or mile-a-minute vine	Polygonaceae	smartweed	
Persicaria punctata (Ell.) Small	dotted smartweed	Polygonaceae	smartweed	
Persicaria sagittata (L.) H. Gross	arrowleaf tearthumb	Polygonaceae	smartweed	
Persicaria virginiana (L.) Gaertn. or Polygonum or Tovara virginianum	jumpseed	Polygonaceae	smartweed	
Phacelia dubia (L.) Trel. var. dubia	smallflower phacelia	Hydrophyllaceae	waterleaf	
Phalaris arundinacea L.	reed canarygrass	Poaceae	grass	
Phaseolus polystachios (L.) BSP var. polystachios	thicket bean	Fabaceae	pea	
Phegopteris hexagonoptera (Michx.) Fee	broad beechfern	Thelypteridaceae	marsh fern	
Phleum pratense L. **	timothy	Poaceae	grass	
Phlox maculata L.	wild sweet william	Polemoniaceae	phlox	
Phlox paniculata L.	fall phlox	Polemoniaceae	phlox	
Phoradendron leucarpum (Raf.) Reveal & M.C. Johnston	oak mistletoe	Viscaceae	mistletoe	
Phragmites australis (Cav.) Trin. ex Steud. **	phragmites or common reed	Poaceae	grass	
Phryma leptostachya L.	American lopseed	Verbenaceae	verbena	
Phyllanthus caroliniensis Walt. ssp. caroliniensis	Carolina leaf-flower or Carolina leaf spurge	Euphorbiaceae	spurge	
Physalis heterophylla Nees	clammy groundcherry	Solanaceae	nightshade	
Physalis longifolia Nuttall var. subglabrata (Mackenzie & Bush) Cronq.	longleaf groundcherry	Solanaceae	nightshade	
Physalis virginiana P. Miller	Virginia groundcherry	Solanaceae	nightshade	

Physocarpus opulifolius (L.) Maxim.	common ninebark	Rosaceae	rose	
Phytolacca americana L. var. americana	American pokeweed	Phytolaccaceae	pokeweed	
Pilea pumila (L.) Gray	Canadian clearweed	Urticaceae	nettle	
Pinus echinata Miller	shortleaf pine	Pinaceae	pine	
Pinus pungens Lambert	table mountain pine	Pinaceae	pine	
Pinus rigida Miller	pitch pine	Pinaceae	pine	
Pinus strobus L.	white pine	Pinaceae	pine	
Pinus virginiana Miller	Virginia pine	Pinaceae	pine	X
Piptochaetium avenaceum (L.) Parodi	blackseed speargrass	Poaceae	grass	
Plantago aristata Michxaux	largebracted plantain	Plantaginaceae	plantain	
Plantago lanceolata L. *	narrowleaf plantain	Plantaginaceae	plantain	
Plantago major *	common plantain	Plantaginaceae	plantain	
Plantago rugelii Dcne.	blackseed plantain	Plantaginaceae	plantain	
Plantago virginica L.	Virginia plantain	Plantaginaceae	plantain	
Platanthera ciliaris (L.) Lindl.	yellow fringed orchid	Orchidaceae	orchid	
Platanthera clavellata (Michx.) Luer	small green wood orchid	Orchidaceae	orchid	
Platanthera flava (L.) Lindl.	palegreen orchid	Orchidaceae	orchid	
Platanthera lacera (Michx.) G.Don	green fringed orchid	Orchidaceae	orchid	
Platanthera peramoena (Gray) Gray	purple fringeless orchid	Orchidaceae	orchid	
Platanus occidentalis L.	American sycamore	Platanaceae	plane-tree	X
Pluchea odorata (L.) Cass.	saltmarsh fleabane or sweetscent	Asteraceae	aster	
Poa annua L. *	annual bluegrass	Poaceae	grass	
Poa autumnalis Muhl. ex Ell.	autumn bluegrass	Poaceae	grass	
Poa compressa L. **	Canada bluegrass	Poaceae	grass	
Poa cuspidata Nutt.	early bluegrass	Poaceae	grass	
Poa pratensis L. ssp. pratensis	Kentucky bluegrass	Poaceae	grass	
Poa sylvestris Gray	woodland bluegrass	Poaceae	grass	
Poa trivialis L. **	rough bluegrass	Poaceae	grass	
Podophyllum peltatum L.	mayapple	Berberidaceae	barberry	
Podostemum ceratophyllum Michx.	hornleaf riverweed	Podostemaceae	riverweed	
Polygala curtissii Gray	Curtiss' milkwort	Polygalaceae	milkwort	
Polygala incarnata L.	procession flower	Polygalaceae	milkwort	
Polygala mariana P. Mill.	Maryland milkwort	Polygalaceae	milkwort	
Polygala sanguinea L.	purple milkwort	Polygalaceae	milkwort	
Polygala verticillata L.	whorled milkwort	Polygalaceae	milkwort	
Polygonatum biflorum (Walt.) Ell.	smooth Solomon's seal	Liliaceae	lily	
Polygonatum biflorum (Walt.) Ell. var. biflorum	smooth Solomon's seal	Liliaceae	lily	
Polygonum aviculare L. *	common or prostrate knotweed	Polygonaceae	smartweed	
Polygonum erectum L.	erect knotweed	Polygonaceae	smartweed	
Polygonum tenue Michx.	plateleaf knotweed	Polygonaceae	smartweed	
Polypodium virginianum complex	rock or common polypody	Polypodiaceae	polypody fern	
Polystichum acrostichoides (Michx.) Schott	Christmas fern	Dryopteridaceae	wood fern family	X
Pontederia cordata L.	pickerelweed	Pontederiaceae	pickerelweed	
Populus alba L. **	white poplar	Salicaceae	willow	
Populus deltoides Bartram ex Marshall ssp. deltoides	eastern cottonwood	Salicaceae	willow	
Populus grandidentata Michx.	bigtooth aspen	Salicaceae	willow	X
Porteranthus trifoliatus (L.) Britt.	Bowman's root	Rosaceae	rose	
Portulaca oleracea L. *	little hogweed	Portulacaceae	purslane	
Potamogeton diversifolius Raf.	waterthread pondweed	Potamogetonaceae	pondweed	
Potamogeton epihydrus Raf.	ribbonleaf pondweed	Potamogetonaceae	pondweed	
Potamogeton foliosus Raf. ssp. foliosus	leafy pondweed	Potamogetonaceae	pondweed	

Potamogeton pusillus L. ssp. pusillus	small pondweed	Potamogetonacea e	pondweed	
Potentilla canadensis L.	dwarf cinquefoil	Rosaceae	rose	
Potentilla norvegica L.	Norwegian cinquefoil	Rosaceae	rose	
Potentilla recta L. *	sulphur cinquefoil	Rosaceae	rose	
Potentilla simplex Michx.	common cinquefoil	Rosaceae	rose	
Prenanthes serpentaria Pursh	lion's foot	Asteraceae	aster	
Proserpinaca palustris L.	marsh maidenweed	Haloragaceae	water milfoil	
Prunella vulgaris L. *	common selfheal	Lamiaceae	mint	
Prunus americana Marshall	American plum	Rosaceae	rose	
Prunus angustifolia Marshall var. angustifolia	Watson's plum	Rosaceae	rose	
Prunus avium (L.) L. **	sweet cherry	Rosaceae	rose	
Prunus cerasifera Ehrh. *	cherry plum	Rosaceae	rose	
Prunus munsoniana W. Wight & Hedrick	wild goose plum	Rosaceae	rose	
Prunus persica (L.) Batsch *	peach	Rosaceae	rose	
Prunus serotina Ehrhart ssp. serotina	black cherry	Rosaceae	rose	X
Pseudognaphalium helleri (Britt.) A. Anderb. var. micradenum Weatherby) Kartesz	Heller's cudweed	Asteraceae	aster	
Pseudognaphalium obtusifolium (L.) Hilliard & Burtt	rabbit tobacco (cudweed)	Asteraceae	aster	
Pteridium aquilinum (L.) Kuhn	western brackenfern	Dennstaedtiaceae	bracken	
Pueraria montana (Loureiro) Merritt var. lobata (Willd.) Maesen & S. Almeida **	kudzu	Fabaceae	pea	
Pycnanthemum incanum (L.) Michx.	hoary mountainmint	Lamiaceae	mint	
Pycnanthemum tenuifolium Schrad.	narrowleaf mountainmint	Lamiaceae	mint	
Pycnanthemum torreyi Benth.	Torrey's mountainmint	Lamiaceae	mint	
Pyrola americana Sweet	American wintergreen	Pyrolaceae	wintergreen	
Pyrola elliptica Nutt.	waxflower shinleaf	Pyrolaceae	wintergreen	
Pyrus calleryana **	callery pear or Bradford pear	Rosaceae	rose	X
Pyrus communis L. **	common pear	Rosaceae	rose	
Pyrus pyrifolia (Burm. f.) Nakai *	Chinese pear	Rosaceae	rose	
Quercus alba Linnaeus	white oak	Fagaceae	beech	X
Quercus bicolor Willdenow	swamp white oak	Fagaceae	beech	
Quercus coccinea Muenchhausen	scarlet oak	Fagaceae	beech	
Quercus falcata Michaux	southern red oak	Fagaceae	beech	X
Quercus ilicifolia	scrub oak	Fagaceae		
Quercus imbricaria Michaux	shingle oak	Fagaceae	beech	
Quercus marilandica Muenchhausen var. marilandica	blackjack oak	Fagaceae	beech	
Quercus montana Linnaeus	chestnut oak	Fagaceae	beech	
Quercus muhlenbergii Engelmann	swamp chestnut oak	Fagaceae	beech	
Quercus palustris Muenchhausen	pin oak	Fagaceae	beech	X
Quercus phellos Linnaeus	willow oak	Fagaceae	beech	X
Quercus rubra Linnaeus var. rubra	northern red oak	Fagaceae	beech	X
Quercus rubra var. borealis (F. Michaux) Farwell	American red oak	Fagaceae	beech	
Quercus stellata Wangenheim	post oak	Fagaceae	beech	X
Quercus velutina Lamarck	black oak	Fagaceae	beech	X
Ranunculus abortivus L.	small flowered crowfoot or littleleaf buttercup	Ranunculaceae	buttercup	
Ranunculus allegheniensis Britt.	Allegheny Mountain buttercup	Ranunculaceae	buttercup	
Ranunculus bulbosus L. *	bulbous buttercup or St. Anthony's turnip	Ranunculaceae	buttercup	
Ranunculus hispidus Michx. var. caricetorum (Greene) T. Duncan	bristly buttercup	Ranunculaceae	buttercup	
Ranunculus hispidus Michx. var. hispidus	bristly buttercup	Ranunculaceae	buttercup	
Ranunculus micranthus Nutt.	rock buttercup	Ranunculaceae	buttercup	
Ranunculus parviflorus L. *	smallflower buttercup	Ranunculaceae	buttercup	
Ranunculus pusillus Poir. in Lamarck var. pusillus	low spearwort	Ranunculaceae	buttercup	

Ranunculus recurvatus Poir. var. recurvatus	blisterwort	Ranunculaceae	buttercup		
Ranunculus repens L. *	creeping buttercup	Ranunculaceae	buttercup		
Ranunculus sardous Crantz *	hairy buttercup	Ranunculaceae	buttercup		
Ranunculus sceleratus L. var. sceleratus	cursed buttercup	Ranunculaceae	buttercup		
Rhexia mariana L. var. mariana	Maryland meadow beauty	Melastomataceae	melastoma		
Rhexia virginica L.	Virginia meadow beauty	Melastomataceae	melastoma		
Rhododendron maximum L.	great laurel	Ericaceae	heath		
Rhododendron periclymenoides (Michx.) Shinners	pink azalea	Ericaceae	heath		
Rhododendron prinophyllum (Small) Millais	early azalea	Ericaceae	heath		
Rhododendron viscosum (L.) Torr.	swamp azalea	Ericaceae	heath		
Rhus aromatica Aiton var. aromatica	fragrant sumac	Anacardiaceae	cashew		
Rhus copallinum L.	winged or shining sumac	Anacardiaceae	cashew		X
Rhus glabra L.	smooth sumac	Anacardiaceae	cashew		
Rhus hirta (L.) Sudworth	staghorn sumac	Anacardiaceae	cashew		
Rhynchospora capitellata (Michaux) Vahl	brownish beaksedge	Cyperaceae	sedge		
Rhynchospora globularis (Chapman) Small var. globularis	globe beaksedge	Cyperaceae	sedge		
Rhynchospora glomerata (L.) Vahl	clustered beaksedge	Cyperaceae	sedge		
Rhynchospora gracilenta Gray	slender beaksedge	Cyperaceae	sedge		
Rhynchospora macrostachya Torrey ex Gray	tall horned beaksedge	Cyperaceae	sedge		
Ribes rotundifolium Michx.	Appalachian gooseberry	Grossulariaceae	gooseberry		
Ribes rubrum L.	cultivated currant	Grossulariaceae	gooseberry		
Robinia hispida L.	bristly locust	Fabaceae	pea		
Robinia pseudoacacia L.	black locust	Fabaceae	pea		X
Rorippa palustris (Linnaeus) Besser var. fernaldiana (Butters & Abbe) Jonsell	marsh yellow cress	Brassicaceae	mustard		
Rorippa sylvestris (Linnaeus) Besser *	creeping yellow cress	Brassicaceae	mustard		
Rosa carolina L. ssp. carolina	Carolina rose	Rosaceae	rose		
Rosa multiflora Thunb. ex Murr. **	multiflora rose	Rosaceae	rose		X
Rosa palustris Marsh.	swamp rose	Rosaceae	rose		
Rosa rubiginosa L. * (or R. eglanteria)	sweet briar	Rosaceae	rose		
Rotala ramosior (L.) Koehne	lowland rotala	Lythraceae	loosestrife		
Rubus allegheniensis	blackberry	Rosaceae	rose		
Rubus argutus Link	sawtooth blackberry	Rosaceae	rose		
Rubus flagellaris Willd.	northern dewberry	Rosaceae	rose		
Rubus hispidus L.	bristly dewberry	Rosaceae	rose		
Rubus occidentalis L.	black rasberry	Rosaceae	rose		
Rubus pensilvanicus Poir.	Pennsylvania blackberry	Rosaceae	rose		
Rubus phoenicolasius Maxim. **	wine rasberry or wineberry	Rosaceae	rose		X
Rubus sp.	blackberry - undetermined species	Rosaceae	rose	X	X
Rudbeckia fulgida Ait.	green-headed or tall coneflower	Asteraceae	aster		
Rudbeckia hirta L	black-eyed susan	Asteraceae	aster		
Rudbeckia laciniata L.	cutleaf coneflower	Asteraceae	aster		
Ruellia caroliniensis (Gmelin) Steudel	hairy ruellia	Acanthaceae	acanthus		
Rumex acetosella L. *	garden sorrel	Polygonaceae	smartweed		
Rumex crispus L. **	curly dock	Polygonaceae	smartweed		
Rumex obtusifolius L. *	bitter dock	Polygonaceae	smartweed		
Sabatia angularis (L.) Pursh	rosepink	Gentianaceae	gentian		
Sabatia dodecandra (L.) BSP	marsh rose gentian	Gentianaceae	gentian		
Saccharum brevibarbe (Michx.) Pers. var. contortum (L.) R. Webster	shortbeard plumegrass	Poaceae	grass		
Saccharum giganteum (Walt.) Pers.	sugarcane plumegrass	Poaceae	grass		
Sagittaria australis (J.G.Smith) Small	longbeak arrowhead	Alismataceae	water plantain		
Sagittaria engelmanniana J.G. Smith	Engelmann's arrowhead	Alismataceae	water plantain		
Sagittaria latifolia Willdenow	broadleaf arrowhead	Alismataceae	water plantain		

