

Vegetation Monitoring at the Reconstructed Anacostia River Fringe Wetlands

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Background

In August 2003 planting was completed at the newly-reconstructed 15-acre River Fringe wetlands along the mainstem of the Anacostia River in Washington, DC. This project is the third in a series of freshwater tidal wetland reconstructions on the Anacostia River designed and implemented by the U.S. Army Corps of Engineers (COE) on lands owned by the National Park Service (NPS). The first was Kenilworth Marsh, planted in 1993; the second was Kingman Marsh, planted in 2000. Kenilworth and Kingman were both constructed in low-energy backwaters of the Anacostia, unlike the River Fringe, which was constructed on the high-energy mainstem, and therefore required sheet piling to provide protection from tidal energy during the establishment phase.

As the third in a series, the River Fringe reconstruction benefited from lessons learned at the prior reconstructions, incorporating a streamlined planting list consisting of seven native plant species, and an extensive system of fencing and flagging to prevent the extensive herbivory by resident Canada geese instrumental in the decimation of vegetation at the Kingman Marsh site. Patuxent Wildlife Research Center has participated in the monitoring of all three of the reconstruction sites, with a variety of partners including NPS, COE, University of Maryland, and DC Department of Health (which designed the monitoring protocol for the River Fringe wetlands).



Sampling Methods

- Two areas (A and B).
- Twelve transects (4 in A; 8 in B).
- Four 1m by 2m plots per transect.
- Three sampling events per growing season.
- Collected percent cover per species.

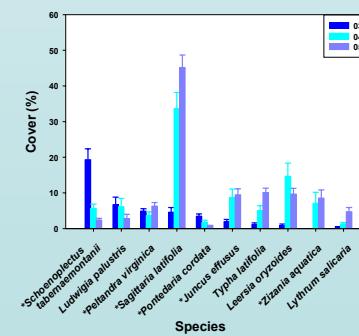


Fig.1. Dominant Species.

Species displayed were the top five providers of cover in at least one year, plus *Lythrum salicaria*, a species of special concern.

* Denotes a species that was planted.

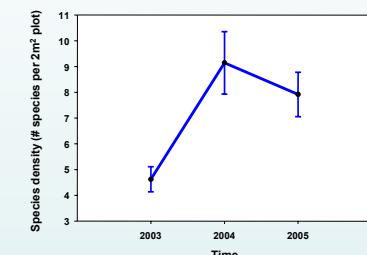


Fig.3. Species Density.



Results

- Over 80 plant species were observed in 2005.
- Of the 9 dominant species 6 were planted (Fig. 1).
- Total vegetative cover averaged $122 \pm 9\%$ in 2005 (Fig. 2).
- Cover from planted species averaged $73 \pm 7\%$ in 2005 (Fig. 2).
- Species density averaged 8 ± 1 species per $2m^2$ plot in 2005 (Fig. 3).
- Cover by *Lythrum salicaria* (purple loosestrife) has increased in the higher areas.

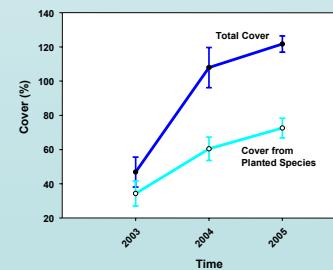


Fig.2. Vegetative Cover.



Conclusions and Questions for the Future

- Three years after installation of the Anacostia River Fringe wetlands, total vegetative cover, cover from planted species, species density and overall species richness all look good.
- Species composition and density of vegetation suggest that elevations in most of the Fringe are not on the low side, which was a problem at Kingman. Installation of a benchmark will allow us to obtain actual elevations.
- Sheet piling, fences, stringing and flagging have thus far protected the Fringe wetlands from tidal energy and geese. The question remains as to what will happen when these are removed.