



# Washington, DC's Anacostia River Watershed River Fringe Wetland Restoration Project in the Tidal Anacostia River

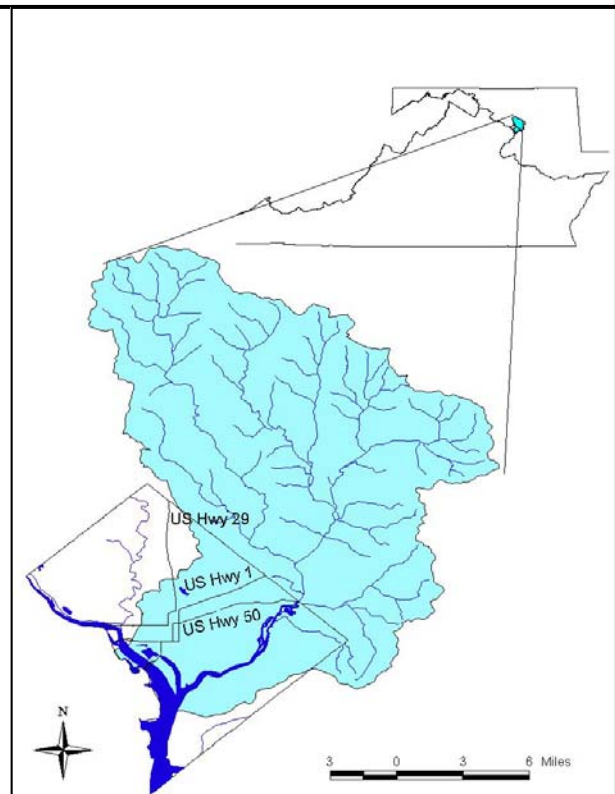
## ***Watershed Snapshot***

The tidal Anacostia River in Washington, DC suffers from Combined Sewer Overflows (CSOs), sewer leaks, urban stormwater runoff, and a legacy of toxic contamination. Adding to these problems are trash, nutrients, sediments, and sewage contributions from the Maryland portion of the watershed. Highlighting the broad-based interest in cleaning up the river, many organizations, citizens, and committees are working on various aspects of these problems. The Environmental Health Administration (EHA)/Watershed Protection Division (WPD) is using Section 319 funding to create restored wetlands in the Anacostia that will reduce the impacts of nutrients, sediments and CSOs. In 2003, DC partnered with the US Army Corps of Engineers to create the River Fringe wetlands, a 17-acre wetland project in the tidal Anacostia River. Water quality improvements are expected through sediment trapping and nutrient uptake from the wetland growth. EHA/WPD will monitor the wetlands for four

years in order to assess water quality improvements.



Source Peter Hill

*Recently Planted River Fringe Wetland*

Source EPA Region 3

## ***Problem***

The Anacostia's impairments are reflected in current TMDL's for bacteria, oil/grease, metals, and organics. In addition, Kingman Lake, a backwater lake connected to the tidal Anacostia River, has the same TMDL's as well as ones for Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD). The River Fringe wetlands are located in the main stem of the river very near the Kingman Lake area. Combined sewer overflows have been a long-running



problem for the Anacostia and the system overflows on average 150 times a year. This combination of untreated sewage and storm-water has extreme deleterious effects upon water quality and aquatic life and is the main reason for the bacteria TMDL. Nonpoint source pollution has been estimated to contribute 10 percent of the District's nitrogen load and 32 percent of its phosphorous load to the Chesapeake Bay. Nonpoint source contributions from road and parking lot runoff are the primary driver for the oil/grease TMDL's.

Although there are no good methods to determine the precise reduction that can be attributed to wetlands in a tidal system with numer-

Source Claire O'Neal



*Aerial photo of the River Fringe wetland one month after planting. In the distance (past E. Capital Bridge) one can see the other 5-acre cell.*



Source Peter Hill

*Intensive fencing and horizontal stringing throughout the marsh was required to exclude destruction by resident Canada geese. It is hoped that a*

ous sources of impairment, it is known that wetlands take up nutrients and serve as a natural sediment trap.