Salix alba L. *	white willow	Salicaceae	willow	
Salix babylonica L. *	weeping willow	Salicaceae	willow	
Salix caroliniana Michx.	coastal plain willow	Salicaceae	willow	
Salix humilis Marshall	prairie willow	Salicaceae	willow	
Salix nigra Marsh.	black willow	Salicaceae	willow	X
Salix occidentalis Walter	Walter's coastal plain willow	Salicaceae	willow	
Salix sericea Marsh.	silky willow	Salicaceae	willow	
Salvia lyrata L.	lyreleaf sage	Lamiaceae	mint	
Sambucus canadensis L. var. canadensis	elderberry	Adoxaceae	muskroot	
Samolus valerandi L.	seaside brookweed	Primulaceae	primrose	
Sanguinaria canadensis L.	bloodroot	Papaveraceae	poppy	
Sanicula canadensis L. var. canadensis	short styled snakeroot	Apiaceae	parsley	
Sanicula odorata (Raf.) K.M. Pryer & L.R. Phillippe	clustered black snakeroot	Apiaceae	parsley	
Sanicula smallii Bickn.	Small's blacksnakeroot	Apiaceae	parsley	
Saponaria officinalis L. **	bouncingbet, soapwort	Caryophyllaceae	pink	
Sassafras albidum (Nutt.) Nees	sassafras	Lauraceae	laurel	X
Saururus cernuus L.	lizard's tail	Saururaceae	lizard's tail	
Saxifraga virginiensis Michaux	early saxifrage	Saxifragaceae	saxifrage	
Schizachyrium scoparium (Michx.) Nash var. scoparium	little bluestem	Poaceae	grass	
Schoenoplectus acutus (Muhl. ex Bigel.) Love & Love var. acutus	hardstem bulrush	Cyperaceae	sedge	
Schoenoplectus fluviatilis	river bulrush	Cyperaceae	sedge	
Schoenoplectus pungens (Vahl) Palla	common threesquare	Cyperaceae	sedge	
Schoenoplectus purshianus (Fernald) Strong var. purshianus	weakstalk bulrush	Cyperaceae	sedge	
Schoenoplectus tabernaemontani (Gmelin) Palla	softstem bulrush	Cyperaceae	sedge	
Scirpus atrovirens Willd.	green bulrush	Cyperaceae	sedge	
Scirpus cyperinus (L.) Kunth	woolgrass	Cyperaceae	sedge	
Scirpus georgianus Harper	Georgia bulrush	Cyperaceae	sedge	
Scirpus pendulus Muhlenberg	rufous bulrush	Cyperaceae	sedge	
Scirpus polyphyllus Vahl	leafy bulrush	Cyperaceae	sedge	
Scleria muhlenbergii Steudel	netted nutrush	Cyperaceae	sedge	
Scleria oligantha Michaux	littlehead nutrush	Cyperaceae	sedge	
Scleria pauciflora Muhl. ex Willd.	fewflower nutrush	Cyperaceae	sedge	
Scleria triglomerata Michaux	whip nutrush	Cyperaceae	sedge	
Scrophularia lanceolata Pursh	lanceleaf figwort	Scrophulariaceae	figwort	
Scrophularia marilandica L.	carpenter's square	Scrophulariaceae	figwort	
Scutellaria elliptica Muhl. ex Spreng.	hairy skullcap	Lamiaceae	mint	
Scutellaria integrifolia L.	narrow-leaved skullcap	Lamiaceae	mint	
Scutellaria lateriflora L. var. lateriflora	mad dog skullcap	Lamiaceae	mint	
Scutellaria nervosa Pursh	veiny skullcap	Lamiaceae	mint	
Scutellaria parvula Michx. var. missouriensis (Torr.) Goodman & Lawson	small skullcap	Lamiaceae	mint	
Scutellaria serrata Andr.	showy skullcap	Lamiaceae	mint	
Sedum sarmentosum Bunge *	stringy stonecrop	Crassulaceae	stonecrop	
Sedum ternatum Michx.	woodland stonecrop	Crassulaceae	stonecrop	
Selaginella apoda (L.) Spring	meadow spikemoss	Selaginellaceae	spike-mosses	
Senna hebecarpa (Fernald) Irwin & Barneby	American senna	Fabaceae	pea	
Senna marilandica (L.) Link	Maryland senna	Fabaceae	pea	
Sericocarpus asteroides (L.) B.S.P.	toothed whitetop aster	Asteraceae	aster	
Sericocarpus linifolius (L.) B.S.P.	narrowleaf whitetop aster	Asteraceae	aster	
Setaria faberi Herrm. **	Japanese bristlegrass	Poaceae	grass	
Setaria italica (L.) Beauv. *	foxtail bristlegrass	Poaceae	grass	
Setaria parviflora (Poir.) Kerguelen	marsh bristlegrass	Poaceae	grass	
Setaria pumila (Poir.) Roemer & Schultes *	yellow foxtail	Poaceae	grass	

Setaria viridis (L.) Beauv. var. viridis *	green bristlegrass	Poaceae	grass		
Sicyos angulatus L.	oneseed bur cucumber	Cucurbitaceae	gourd		
Sida spinosa L. *	prickly fanpetals	Malvaceae	mallow		
Silene antirrhina L.	sleepy catchfly	Caryophyllaceae	pink		
Silene caroliniana Walt. var. pensylvanica (Michx.) Fernald	wild pink	Caryophyllaceae	pink		
Silene dichotoma Ehrh. *	forked catchfly	Caryophyllaceae	pink		
Silene latifolia Poir. *	bladder campion	Caryophyllaceae	pink		
Silene stellata (L.) Ait. f.	starry campion	Caryophyllaceae	pink		
Silene vulgaris (Moench) Garcke *	maidenstears	Caryophyllaceae	pink		
Silphium asteriscus L. var. trifoliatum (L.) Clevinger	whorled rosinweed	Asteraceae	aster		
Silphium asteriscus L., s.l.	starry rosinweed	Asteraceae	aster		
Sisymbrium officinale (Linnaeus) Scopoli *	hedge mustard	Brassicaceae	mustard		
Sisyrinchium angustifolium P. Mill.	narrowleaf blue-eyed grass	Iridaceae	iris		
Sisyrinchium mucronatum Michx.	needletip blue-eyed grass	Iridaceae	iris		
Sium suave Walt.	water parsnip	Apiaceae	parsley		
Smallanthus uvedalia (L.) Mackenzie ex Small	hairy or large-flowered leafcup	Asteraceae	aster		
Smilax glauca Walt.	cat greenbriar	Smilacaceae	catbriar		X
Smilax herbacea L.	smooth carrionflower	Smilacaceae	catbriar		
Smilax rotundifolia L.	roundleaf greenbriar	Smilacaceae	catbriar	X	X
Smilax tamnoides L.	bristly greenbriar	Smilacaceae	catbriar		
Solanum carolinense L. var. carolinense	Carolina horsenettle	Solanaceae	nightshade		
Solanum dulcamara L. *	climbing nightshade	Solanaceae	nightshade		
Solanum ptycanthum Dunal	west Indian nightshade	Solanaceae	nightshade		
Solidago altissima L. var. altissima	Canada goldenrod	Asteraceae	aster		
Solidago arguta Ait.	cutleaf goldenrod	Asteraceae	aster		
Solidago bicolor L.	silverrod	Asteraceae	aster		
Solidago caesia L.	bluestem goldenrod	Asteraceae	aster		
Solidago erecta Pursh	erect goldenrod	Asteraceae	aster		
Solidago gigantea Ait.	great goldenrod	Asteraceae	aster		
Solidago juncea Ait.	early goldenrod	Asteraceae	aster		
Solidago nemoralis Ait. var. nemoralis	gray golenrod	Asteraceae	aster		
Solidago pinetorum Small	Small's goldenrod	Asteraceae	aster		
Solidago rigida L. ssp. rigida	stiff goldenrod	Asteraceae	aster		
Solidago rugosa P. Mill.	rough goldenrod	Asteraceae	aster		
Solidago speciosa Nutt. var. speciosa	showy goldenrod	Asteraceae	aster		
Solidago ulmifolia Muhl. ex Willd. var. ulmifolia	elm-leaved goldenrod	Asteraceae	aster		
Sonchus arvensis L. var. glabrescens Guenth., Grab. & Wimmer	field sowthistle	Asteraceae	aster		
Sonchus oleraceus L.	common sowthistle	Asteraceae	aster		
Sorghastrum nutans (L.) Nash	Indian grass	Poaceae	grass		
Sorghum halepense (L.) Pers. **	Johnson grass	Poaceae	grass		
Sparganium americanum Nutt.	American bur-reed	Sparganiaceae	bur-reed		
Sparganium androcladum (Engelm.) Morong	branched bur-reed	Sparganiaceae	bur-reed		
Sparganium eurycarpum Engelm. ex Gray	broadfruit bur-reed	Sparganiaceae	bur-reed		
Spartina cynosuroides (L.) Roth	saltreed grass	Poaceae	grass		
Spergularia rubra (L.) J. & K. Presl *	red sandspurrey	Caryophyllaceae	pink		
Sphenopholis nitida (Biehler) Scribn.	shiny wedgescale	Poaceae	grass		
Sphenopholis obtusata (Michx.) Scribn.	prairie wedgescale	Poaceae	grass		
Sphenopholis obtusata (Michx.) Scribn. var. major (Torr.) K.S. Erdman	prairie wedgescale	Poaceae	grass		
Sphenopholis pensylvanica (L.) A.S. Hitchc.	swamp wedgescale	Poaceae	grass		
Spiraea alba Du Roi var. latifolia (Ait.) Dippel	white meadowsweet	Rosaceae	rose		
Spiraea betulifolia Pallas ssp. corymbosa (Raf.) Taylor & McBryde	shinyleaf meadowsweet	Rosaceae	rose		

Spiraea japonica L. f. **	Japanese meadowsweet	Rosaceae	rose	
Spiranthes cernua (L.) L.C.Rich.	nodding lady's tresses	Orchidaceae	orchid	
Spiranthes lacera (Raf.) Raf. var. gracilis (Bigelow) Luer	northern slender lady's tresses	Orchidaceae	orchid	
Spiranthes ochroleuca (Rydb.) Rydb.	yellow nodding lady's tresses	Orchidaceae	orchid	
Spiranthes ovalis Lindl. var. erostellata Catling	October lady's tresses	Orchidaceae	orchid	
Spiranthes praecox (Walt.) S.Wats.	greenvein lady's tresses	Orchidaceae	orchid	
Spiranthes tuberosa Raf.	little lady's tresses	Orchidaceae	orchid	
Spiranthes vernalis Engelm. & Gray	spring lady's tresses	Orchidaceae	orchid	
Sporobolus vaginiflorus (Torr. ex Gray) Wood	poverty dropseed	Poaceae	grass	
Stachys hispida Pursh	hairy hedgenettle	Lamiaceae	mint	
Stachys pilosa var. arenicola (Britt.) G. Mulligan & D. Munroe	hairy hedgenettle	Lamiaceae	mint	
Staphylea trifolia L.	American bladdernut	Staphyleaceae	bladdernut	
Stellaria graminea L. *	lesser stitchwort	Caryophyllaceae	pink	
Stellaria longifolia Muhl.	longleaf starwort	Caryophyllaceae	pink	
Stellaria media (L.) Vill. **	common chickweed	Caryophyllaceae	pink	X
Stellaria pubera Michx.	star chickweed	Caryophyllaceae	pink	
Strophostyles helvula (L.) Ell.	amberique bean	Fabaceae	pea	
Strophostyles umbellata (Muhl. ex Willd.) Britt.	pink fuzzybean	Fabaceae	pea	
Stuckenia pectinata (L.) Borner	sago pondweed	Potamogetonacea e	pondweed	
Stylosanthes biflora (L.) B.S.P.	sidebean pencilflower	Fabaceae	pea	
Symphoricarpos orbiculatus Moench	coralberry	Caprifoliaceae	honeysuckle	X
Symphyotrichum cordifolium (L.) Nesom	blue wood aster	Asteraceae	aster	
Symphyotrichum dumosum (L.) Nesom	bushy aster	Asteraceae	aster	
Symphyotrichum laeve (L.) A. & D. Love var. laeve	smooth aster	Asteraceae	aster	
Symphyotrichum lanceolatum (Willd.) Nesom	white panicle aster	Asteraceae	aster	
Symphyotrichum lateriflorum (L.) A.& D. Love	calico aster	Asteraceae	aster	
Symphyotrichum novae-angliae (L.) Nesom	New England aster	Asteraceae	aster	
Symphyotrichum patens (Ait.) Nesom	late purple aster	Asteraceae	aster	
Symphyotrichum pilosum (Willd.) Nesom	hairy white old field aster	Asteraceae	aster	
Symphyotrichum pilosum (Willd.) Nesom var. pringlei (Gray) Nesom	Pringle's aster	Asteraceae	aster	
Symphyotrichum prenanthoides (Muhl. ex Willd.) Nesom	crooked stem aster	Asteraceae	aster	
Symphyotrichum puniceum (L.) A.& D. Love var. puniceum	purple stem aster	Asteraceae	aster	
Symphyotrichum racemosum (Ell.) Nesom	smooth white old field aster	Asteraceae	aster	
Symphyotrichum undulatum (L.) Nesom	wavy leaf aster	Asteraceae	aster	
Symplocarpus foetidus (L.) Salisbury ex W.P. C. Barton	skunk cabbage	Araceae	arum	
Taenidia integerrima (L.) Drude	yellow pimpernel	Apiaceae	parsley	
Taraxacum erythrospermum Andrzejowski ex Besser	red-seeded dandelion	Asteraceae	aster	
Taraxacum officinale G.H. Weber ex Wiggers *	dandelion	Asteraceae	aster	
Taxus canadensis Marshall	Canada yew	Taxaceae	yew	
Tephrosia virginiana (L.) Pers.	Virginia tephrosia	Fabaceae	pea	
Teucrium canadense L.	American germander	Lamiaceae	mint	
Thalictrum dioicum L.	early meadow-rue	Ranunculaceae	buttercup	
Thalictrum pubescens Pursh	king of the meadow	Ranunculaceae	buttercup	
Thalictrum revolutum DC.	waxyleaf meadow-rue	Ranunculaceae	buttercup	
Thalictrum thalictroides (L.) Eames & Boivin	rue anemone	Ranunculaceae	buttercup	
Thaspium barbinode (Michx.) Nutt.	hairyjoint meadow parsnip	Apiaceae	parsley	
Thaspium trifoliatum (L.) Gray	purple meadow parsnip	Apiaceae	parsley	
Thelypteris noveboracensis (L.) Nieuwl.	New York fern	Thelypteridaceae	marsh fern	
Thelypteris palustris Schott var. pubescens (Lawson) Fern.	eastern marsh fern	Thelypteridaceae	marsh fern	
Thlaspi arvense Linnaeus *	wild field pennycress	Brassicaceae	mustard	
Tilia americana L.	American basswood	Tiliaceae	linden	
Tipularia discolor (Pursh) Nutt	Crane-fly orchid	Orchidaceae	orchid	X

