



St. Croix River High Salt Marsh & Floodplain Wetland Restoration Project

The St. Croix River is a tidal river system that empties into the Minas Basin, part of the greater Bay of Fundy. The restoration project consists of four dykelands along the St. Croix River. The goal is to restore the natural hydrology to the sites, enabling the re-establishment of high salt marsh and floodplain wetland habitat conditions. There is a six-year (one year pre- and five years post-restoration) monitoring program associated with this project.

Monitoring Program: 2006 – 2012

Location: Hants County, Nova Scotia

Client: Nova Scotia Department of
Transportation & Infrastructure Renewal
(NSTIR)
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Project Managers: Tony M. Bowron
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Key Personnel: Jennie Graham (CBWES)
Dr. Jeremy Lundholm (SMU¹)
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Project Details:

NSTIR commissioned CBWES Inc. to develop a compensation proposal for the restoration of four fallow dykeland sites along the St. Croix River, (West Hants County, NS) as required by the NS Department of Environment and Labour (NSEL) for the alteration of a wetland or watercourse. The compensation proposal included conducting an elevation survey of the four sites, constructing a Digital Elevation Model (DEM), consulting with NSDA staff and university wetland researchers, and developing the restoration design proposal and monitoring program. As part of this compensation project, CBWES conducted an extensive baseline study of the restoration sites and an unrestricted salt marsh pre-restoration.



¹ SMU – Saint Mary's University

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. Neatt. 2007. Compensation Proposal for Restoration of a High Salt Marsh and Floodplain Wetland on the St. Croix River. Report Prepared for Nova Scotia Department of Transportation and Public Works. CB Wetlands & Environmental Specialists Report No. 2
2. Bowron, T.M., N.C. Neatt, J.M. Graham, J. Lundholm and D. van Proosdij. 2008. Pre-Construction Monitoring (Baseline) of the St. Croix River High Salt Marsh and Floodplain Wetland Restoration Project. Report Prepared for Nova Scotia Department of Transportation and Infrastructure Renewal. CBWES Inc. Publication No.10

*Electronic copies of project reports are available: 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.