

Chesapeake Bay Field Office

Poplar Island Restoration Project



Once a haven for wildlife, Poplar Island, in the mid Chesapeake Bay region, was slipping away at a rate of more than 13 feet a year due to rapid erosion brought on by sea-level rise and land subsidence. Without intervention the island was well on the way to becoming just another sand shoal.

The Poplar Island Restoration Project, initiated in 1998, is expected to restore 1,100 acres of wetland and upland habitat within the historic island footprint using dredged material from Baltimore's shipping-channel complex. The project will also re-create an 800-acre protected embayment, Poplar Harbor, on the leeward side of the island. It is hoped that by re-creating an area of calm, shallow water, the project will help restore the local SAV (submerged aquatic vegetation) beds to historic levels.

In addition to monitoring, Chesapeake Bay Field Office has been involved in many aspects of the project, including conceptual design, habitat creation, geomorphological considerations, vegetation planting, assisting with wildlife-human conflicts during construction, and the placement of bird nesting islands.

Monitoring currently underway is intended to compare baseline ecological conditions to those in the post-restoration period while providing data useful for ongoing design adjustment. Monitoring studies are expected to last several years. The Chesapeake Bay Field Office is responsible for three elements of Poplar Island ecological

monitoring: wetland vegetation, submerged aquatic vegetation, and wetland elevation. Other components of Poplar Island monitoring include fisheries usage monitoring by National Marine Fisheries Service and avian and mammalian monitoring by U.S. Geological Survey.

Poplar Island Wetlands

The U.S. Fish & Wildlife Service began monitoring several reference marshes in the Poplar Island complex and along the Eastern Shore of the Chesapeake Bay in September of 1996 and 2001 to establish a body of local saltmarsh vegetation information to be used in evaluation of the future wetlands created on a restored Poplar Island.

As expected, there were differences low marsh and high marsh vegetation at the reference sites. Saltmarsh cordgrass (*Spartina alterniflora*) was the dominant plant species in the low marsh zone, with saltmeadow hay (*Spartina patens*) a secondary dominant species. Within the high marsh zone, *S. patens* was the overwhelming dominant species, but common reed (*Phragmites australis*), saltgrass (*Distichlis spicata*), *S. alterniflora*, and high tide bush (*Iva frutescens*) were also important community components. The high marsh zone had greater diversity than in the low marsh zone. Stem heights varied from site-to-site for most species analyzed. This information will be valuable in mid-course corrections and evaluations necessary for the success of the restoration project.

Wetland elevation monitoring will begin in 2003. Linking the detailed vegetation community information directly to elevation will create a more visual and intuitively-applicable, representation of local saltmarsh vegetation. The connections between vegetation community variation and marsh elevations will help to guide future restoration designs and mid-course corrections.

SAV in Poplar Harbor

Monitoring of SAV near the construction site occurred during July and September of both 2001 and 2002. Three species were found both in Poplar Harbor and at the reference sites: widgeon grass (*Ruppia maritima*), sago pondweed (*Stuckenia pectinata*), and horned pondweed (*Zannichellia palustris*). Although the Poplar Harbor beds were sparse and scattered relative to the Eastern Shore reference sites, the continued survival of SAV there represents a promising potential for resurgence. Repeating monitoring in 2002 and beyond affords year-to-year comparisons for gauging the project's success in influencing restoration of SAV beds.

For additional information, contact:

Dan Murphy (410) 573-4521
dan_r_murphy@fws.gov
U.S. Fish & Wildlife Service
177 Admiral Cochrane Dr.
Annapolis, MD 21401