Toxicodendron radicans (L.) Kuntze var. radicans	poison ivy	Anacardiaceae	cashew	X
Toxicodendron vernix (L.) Kuntze	poison sumac	Anacardiaceae	cashew	
Tragopogon dubius Scop.	goat's beard	Asteraceae	aster	
Triadenum virginicum (L.) Raf.	Virginia marsh St. Johnswort	Clusiaceae	St. Johnswort	
Triadenum walteri (J. G.Gmel.) Gleason	greater marsh St. Johnswort	Clusiaceae	St. Johnswort	
Trichophorum planifolium (Sprengel) Palla	bashful bulrush	Cyperaceae	sedge	
Trichostema brachiatum L.	fluxweed	Lamiaceae	mint	
Trichostema dichotomum L.	forked bluecurls	Lamiaceae	mint	
Tridens flavus (L.) A.S. Hitchc. var. flavus	purpletop	Poaceae	grass	X
Trifolium arvense L. *	rabbitfoot clover	Fabaceae	pea	
Trifolium aureum Pollich *	golden clover	Fabaceae	pea	
Trifolium campestre Schreb. *	field clover	Fabaceae	pea	
Trifolium dubium Sibthorp *	suckling clover	Fabaceae	pea	
Trifolium hybridum L. *	alsike clover	Fabaceae	pea	
Trifolium pratense L. *	red clover	Fabaceae	pea	
Trifolium reflexum L.	buffalo clover	Fabaceae	pea	
Trifolium repens L. *	white clover	Fabaceae	pea	
Triodanis perfoliata (L.) Nieuwl. var. perfoliata	Venus looking glass	Campanulaceae	bellflower	
Triosteum perfoliatum L.	feverwort	Caprifoliaceae	honeysuckle	
Tripsacum dactyloides (L.) L.	eastern gama grass	Poaceae	grass	
Tsuga canadensis (L.) Carriere	eastern hemlock	Pinaceae	pine	X
Tussilago farfara L. **	coltsfoot	Asteraceae	aster	
Typha angustifolia L.	narrow-leaved cattail	Typhaceae	cattail	
Typha domingensis Pers.	pale cattail	Typhaceae	cattail	
Typha latifolia L.	broad-leaved cattail	Typhaceae	cattail	
Ulmus americana L.	American elm	Ulmaceae	elm	X
Ulmus parvifolia Jacq. *	Chinese elm	Ulmaceae	elm	
Ulmus rubra Muhl.	slippery elm	Ulmaceae	elm	X
Urtica dioica L., s.l. *	stinging nettle	Urticaceae	nettle	
Utricularia gibba L.	humped bladderwort	Lentibulariaceae	bladderwort	
Utricularia vulgaris L. ssp. macrorhiza	common bladderwort	Lentibulariaceae	bladderwort	
Uvularia perfoliata L.	perfoliate bellwort	Liliaceae	lily	
Uvularia sessilifolia L.	sessileleaf bellwort	Liliaceae	lily	
Vaccinium ×marianum S. Wats. (pro sp.)	vaccinium	Ericaceae	heath	
Vaccinium fuscatum Ait.	black highbush blueberry	Ericaceae	heath	
Vaccinium pallidum Ait.	Blue Ridge blueberry	Ericaceae	heath	
Vaccinium sp.	blueberry	Ericaceae	heath	X
Vaccinium stamineum L.	deerberry	Ericaceae	heath	
Valerianella locusta (L.) Latterade *	Lewiston cornsalad	Valerianaceae	valerian	
Valerianella radiata (L.) Dufr.	beaked cornsalad	Valerianaceae	valerian	
Veratrum virginicum (L.) Aiton	Virginia bunchflower	Liliaceae	lily	
Veratrum viride Aiton var. viride	green false hellebore	Liliaceae	lily	
Verbascum blattaria L. *	moth mullein	Scrophulariaceae	figwort	
Verbascum thapsus L. **	common mullein	Scrophulariaceae	figwort	
Verbena hastata L.	swamp verbena	Verbenaceae	verbena	
Verbena simplex Lehm.	narrowleaf vervain	Verbenaceae	verbena	
Verbena urticifolia L.	white vervain	Verbenaceae	verbena	
Verbesina alternifolia (L.) Britt. ex Kearney	yellow ironweed or wingstem	Asteraceae	aster	
Vernonia glauca (L.) Willd.	broad-leaved ironweed	Asteraceae	aster	
Vernonia noveboracensis (L.) Michx.	New York ironweed	Asteraceae	aster	
Veronica agrestis L. *	green field speedwell	Scrophulariaceae	figwort	
Veronica arvensis L. *	corn speedwell	Scrophulariaceae	figwort	
Veronica hederifolia	ivy-leaved speedwell	Scrophulariaceae	figwort	
Veronica officinalis L.	common speedwell or gypsyweed	Scrophulariaceae	figwort	

Veronica peregrina L. var. peregrina	hairy purslane speedwell	Scrophulariaceae	figwort		
Veronica persica Poiret	bird's eye speedwell	Scrophulariaceae	figwort		
Veronica serpyllifolia L. var. serpyllifolia *	thymeleaf speedwell	Scrophulariaceae	figwort		
Veronicastrum virginicum (L.) Farwell	Culver's root	Scrophulariaceae	figwort		
Viburnum acerifolium L.	maple-leaf viburnum	Adoxaceae	muskroot		X
Viburnum dentatum L.	southern arrowwood	Adoxaceae	muskroot		
Viburnum dentatum L. var. lucidum Aiton	southern arrowwood	Adoxaceae	muskroot		
Viburnum dilatatum**	Linden viburnum	Adoxaceae	muskroot		X
Viburnum nudum L.	possumhaw	Adoxaceae	muskroot		
Viburnum plicatum*	doublefile	Adoxaceae	muskroot		X
Viburnum prunifolium L.	smooth blackhaw viburnum	Adoxaceae	muskroot		X
Vicia caroliniana Walt.	Carolina vetch	Fabaceae	pea		
Vicia cracca L. *	bird vetch	Fabaceae	pea		
Vicia sativa L. *	garden vetch	Fabaceae	pea		
Vicia tetrasperma (L.) Schreb. *	lentil vetch	Fabaceae	pea		
Vicia villosa Roth ssp. varia (Host) Corbiere *	winter vetch	Fabaceae	pea		
Vinca minor L. **	periwinkle	Apocynaceae	dogbane	X	X
Viola affinis Le Conte	sand violet	Violaceae	violet		
Viola bicolor Pursh	field pansy	Violaceae	violet		
Viola blanda Willd.	sweet white violet	Violaceae	violet		
Viola canadensis L. var. canadensis	Canada white violet	Violaceae	violet		
Viola cucullata Ait.	marsh blue violet	Violaceae	violet		
Viola fimbriatula J.E. Smith	ovate-leaved violet	Violaceae	violet		
Viola hirsutula Brainerd	southern woodland violet	Violaceae	violet		
Viola lanceolata L. ssp. lanceolata	bog white violet	Violaceae	violet		
Viola palmata L.	early blue violet	Violaceae	violet		
Viola pedata L.	birdfoot violet	Violaceae	violet		
Viola primulifolia L.	primrose-leaf violet	Violaceae	violet		
Viola pubescens Aiton	downy yellow violet	Violaceae	violet		
Viola pubescens Aiton var. pubescens	downy yellow violet	Violaceae	violet		
Viola pubescens Aiton var. scabriuscula Schwein. ex Torr. & Gray	downy yellow violet	Violaceae	violet		
Viola sagittata Aiton	arrowleaf violet	Violaceae	violet		
Viola sororia Willd.	common blue violet	Violaceae	violet		
Viola striata Ait.	striped cream violet	Violaceae	violet		
Vitis aestivalis Michx.	summer grape	Vitaceae	grape		
Vitis labrusca L.	fox grape	Vitaceae	grape		
Vitis riparia Michx.	riverbank grape	Vitaceae	grape		
Vitis rupestris Scheele	sand grape	Vitaceae	grape		
Vitis sp.	grape	Vitaceae	grape		X
Vitis vulpina L.	frost grape	Vitaceae	grape		
Vulpia myuros (L.) K.C. Gmel. *	rat-tail fescue	Poaceae	grass		
Vulpia octoflora (Walt.) Rydb.	sixweeks fescue	Poaceae	grass		
Wisteria sinensis	Chinese wisteria	Fabaceae	pea		
Wolffiella gladiata (Hegelm.) Hegelm.	Florida mudmidget	Lemnaceae	duckweed		
Woodsia obtusa (Spreng.) Torr. ssp. obtusa	bluntlobe cliff fern	Dryopteridaceae	wood fern family		
Woodwardia areolata (L.) T. Moore	netted chain fern	Blechnaceae	chain fern		
Xanthium spinosum L.	spiny cocklebur	Asteraceae	aster		
Xanthium strumarium L. **	hairy cocklebur	Asteraceae	aster		
Xyris torta J.M. Smith	slender yelloweyed grass	Xyridaceae	yellow-eyed grass		
Yucca filamentosa L.	yucca	Agavaceae	agave		
Zanthoxylum americanum P. Mill.	common pricklyash	Rutaceae	citrus		
Zizania aquatica L. var. aquatica	annual wildrice	Poaceae	grass		

Zizia aptera (Gray) Fern.	heart-leaved Alexander	Apiaceae	parsley
Zizia aurea (L.) W.D.J. Koch	golden Alexander	Apiaceae	parsley

* denotes mildly invasive non-native species
** denotes highly invasive non-native species

Amphibians and Reptiles

Scientific Name	Common Name	Found at Dove's Landing (X)
Amphibians		
Ambystoma maculatum	Salamander, spotted	
Ambystoma opacum	Salamander, marbled	
Bufo americanus	Toad, American	
Bufo fowleri	Toad, Fowler's	
Desmognathus fuscus	Salamander, northern dusky	
Eurycea bislineata	Salamander, northern two-lined	
Eurycea guttolineata	Salamander, three-lined	
Hemidactylium scutatum	Salamander, four-toed	
Hyla chrysoscelis	Treefrog, Cope's gray	
Hyla versicolor	Treefrog, gray	
Plethodon cinereus	Salamander, northern red-backed	
Plethodon cylindraceus	Salamander, slimy	
Pseudacris crucifer crucifer	Peeper, northern spring	
Pseudacris feriarum	Frog, southeastern chorus	
Pseudotriton montanus	Salamander, mud	
Pseudotriton ruber ruber	Salamander, northern red	
Rana clamitans melanota	Frog, southern green	
Rana palustris	Frog, pickerel	
Rana sphenocephala utricularius	Frog, southern leopard	
Rana sylvatica	Frog, wood	
Scaphiopus holbrooki	Toad, eastern spadefoot	
Reptiles		
Agkistrodon contortrix mokasen	Copperhead, northern	
Apalone spinifer spinifer*	Eastern Spiny Softshell	
Carphophis amoenus amoenus	Snake, eastern worm	
Chelydra serpentina serpentina	Turtle, common snapping	
Chrysemys picta picta	Turtle, eastern painted	
Chrysemys picta dorsalis	Turtle, Southern painted	
Clemmys guttata	Turtle, Spotted	
Coluber constrictor constrictor	Racer, northern black	
Diadophis punctatus edwardsii	Snake, northern ringneck	
Elaphe guttata	Snake, corn	
Elaphe obsoleta obsoleta	Snake, black rat	
Eumeces fasciatus	Skink, five-lined	
Eumeces laticeps	Skink, broadhead	
Graptemys geographica*	Northern Map Turtle	
Heterodon platirhinos	Snake, eastern hognose	

Kinosternon subrubrum subrubrum	Turtle, eastern mud	
Lampropeltis calligaster rhombomacula	Kingsnake, mole	
Lampropeltis getula getula	Kingsnake, eastern	
Nerodia sipedon sipedon	Snake, northern water	
Opheodrys aestivus aestivus	Snake, rough green	
Pseudemys rubriventris rubriventris	Slider, northern red-bellied	
Regina septemvittata	Snake, queen	
Sceloporus undulatus hyacinthinus	Lizard, northern fence	
Scincella lateralis	Skink, ground	
Sternotherus odoratus	Turtle, eastern musk (= stinkpot)	
Storeria occipitomaculata	Snake, redbelly	
Terrapene carolina carolina	Turtle, eastern box	
Thamnophis sauritus sauritus	Snake, eastern ribbon	
Thamnophis sirtalis sirtalis	Snake, eastern garter	
Trachemys scripta elegans	Slider, red-eared	
Trachemys scripta scripta	Slider, yellow-bellied	
Virginia valeriae valeriae	Snake, eastern smooth earth	

Bird Species - Common Name	Birds Observed
Snow Goose	
Cackling Goose	
Canada Goose	
Tundra Swan	
Mute Swan	
Wood Duck	
Gadwall	
Am Wigeon	
Eurasian Wigeon	
Am Black Duck	
Mallard	
No Shoveler	
No Pintail	
Am Gr-wg Teal	
Canvasback	
Redhead	
Ring-nkd Duck	
Greater Scaup	
Lesser Scaup	
scaup sp.	
Bufflehead	

Com Goldeneye	
Long-tailed Duck	
Hooded Merg	
Com Merganser	
Red-br Merg	
Ruddy Duck	
Common Loon	
Pied-bd Grebe	
Red-neckd Grebe	
DC Cormorant	
Great Bl Heron	
Great Egret	
Green Heron	
Black Vulture	X
Turkey Vulture	X
Bald Eagle	
B Eagle, Adult	X
B Eagle, Imm	
Osprey	
No Harrier	

Sharp-sh Hawk	
Cooper's Hawk	
accipiter sp.	
Red-sh Hawk	
Red-tailed Hawk	X
Am Kestrel	
Merlin	
Wild Turkey	X
No Bobwhite	
King Rail	
American Coot	
Killdeer	
Gr Yellowlegs	
Less Yellowlegs	
Wilson's Snipe	
Am Woodcock	
Bonaparte's Gull	
Ring-billed Gull	
Herring Gull	
Iceland Gull	

Ls Blk-bd Gull	
Grt Bl-bkd Gull	
gull sp.	
N Rough-winged Swallow	
Tree Swallow	
Rock Pigeon	
Mourning Dove	X
Black-billed Cuckoo	
Yellow-billed Cuckoo	
E Screech Owl	
Great Horned Owl	
Barred Owl	
Belted Kingfisher	
Red-blld Woodpecker	X
Yel-blld Sapsucker	
Downy Woodpecker	X
Hairy Woodpecker	
No. Flicker	X
Pileated Woodpecker	X
Eastern Phoebe	
Eastern Pewee	
Acadian Flycatcher	
Great Crested Flycatcher	
Red-eyed Vireo	
White-eyed Vireo	
Horned Lark	
Blue Jay	X
American Crow	X
Fish Crow	
crow sp.	
Com. Raven	
Car Chickadee	X
Tufted Titmouse	X
Red-br Nuthatch	
White-br Nuthatch	X
Brown Creeper	
Carolina Wren	X
Winter Wren	
GC Kinglet	
RC Kinglet	
Eastern Bluebird	X
Hermit Thrush	X
American Robin	X

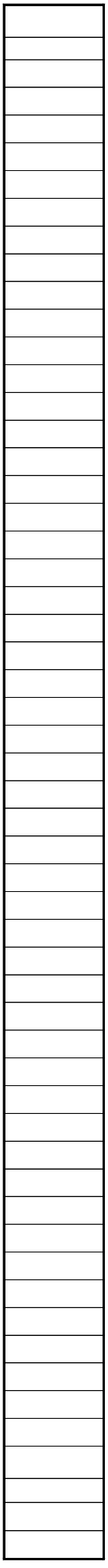
Gray Catbird	
No Mockingbird	X
Brown Thrasher	
Cedar Waxwing	X
E Starling	
Blackpole Warbler	
Black-and-White Warbler	
Yell-rump Warbler	X
Yellow-throated Warbler	
Palm Warbler	
Pine Warbler	
Prothonotary Warbler	
Com Yellowthroat	
Magnolia Warbler	
Scarlet Tanager	
E Towhee	
Am Tree Sp	
Chipping Sp	
Field Sp	
Savannah Sp	
Fox Sp	
Song Sparrow	
Lincoln's Sp	
Swamp Sp	
White-thr Sp	X
White-crn Sp	
Dark-eyed Junco	X
No Cardinal	
Red-wgd Blkbird	
E Meadowlark	
Rusty Blackbird	
Com Grackle	
Brown-hd Cowbird	
blackbird sp.	
Baltimore Oriole	
Indigo Bunting	
Purple Finch	
House Finch	
Pine Siskin	
Am Goldfinch	
House Sparrow	

