



A RED FOX IN NORTH LAKE - TAKEN BY JOANNE DUNPHY

# Souris & Area Watershed News

Souris & Area Branch  
of the PEI Wildlife Federation

PO Box 692  
Souris, PEI  
COA 2B0  
902-687-4115

sourisareawildlife@gmail.com  
www.souriswl.com

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## Basin Head Giant Moss Rescue Mission

Irene Novaczek PhD

Hi folks! I am the marine biologist investigating the famous giant Irish moss in Basin Head Lagoon. The lagoon was declared a Marine Protected Area in 2005 because of the existence of this unique population of giant moss. The plants look completely different from what you find attached to rocks on the shore at Cable Head. Not only do they have huge, thick, rubbery blades but they also contain double the usual amount of carrageenan and each plant is attached to the bottom of the lagoon only by the byssal threads of mussels.

Unlike most Irish moss, the giants do not reproduce by spores; they simply fall apart in the heat of summer. If there is a bed of lively mussels to fall apart on, all is well – the fragments get tied down and carry on growing. But if the mussels are not there to catch the fragments, the tide carries them away. That's what has been going on for the past decade, and we're down to only a few square meters of these unusual and valuable plants, where once there was a dense bed a kilometer long and almost half a meter thick.

The main reason for the decline seems to be that year after year, since 1998, invasive green crabs have been eating baby mussels as fast as the mussels can produce them. As a result the few remaining mussels are very old, and the moss has very little to hold it down. Fortunately, we have a Marine Protected Area in place, so that this has not gone unnoticed and so we have a framework and the resources for working together to prevent the moss from disappearing.

As well as the green crabs, there are other problems in the estuary. The worst, I think, is the sea lettuce that feeds on the excess fertilizer that flows into the lagoon. The green mats smother the bottom and as they die and rot and they strip the water of oxygen leaving behind a slimy mess of toxic silt that moves around the estuary and goes on killing.

With the help of the Souris Wildlife team, I spent the summer of 2014 documenting just how desperate the situation is. We lost clumps of moss over that summer, and then lost a lot more over that winter. It was beginning to look quite desperate. So in 2015 we started to bring in young, cultivated mussels. These had to be bathed in flowing fresh water for 24 hours before going into Basin Head to make sure they weren't carrying any unwanted beasties such as invasive tunicates. As the Irish moss fragmented during the summer, we picked up each bit and put it together with some mussels in



*Giant Irish Moss found in the Marine Protected Area at Basin Head.*

## Basin Head Giant Moss Rescue Mission - continued from page 1

a bag that was hung out on a line of buoys. The moss and mussels knit together to make a compact clump in a day or two, then they're ready for planting back into the lagoon. Because the giant plants are so few in the wild, we've also imported fragments of giant Basin Head plants that have been growing in tanks at a marine lab in Nova Scotia since 2008.

Slowly but surely we hope to bring the northeast arm in Basin Head back to life, thriving with giant Irish moss again. In 2016 we will check to see whether the clumps we planted in the summer and fall of 2015 have survived, and where they are growing best. That will guide next summer's efforts. We may need to give the eelgrass a helping hand as well, as it has almost disappeared. Reducing the number of European green crabs is also key to enhanced ecosystem management in this particular area. Nitrate levels will need to come down in order to ensure less blooms of sea lettuce this year as well. I hope that someday you will be able to visit the bed and see it teeming with life as it was back in the 1990s. Wish us luck! We'll need it. And if you find a good recipe for green crabs, we're interested!



SAB field technicians Tony and Sandra Meade planting giant Irish moss with Irene at Basin Head.

## ELECTRO FISHING SURVEYS

Souris & Area Wildlife Branch took the plunge and purchased our own electro fisher this year with the assistance of funding from Environment Canada through its 'Habitat Species at Risk' fund. This was a very expensive purchase (approximately \$13,000) but very much needed for us to get a grasp of fish stocks in each of our rivers. We were fortunate as we had Mary Finch, Becky Peterson and Fred Cheverie certified to operate this unit, as much safety is involved with this as we are putting an electrical charge into the water.

Historically we depended upon the Province for the past 20 years to do two or three rivers in our area annually, and the demand for that one machine across PEI with approximately 250 watersheds was exceptionally high which resulted in very little data being collected in our area.

We selected a survey site (150 – 250 meters) that was reasonably accessible in each river that would be a good representative of the habitat that would exist in most of that particular watershed. Being very careful not to walk in the selected site or spook the fish, barrier nets were placed across the river at the starting and ending points to lock the fish into the selected areas. Obviously these nets had lead weights and were farther weighed down with large rocks found in-stream, so that the area was completely closed and so that zero fish could escape the area.

