

Appendix B

Existing Vegetation and Wildlife

Nonmotorized Boathouse Zone Feasibility Study

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3.4.3 Terrestrial/Aquatic Vegetation & Wildlife

Terrestrial Vegetation

Vegetative cover on the project site includes a combination of mature and immature hardwoods, as well as herbaceous plants, around the perimeter, and generally herbaceous plant cover within the central portions of the study area. The site consists of the following plant cover types: mowed turf grass, wet meadow, hardwood swamp, upland hardwood shrub dominated, and upland hardwood tree dominated. The site is largely dominated by invasive non-native plant species, interspersed with mature native trees and some native saplings.

Based on field reconnaissance conducted during the fall of 2004 for the purposes of this EA, the dominant plants identified at the site consist of the following:

Plant Name	Native (✓)
<i>Acer negundo</i> - Box elder	✓
<i>Acer platanoides</i> - Norway maple	
<i>Acer rubrum</i> - Red maple	✓
<i>Acer saccharinum</i> - Silver maple	✓
<i>Agrostis alba</i> - Red top	
<i>Clematis virginiana</i> - Virgin's bower	✓
<i>Cyperus strigosus</i> - Flat sedge	
<i>Digitaria sanguinalis</i> - Crabgrass	
<i>Echinochloe crusgalli</i> - Barnyard grass	
<i>Fagus grandifolia</i> - American beech	✓
<i>Fraxinus nigra</i> - Black Ash	✓
<i>Hedera helix</i> - English ivy	
<i>Impatiens sp</i> - Touch-me-not	✓
<i>Juncus effusus</i> - Needle rush	✓
<i>Liriodendron tulipifera</i> - Tulip poplar	✓
<i>Lonicera japonica</i> - Japanese honeysuckle	
<i>Lonicera maackii</i> - Amur honeysuckle	
<i>Lysimachia nummularia</i> - Moneywort	
<i>Morus alba</i> - White mulberry	
<i>Phalaris arundinacea</i> - Reed canary	
<i>Platanus occidentalis</i> - Sycamore	✓
<i>Polygonum persicaria</i> - Lady's thumb	
<i>Polygonum cuspidatum</i> - Japanese knotweed	
<i>Robinia pseudoacacia</i> - Black locust	✓
<i>Rubus idaeus</i> - Raspberry	
<i>Rumex crispus</i> - Curled dock	
<i>Salix nigra</i> - Black willow	✓
<i>Setaria viridis</i> - Green Foxtail Grass	
<i>Smilax glauca</i> - Cat briar	✓
<i>Solidago rugosa</i> - Rough goldenrod	
<i>Typha latifolia</i> - Cattail	✓
<i>Ulmus americana</i> - American elm	✓
Unidentified grass (potentially <i>Agrostis alba</i>)	✓

The most dominant plant in the uplands and along the upland/wetland transition is Amur Honeysuckle (*Lonicera maackii*). Thickets of honeysuckle cover sections of the site and most of the understory consists of the same. White Mulberry (*Morus alba*) also dominates sections of the uplands. The most dominant species within the wetlands are a grass, presumably Green Foxtail (*Setaria viridis*). The invasive, non-native grass species appear to be growing on hummocks in some portions of the wetland area. The site, both upland and wetland areas appear to consist mostly of invasive, non-native vegetation. Only one obligate wetland plant has been identified - Cattail (*Typha latifolia*) - and only in sporadic locations, possibly indicating that the site dries out from time to time.

The vegetative structure appeared to occur in linear bands, progressing parallel to the edge of the Capital Crescent Trail and the riverbank. The first vegetative cover type starting from the path, consists of about a 25-foot-wide section of more native mature trees, in both wetland and upland areas. This section is wetter in the central and southern sections. The next consistent band of vegetation is about 30 feet in width and was dominated by herbaceous plants, mostly grasses, and with both upland and wetland areas (drier at either end). There are a few scattered Black Willow (*Salix nigra*) tree seedlings within this band. The final band extends out about 30 feet and ended at the bank of the Potomac, and was dominated by a growth of saplings (mostly mulberry) and areas of honeysuckle thickets. Ground cover in this waterfront band includes English Ivy (*Hedera helix*). The wetland area extends mostly within the herbaceous growth band but also extends into the mature wooded area and the sapling band.

