

Monitoring & Evaluation Report
Souris River Saltwater Marsh
HADD Project
2010



Souris & Area Branch of the PEI Wildlife Federation (SABWF) has completed the construction of a salt-marsh in 2008 within the upper estuary of Souris River with two smaller ones within the northeast corner of the estuary.

In cooperation with the Souris Harbour Authority Inc. (SHAI) and Department of Fisheries and Oceans (DFO), the Souris Wildlife Federation has administered an innovative project aimed at enhancing wildlife habitat and water quality in the Souris River. With funding provided by SHAI, this initiative will create large areas of salt-marsh at two locations in the Souris River through the installation and maintenance of brush mats in the summer of 2008. These structures consist of large numbers of softwood trees carefully arranged and secured in such a way to trap suspended sediments and organic matter carried by the water.

Over time, this leads to the creation of a new stream bank capable of supporting such plants as grasses and cattails, eventually forming a stable salt-marsh ecosystem. The environmental benefits of this new marsh area are extensive, and include providing unique wildlife habitat and absorbing excess nutrients from the water. This project was developed to mitigate habitat loss associated with necessary repairs made recently to the Souris Breakwater. The Souris Harbour Authority Inc., as an environmentally responsible organization, embraced the holistic approach of watershed management. Environmental enhancements made upriver ultimately benefit habitats downstream, and the positive results of this venture will be realized for years to come.

The Souris & Area Wildlife Branch (SAWB) was invited by Souris Harbour Authority (SHAI) to develop a method of evaluating the progress of this saltwater marsh gaining vegetation over the next three years (ends 2010).

The method that was developed by SAWB instituted five (5) measured zones (GPS and measuring tape) within this saltwater marsh. These zones were strategically selected and named (zone #1, etc) within the marsh. Three of the zones were 10 metre square, and two triangles, one at the point of the marsh and one at the base of the marsh. Each of these zones was also selected on the basis of the amount of vegetation (measured with approximation) occurring within them as of December 2008.

This document will include a map of the site, GPS coordinates and a series of pictures depicting the amount of vegetation that was present within each site. A budget will also be included for the estimated costs to be incurred for each of the three years.

GPS Coordinates for each of the Zones

Zone #1

1	62.3019996	46.3843002
1	62.3021173	46.3843504
1	62.3022506	46.3842999

Zone #2

2	62.3017432	46.3842257
2	62.3018322	46.3842811
2	62.3019214	46.3842196
2	62.3018389	46.3841633

Zone #3

3	62.3017714	46.3838489
3	62.3018772	46.3839098
3	62.3019704	46.3838438
3	62.3018671	46.3837829

Zone #4

4	62.3014234	46.3835076
4	62.3015096	46.3835783
4	62.3016171	46.3835142
4	62.3015244	46.3834434

Zone #5

5	62.3007503	46.3833829
5	62.3010335	46.3833999
5	62.3010495	46.3834666

GPS map of Souris River Saltwater Marsh



Pictures of each zone

Zone #1 Triangle measuring 131 metres square

2008 Vegetation Levels Scaled at 20%



2009 Vegetation Levels Scaled at 20%



2010 Vegetation Levels Scaled at 30%



Zone #2 A square with an area of 100 metres square.

2008 Vegetation Levels Scaled at 0-5%



2009 Vegetation Levels Scaled at 15%



2010 Vegetation Scaled at 15%



Zone #3 A square with an area of 100 metres square

2008 Veg. Scaled at 0%



2009 Veg. Scaled At 0%



2010 Veg Scaled At 10%



Zone #4 A square with an area of 100 metres square

2008 Veg. Scaled At 15%



2009 Veg. Scaled At 40%



2010 Veg. Scaled At 50%



Zone #5 A triangle with an area of 260 metres square.

2008 Veg. Scaled At 55%



2009 Veg. Scaled At 70%



2010 Veg. Scaled At 75%



General Comments:

While doing my field work in late November and early December, I found the work that was done in the saltwater marsh very stable. During the past two years with ice, storms, etc most of the stakes have “popped out” but the sediment seems to have secured the mat within the marsh. The channel has become substantially deeper near the box culvert of the causeway. In the small area we did below (Phylliss Campbell’s) things didn’t stay as secure over the winter months with a portion washing out into the estuary. We probably in hindsight should have used stakes longer than 4 ft. in that area as the mud appeared to be deeper.

In the past year’s reports I expressed concerns with my spruce stakes holding (they didn’t) as my markers (attempting to be environmentally friendly) to indicate the zones. I will not change these to rebar because of the same environmental concerns. I will continue to use the same GPS coordinates each fall and place new stakes at these points, the costs really don’t warrant the environmental risks..

I attempted to take pictures from exactly the same angle and distance to give a true depiction of each zone and found this is really not as easy as I anticipated. I utilized two of my crew members that assisted in the initial brushmatting and used their observations in assessing the vegetation cover and found we were all in the “ballpark” with our estimations.

We found the marsh changing with a blanket of sand starting to form over the black mud which makes the marsh somewhat easier for walking in our assessments. We feel confident in suggesting that there has been an increase of approximately 10% annually of the vegetation cover in this marsh over the past two years.

This saltwater marsh is receiving quite a number of visits from people from PEI and other parts of our country. We have had a number of DFO officials from New Brunswick, come to observe. We have had a delegation from a national conference held in Charlottetown of various Canadian conservation groups in 2009. The Biology Dept. of UPEI has visited this site annually. Representatives from Agriculture Canada have also visited. Tours were also given by our Branch staff to students of Souris Cons. and Eastern Kings Schools in 2009 and in 2010. In 2010 we also entertained a field trip of international delegates from the “Coastal Zone Canada Conference” held at UPEI. This particular project is very popular and of interest to scientists throughout the world.



**Grade 3 (Souris Cons)
(Environmental Studies)**



Biology class UPEI, 2010



Coastal Zone Canada Field Trip 2010



December 03, 2010

Budget

Evaluation and Monitoring for 2008-2010

Year	Wages	Merc.	Mileage	Supplies	Total	Status
2008	40 hrs @ 20.00/hr = \$800	10.5% = \$84	180 km = \$81	\$61	\$1026	Paid
2009	20 hrs @ \$20/hr = \$400	10.5% = \$42	180 km = \$81	\$70	\$593	Paid
2010	20 hrs @ \$20/hr = \$400	10.5% = \$42	180 km = \$81	\$70	\$593	To be paid in 2010

The Souris & Area Branch of the PEI Wildlife Federation (SAWB) was very pleased to partner in this project with the Souris Harbour Authority. This project was very unique and the only one of this magnitude in the Maritime region.

There is strong indication that this project is working, with vegetation increasing annually and the amount of biomass of sea lettuce that catches in this marsh and essentially removed from the watershed during peak growth season.

Local fishermen have indicated that they have observed less sea lettuce in their lobster traps in the estuary of Souris River in the spring of 2010. I would hesitate to give full credit to our saltwater marsh, but probably a cumulative effort of our farmers implementing nutrient management plans, our saltwater marsh and SAWB's vigilant stream enhancement work on Souris River.

Submitted By,

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