The electro fisher (weighing approximately 40 – 50 lbs.) is strapped on the back of the leader and the appropriate voltage is selected, the e-wand is attached to the machine and it sends the current from the machine to the stream and two other people equipped with dip nets are in place to catch the stunned fish as they are hit with current. Each member of the team in the water is equipped with non-leaky waders, special rubber gloves and polarized glasses.

Three separate slow passes in the selected area takes place with each sweep yielding less and less fish. The yields from each sweep are placed in separate containers (fish pans and 5 gallon buckets). Obviously when the third sweep is completed it is understood that you have all the fish in that area.

Each of these fish are identified by species and measured and released alive below the netted area. The plan is to electro fish exactly the same area each year and through time that will give us continual data to determine if the fish density in this area is increasing, unchanged or declining.

This year SAB electro fished the following rivers: East Lake, North Lake Creek, Priest Pond, Cross River, Hay River, Bear River, Naufrage River, Cow River, Fortune River, and Souris River. The numbers are not compiled yet for each of these sites but they will be made available before our recreational fishing meeting in April 2016.



Pictured to the left is Watershed Coordinator Fred Cheverie electro fishing with staff in Naufrage this past fall, where preliminary data analysis found in the upper headwaters a higher ration of Brook trout versus Atlantic salmon.



SAB President Kevin Robertson out with field technicians Tony Meade and Becky Hersom-Petersen electro fishing in Fortune in October.



SAB field staff Tony and Mike measuring the width of the survey zone which will aid in calculating densities of fish found here.

# ATLANTIC SALMON REDD SURVEY 2015

Souris and Area Wildlife Branch was very pleased with this year’s annual redd surveys, conducted in seven main rivers in our management area. Sections of Souris River and Fortune River were also included. No redds were found in Souris River but two were located in Fortune River, in late November.

Early redd counts started on November 2<sup>nd</sup> with the first sighting of an Atlantic salmon redd on this date. The surveys continued throughout November and concluded on December 2<sup>nd</sup>. High water and inclement weather make it difficult to conduct these surveys every year. This year was difficult in particular, comparable to last year’s conditions. The surveys were in full effect by mid-November with our staff diligently walking systems in a few key areas to see if the salmon have entered the usual spawning areas. This year it wasn’t until November 26<sup>th</sup> before the salmon appeared in any substantial number in these areas. We are unsure of the reason for their late arrival although many factors could apply including water temperature and late fall rains resulting in higher than usual water levels in many watersheds. It is unfortunate that the late fall rains and resulting high waters coincided with the start of redd counting resulting in exceptionally difficult conditions to wade and see redds on the stream bottom again this year.

This year SAB set up our new fish trap in Cross River to track the spawning times of salmon in a previously heavily occupied spawning area. The first and only salmon appeared in the trap on November 2<sup>nd</sup>. The last sweep of this area in Cross River was on December 10<sup>th</sup>, with the number of confirmed Atlantic salmon redds up this year at 238 compared to last year at 193. This is a 23% increase.

The following table indicates our redd counts over the past eight years:

Watershed	2015	2014	2013	2012	2011	2010	2009	2008
Bear River	13	3	16	0	0	n/a	n/a	n/a
Cow River	67	12	50	1	4	n/a	n/a	n/a
Cross River	238	193	268	83	190	100	70	120
Hay River	36	15	43	3	1	n/a	n/a	n/a
Naufrage River	154	217	453	43	429	33	32	100
North Lake Creek	262	183	333	106	355	205	213	200
Priest Pond Creek	138	129	151	21	20	13	8	11
Souris River	0	2	0	0	0	n/a	n/a	n/a
Fortune	2	0	n/a	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>910</b>	<b>754</b>	<b>1314</b>	<b>257</b>	<b>999</b>	<b>351</b>	<b>323</b>	<b>431</b>



SAB field technician Sandra Meade viewing a large Atlantic salmon redd found this past fall.



Fred Cheverie and volunteer Hannah Malloy walking Cross River to check for redds.



Watershed Coordinator Fred Cheverie with Holland College’s Wildlife Conservation Technology second year students in Cross River on December 2<sup>nd</sup>. Photograph courtesy of CBC’s Nancy Russell.

