



Walton River Salt Marsh Restoration Project

The Walton River is a tidal river located on the Minas Basin, part of the greater Bay of Fundy. The site (12 ha) was a Ducks Unlimited Canada (DUC) impoundment that was returned to the tide in 2005. The goal was to restore the natural hydrology to the site, enabling the re-establishment of salt marsh habitat conditions similar to the salt marshes found in this tidal river system. A six-year monitoring program (one year pre- and five years post-restoration) is associated with this project.

Monitoring Program: 2005 – 2011

Location: Hants County, Nova Scotia

Client: Nova Scotia Department of
Transportation & Infrastructure Renewal
(NSTIR)
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Project Details:

During the summer of 2005, the NSTIR in partnership with DUC and the Nova Scotia Department of Natural Resources undertook construction activities at a site along the Walton River, Hants County, Nova Scotia to restore tidal flow to a 12 ha former salt marsh. The restoration of tidal flow, and ultimately of salt marsh habitat, to this site fulfills the compensation requirements noted in NSTIR's Harmful Alteration Disruption or Destruction (HADD) Compensation Proposal and Fisheries Act-Section 35(2) HADD Authorizations for proposed Highway 101 construction project (in the St. Croix and Gaspereau River watersheds).

Construction activities, conducted by DUC between 29 August and 9 September 2005, began with removal of the water control structure, allowing access to the site for sampling and in preparation for construction. Then the dyke was breached in five locations, one at the site of a historical channel.



¹ SMU – Saint Mary's University

In 2005, CBWES developed a tidal wetland restoration monitoring program for the six-year long-term monitoring for the site. CBWES conducted an extensive baseline study of the restoration site and an adjacent unrestricted salt marsh in advance of the restoration. The year-1 and year-2 monitoring of the reference and restoration sites was conducted by CBWES.

Long-term Monitoring Program:

The monitoring program utilized for this project was adopted and adapted by CBWES from a set of regional protocols (The Global Program of Action Coalition for the Gulf of Maine Regional Monitoring Protocol^{2,3}) developed for use as part of tidal wetland restoration projects in the Gulf of Maine and Bay of Fundy.

Indicators used to assess this project:

Geospatial Attributes

- Digital Elevation Model
- Habitat Mapping

Hydrology

- Hydroperiod
- Water Table Depth
- Water Quality

Soils and Sediments

- Pore Water Salinity
- Soil Characteristics
- Sediment Accretion and Elevation

Vegetation

Nekton

Benthic and Other Aquatic Invertebrates



Project Reports:

1. Bowron, T.M. and N.C. Chiasson. 2006. Pre and Immediate Post-Construction Monitoring of the Walton River Salt Marsh Restoration Project. Report Prepared for Nova Scotia Department of Transportation and Public Works. CB Wetlands & Environmental Specialists Publication No. 2
2. Bowron, T.M. and N.C. Neatt. 2007. Post-Construction Monitoring (Year 1) of the Walton River Salt Marsh Restoration Project. Report Prepared for Nova Scotia Department of Transportation and Public Works. CB Wetlands & Environmental Specialists Publication No. 4
3. Bowron, T.M., N.C. Neatt, J.M. Graham, J. Lundholm and D. van Proosdij. 2008. Post-Construction Monitoring (Year 2) of the Walton River Salt Marsh Restoration Project. Report Prepared for Nova Scotia Department of Transportation and Infrastructure Renewal. CBWES Inc. Publication No.7

*Electronic copies of project reports are available at: www.gov.ns.ca/tran/enviroservices/enviroSaltMarsh.asp or by contacting CBWES at info@cbwes.com

² Neckles, H.A. and M. Dionne. (eds.) 2000. Regional Standards to Identify and Evaluate Tidal Wetland Restoration in the Gulf of Maine. A GPAC Workshop. Wells National Estuarine Research Reserve, Wells, ME.

³ Neckles, H.A., M. Dionne, D.M. Burdick, C.T. Roman, R. Buchsbaum, and E. Hutchins. 2002. A Monitoring Protocol to Assess Tidal Restoration of Salt Marshes on Local and Regional Scales. *Restoration Ecology*, 10(3): 556 – 563.