MANASSAS-BULL RUN CBC CHECKLIST - 18 Dec 11					COMPOSITE RESULTS		
SPECIES	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	TOTALS
Snow Goose							
Canada Goose	928	527	1573	966	479	492	4469
Mute Swan							
Tundra Swan							
Wood Duck							
Gadwall			13				13
American Black Duck				4			4
Mallard	52	34	153	54		36	329
Northern Shoveler							
Northern Pintail							
Green-winged Teal							
Canvasback							
Ring-necked Duck	3			9			12
Lesser Scaup							
Bufflehead				9			9
Common Goldeneye							
Hooded Merganser			12	28	6		46
Common Merganser			125	6			131
Red-breasted Merganser							
Ruddy Duck							
duck, sp							
Ring-necked Pheasant							
Ruffed Grouse							
Wild Turkey							
Northern Bobwhite							
Common Loon							
Pied-billed Grebe	3		11				14
Horned Grebe							
Double-crested Cormorant	1	1	1	1			4
Great Blue Heron	2	2	4	2	1	4	15
Black Vulture	12	13	4	20	28	122	199
Turkey Vulture	49	23	13	15	54	57	211
Bald Eagle: adult			6			3	9
immature			3	1			4
Northern Harrier	3					3	6
Sharp-shinned Hawk	1	2					3
Cooper's Hawk	6	1		3		1	11
accipiter sp	2					1	3
Red-shouldered Hawk	11	8	5	3	5	15	47
Red-tailed Hawk	16	6	10	4	8	14	58
Rough-legged Hawk *							
American Kestrel				1	3		4
Merlin *	1						1
Peregrine Falcon *							
American Coot			1				1
Killdeer	2		8		17		27
sandpiper, sp							
Wilson's Snipe							
American Woodcock							
Great Egret *							
MANASSAS-BULL RUN CBC CHECKLIST - 18 Dec 11					COMPOSITE RESULTS - p		
SPECIES	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	TOTALS
Ring-billed Gull	13	3	462	37	5	82	542
Herring Gull				15			15

Great Black-backed Gull							
gull, sp		8		6	4		18
Rock Dove (pigeon)	97	28	81	20		68	294
Mourning Dove	100	89	30	78	4	91	392
Barn Owl							
Eastern Screech Owl							
Great Horned Owl	1					1	2
Barred Owl					2		2
Short-eared Owl							
Belted Kingfisher	2	1	3	1		2	9
Red-headed Woodpecker					2		2
Red-bellied Woodpecker	57	25	68	23	25	30	228
Yellow-bellied Sapsucker	2	5	4		4	4	19
Downy Woodpecker	47	30	48	10	18	41	194
Hairy Woodpecker	13		6		4	1	24
Northern (Yellow-shafted) Flicker	20	13	38	10	23	58	162
Pileated Woodpecker	11	8	9	2	6	5	41
Eastern Phoebe							
Blue Jay	92	50	107	68	108	65	490
American Crow	152	1592	306	79	83	90	2072
Fish Crow	82	83	39	4	26	160	394
crow, sp	44	74		9	56	50	233
Common Raven	4					3	7
Horned Lark							
Carolina Chickadee	224	153	139	58	100	98	772
Tufted Titmouse	227	76	106	43	43	81	576
Red-breasted Nuthatch							
White-breasted Nuthatch	100	49	67	13	16	23	268
Brown Creeper	3		3		5		11
Carolina Wren	66	50	69	22	30	41	278
Eastern Winter Wren	8	1	6	1	4	2	22
Golden-crowned Kinglet	2	1	17	2	4	2	28
Ruby-crowned Kinglet	2	1					3
Eastern Bluebird	56	39	86	31	129	75	416
Hermit Thrush	5	2	6		3	1	17
American Robin	356	149	55	227	82	405	1274
Gray Catbird							
Northern Mockingbird	22	12	11	27	27	38	137
Brown Thrasher			1				1
European Starling	543	213	26	626	45	558	2011
American Pipit *							
Cedar Waxwing	65	113	29	117	271	547	1142
Yellow-rumped (Myrtle) Warbler	15		30	22	38	54	159
Pine Warbler							
Palm Warbler						1	1
Eastern Towhee	1	8	11		4		24
American Tree Sparrow		1			3	1	5

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	TOTALS
Chipping Sparrow	6	1		1	4	5	17
Field Sparrow			7	10	24	19	60
Vesper Sparrow *							
Savannah Sparrow		4			1		5
Fox Sparrow		1	2				3

Song Sparrow	15	40	55	34	45	78	267
Swamp Sparrow		1 CW			3		3
White-throated Sparrow	104	74	93	43	35	92	441
White-crowned Sparrow						1	1
sparrow, sp							
Dark-eyed (Slate-colored) Junco	301	105	146	88	135	296	1071
Lapland Longspur *							
Northern Cardinal	142	116	67	53	45	107	530
Red-winged Blackbird					75	180	255
Eastern Meadowlark					17	1	18
Rusty Blackbird *							
Common Grackle			1				1
Brown-headed Cowbird							
blackbird, sp							
Purple Finch							
House Finch	60	15	12	47	17	38	189
Pine Siskin							
American Goldfinch	52	23	61	5	15	52	208
Evening Grosbeak							
House Sparrow	74	52	15	29		21	191
Green Heron	1						1
Lesser Yellowlegs			1				1
Common Yellowthroat						1 CW	1 CW
Total Species	55	47	56	49	50	52	78
Total Number of Birds	4,279	3,925	4,265	2,987	2,191	4,316	21,177
Low temp	26					High temp	43
	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	TOTALS
# field observers	26	20	11	14	10	22	103
Minimum # parties	6	5	4	4	4	6	29
Maximum # parties	8	5	4	4	4	9	34
# feeder watchers	1					1	2
Feeder watch hours	3					4	7
Owling hours						1.50	1.50
Owling miles						0.25	0.25
Hours on foot	37.50	21.75	18.25	8.00	24.25	35.50	145.25
Hours by car	4.00	3.25	2.00	8.00	3.00	5.50	25.75
Total party hours	41.50	25.00	20.25	16.00	27.25	41.00	171.00
Miles on foot	33.00	16.75	19.50	8.00	19.20	24.50	121.00
Miles by car	74.50	53.00	10.00	58.00	29.20	67.50	292.25
Total party miles	####	69.75	29.50	66.00	48.40	92.00	413.25
Compiler						Shipman	



2071.8

DEPARTMENT OF GAME AND INLAND FISHERIES WILDLIFE REPORT
Known or Likely Species in the Doves Landing Area of Prince William County

496 Known or Likely Species ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name
10032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus
60006	SE	II	Floater, brook	Alasmidonta varicosa
30062	ST	I	Turtle, wood	Glyptemys insculpta
40129	ST	I	Sandpiper, upland	Bartramia longicauda
40293	ST	I	Shrike, loggerhead	Lanius ludovicianus
40379	ST	I	Sparrow, Henslow's	Ammodramus henslowii
40292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
100248	FS	I	Fritillary, regal	Speyeria idalia idalia

40093	FS	II	Eagle, bald	Haliaeetus leucocephalus
60029	FS	III	Lance, yellow	Elliptio lanceolata
30063	CC	III	Turtle, spotted	Clemmys guttata
30012	CC	IV	Rattlesnake, timber	Crotalus horridus
40372		I	Crossbill, red	Loxia curvirostra
40225		I	Sapsucker, yellow-bellied	Sphyrapicus varius
40319		I	Warbler, black-throated green	Dendroica virens
40306		I	Warbler, golden-winged	Vermivora chrysoptera
40038		II	Bittern, American	Botaurus lentiginosus
40052		II	Duck, American black	Anas rubripes

40213		II	Owl, northern saw-whet	Aegolius acadicus
40105		II	Rail, king	Rallus elegans
40320		II	Warbler, cerulean	Dendroica cerulea
40266		II	Wren, winter	Troglodytes troglodytes
30068		III	Turtle, eastern box	Terrapene carolina carolina
40037		III	Bittern, least	Ixobrychus exilis exilis
40094		III	Harrier, northern	Circus cyaneus
40035		III	Night-heron, black-crowned	Nycticorax nycticorax hoactii
40036		III	Night-heron, yellow-crowned	Nyctanassa violacea violacea
40204		III	Owl, barn	Tyto alba pratincola
40181		III	Tern, common	Sterna hirundo

40270		III	Wren, sedge	Cistothorus platensis
100150		III	Butterfly, mottled duskywing	Erynnis martialis
10038		IV	Alewife	Alosa pseudoharengus
10131		IV	Eel, American	Anguilla rostrata
10001		IV	Lamprey, least brook	Lampetra aepyptera
10040		IV	Shad, American	Alosa sapidissima
20069		IV	Salamander, eastern mud	Pseudotriton montanus montanus
20058		IV	Siren, greater	Siren lacertina
20061		IV	Spadefoot, eastern	Scaphiopus holbrookii
30045		IV	Ribbonsnake, common	Thamnophis sauritus sauritus

30017		IV	Scarletsnake, northern	Cemophora coccinea copei
30024		IV	Snake, eastern hog-nosed	Heterodon platirhinos
30033		IV	Snake, queen	Regina septemvittata
40349		IV	Blackbird, rusty	Euphagus carolinus
40100		IV	Bobwhite, northern	Colinus virginianus
40272		IV	Catbird, gray	Dumetella carolinensis
40337		IV	Chat, yellow-breasted	Icteria virens virens
40214		IV	Chuck-will's-widow	Caprimulgus carolinensis
40264		IV	Creeper, brown	Certhia americana
40202		IV	Cuckoo, yellow-billed	Coccyzus americanus

40142		IV	Dowitcher, short-billed	Limnodromus griseus
40240		IV	Flycatcher, willow	Empidonax traillii
40358		IV	Grosbeak, rose-breasted	Pheucticus ludovicianus
40028		IV	Heron, green	Butorides virescens
40229		IV	Kingbird, eastern	Tyrannus tyrannus
40344		IV	Meadowlark, eastern	Sturnella magna
40263		IV	Nuthatch, brown-headed	Sitta pusilla
40330		IV	Ovenbird	Seiurus aurocapilla
40312		IV	Parula, northern	Parula americana
40243		IV	Pewee, eastern wood	Contopus virens
40123		IV	Plover, black-bellied	Pluvialis squatarola
40065		IV	Scaup, greater	Aythya marila

40391		IV	Sparrow, field	Spizella pusilla
40378		IV	Sparrow, grasshopper	Ammodramus savannarum pratensis
40248		IV	Swallow, northern rough-winged	Stelgidopteryx serripennis
40217		IV	Swift, chimney	Chaetura pelagica
40355		IV	Tanager, scarlet	Piranga olivacea
40180		IV	Tern, Forster's	Sterna forsteri
40273		IV	Thrasher, brown	Toxostoma rufum
40277		IV	Thrush, wood	Hylocichla mustelina
40375		IV	Towhee, eastern	Pipilo erythrophthalmus
40297		IV	Vireo, yellow-throated	Vireo flavifrons
40302		IV	Warbler, black-and-white	Mniotilta varia

40307		IV	Warbler, blue-winged	Vermivora pinus
40340		IV	Warbler, Canada	Wilsonia canadensis
40333		IV	Warbler, Kentucky	Oporornis formosus
40328		IV	Warbler, prairie	Dendroica discolor
40303		IV	Warbler, prothonotary	Protonotaria citrea
40305		IV	Warbler, worm-eating	Helmitheros vermivorus
40313		IV	Warbler, yellow	Dendroica petechia
40332		IV	Waterthrush, Louisiana	Seiurus motacilla
40215		IV	Whip-poor-will	Caprimulgus vociferus
40140		IV	Woodcock, American	Scolopax minor
40269		IV	Wren, marsh	Cistothorus palustris

50040		IV	Weasel, least	Mustela nivalis allegheniensis
60137		IV	Creeper	Strophitus undulatus
60159		IV	Lance, Carolina	Elliptio angustata
60184		IV	Mussel, northern lance	Elliptio fisheriana
60005		IV	Mussel, triangle floater	Alasmidonta undulata
60194		IV	Snail, gravel elimia	Elimia catenaria
60176		IV	Spike, Atlantic	Elliptio producta
70104		IV	Crayfish, Allegheny	Orconectes obscurus
100223		IV	Butterfly, frosted elfin	Callophrys irus
10188			Bass, largemouth	Micropterus salmoides
10186			Bass, smallmouth	Micropterus dolomieu
10168			Bass, striped	Morone saxatilis
10167			Bass, white	Morone chrysops
10183			Bluegill	Lepomis macrochirus
10123			Bullhead, brown	Ameiurus nebulosus
10122			Bullhead, yellow	Ameiurus natalis
10062			Carp, common	Cyprinus carpio
10125			Catfish, channel	Ictalurus punctatus
10120			Catfish, white	Ameiurus catus

10103			Chub, creek	Semotilus atromaculatus
10067			Chub, river	Nocomis micropogon
10106			Chubsucker, creek	Erimyzon oblongus
10190			Crappie, black	Pomoxis nigromaculatus
10189			Crappie, white	Pomoxis annularis
10101			Dace, blacknose	Rhinichthys atratulus
10366			Dace, rosyside	Clinostomus funduloides
10193			Darter, fantail	Etheostoma flabellare
10213			Darter, shield	Percina peltata
10211			Darter, stripeback	Percina notogramma
10104			Fallfish	Semotilus corporalis
10033			Gar, longnose	Lepisosteus osseus
10059			Goldfish	Carassius auratus
10045			Herring, blueback	Alosa aestivalis
10143			Killifish, banded	Fundulus diaphanus
10002			Lamprey, sea	Petromyzon marinus
10129			Madtom, margined	Noturus insignis
10099			Minnow, bluntnose	Pimephales notatus
10063			Minnow, cutlips	Exoglossum maxillingua
10408			Minnow, eastern silvery	Hybognathus regius
10148			Mosquitofish, eastern	Gambusia holbrooki
10166			Perch, white	Morone americana
10206			Perch, yellow	Perca flavescens
10056			Pickerel, chain	Esox niger
10055			Pickerel, redfin	Esox americanus americanus
10364			Pike, northern	Esox lucius
10182			Pumpkinseed	Lepomis gibbosus
10283			Sculpin, mottled	Cottus bairdi
10407			Sculpin, Potomac	Cottus girardi
10041			Shad, gizzard	Dorosoma cepedianum
10042			Shad, threadfin	Dorosoma petenense

10072			Shiner, comely	Notropis amoenus
10080			Shiner, common	Luxilus cornutus
10068			Shiner, golden	Notemigonus crysoleucas
10073			Shiner, satinfin	Cyprinella analostana
10082			Shiner, spottail	Notropis hudsonius
10086			Shiner, swallowtail	Notropis procne
10108			Sucker, northern hog	Hypentelium nigricans
10105			Sucker, white	Catostomus commersoni
10181			Sunfish, green	Lepomis cyanellus
10180			Sunfish, redbreast	Lepomis auritus
20004			Bullfrog, American	Lithobates catesbeianus
20012			Frog, eastern cricket	Acris crepitans
20008			Frog, northern green	Lithobates clamitans melanota
20013			Frog, pickerel	Lithobates palustris
20016			Frog, southern leopard	Lithobates sphenocephalus utricularius
20018			Frog, upland chorus	Pseudacris feriarum
20019			Frog, wood	Lithobates sylvaticus
20065			Newt, red-spotted	Notophthalmus viridescens viridescens
20071			Peeper, spring	Pseudacris crucifer
20043			Salamander, eastern red-backed	Plethodon cinereus
20029			Salamander, four-toed	Hemidactylium scutatum
20035			Salamander, marbled	Ambystoma opacum
20038			Salamander, northern dusky	Desmognathus fuscus
20070			Salamander, northern red	Pseudotriton ruber ruber

20053			Salamander, northern two-lined	Eurycea bislineata
20049			Salamander, spotted	Ambystoma maculatum
20051			Salamander, three-lined	Eurycea guttolineata
20080			Salamander, white-spotted slimy	Plethodon cylindraceus
20059			Toad, eastern American	Anaxyrus americanus americanus
20062			Toad, Fowler's	Anaxyrus fowleri
20006			Treefrog, Cope's gray	Hyla chrysoscelis
20009			Treefrog, green	Hyla cinerea
30041			Brownsnake, northern	Storeria dekayi dekayi
30059			Cooter, eastern river	Pseudemys concinna concinna
30057			Cooter, northern red-bellied	Pseudemys rubriventris
30016			Copperhead, northern	Agkistrodon contortrix mokasen
30022			Cornsnake, red	Pantherophis guttatus
30049			Earthsnake, eastern smooth	Virginia valeriae valeriae
30044			Gartersnake, eastern	Thamnophis sirtalis sirtalis
30038			Greensnake, northern rough	Opheodrys aestivus aestivus
30026			Kingsnake, eastern	Lampropeltis getula getula
30027			Kingsnake, mole	Lampropeltis calligaster rhombomaculata
30002			Lizard, eastern fence	Sceloporus undulatus