We seemed to do well in headwater regions of the river systems where the water levels were lower, while we fared out poorly closer to the estuaries where the volumes of water were higher. Unfortunately we did encounter beavers in two of our systems, in Priest Pond and Naufrage River and that interferes with good spawning territory. But with the consistent habitat work and enhancements SAB has made in the last 3 to 5 years in these watersheds it is quite evident that there is an increase in desirable juvenile habitat and cover so that the salmon can get to smolt size and go off to sea so they may come back to this area to spawn. All redds were marked using GPS technology and placed on maps for future use and this documentation was also forwarded to DFO and the PEI Fish & Wildlife Division.

Souris and Area Wildlife Branch would like to thank volunteers Joe MacDonald, Hannah Malloy and Harry Meade for their aid in our annual redd surveys, enabling us to visit as many rivers as possible this year. Also thank you to Holland College’s Wildlife Conservation Technology program and their instructors Bonnie Hayden and Luke Peters as well as second year students Noah Campbell, Stephen Corkum, Alex Cunningham, Bethany Dauphinee, Shawn Feener, Sara Gamble, Lydia Giffin, Crystal Jarvis, Stephen Knapton, Benjamin MacNeill, Zachary Rochford, Matthew Sheidow, Christopher Sinclair, Marlee Smith and Emma Spence for all of their help. We appreciate your dedication and ongoing support!

## BEAVER POPULATIONS IN OUR MANAGEMENT AREA

Beaver populations remain abundant in our management area despite efforts of local trappers to dampen their population levels. Prices are projected to be low which gives less incentive for trappers to be vigilant in their efforts. We were very disappointed to find in our salmon redd surveys this fall that beavers had set up substantial dams on Priest Pond, Naufrage and Cow River that prevented salmon from reaching prime spawning habitat. It is heartbreaking to accept the fact that when we went through these systems in August and they were open with no apparent sign of beavers, and above each of these dams in late November and into December we attained no salmon redds. Trappers have been summoned to take out beavers on East Lake, Priest Pond, Basin Head, Hay River, Cow River, Naufrage River, Bear River and Black Pond. Beavers are a very fertile mammals and it is expected that the management of this species will be problematic in coming years.



*A large beaver dam found in Naufrage River that has been notched.*

## SOURIS HARBOUR SALT WATER MONITORING PROJECT

Good quality water is such an important part of keeping our fishing harbours healthy for the future. Marine animals, plants and fish need clean water to survive and thrive. We need these marine systems to stay healthy in order for us to benefit from them. SAB has been monitoring Souris Harbour as part of a project funded by Souris Harbour Authority Incorporated (SHAI) because we have a common goal in maintaining the best water quality possible in the Souris Harbour area for all stakeholders involved.

A committee made up of local fishers called the Souris Fishers Committee first proposed a water monitoring program for Souris Harbour in response to SHAI taking over the old Ocean Choice Inc. (OCI) facility and the re-opening and re-purposing of the old plant in Souris. The Souris Fishers Committee strives for open communication with the plant owner (SHAI) and its current operating tenant, Centre for Aquaculture Technologies (CATC). Transparent discussion about the types of chemicals used in the facility and the mitigation/ filtration processes used is sought to ensure that the impact to water quality and lobster populations is non-existent.

When this plant was previously operating, increased pollution and decreased lobster landings were noted in the harbour and attributed to the effluent from the plant. Over the past few years with the plant closed, fishers have noticed an increase in lobster catches within the harbour and vicinity of the effluent pipe. Fishers are concerned that effluent will cause environmental degradation and cause lobsters to actively avoid the area resulting in decreased landings. Previous monitoring efforts and studies completed in the harbour on water quality in relation to lobster were not made readily available to the local fishermen or to the community.

With the re-opening of the plant, as part of this process, the Souris Fishers Committee with the cooperation of Eastern Kings Fishermen's Association is initiating a water monitoring program to test the water quality at the effluent pipe outflow and adjacent areas. That is where SAB has come into play on this very important topic. Souris Fishers Committee has asked Souris & Area Branch of the PEI Wildlife Federation to assist with the implementation of a monitoring program for the harbour to ensure adequate and concise water testing is done. Data collected through this monitoring program will be the property of the fishermen and having a non-profit group collect the data provides the fishers with non-biased data and monitoring information to guide their discussion and any necessary action regarding water quality issues.

SAB would like to thank Peter MacPhee, Trent MacPhee and Stephen Carter for volunteering their boats and time to help with this project. We appreciate your ongoing support on this valuable venture.



