Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
District of Columbia

Project Expands Wetland Functions in Tidal River

Waterbody Improved

Nearly all the historic wetlands surrounding the Anacostia River were lost when the Washington, D.C., area was developed. Also lost were the ecosystem services that wetlands provide, including water filtration and habitat. As a result, sediment and nutrients levels in the river increased. The District of Columbia's (District's) Department of the Environment (DDOE) launched an effort to restore some of the wetlands along the mainstream portion of the river. Restoring the sites increased coverage of planted vegetation by more than 100 percent along the river and improved the ability of the areas to process excess nutrients and filter sediment.

Problem

The tidal portion of the Anacostia River once included hundreds of acres of wetlands. During the capitol region's development, the U.S. Army Corps of Engineers (USACE) straightened the river and filled in almost all the wetlands, leaving the tidal Anacostia with little ability to process pollutants flowing downstream from Maryland and the District.

Recently DDOE and USACE conducted a planning study using Clean Water Act (CWA) section 319 funding and identified areas (fringe sites) in the mainstem channel that could sustain wetlands. In 2003 the partners implemented a 17-acre wetland restoration project called the River Fringe Wetlands.

Project Highlights

The partners identified two existing depositional areas (Figure 1) in the river as prime spots for raising the elevation and planting wetland plants. They dredged sediment from approximately a mile upstream of the sites and pumped it into two cells, which were supported by sheet piling and coconut coir (fiber) logs. The 1.7- to 2.3-foot target elevations were reached after two weeks of dredging (Figure 2).

Vegetation in a similar wetland restoration project conducted in 2000 suffered from significant grazing damage by numerous Canada geese that reside year-round on nearby National Park Service land. Learning from that, the partners opted to sufficiently raise the elevations of the River Fringe wetland restoration project to sustain a vigorous assemblage of wetland plants that would not attract resident geese. In addition, the partners added fences around the newly planted wetlands to deter geese from accessing them from the ground.

Figure 1. Before construction, the River Fringe Wetland site was a depositional mudflat.

Figure 2. Project partners pumped sediment into two cells to create the River Fringe Wetland, seen here as the slight bulge of land extending into the river just beyond the tennis courts.

The partners planted seven species in the River Fringe project area, the vast majority of which are unpalatable to Canada geese. One species of interest, *Zizania aquatica* (wild rice), historically dominated the wetlands. The Anacostia Watershed Society (AWS) reestablished that species using a unique method. AWS grew wild rice and collected the seed over the course of one growing season. It then embedded the seeds in mud balls and invited enthusiastic school children

Figure 3. Three years after construction, the area is densely vegetated.

to throw them into the wetland cells. The wild rice plants, in addition to many other planted species, have flourished over the past 7 years (Figure 3).

Results

The coverage of planted vegetation has increased to approximately 80 percent and has remained steady for the past 4 years (Figure 4). More than 70 species have been identified over the past 5 years (Figure 5). Volunteer species (mostly annual species), have been an important component of the vegetation composition, contributing an additional 40 to 60 percent coverage. The greater than 100 percent increase indicates that numerous layers of vegetation have created an extremely dense plant mass. The plants absorb excess nutrients and filter sediment from the river, thereby achieving the project's primary goal.

Partners and Funding

The U.S. Environmental Protection Agency provided $200,000 in CWA section 319 funding to assist DDOE with the restoration project. DDOE contributed 25 percent of the costs of the restoration project and contributed staffing for the wetland monitoring. The USACE Baltimore District contributed 75 percent of the costs and handled contract and project management duties. The $4 million total project cost consisted of feasibility studies, design, permitting, construction and monitoring.

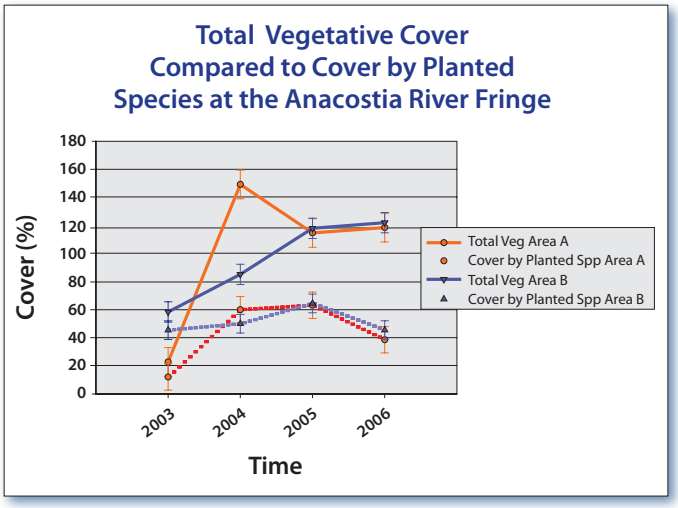

Figure 4. Coverage of planted vegetation has remained constant.

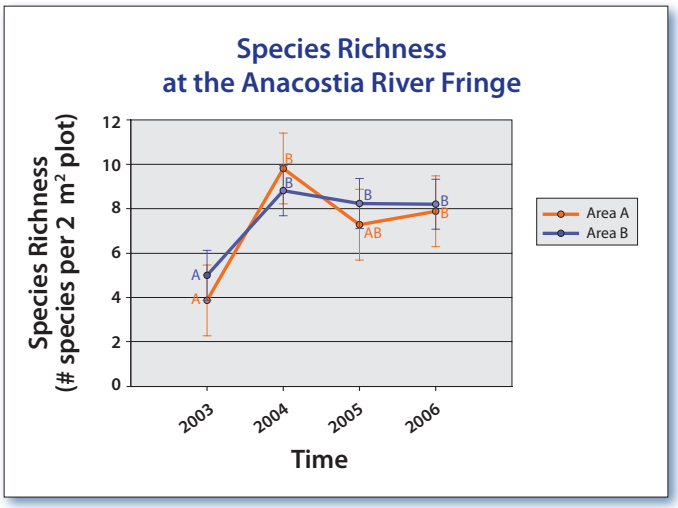

Figure 5. Numerous species continue to thrive in the River Fringe Wetland.

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