30029			Milksnake, eastern	Lampropeltis triangulum triangulum
30018			Racer, northern black	Coluber constrictor constrictor
30008			Racerunner, eastern six-lined	Aspidoscelis sexlineata sexlineata
30023			Ratsnake, eastern	Pantherophis alleghaniensis
30006			Skink, broad-headed	Plestiodon laticeps
30004			Skink, common five-lined	Plestiodon fasciatus
30007			Skink, little brown	Scincella lateralis
30005			Skink, southeastern five-lined	Plestiodon inexpectatus
30042			Snake, northern red-bellied	Storeria occipitomaculata occipitomaculata
30020			Snake, northern ring-necked	Diadophis punctatus edwardsii
30052			Turtle, eastern musk	Sternotherus odoratus
30060			Turtle, eastern painted	Chrysemys picta picta
30050			Turtle, snapping	Chelydra serpentina
30034			Watersnake, northern	Nerodia sipedon sipedon
30019			Wormsnake, eastern	Carphophis amoenus amoenus
40346			Blackbird, red-winged	Agelaius phoeniceus
40282			Bluebird, eastern	Sialia sialis
40068			Bufflehead	Bucephala albeola
40361			Bunting, indigo	Passerina cyanea
40401			Bunting, snow	Plectrophenax nivalis nivalis
40064			Canvasback	Aythya valisineria

40357			Cardinal, northern	Cardinalis cardinalis
40258			Chickadee, Carolina	Poecile carolinensis
40113			Coot, American	Fulica americana
40024			Cormorant, double-crested	Phalacrocorax auritus
40023			Cormorant, great	Phalacrocorax carbo
40353			Cowbird, brown-headed	Molothrus ater
40373			Crossbill, white-winged	Loxia leucoptera
40255			Crow, American	Corvus brachyrhynchos
40256			Crow, fish	Corvus ossifragus
40203			Cuckoo, black-billed	Coccyzus erythropthalmus
40364			Dickcissel	Spiza americana
40198			Dove, mourning	Zenaida macroura carolinensis
40069			Duck, long-tailed	Clangula hyemalis
40076			Duck, ruddy	Oxyura jamaicensis
40061			Duck, wood	Aix sponsa
40030			Egret, cattle	Bubulcus ibis
40032			Egret, great	Ardea alba egretta
40367			Finch, house	Carpodacus mexicanus
40366			Finch, purple	Carpodacus purpureus
40221			Flicker, northern	Colaptes auratus
40239			Flycatcher, Acadian	Empidonax virescens
40234			Flycatcher, great crested	Myiarchus crinitus
40053			Gadwall	Anas strepera
40284			Gnatcatcher, blue-gray	Polioptila caerulea
40371			Goldfinch, American	Carduelis tristis
40045			Goose, Canada	Branta canadensis

40049			Goose, lesser snow	Chen caerulescens caerulescens
40410			Goose, snow	Chen caerulescens
40352			Grackle, common	Quiscalus quiscula
40008			Grebe, pied-billed	Podilymbus podiceps
40360			Grosbeak, blue	Guiraca caerulea caerulea
40365			Grosbeak, evening	Coccothraustes vespertinus
40099			Grouse, ruffed	Bonasa umbellus
40165			Gull, great black-backed	Larus marinus
40167			Gull, herring	Larus argentatus
40173			Gull, laughing	Larus atricilla
40170			Gull, ring-billed	Larus delawarensis
40089			Hawk, broad-winged	Buteo platypterus
40086			Hawk, Cooper's	Accipiter cooperii
40088			Hawk, red-shouldered	Buteo lineatus lineatus
40087			Hawk, red-tailed	Buteo jamaicensis
40090			Hawk, rough-legged	Buteo lagopus johannis
40085			Hawk, sharp-shinned	Accipiter striatus velox
40027			Heron, great blue	Ardea herodias herodias
40218			Hummingbird, ruby-throated	Archilochus colubris
40252			Jay, blue	Cyanocitta cristata
40387			Junco, dark-eyed	Junco hyemalis
40098			Kestrel, American	Falco sparverius sparverius
40119			Killdeer	Charadrius vociferus
40220			Kingfisher, belted	Ceryle alcyon
40285			Kinglet, golden-crowned	Regulus satrapa

40286			Kinglet, ruby-crowned	Regulus calendula
40245			Lark, horned	Eremophila alpestris
40051			Mallard	Anas platyrhynchos
40251			Martin, purple	Progne subis
40078			Merganser, common	Mergus merganser americanus
40077			Merganser, hooded	Lophodytes cucullatus
40079			Merganser, red-breasted	Mergus serrator serrator
40271			Mockingbird, northern	Mimus polyglottos
40112			Moorhen, common	Gallinula chloropus cachinnans
40216			Nighthawk, common	Chordeiles minor
40262			Nuthatch, red-breasted	Sitta canadensis
40261			Nuthatch, white-breasted	Sitta carolinensis
40348			Oriole, Baltimore	Icterus galbula
40347			Oriole, orchard	Icterus spurius
40095			Osprey	Pandion haliaetus carolinensis
40209			Owl, barred	Strix varia
40206			Owl, great horned	Bubo virginianus
40210			Owl, long-eared	Asio otus
40211			Owl, short-eared	Asio flammeus
40101			Pheasant, ring-necked	Phasianus colchicus
40236			Phoebe, eastern	Sayornis phoebe
40197			Pigeon, rock	Columba livia
40054			Pintail, northern	Anas acuta acuta
40287			Pipit, American	Anthus rubescens
40254			Raven, common	Corvus corax

40341			Redstart, American	Setophaga ruticilla
40275			Robin, American	Turdus migratorius
40132			Sandpiper, solitary	Tringa solitaria
40134			Sandpiper, spotted	Actitis macularia
40066			Scaup, lesser	Aythya affinis
40075			Scoter, black	Melanitta nigra americana
40205			Screech-owl, eastern	Megascops asio
40060			Shoveler, northern	Anas clypeata
40370			Siskin, pine	Carduelis pinus
40141			Snipe, Wilson's	Gallinago delicata
40389			Sparrow, chipping	Spizella passerina
40395			Sparrow, fox	Passerella iliaca
40342			Sparrow, house	Passer domesticus
40377			Sparrow, savannah	Passerculus sandwichensis
40398			Sparrow, song	Melospiza melodia
40397			Sparrow, swamp	Melospiza georgiana
40383			Sparrow, vesper	Pooecetes gramineus
40393			Sparrow, white-crowned	Zonotrichia leucophrys
40394			Sparrow, white-throated	Zonotrichia albicollis
40294			Starling, European	Sturnus vulgaris
40247			Swallow, bank	Riparia riparia
40249			Swallow, barn	Hirundo rustica
40246			Swallow, tree	Tachycineta bicolor
40043			Swan, mute	Cygnus olor
40044			Swan, tundra	Cygnus columbianus columbianus
40356			Tanager, summer	Piranga rubra
40057			Teal, blue-winged	Anas discors orphna
40056			Teal, green-winged	Anas crecca carolinensis
40189			Tern, Caspian	Sterna caspia

40278			Thrush, hermit	Catharus guttatus
40260			Titmouse, tufted	Baeolophus bicolor
40102			Turkey, wild	Meleagris gallopavo silvestris
40298			Vireo, blue-headed	Vireo solitarius
40299			Vireo, red-eyed	Vireo olivaceus
40301			Vireo, warbling	Vireo gilvus gilvus
40295			Vireo, white-eyed	Vireo griseus
40081			Vulture, black	Coragyps atratus
40080			Vulture, turkey	Cathartes aura
40316			Warbler, black-throated blue	Dendroica caerulescens
40325			Warbler, blackpoll	Dendroica striata
40323			Warbler, chestnut-sided	Dendroica pensylvanica
40338			Warbler, hooded	Wilsonia citrina
40314			Warbler, magnolia	Dendroica magnolia
40311			Warbler, Nashville	Vermivora ruficapilla
40329			Warbler, palm	Dendroica palmarum
40326			Warbler, pine	Dendroica pinus
40317			Warbler, yellow-rumped	Dendroica coronata cornata
40322			Warbler, yellow-throated	Dendroica dominica
40331			Waterthrush, northern	Seiurus noveboracensis
40290			Waxwing, cedar	Bombycilla cedrorum
40059			Wigeon, American	Anas americana
40058			Wigeon, Eurasian	Anas penelope
40227			Woodpecker, downy	Picoides pubescens medianus
40226			Woodpecker, hairy	Picoides villosus
40222			Woodpecker, pileated	Dryocopus pileatus

40223			Woodpecker, red-bellied	Melanerpes carolinus
40224			Woodpecker, red-headed	Melanerpes erythrocephalus
40268			Wren, Carolina	Thryothorus ludovicianus
40265			Wren, house	Troglodytes aedon
40336			Yellowthroat, common	Geothlypis trichas
50028			Bat, big brown	Eptesicus fuscus fuscus
50029			Bat, eastern red	Lasiurus borealis borealis
50033			Bat, evening	Nycticeius humeralis humeralis
50030			Bat, hoary	Lasiurus cinereus cinereus
50020			Bat, little brown	Myotis lucifugus lucifugus
50025			Bat, silver-haired	Lasionycteris noctivagans
50069			Beaver, American	Castor canadensis
50051			Bobcat	Lynx rufus rufus
50056			Chipmunk, common eastern	Tamias striatus striatus
50055			Chipmunk, Fisher's eastern	Tamias striatus fisheri
50103			Cottontail, eastern	Sylvilagus floridanus mallurus
50125			Coyote	Canis latrans
50108			Deer, white-tailed	Odocoileus virginianus
50050			Fox, common gray	Urocyon cinereoargenteus cinereoargenteus
50049			Fox, red	Vulpes vulpes fulva
50085			Lemming, Stone's southern bog	Synaptomys cooperi stonei
50042			Mink, common	Mustela vison mink

50017			Mole, eastern	Scalopus aquaticus aquaticus
50019			Mole, star-nosed	Condylura cristata cristata
50074			Mouse, common white-footed	Peromyscus leucopus leucopus
50071			Mouse, eastern harvest	Reithrodontomys humulis virginianus
50098			Mouse, house	Mus musculus musculus
50099			Mouse, meadow jumping	Zapus hudsonius americanus
50073			Mouse, northern white-footed	Peromyscus leucopus noveboracensis
50124			Mouse, prairie deer	Peromyscus maniculatus bairdii
50093			Muskrat, large-toothed	Ondatra zibethicus macrodon
50022			Myotis, northern	Myotis septentrionalis septentrionalis
50001			Opossum, Virginia	Didelphis virginiana virginiana
50045			Otter, northern river	Lontra canadensis lataxina
50027			Pipistrelle, eastern	Pipistrellus subflavus subflavus
50038			Raccoon	Procyon lotor lotor
50079			Rat, hispid cotton	Sigmodon hispidus virginianus
50078			Rat, marsh rice	Oryzomys palustris palustris
50095			Rat, Norway	Rattus norvegicus norvegicus
50014			Shrew, Dismal Swamp short-tailed	Blarina brevicauda telmalestes

50013			Shrew, Kirtland's short-tailed	Blarina brevicauda kirtlandi
50015			Shrew, least	Cryptotis parva parva
50010			Shrew, pygmy	Sorex hoyi winnemana
50007			Shrew, southeastern	Sorex longirostris longirostris
50047			Skunk, striped	Mephitis mephitis nigra
50048			Skunk, striped	Mephitis mephitis mephitis
50063			Squirrel, eastern fox	Sciurus niger vulpinus
50058			Squirrel, northern gray	Sciurus carolinensis pennsylvanicus
50065			Squirrel, southern flying	Glaucomys volans volans
50059			Squirrel, talkative red	Tamiasciurus hudsonicus loquax
50087			vole, common Gapper's red-backed	Clethrionomys gapperi gapperi
50082			Vole, meadow	Microtus pennsylvanicus pennsylvanicus
50091			Vole, pine	Microtus pinetorum scalopsoides
50041			Weasel, long-tailed	Mustela frenata noveboracensis
50054			Woodchuck	Marmota monax monax
60012			Floater, eastern	Pyganodon cataracta
60025			Mussel, eastern elliptio	Elliptio complanata
70099			Crayfish	Fallicambarus uhleri
70102			Crayfish, Appalachian brook	Cambarus bartonii bartonii
70095			Crayfish, devil	Cambarus diogenes diogenes
70126			Crayfish, Digger	Fallicambarus fodiens

70094			Crayfish, no common name	Cambarus acuminatus
70098			Crayfish, spiny cheek	Orconectes limosus
70120			Crayfish, White River	Procambarus acutus
100043			Armyworm	Pseudaletia unipuncta
100041			Borer, European corn	Ostrinia nubilatis
100220			Butterfly, American copper	Lycaena phlaeas
100262			Butterfly, American lady	Vanessa virginiensis
100245			Butterfly, American snout	Libytheana carinenta
100274			Butterfly, Appalachian brown	Satyrodes appalachia
100232			Butterfly, banded hairstreak	Satyrium calanus
100092			Butterfly, black swallowtail	Papilio polyxenes asterius
100137			Butterfly, brown elfin	Callophrys augustinus
100205			Butterfly, cabbage white	Pieris rapae
100167			Butterfly, carus skipper	Polites carus
100159			Butterfly, clouded skipper	Lerema accius
100094			Butterfly, clouded sulphur	Colias philodice
100165			Butterfly, cobweb skipper	Hesperia metea
100265			Butterfly, common buckeye	Junonia coenia

100157			Butterfly, common sootywing	Pholisora catullus
100277			Butterfly, common wood-nymph	Cercyonis pegala
100230			Butterfly, coral hairstreak	Satyrium titus
100168			Butterfly, crossline skipper	Polites origenes
100184			Butterfly, Dion skipper	Euphyes dion
100147			Butterfly, dreamy duskywing	Erynnis icelus
100185			Butterfly, Dun skipper	Euphyes vestris
100188			Butterfly, dusted skipper	Atrytonopsis hianna
100258			Butterfly, eastern comma	Polygonia comma
100225			Butterfly, eastern pine elfin	Callophrys niphon
100238			Butterfly, eastern tailed-blue	Everes comyntas
100093			Butterfly, eastern tiger swallowtail	Papilio glaucus
100161			Butterfly, European skipper	Thymelicus lineola
100209			Butterfly, falcate orangetip	Anthocharis midea
100162			Butterfly, fiery skipper	Hylephila phyleus
100139			Butterfly, golden-banded skipper	Autochton cellus
100228			Butterfly, gray hairstreak	Strymon melinus

100249			Butterfly, great spangled fritillary	Speyeria cybele
100270			Butterfly, hackberry emperor	Asterocampa celtis
100145			Butterfly, Hayhurst's scallopwing	Staphylus hayhurstii
100224			Butterfly, Henry's elfin	Callophrys henrici
100141			Butterfly, hoary edge	Achalarus lyciades
100149			Butterfly, Horace's duskywing	Erynnis horatius
100148			Butterfly, Juvenal's duskywing	Erynnis juvenalis
100160			Butterfly, least skipper	Ancyloxypha numitor
100163			Butterfly, Leonard's skipper	Hesperia leonardus
100175			Butterfly, little glassywing	Pompeius verna
100279			Butterfly, little wood-satyr	Megisto cymela
100252			Butterfly, meadow fritillary	Boloria bellona
100079			Butterfly, monarch	Danaus plexippus
100090			Butterfly, mourning cloak	Nymphalis antiopa
100173			Butterfly, northern broken dash	Wallengrenia egeremet
100143			Butterfly, northern cloudywing	Thorybes pylades
100272			Butterfly, northern pearly-eye	Enodia anthedon