*Watershed Coordinator Fred Cheverie with fisherman Trent MacPhee out gathering water samples in Souris Harbour.*



*Pictured to the left: Becky Hersom-Petersen and Fred Cheverie ready a sampling device that will take a deep water sample in Souris Harbour.*

## SOURIS & AREA WILDLIFE STAFF UPDATE

Souris and Area Branch Board of Directors would like to congratulate Mary Finch in attaining the position as Watershed Ecologist for PEI. It is obviously a substantial loss for the Souris & Area Branch (SAB) but a terrific gain for the province of PEI. Mary will be employed by the Province of PEI but will take her direction from the PEI Watershed Alliance (PEIWA). The PEIWA is an umbrella organization that works with all watershed organizations all across the province. It has been deemed for years that a person with such technical and academic experience was needed for the province as many watershed groups had very few people with the necessary expertise to turn to when in need of assistance in guidance. Mary in her tenure with SAB was a terrific employee and raised the level of science and awareness that is taking place within our organization. The good news is that SAB will still have some (but not all) access to Mary for her guidance in the future.



*Mary Finch with an eco-tour participant in the summer of 2014.*



*Becky Hersom-Petersen*

Souris and Area Wildlife Branch hired Becky Hersom-Petersen in the spring of 2015 when we became aware that Mary Finch would be taking her maternity leave. Becky is formerly from the Annapolis Valley in Nova Scotia and has lived in the Eastern end of PEI (Primrose) for over thirty years with her husband Val. Becky has lots of watershed experience with Boughton, Winter and Morell watersheds. Becky has been a “big cog” in watershed management with the Souris and Area watershed team over the past few months. Becky was recruited by myself to assist us with Mary’s loss and has agreed to stay at least into the fall of 2016. Becky is a self-described “work alcoholic” with a true passion for the environment. She is a master at proposal writing and has vast technical experience and has the inapt ability to see “the big picture”. Becky also works with Abegweit First Nation.

## PLANTING EELGRASS FOR ECOSYSTEM ENHANCEMENT

Eelgrass meadows are shallow water marine ecosystems that are important nursery grounds for many species acting as shelter from predators and as a steady food supply. In recent decades human activities have caused these underwater meadows to disappear. Eelgrass can take a long time to grow back on its own after it has been gone from an area. In 2015 SAB began a small scale pilot project to see how difficult, and how successful transplanting eelgrass shoots from healthy beds to areas where it had died off. After monitoring the water temperature and the amount of light penetration at potential planting sites, the site most similar to where the plants came from were chosen and planted with eelgrass shoots collected from the wrack line (where eelgrass washes up on shore). The plants with a good piece of root were connected through holes in oyster shells and dropped into the water at the planting site. The planting was done in the fall after the water temperature went below 15°C. We cannot wait until next year to see how the transplants made out over the winter months.



*SAB staff taking eelgrass shoots and feeding them through oyster shells, which will be used as an anchor for the eelgrass so they may embed at the planting site.*

*Transplanted eelgrass in Souris River*

## UPCOMING EVENTS:

Learn more about our local environment and area with these great events on the agenda!

Giant Irish Moss Presentation featuring Dr. Irene Novaczek - Date and location to be announced via SAB's Facebook & Twitter pages, our website and displayed posters in early February. Learn all about this unique strain of Irish moss, *Chondrus crispus*, which exists in the lagoon at Basin Head and is not known to exist anywhere else in the world.

SAB will be hosting a recreational fishing meeting for the community prior to opening day on April 15<sup>th</sup>, meeting date and location to be announced.

Souris and Area Wildlife Branch's Annual General Meeting will be held on Wednesday, April 27<sup>th</sup> at 7pm at the Souris Striders Ski Lodge, located at 1358 Souris Line Road. Refreshments will be served and all are welcome to come.

We look forward to seeing you out at these events. Please continue to check our website: [www.souriswl.com](http://www.souriswl.com) and our Facebook and Twitter pages for updates and details.



## CONGRATULATIONS!

A big congratulations to SAB Director (Secretary) Erica MacDonald and to her husband Norman on the safe and happy arrival of Walter in September, a little brother for John Allan.



John Allan holding his baby brother in the first photo and a close up of adorable baby Walter in the second photo. Photographs courtesy of Erica MacDonald.