### **Project Highlights**

In 2003, EHA/WPD worked to review, approve, and oversee the construction of the River Fringe wetlands with the US Army Corps of Engineers, Baltimore District. The mudflats were created by dredging sediment from the river bottom in Bladensburg and pumping the slurry through pipes down to two depositional areas of the river in the District. The mudflat elevation was critical for eventual success given that different types of vegetation grow at different elevations. In 2000, the District and the Corps created the Kingman Lake wetlands which were soon severely impacted by the voracious grazing of resident Canada geese. One reason for the inability of the marsh to recover from this grazing was the low elevations that were chosen for the marsh. The removal of fencing recommended by the National Park Service (NPS) also led to the loss of nearly 75% of the planted vegetation. With the River Fringe wetlands, EHA and the Corps created higher mudflats which has led to the growth of annuals and other dense vegetation. As of Fall 2005, over 95% of the wetland is densely vegetated. The Corps and EHA



NONPOINT SOURCE POLLUTION PROGRAM

Source Peter Hill



*Depositional mudflat in the Anacostia River just below Benning Road. This mudflat was raised significantly to create the larger of the two wetland sites for the River Fringe project.*

Birds and insects are benefiting greatly from this improved habitat and once existing fencing and sheet piling has been removed, it is expected that the wetlands will also serve as habitat for juvenile fish.

**Challenges Faced**

The undertaking of any action in the District involves challenges not always present in more rural or suburban areas. The issue of land ownership is unique in the District, where most of the lands adjoining the rivers and creeks as well as the river bottom is owned by the NPS. Any alteration to the land requires a special use permit and approval by the NPS. This gives NPS a virtual veto power over all projects that happen along the Anacostia River. Further land owner coordination recognized the special role of the Anacostia Waterfront Corporation (AWC), a District-created private entity charged with creating a master framework plan to coordinate all development activities adjacent to the Anacostia River in the District. EHA spent many hours ensuring that these critical land owning partners were aware of the multiple benefits of these projects. EHA also ensured that these projects fit into the AWC master plan.

are maintaining fencing as well, until the NPS develops a comprehensive resident Canada goose management plan to address extremely large numbers of resident Canada geese on NPS property.

**Results**

Two and a half years after the construction of the wetland, EHA/WPD and the Corps of Engineers can tentatively claim success in an urban wetland restoration project. Given the numbers of stressors (invasive plants, resident Canada geese, poor water quality), this is a laudable result. Over 40 species of plants have been identified in the wetland to date. Although some invasive plants are present, EHA/WPD and NPS are looking at methods to control invasive species such as *Phragmites australis* (Common reed) and *Lythrum salicaria* (purple loosestrife).

Source Peter Hill



*The southern portion of the river fringe wetland lies adjacent to Kingman Island; sheet piling will be removed in 2006.*

Spring 2006



## NONPOINT SOURCE POLLUTION PROGRAM

Another wetland project implementation challenge concerns the funding mechanisms used for these projects. Corps of Engineers funding is appropriated annually and projects are earmarked for construction based upon issues beyond the control of project managers. All of the wetland projects involved a “funding gestation period” that lasted from 1 to 3 years depending upon the project. On more than one occasion, funding that was in hand was stripped for other urgent projects. Consequently, project schedules typically were extended beyond the original timeframes. EHA’s vital cost share for the River Fringe project came from Section 319 funds as well as a 5 million dollar federal appropriation specifically intended for Anacostia restoration work. Section 319 nonpoint source funds served as a match for all of EHA/WPD’s restoration projects, allowing for EHA staff management, project monitoring, and project outreach.

Challenges in communicating the wetlands benefits was an issue that was not initially predicted. Some members of the community vocally objected to the creation of perceived mosquito habitat in a city. Outreach to these groups was essential to explain how these wetland restoration projects would not increase risk to the West Nile virus or create “mosquito habitat.”

### **Partners and Funding**

Environmental Health Administration  
Watershed Protection Division (WPD)  
US Army Corps of Engineers, Baltimore District

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Source Claire O'Neal

*Aerial Photograph of River Fringe Wetlands 3-4 Months After Planting: 2003*