100197			Butterfly, Ocola skipper	Panoquina ocola
100236			Butterfly, olive juniper hairstreak	Callophrys gryneus gryneus
100211			Butterfly, orange sulphur	Colias eurytheme
100257			Butterfly, pearl crescent	Phyciodes tharos
100359			Butterfly, Peck's skipper	Polites peckius
100200			Butterfly, pipevine swallowtail	Battus philenor
100259			Butterfly, question mark	Polygonia interrogationis
100264			Butterfly, red admiral	Vanessa atalanta
100235			Butterfly, red-banded hairstreak	Calycopis cecrops
100268			Butterfly, red-spotted purple	Limenitis arthemis astyanax
100174			Butterfly, sachem	Atalopedes campestris
100082			Butterfly, silver-spotted skipper	Epargyreus clarus
100255			Butterfly, silvery checkerspot	Chlosyne nycteis
100146			Butterfly, sleepy duskywing	Erynnis brizo
100142			Butterfly, southern cloudywing	Thorybes bathyllus
100202			Butterfly, spicebush swallowtail	Papilio troilus
100239			Butterfly, spring azure	Celastrina ladon

100234			Butterfly, striped hairstreak	Satyrium liparops
100158			Butterfly, swarthy skipper	Nastra lherminier
100169			Butterfly, tawny-edged skipper	Polites themistocles
100247			Butterfly, variegated fritillary	Euptoieta claudia
100266			Butterfly, viceroy	Limenitis archippus
100227			Butterfly, white M hairstreak	Parrhasius m-album
100153			Butterfly, wild indigo duskywing	Erynnis baptisiae
100180			Butterfly, Zabulon skipper	Poanes zabulon
100204			Butterfly, zebra swallowtail	Eurytides marcellus
100026			Deerfly	Chrysops vittatus vittatus
100042			Earworm, corn	Heliathis zea
100290			Moth, buck	Hemileuca maia
100295			Moth, Carolina sphinx	Manduca sexta
100100			Moth, catalpa sphinx	Ceratomia catalpae
100040			Moth, codling	Cydia pomonella
100296			Moth, Five-spotted hawk	Manduca quinquemaculata
100047			Moth, gypsy	Lymantria dispar
100312			Moth, hummingbird clearwing	Hemaris thysbe
100283			Moth, imperial	Eacles imperialis
100096			Moth, Io	Automeris io
100095			Moth, Luna	Actias luna

100289			Moth, pinkstriped oakworm	Anisota virginiensis
100098			Moth, Polyphemus	Antheraea polyphemus
100284			Moth, regal	Citheronia regalis
100286			Moth, rosy maple	Dryocampa rubicunda
100310			Moth, small-eyed sphinx	Paonias myops
100101			Moth, snowberry clearwing	Hemeris diffinis
100307			Moth, Southern pine sphinx	Lapara coniferarum
100287			Moth, spiny oakworm	Anisota stigma
100311			Moth, walnut sphinx	Laothoe juglandis
100300			Moth, waved shinx	Ceratomia undulosa
100294			Moth, whitelined sphinx	Hyles lineata
100193			Roadside-skipper, common	Amblyscirtes vialis
110230			Tick, American dog	Dermacentor variabilis
110232			Tick, brown dog	Rhipicephalus sanguineus
110228			Tick, lone star	Amblyomma americanum
110231			Tick, rabbit	Haemaphysalis leporispalustris
110229			Tick, winter	Dermacentor albipictus

EXISTING UTILTIES

As the character of the area surrounding Doves Landing has changed little over the past 50 years, the development of utilities in the area is scarce. The County leases a cell tower site to Verizon. All utilities are residential in nature. The adjacent property owners rely on well and septic. Electric service of various levels is available along Doves Lane. Phone service is available on Doves Lane as well. In addition there is a phone line easement that enters the property along the waterfront.

HYDROLOGY

Doves Landing is situated at the confluence of Kettle Run and Broad Run as they merge to form the Occoquan River. The property drains into the Occoquan River which is part of the Chesapeake Bay watershed. The 240 acre site includes over 25 acres of wetlands as well as extensive floodplain. The site is 95% forested and the forest acts as a filter for rainwater and off site drainage. This serves as an important feature that greatly improves the water quality of the surrounding water resources. It is essential that any improvements to the property protect the existing forested condition and its value to the areas water quality.

TOPOGRAPHY

The topography of Doves Landing is similar to the surrounding landscape. The property is within the piedmont region of Virginia. Virginia's piedmont is the gently rolling land between the mountains and the Tidewater. It begins at the foot of the Blue Ridge Mountains and extends eastward, becoming less undulating the closer it comes to the fall line. Prince William County lies in the northern portion of the region where the Piedmont is narrow as it approaches the tidewater of the Potomac River.

Doves Landing topography features moderately steep slopes to the approaches of the Occoquan River and Broad Run. Project area elevations vary from 145 to 225 feet above sea level. The existing trails along the downward slopes are forested and thus absorb rain water well.

SOILS/GEOLOGY

The project area is located on the interface of the Culpeper Basin and the Piedmont Plateau Physiographic Provinces. The project area is located where Broad Run and Cedar Run join to form the Occoquan River, approximately 26 miles upstream from the confluence of the Occoquan River and the Potomac River, in central Prince William County, Virginia. Project area elevations vary from 145 to 225 feet above sea level.

This portion of the piedmont plateau formed in the residuum of sedimentary rocks of siltstone, sandstone conglomerate, and basic rocks of diabase and basalt. The mapped soil complex for the project area is the Arcola-Panoram-Nestoria. This soil complex is moderately deep, deep, and shallow soils that are well drained and have a loamy subsoil. The major soils types' onsite are Arcola Silt Loam, Arcola-Nestoria Complex, Bermudian Silt Loam, Braddock Loam, Brentsville Sandy Loam, Calverton Silt Loam, Manassas Silt Loam, Meadowville, Silt Loam, Panorama Silt Loam, and Rowland silt loam (United States Department of Agriculture, Soil Conservation Service 1989). The soil types have slopes that range from 0 to 50 percent slopes and are mapped on the custom soils report included in **Attachment XXX** (U.S. Department of Agriculture, Natural Resources Conservation Service, Prince William County Soil Survey). Below is a chart which highlights the major soil types and includes the percentages of area encompassed by the soil.

Prince William County, Virginia (VA153)

Map Unit Symbol	Map Unit	Acres in AOI	Percent of
1A	Aden silt loam, 0 to 2 percent slopes	0.1	
3A	Albano silt loam, 0 to 4 percent slopes	2.2	
4B	Arcola silt loam, 2 to 7 percent slopes	4.9	
5C	Arcola-Nestoria complex, 7 to 15	5.7	
5D	Arcola-Nestoria complex, 15 to 25	2.2	
7A	Bermudian silt loam, 0 to 2 percent	43.3	1
8C	Braddock loam, 7 to 15 percent slopes	6.4	
9C	Brentsville sandy loam, 7 to 15 percent	68.1	2
11	Calverton silt loam, 0 to 7 percent slopes	36.8	1
14	Codorus loam, 0 to 2 percent slopes	0.3	
19	Elioak loam, 2 to 7 percent slopes	0.0	
20	Elsinboro sandy loam, 2 to 7 percent	1.9	
24	Glenelg-Buckhall complex, 7 to 15	1.7	
35	Manassas silt loam, 2 to 7 percent slopes	42.4	1
38	Meadowville loam, 0 to 5 percent slopes	2.5	
43	Nestoria gravelly silt loam, 25 to 50	0.7	
46	Panorama silt loam, 2 to 7 percent	17.1	
46	Panorama silt loam, 7 to 15 percent	2.6	
49	Rowland silt loam, 0 to 2 percent slopes	4.2	
51 E	Stumptown very flaggy loam, 25 to 50 percent slopes	1.9	
W	Water	25.1	9.3%
Totals for Area of		**270.1**	**100.0%**

Legend

- Trails 4.95 miles
- Streams
- WetlandsArea
- Wetland Line
- Drive
- Contours
- Property Boundary

SC

BB

SG

Wetlands Area GG
0.4 Acres

SD

SE

SF

Wetlands Area DD
24.8 Acres

SB

SA

Wetland Area BB
0.31 Acres

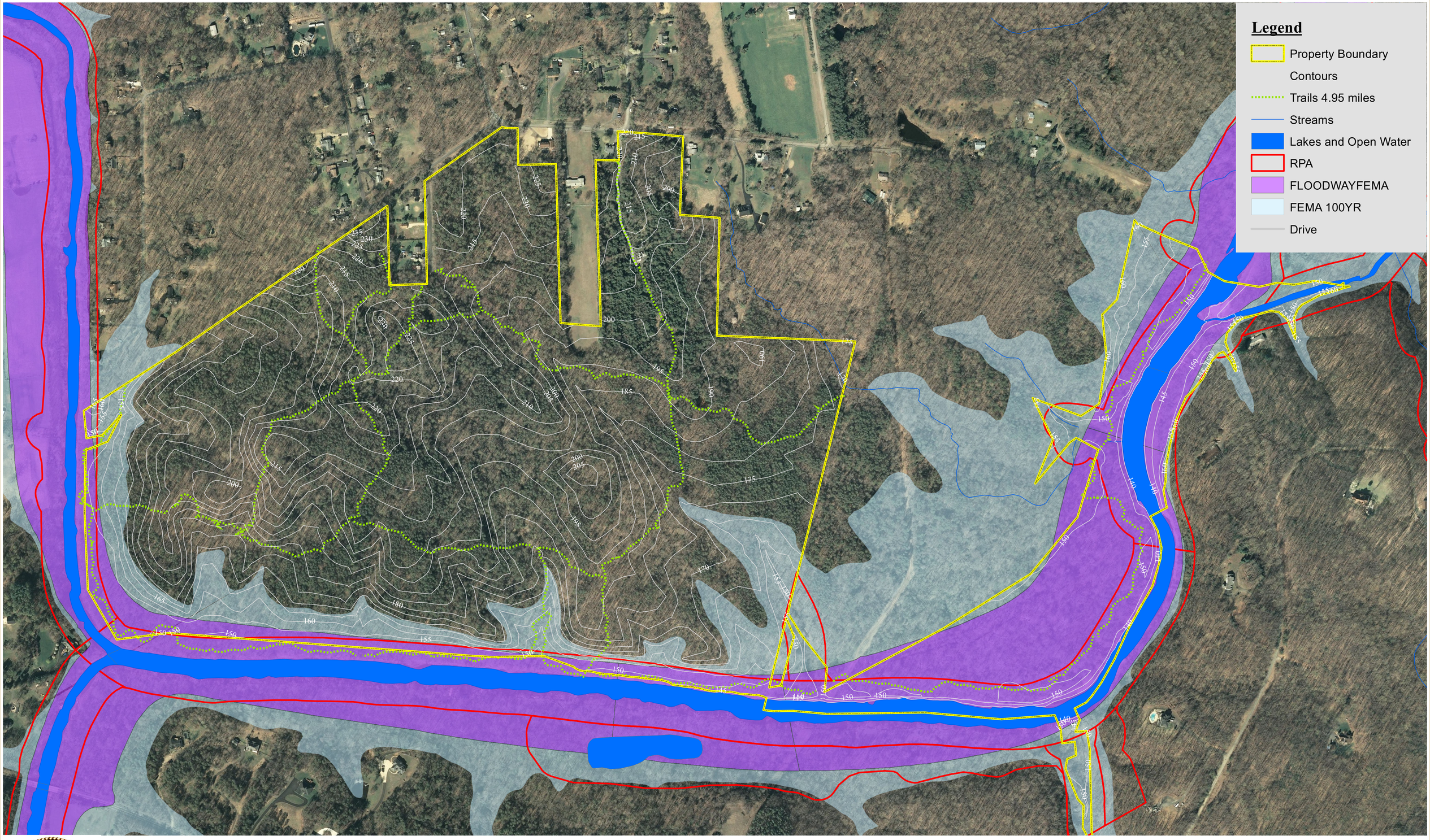
Total Area of Wetlands: 25.51 acres

Doves Landing Wetlands Map

Doves Lane
Manassas, VA 20112

200 100 0 200
Feet

Sources: PWCDPR, PWC, Virginia GIS
Prepared by: Ryan Conklin PP AICP, Planner II DPR

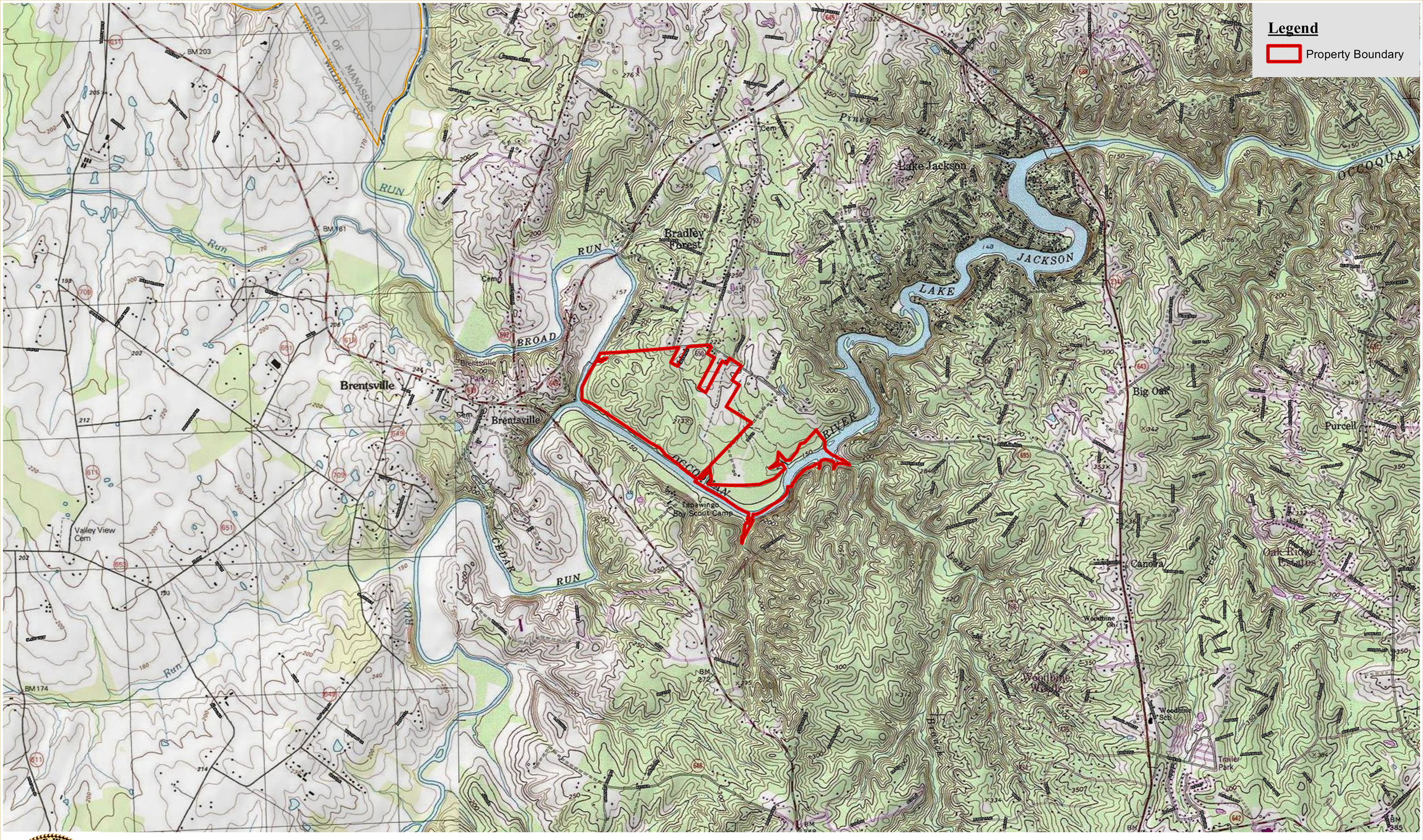


Doves Landing
Flood Plain Map

Doves Lane
Manassas, VA 20112

200 100 0 200
Feet

Sources: PWCDPR, PWC, Virginia GIS
Prepared by: Ryan Conklin PP AICP, Planner II DPR