It appears that these “bands” of vegetation represent the development activity that has taken place at the site. The band of mature trees running along the hiking path was most likely the previous frontage on the Potomac River. The hiking/biking path was once the Baltimore & Ohio Railroad but has been converted to the CCT. In the early 1960s, a 84” sewer main was installed along this previous shoreline. The herbaceous cover along this pipeline corridor may persist due to long-term saturation and unsuitable soils for tree establishment. There may have also been maintenance efforts within the easement to keep woody trees off the pipeline corridor.

The District of Columbia provides protection to “special trees” from unauthorized removal under the District’s Urban Forest Preservation Act of 2002. “Special trees” are defined as any non-exempt District tree having a circumference of 55” or greater (i.e., a diameter of 17.5” or greater measured at a height of 4.5’). There are three tree species exempt from this Act: *Ailanthus altissima* (Tree of Heaven), *Morus* species (Mulberry), and *Acer platanoides* (Norway maple). The purpose of the Act is to establish an urban forest preservation program; to require community notification prior to the removal or replacement of trees on public space; and to require penalties for injuring trees on public space and private property.

Except as otherwise provided, no person or non-governmental entity shall remove a Special Tree without a Special Tree Removal Permit. In return for permitted removal of trees, the applicant either plants new trees of equal circumference to the removed tree, and or pays to a Tree Fund collected by the District.

Of the trees on-site, there are two American Elm trees (at 20” and 21” diameters) that meet the District’s minimum diameter criteria for Special Trees. Both are located in the northwest corner of the site.

Submerged Aquatic Vegetation

Submerged Aquatic Vegetation (SAV) is a major threatened resource within the Potomac River and the Chesapeake Bay. The Chesapeake Bay Coastal Program has coordinated the surveying and monitoring of SAV beds in order to identify trends in the composition, number, and distribution of SAV species. The program has also developed guidelines for maintaining and improving conditions for SAV, which are valuable for the role they play in providing habitat and food for shellfish and other aquatic organisms, as well as waterfowl habitat.

In the 1920s, the Potomac River, as well as other areas in Chesapeake Bay, was infested with an undesirable plant, the water chestnut (*Trapa natans*). During the 1950s, the Potomac was overrun by dense beds of Eurasian watermilfoil. Heavy growths of water chestnut and milfoil competed with other aquatic plants for light and nutrients and often crowded out other plant species. Since 1960, the upper Potomac River has been experiencing massive summer blooms of algae (*Anacystis*), promoted by high levels of phosphorus and nitrogen. Excessive blooms effectively shade out submerged grasses, which could be the reason the upper Potomac River no longer supports dense grass beds. Several years ago aquatic areas along the shoreline of the site were dominated by a thick growth of *Hydrilla*, a very common, very invasive non-native plant known to cover large expanses of water bodies thereby, limiting habitat for native species and eliminating light penetration into the water bodies. Naturally occurring SAV normally do not dominate large expanses of waterbodies, and instead provide valuable habitat for aquatic insects, fish, and amphibians.

Conditions in the river have varied over the years and monitoring has identified major negative trends in the numbers and distribution of major SAV species. Most of these negative trends are related to water clarity, which depends largely on eutrophication levels within the river as well as stability of the bottom, bar, and bank sediments.

Recorded data on SAV coverage indicates that the last year SAV was found in the area of the project site was 2001. Since this time, the coverage of SAV has greatly decreased. Coinciding with the beginning of this decrease was the end of a four- to five-year drought, increased snowfall in winter and rainfall in summer, and several of the heaviest hurricane/tropical storm seasons in recent years. The increased precipitation has resulted in a higher than average river flow and increased sediment loading, which may have caused the destruction of existing SAV beds and the limiting of their growth and proliferation.