Doves Landing
USGS Topoquad

Doves Lane
Manassas, VA 20112

1,000 500 0 1,000
Feet

Sources: PWCDPR, PWC, Virginia GIS
Prepared by: Ryan Conklin PP AICP, Planner II DPR

United States Department of Agriculture

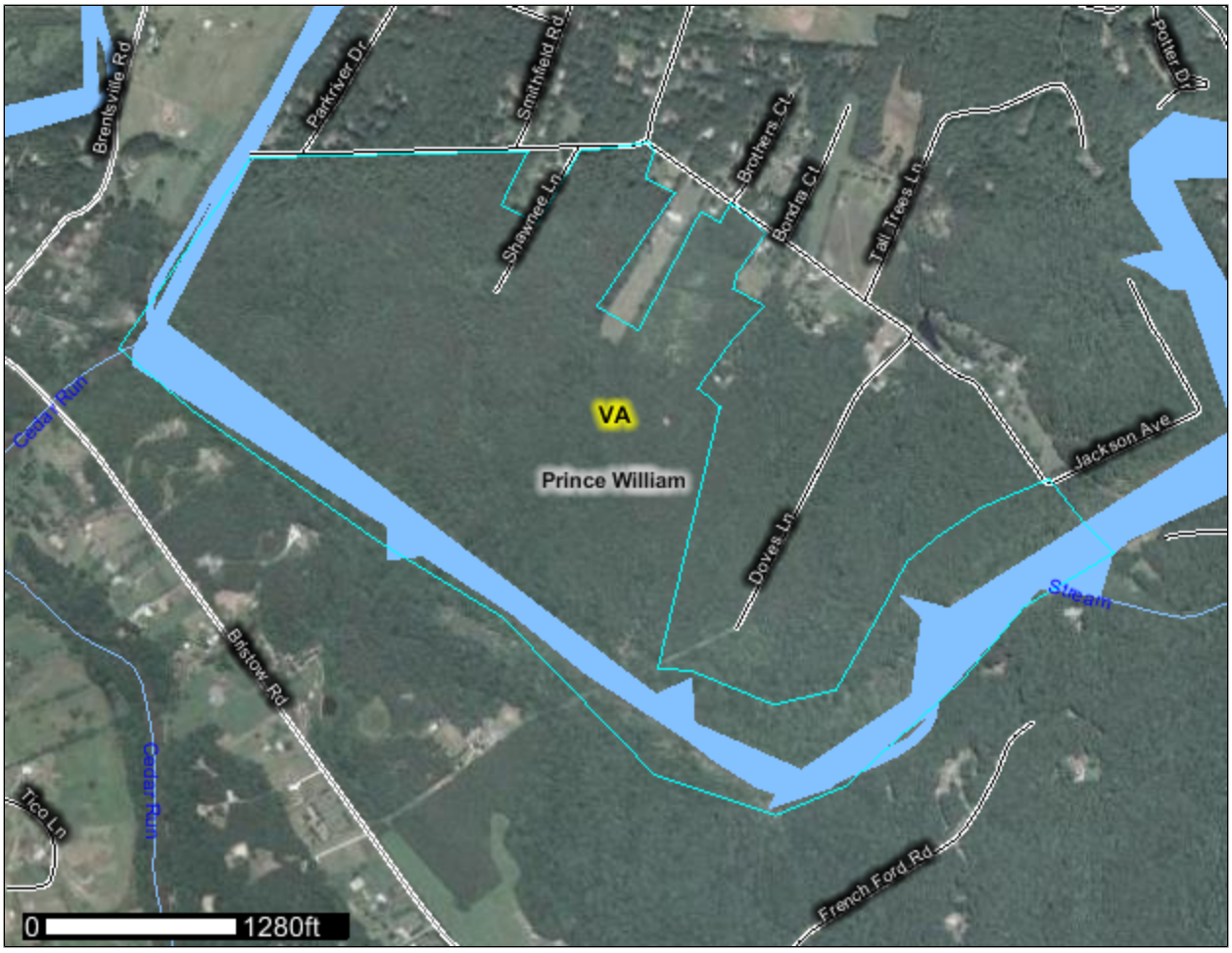
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Prince William County, Virginia

Dove's Landing



December 5, 2012

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

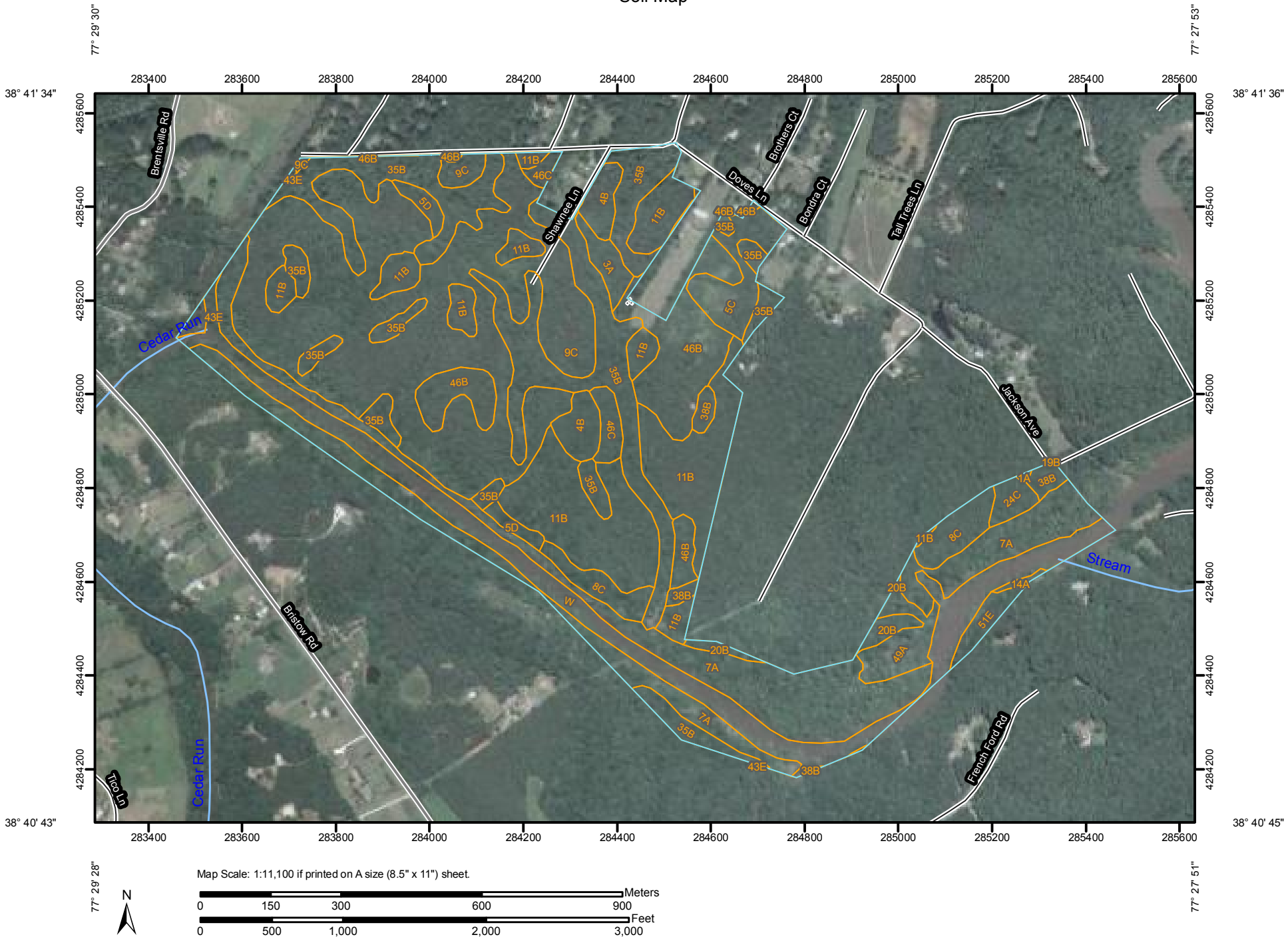
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:11,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Prince William County, Virginia
Survey Area Data: Version 11, Jan 25, 2010

Date(s) aerial images were photographed: 6/24/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Prince William County, Virginia (VA153)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
1A	Aden silt loam, 0 to 2 percent slopes	0.1	0.0%
3A	Albano silt loam, 0 to 4 percent slopes	2.2	0.8%
4B	Arcola silt loam, 2 to 7 percent slopes	4.9	1.8%
5C	Arcola-Nestoria complex, 7 to 15 percent slopes	5.7	2.1%
5D	Arcola-Nestoria complex, 15 to 25 percent slopes	2.2	0.8%
7A	Bermudian silt loam, 0 to 2 percent slopes	43.3	16.0%
8C	Braddock loam, 7 to 15 percent slopes	6.4	2.4%
9C	Brentsville sandy loam, 7 to 15 percent slopes	68.1	25.2%
11B	Calverton silt loam, 0 to 7 percent slopes	36.8	13.6%
14A	Codorus loam, 0 to 2 percent slopes	0.3	0.1%
19B	Elioak loam, 2 to 7 percent slopes	0.0	0.0%
20B	Elsinboro sandy loam, 2 to 7 percent slopes	1.9	0.7%
24C	Glenelg-Buckhall complex, 7 to 15 percent slopes	1.7	0.6%
35B	Manassas silt loam, 2 to 7 percent slopes	42.4	15.7%
38B	Meadowville loam, 0 to 5 percent slopes	2.5	0.9%
43E	Nestoria gravelly silt loam, 25 to 50 percent slopes	0.7	0.3%
46B	Panorama silt loam, 2 to 7 percent slopes	17.1	6.3%
46C	Panorama silt loam, 7 to 15 percent slopes	2.6	1.0%
49A	Rowland silt loam, 0 to 2 percent slopes	4.2	1.6%
51E	Stumptown very flaggy loam, 25 to 50 percent slopes	1.9	0.7%
W	Water	25.1	9.3%
Totals for Area of Interest		**270.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic

classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar

interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Prince William County, Virginia

1A—Aden silt loam, 0 to 2 percent slopes

Map Unit Setting

Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Aden and similar soils: 85 percent

Description of Aden

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 74 to 82 inches to paralithic bedrock
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3w
Hydrologic Soil Group: C

Typical profile

0 to 8 inches: Silt loam
8 to 31 inches: Clay
31 to 58 inches: Silty clay loam
58 to 78 inches: Silt loam
78 to 82 inches: Bedrock

3A—Albano silt loam, 0 to 4 percent slopes

Map Unit Setting

Elevation: 400 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition
Albano and similar soils: 80 percent

Description of Albano

Setting
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium over triassic residuum

Properties and qualities
Slope: 0 to 4 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability (nonirrigated): 5w
Hydrologic Soil Group: D

Typical profile
0 to 7 inches: Silt loam
7 to 40 inches: Clay
40 to 43 inches: Extremely gravelly silty clay loam
43 to 53 inches: Bedrock

4B—Arcola silt loam, 2 to 7 percent slopes

Map Unit Setting
Elevation: 300 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition
Arcola and similar soils: 80 percent
Minor components: 5 percent

Description of Arcola

Setting
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex

Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.8 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: C

Typical profile

0 to 9 inches: Silt loam
9 to 22 inches: Gravelly silt loam
22 to 28 inches: Very gravelly silt loam
28 to 48 inches: Bedrock
48 to 58 inches: Bedrock

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

5C—Arcola-Nestoria complex, 7 to 15 percent slopes

Map Unit Setting

Elevation: 300 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Arcola and similar soils: 50 percent
Nestoria and similar soils: 30 percent
Minor components: 5 percent

Description of Arcola

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: C

Typical profile

0 to 9 inches: Silt loam
9 to 22 inches: Gravelly silt loam
22 to 28 inches: Very gravelly silt loam
28 to 48 inches: Bedrock
48 to 58 inches: Bedrock

Description of Nestoria

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 4e

Hydrologic Soil Group: C/D

Typical profile

0 to 8 inches: Channery silt loam
8 to 14 inches: Very channery silt loam
14 to 18 inches: Very channery silt loam
18 to 30 inches: Bedrock
30 to 34 inches: Bedrock

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

5D—Arcola-Nestoria complex, 15 to 25 percent slopes

Map Unit Setting

Elevation: 300 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Arcola and similar soils: 50 percent
Nestoria and similar soils: 30 percent
Minor components: 5 percent

Description of Arcola

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water capacity: Low (about 3.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C

Typical profile

0 to 9 inches: Silt loam
9 to 22 inches: Gravelly silt loam
22 to 28 inches: Very gravelly silt loam
28 to 48 inches: Bedrock
48 to 58 inches: Bedrock

Description of Nestoria

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6e
Hydrologic Soil Group: C/D

Typical profile

0 to 8 inches: Channery silt loam
8 to 14 inches: Very channery silt loam
14 to 18 inches: Very channery silt loam
18 to 30 inches: Bedrock
30 to 34 inches: Bedrock

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

7A—Bermudian silt loam, 0 to 2 percent slopes

Map Unit Setting

Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Bermudian and similar soils: 85 percent

Description of Bermudian

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 60 to 68 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 36 to 79 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 1
Hydrologic Soil Group: B

Typical profile

0 to 12 inches: Silt loam
12 to 38 inches: Silt loam
38 to 64 inches: Channery silty clay loam
64 to 74 inches: Bedrock

8C—Braddock loam, 7 to 15 percent slopes

Map Unit Setting

Elevation: 1,000 to 3,500 feet
Mean annual precipitation: 19 to 50 inches

Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition
Braddock and similar soils: 80 percent

Description of Braddock

Setting
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium

Properties and qualities
Slope: 7 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.9 inches)

Interpretive groups
Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile
0 to 8 inches: Loam
8 to 55 inches: Clay
55 to 69 inches: Clay

9C—Brentsville sandy loam, 7 to 15 percent slopes

Map Unit Setting
Elevation: 70 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition
Brentsville and similar soils: 80 percent
Minor components: 3 percent

Description of Brentsville

Setting
Landform: Hillslopes

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.5 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: C

Typical profile

0 to 11 inches: Sandy loam
11 to 26 inches: Sandy loam
26 to 34 inches: Sandy loam
34 to 38 inches: Bedrock
38 to 48 inches: Bedrock

Minor Components

Albano

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

11B—Calverton silt loam, 0 to 7 percent slopes

Map Unit Setting

Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Calverton and similar soils: 80 percent

Description of Calverton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 0 to 7 percent
Depth to restrictive feature: 10 to 30 inches to fragipan; 40 to 60 inches to paralithic bedrock; 60 to 79 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3w
Hydrologic Soil Group: C

Typical profile

0 to 10 inches: Silt loam
10 to 19 inches: Silty clay loam
19 to 29 inches: Silt loam
29 to 55 inches: Silty clay
55 to 65 inches: Bedrock
65 to 75 inches: Bedrock

14A—Codorus loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 200 to 600 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Codorus and similar soils: 85 percent
Minor components: 5 percent

Description of Codorus

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 2w
Hydrologic Soil Group: C

Typical profile

0 to 12 inches: Loam
12 to 42 inches: Loam
42 to 65 inches: Sandy loam

Minor Components

Hatboro

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

19B—Elioak loam, 2 to 7 percent slopes

Map Unit Setting

Elevation: 330 to 2,000 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Elioak and similar soils: 80 percent
Minor components: 3 percent

Description of Elioak

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from mica schist

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: C

Typical profile

0 to 5 inches: Loam
5 to 41 inches: Clay
41 to 72 inches: Loam

Minor Components

Baile

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

20B—Elsinboro sandy loam, 2 to 7 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Elsinboro and similar soils: 80 percent
Minor components: 5 percent