In addition to a review of historic data, a field reconnaissance of the river shoreline and adjacent offshore area at the project site was conducted for potential SAV beds (by Schnabel Engineering, 2005). Field sampling was conducted 15-20feet offshore using a skiff and a rake for the entire length of shoreline at the project site. In addition, the intertidal zone was observed for plant growth, and the shorelines and coves within the vicinity of the site were observed, as well as the C&O Canal, for presence of SAV. Although historical records of SAV beds exist for the area around the project site, there were no root systems or remnants of stems/leaves observed in the vicinity of the shoreline. Since the assessment was conducted in late fall, when SAV would typically not be visible, a review of the tidal flats in the vicinity of the site was performed. Flats across the river and down the Little River and the Georgetown Channel were observed from the water at low tide. Also, river users and government agencies working on the river were

interviewed. SAV was found in one location, but generally there was a lack of SAV for the extensive tidal flats and shallows in the river (Schnabel 2005).

According to frequent river users and the Chesapeake Bay Program, SAV beds have drastically reduced in size and number over the past two to three years. There are records that beds of Hydrilla had been located off the shoreline of the project site in 2002. No current remnants of this bed remain. However, there is the potential for SAV to reoccur in the vicinity of the site, based on the documentation of previous occurrences, and the efforts of the Chesapeake Bay Coastal Program and its local jurisdictions to protect and restore the Chesapeake Bay watershed, which this site is part of, by improving water quality, reducing sedimentation, and restoring wetlands and shallow water habitats.

Wildlife

Benthic Invertebrates

Benthic invertebrates are those invertebrate organisms that live within the sediments of the shallows and bottom area of water bodies, including streams, rivers, and perennially flooded wetlands. There was no specific sampling of the benthic areas around the shoreline of the boathouse site for aquatic invertebrates. However, during the SAV assessment, sediment raking of the top three inches of the bottom sediments revealed the presence of numerous *Mollusca* species, including one species of clam and two species of snails. These organisms were not identified, except for the bivalve, which was identified as the Asiatic clam (*Corbicula fluminea*) which was pulled up in abundance, sometimes 15 or 20 in one rake.

This clam species is an exotic species. The Asiatic clam is a known biofouler in power plant and industrial water systems and has also caused problems in irrigation canals and pipes. Ecologically, this species can alter benthic substrates and compete with native mussel species for food and space. In addition, Asian clams appear to be capable of tolerating polluted environments better than many native bivalves.

Native mussel species are known to occur locally. In the C&O Canal approximately one mile upstream of the Key Bridge, native mussels were studied and documented in *Evaluation of Native Freshwater Mussel Populations in the C&O Canal NHP Final Report, 2004* (USGS-Leetown Science Center 2004). A sample site in the canal at mile 0.93 of actual towpath (upriver from Key Bridge) revealed the following mussel species: *Utterbackia imbecillis* (listed Rare in Maryland - State of the Streams: 1995-1997 Maryland Biological Stream Survey Results), and *Pyganadon cataracta*.

The artificial wetland area on-site does not have appropriate habitat for aquatic organisms due to the continual drying out of the site indicated by the plant community at the site.

Fish

A joint effort by the U.S. Fish and Wildlife Service and the Interstate Commission on the Potomac River Basin began in 1995 has resulted in a significant re-establishment of American shad in the Potomac River. In eight years, over 15 million shad fry were introduced into the

Potomac River. Monitoring in the tidal freshwater Potomac has revealed significant success in increased collection of adult, young of year, and shad fry in this area since release occurred.

The C&O Canal NHP completed a park-wide fish survey in 2004 (see Appendix).²⁶ Additionally, naturally ranging fish in this portion of the Potomac and tributaries to the river have been identified by the Maryland Biological Stream Survey. Fish that likely range around the project site include American eel, lamprey, killifish, dace, minnows, shiners chubbs, bluegills, and bass.

Birds

The Potomac River has historically supported many types of bird species, including waterfowl, raptors, songbirds, wading birds, etc. Birds of interest that have been observed in the area of the site include turkey vultures, great blue herons, bald eagles, Canada geese, cackling geese, mergansers, and peregrine falcons. Many more bird species could possibly be found in the environs due to the proximity to a large waterbody and expanses of wild, open river and wooded uplands, wetlands, and marshes.

The site supports plants that produce fruits and seeds which would be attractive to nesting and resting bird species. The proximity to urban areas, however, limits this site from being of great use to the larger wild bird species mentioned above.

Mammals

There were very few animals of any type observed, which would be expected for a site so close to an urban environment. Animal signs belonging to White-tailed deer (scat, browse, and prints) were observed and it appears that deer use the site extensively. The site is most likely suitable for other small mammal use, including raccoon, skunk, fox, and rodents. Although the site serves in some capacity as an animal habitat, its proximity to an urban area and the continuous natural shoreline and habitat area to the west indicates that it is probably not a significant habitat resource.

Reptiles and Amphibians

Reptiles and amphibians have been studied within the C&O Canal NHP and observed within the C&O Canal and offsite in the tributaries and natural areas along the Potomac (see Appendix).²⁷ However, there were no observances of herptiles or of appropriate habitat of any type during a fall 2004 field visit. Records of turtle species, including Eastern redbellies, painted, and Eastern box turtles exist in the area; however, there does not appear to be suitable habitat for these species to exist at the site. There are not enough perennial, deeper wetland ponds to support the species during their life cycle. In addition, the soils are very hard both on the site and at the river/shoreline interface due to fill material and concrete deposited on the shoreline. It is possible that Eastern red-back salamanders (*Plethodon cinereus*) or Red-spotted newt (*Notophthalmus viridescens*) use the site at the adult stages. However, due to the contaminated

²⁶ Raesly, Richard L., Inventory and Biological Monitoring of Fishes in National Parks of the National Capital Region, NPS, 2004.

²⁷ Dr. Thomas K. Pauley, Herp Species observed by habitat at CHOH Surveys, NPS-Center for Urban Ecology, 2005.

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condition of the soils on the site, it is not likely that amphibians that are sensitive to degraded water quality would use this site for prolonged periods of time, if at all.

Protected Plant and Animal Species

Plant and animal species, which are rare, threatened and endangered, (RT&E) either locally, regionally, or nationally, are considered sensitive and are protected (along with their habitat) under a number of federal, state, and local laws. These include the federal Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, Maryland and Virginia sensitive species laws, and the applicable critical area plans for the Chesapeake Bay Program. The U.S. Fish and Wildlife Service (USFWS) has authority over projects that may affect federally listed species.

RT&E Plant and Animal Species

USFWS has indicated there are no Federally listed RT&E plant or animal species near the site (see correspondence in Appendix). There are Mussels listed as rare in Maryland as discussed above that have been located in the C&O Canal with the closest location almost a mile upstream from the site. There are also locally listed RT&E plant species located in the District of Columbia. An inventory in the vicinity of the project site is provided by *Inventory for Rare Plants & Significant Habitats along the C&O Canal NHP and Potomac River (within the District of Columbia) March 2001* (Wildlife & Heritage Division Maryland DNR, 2001). The project site lies within the Fletcher's Floodplain Survey Site from Key Bridge upstream approximately two miles towards Chain Bridge to the boathouse at Fletcher's Cove. Within this area are small pockets of scoured bedrock terrace habitats including river overwash habitat, scour prairie, scour savanna and woodland and exposed bedrock habitats. Although this description of the habitat is accurate for areas upstream, the boathouse site is primarily a fill site (for the railroad and Interceptor Sewer) and does not include any of these specialized habitat areas.

Nineteen plant species listed in the District of Columbia as rare, highly rare, historical or extirpated are documented within the Fletcher's Floodplain Survey Site. The *Inventory for Rare Plants & Significant Habitats along the C&O Canal NHP and Potomac River; Field Forms & Maps (Part Three)* (Wiegand, April 2001) lists twelve RT&E plant species within the Fletcher's Floodplain Survey Site.

Maryland DNR has field knowledge of the RT&E plants and the potential for populations in the vicinity of the C&O Canal NHP. They have documented good RT&E habitat for plant species near the boathouse at Fletcher's Cove, approximately two miles upriver from the project site.

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