Description of Elsinboro

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: B

Typical profile

0 to 9 inches: Sandy loam
9 to 44 inches: Sandy clay loam
44 to 65 inches: Gravelly sandy loam

Minor Components

Hatboro

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

24C—Glenelg-Buckhall complex, 7 to 15 percent slopes

Map Unit Setting

Elevation: 300 to 2,000 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Glenelg and similar soils: 45 percent
Buckhall and similar soils: 35 percent

Description of Glenelg

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from mica schist

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.5 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 5 inches: Loam
5 to 20 inches: Clay loam
20 to 65 inches: Sandy loam

Description of Buckhall

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from mica schist

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Loam
7 to 12 inches: Clay loam
12 to 43 inches: Clay
43 to 72 inches: Sandy loam

35B—Manassas silt loam, 2 to 7 percent slopes

Map Unit Setting

Elevation: 400 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Manassas and similar soils: 85 percent
Minor components: 3 percent

Description of Manassas

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Moderate (about 8.1 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: B

Typical profile

0 to 10 inches: Silt loam
10 to 43 inches: Silt loam
43 to 49 inches: Channery sandy loam
49 to 60 inches: Bedrock

Minor Components

Albano

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Head slope

Down-slope shape: Linear
Across-slope shape: Concave

38B—Meadowville loam, 0 to 5 percent slopes

Map Unit Setting

Elevation: 330 to 2,000 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Meadowville and similar soils: 80 percent
Minor components: 3 percent

Description of Meadowville

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Triassic residuum

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.8 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: B

Typical profile

0 to 12 inches: Loam
12 to 31 inches: Clay loam
31 to 39 inches: Gravelly loam
39 to 72 inches: Sandy loam

Minor Components

Baile

Percent of map unit: 3 percent

Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

43E—Nestoria gravelly silt loam, 25 to 50 percent slopes

Map Unit Setting

Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Nestoria and similar soils: 80 percent

Description of Nestoria

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: C/D

Typical profile

0 to 8 inches: Channery silt loam
8 to 14 inches: Very channery silt loam
14 to 18 inches: Very channery silt loam
18 to 30 inches: Bedrock
30 to 40 inches: Bedrock

46B—Panorama silt loam, 2 to 7 percent slopes

Map Unit Setting

Elevation: 400 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Panorama and similar soils: 75 percent
Minor components: 5 percent

Description of Panorama

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability (nonirrigated): 2e
Hydrologic Soil Group: B

Typical profile

0 to 10 inches: Silt loam
10 to 19 inches: Silty clay loam
19 to 38 inches: Silty clay loam
38 to 55 inches: Very channery silty clay loam
55 to 59 inches: Bedrock

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear

Across-slope shape: Concave

46C—Panorama silt loam, 7 to 15 percent slopes

Map Unit Setting

Elevation: 400 to 800 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Panorama and similar soils: 75 percent
Minor components: 5 percent

Description of Panorama

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Triassic residuum

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.0 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 10 inches: Silt loam
10 to 19 inches: Silty clay loam
19 to 38 inches: Silty clay loam
38 to 55 inches: Very channery silty clay loam
55 to 59 inches: Bedrock

Minor Components

Albano

Percent of map unit: 5 percent

Landform: Depressions
Landform position (three-dimensional): Head slope
Down-slope shape: Linear
Across-slope shape: Concave

49A—Rowland silt loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 300 to 600 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Rowland and similar soils: 80 percent

Description of Rowland

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 2w
Hydrologic Soil Group: C

Typical profile

0 to 11 inches: Silt loam
11 to 28 inches: Silt loam
28 to 48 inches: Channery silty clay loam
48 to 65 inches: Silt loam

51E—Stumptown very flaggy loam, 25 to 50 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,500 feet
Mean annual precipitation: 19 to 50 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 168 to 211 days

Map Unit Composition

Stumptown and similar soils: 80 percent

Description of Stumptown

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from mica schist

Properties and qualities

Slope: 25 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B

Typical profile

0 to 12 inches: Very flaggy loam
12 to 20 inches: Very flaggy clay loam
20 to 27 inches: Extremely flaggy sandy loam
27 to 33 inches: Bedrock
33 to 43 inches: Bedrock

W—Water

Map Unit Composition

Water: 100 percent

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SOILS

The project area is located on the interface of the Culpeper Basin and the Piedmont Plateau Physiographic Provinces. The project area is located where Broad Run and Cedar Run join to form the Occoquan River, approximately 26 miles upstream from the confluence of the Occoquan River and the Potomac River, in central Prince William County, Virginia. Project area elevations vary from 145 to 225 feet above sea level.

This portion of the piedmont plateau formed in the residuum of sedimentary rocks of siltstone, sandstone conglomerate, and basic rocks of diabase and basalt. The mapped soil complex for the project area is the Arcola-Panoram-Nestoria. This soil complex is moderately deep, deep, and shallow soils that are well drained and have a loamy subsoil. The major soils types' onsite are Arcola Silt Loam, Arcola-Nestoria Complex, Bermudian Silt Loam, Braddock Loam, Brentsville Sandy Loam, Calverton Silt Loam, Manassas Silt Loam, Meadowville, Silt Loam, Panorama Silt Loam, and Rowland silt loam (United States Department of Agriculture, Soil Conservation Service 1989). The soil types have slopes that range from 0 to 50 percent slopes and are mapped on the custom soils report included in Attachment __ (U.S. Department of Agriculture, Natural Resources Conservation Service, Prince William County Soil Survey). Below is a chart which highlights the major soil types and includes the percentages of area encompassed by the soil.

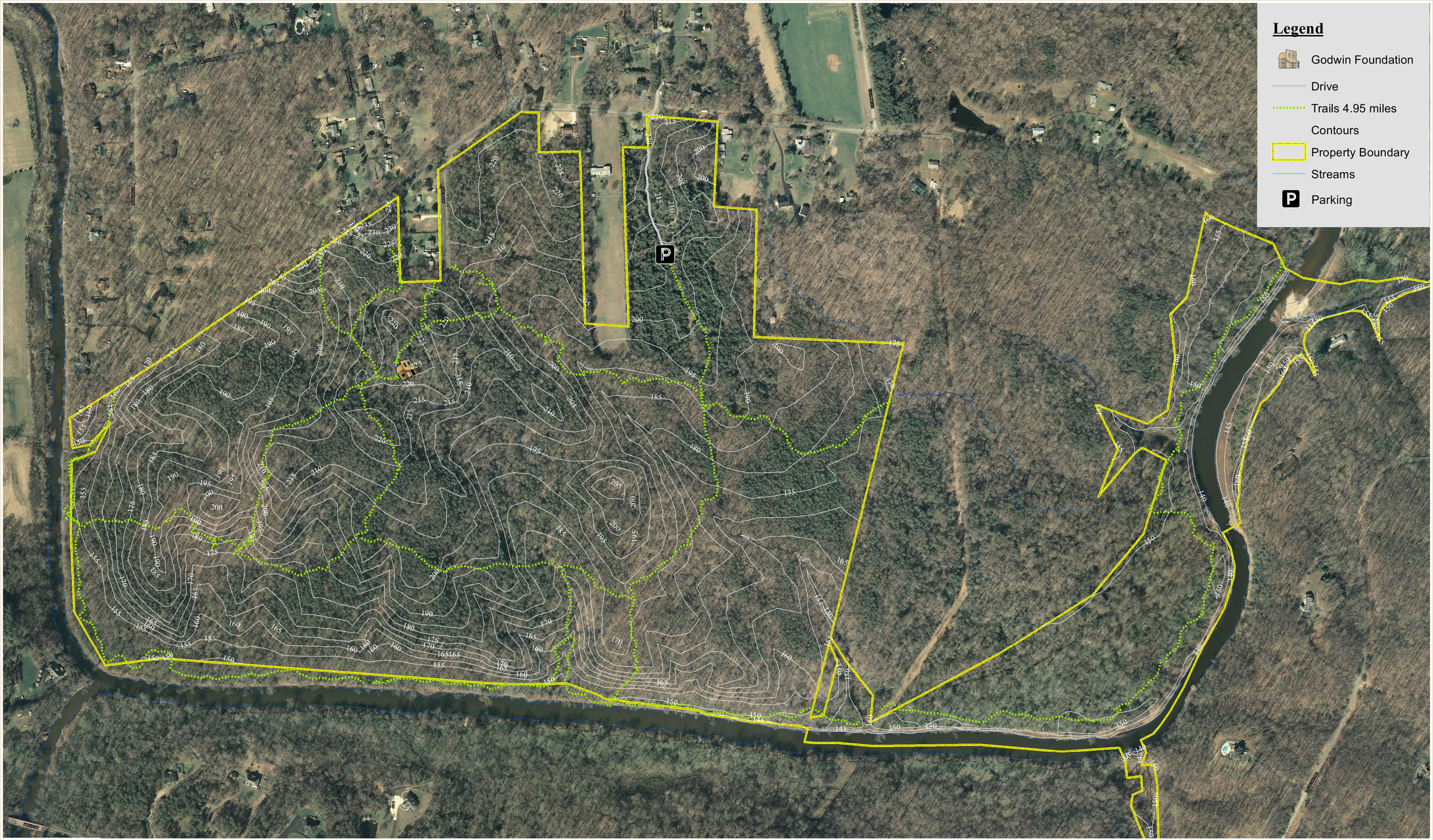
Prince William County, Virginia (VA153)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1A	Aden silt loam, 0 to 2 percent slopes	0.1	0.0%
3A	Albano silt loam, 0 to 4 percent slopes	2.2	0.8%
4B	Arcola silt loam, 2 to 7 percent slopes	4.9	1.8%
5C	Arcola-Nestoria complex, 7 to 15 percent slopes	5.7	2.1%
5D	Arcola-Nestoria complex, 15 to 25 percent slopes	2.2	0.8%
7A	Bermudian silt loam, 0 to 2 percent slopes	43.3	16.0%
8C	Braddock loam, 7 to 15 percent slopes	6.4	2.4%
9C	Brentsville sandy loam, 7 to 15 percent slopes	68.1	25.2%
11B	Calverton silt loam, 0 to 7 percent slopes	36.8	13.6%
14A	Codorus loam, 0 to 2 percent slopes	0.3	0.1%
19B	Elioak loam, 2 to 7 percent slopes	0.0	0.0%
20B	Elsinboro sandy loam, 2 to 7 percent slopes	1.9	0.7%
24C	Glenelg-Buckhall complex, 7 to 15 percent slopes	1.7	0.6%
35B	Manassas silt loam, 2 to 7 percent slopes	42.4	15.7%
38B	Meadowville loam, 0 to 5 percent slopes	2.5	0.9%
43E	Nestoria gravelly silt loam, 25 to 50 percent slopes	0.7	0.3%
46B	Panorama silt loam, 2 to 7 percent slopes	17.1	6.3%
46C	Panorama silt loam, 7 to 15 percent slopes	2.6	1.0%
49A	Rowland silt loam, 0 to 2 percent slopes	4.2	1.6%
51E	Stumptown very flaggy loam, 25 to 50 percent slopes	1.9	0.7%
W	Water	25.1	9.3%
Totals for Area of Interest		**270.1**	**100.0%**

VIEWSHEDS

The Doves Landing property's is comprised of wetlands, forest, and waterfront. This provides for views of the Occoquan River as well as Broad and Cedar Runs. The adjacent properties are single family homes and are only visible from the property line. There are a number of residential houses visible from the trail along the Occoquan River. These houses are located in the rural area of the County and do not negatively impact the property.

The importance of maintaining vegetative buffers in critical areas along the perimeter of the property is key to maintaining the natural beauty of the Doves Landing property as well as acting as a buffer for adjacent landowners.

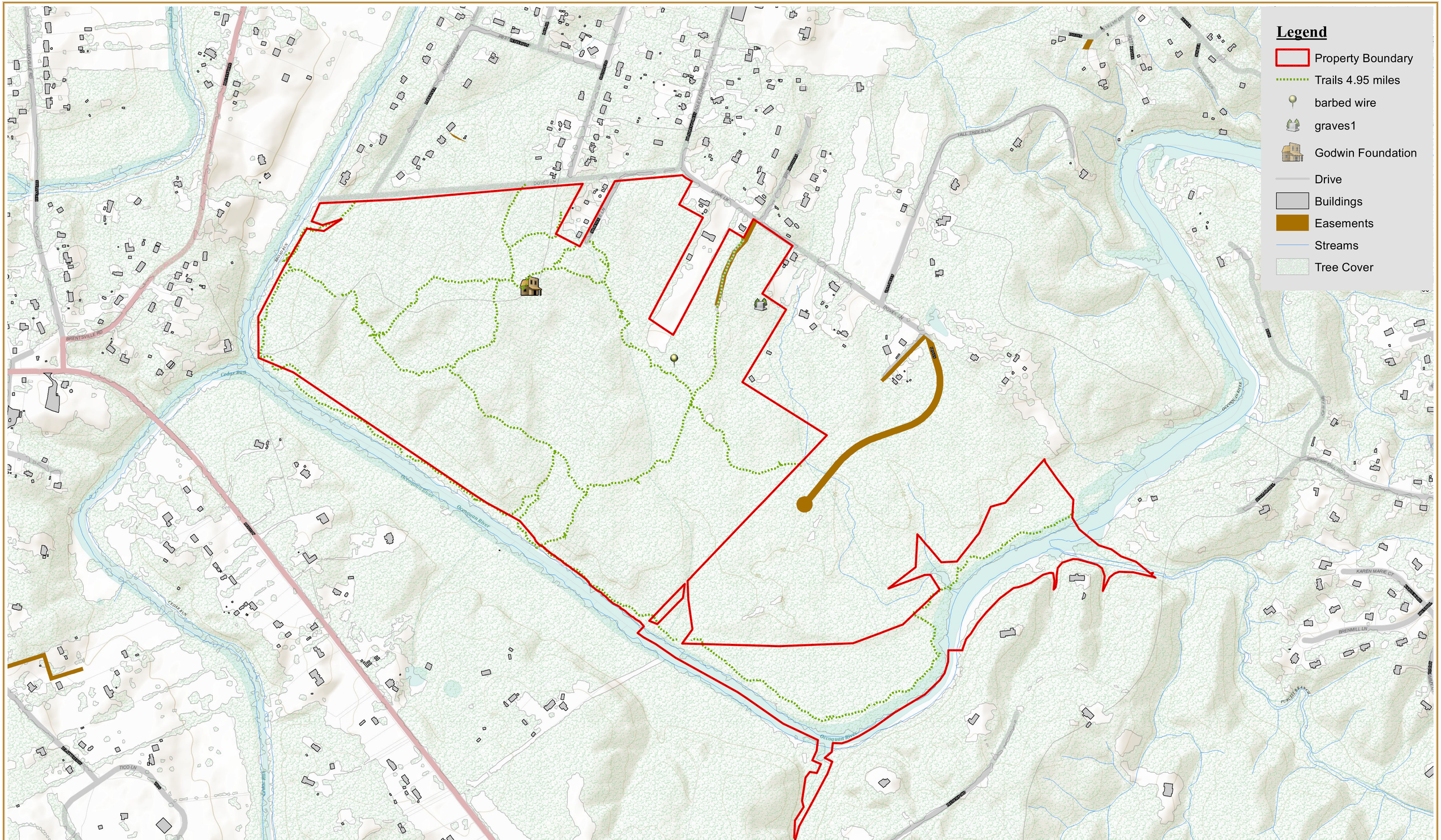


Doves Landing

Doves Lane
Manassas, VA 20112

200 100 0 200
Feet

Sources: PWCDPR, PWC, Virginia GIS
Prepared by: Ryan Conklin PP AICP, Planner II DPR



Doves Landing
Existing Conditions Map

Doves Lane
Manassas, VA 20112

300 150 0 300
Feet

Sources: PWCDPR, PWC, Virginia GIS
Prepared by: Ryan Conklin PP AICP, Planner II DPR