### Souris & Area Branch of the PEI Wildlife Federation Membership & Donation Form

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

City/Province: \_\_\_\_\_

Postal Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

#### Payment

Please check one or both:

Membership (\$10)

Donations

Amount enclosed: \$ \_\_\_\_\_

(Note: An official tax receipt can only be issued for the value of the donation and will not include the \$10 membership fee)

## A VIEW FROM EASTERN KINGS:

Souris and Area Wildlife Branch would like to greatly thank everyone who submits pictures into us so that we may share them on our website as our picture of the day. SAB is very proud to host "A View from Eastern Kings" which features a new photograph each day from our area. We receive so many wonderful pictures that are beautiful and showcase eastern PEI very well. We love receiving your photos and they can be sent by anyone to our email address: [sourisareawildlife@gmail.com](mailto:sourisareawildlife@gmail.com) so that we can share your pictures for all to see!



*Sundog over East Point Lighthouse, courtesy of Nova MacIssac*



*Male Mallard Duck in Fortune, courtesy of JoAnne Dunphy*



*Northern Parula near Souris, courtesy of Wanda Bailey*



*Tiger Moth near Cardigan, courtesy of Barbara Pinto*



*Cows on the Grant Road, courtesy of Judy MacDonald*



*North Side Falls, courtesy of Marcy Robertson*

**PRESIDENT'S COMMENTS: KEVIN ROBERTSON**

A committee including some Board of Directors and staff members from Souris & Area Wildlife Branch will be attending the PEI Annual Recreational Fishing Meeting in late January hosted by Fisheries and Oceans Canada. This meeting is important as organizations across PEI have the opportunity to give input into changes that they would like to see in their region. Fisheries and Oceans Canada historically gives information about changes that they see as important within the region and want input from local organizations. Souris and Area Wildlife Branch have concerns about predators especially seals and double-crested cormorants whose populations have risen to exceptionally high levels and have become detrimental to the success of increasing recreational fish populations. This concern will once again be brought to the table. Members of the Souris & Area Branch were startled to hear about the increased number of Striped Bass that were recently encountered by local fisherman Stephen Carter in his silverside nets in Colville Bay this fall. SAB will be recommending that there be a full open season on this species. In past years the season was only open on sporadic dates to protect this species, but it seems to be doing well in the Maritime region. SAB will also be requesting a delayed opening on Souris River with an extension to November 30<sup>th</sup> for Rainbow Trout with the same limits as past years. Souris & Area Wildlife Branch will be hosting a recreational fishing meeting in Souris prior to opening season in April to give everyone updates in changes in regulations and trends that we see happening with recreational fisheries. It will also be an opportunity to get input from our local community.

**COORDINATOR'S COMMENTS: FRED CHEVERIE**

I have recently spent some time online reviewing submissions to the Province of PEI regarding the "Proposed PEI Water Act". There are approximately 60 to 70 presentations (some groups did more than one) and they are all very interesting and very educational. I would recommend anyone with computer access to review as many of these as you possibly can as you will become much more informed on the agricultural industry of PEI and the environmental issues that face our province at this time. The web address is: [www.gov.pe.ca/water\\_act/consultations](http://www.gov.pe.ca/water_act/consultations) and you can simply click on 'Presentations' to view them. These presentations are highly colorful, descriptive, and informative and I really think that many of you will thoroughly enjoy them. I also would encourage senior high school students to review these so that they may draw their own conclusions about what's going on with the Water Act. The public will again have an opportunity for input on the Act this spring and this will be the "last call" for feedback or community involvement. The next steps in the final preparation of this Water Act is as follows: **White Paper Release** – Round 1 of public consultations, to be hosted by the Environmental Advisory Council, are to be completed by the end of January 2016, **Draft Water Act and Regulations** – Round 2 of public consultations will take place in the Spring of 2016, with dates to be announced at that time and **Water Act Completion** – The Act will be finalized and ready for the PEI Legislature this coming Fall 2016.

**ABOUT US:**

The Souris & Area Branch of the PEI Wildlife Federation is a non-profit, environmental organization dedicated to the conservation, protection and enhancement of watersheds in north eastern Kings County. Our management area accounts for approximately 62,000 hectares representing about 9% of PEI, including 24 individual watersheds.

The goals of our organization include:

1. To establish North Eastern Kings County as the "Sports Fishing Capital" of Prince Edward Island
2. The management of natural resources and enhancement of fish, wildlife and their habitat through watershed planning, protection and restoration initiatives
3. To become the model watershed group on Prince Edward Island
4. To bring unprecedented environmental awareness to our stake holders to create a more informed general public capable of eliciting progressive environmental action
5. To promote our management area as one of the most pristine natural areas in Prince Edward Island through ecotourism ventures to attract visitors to the local area

We meet the 2<sup>nd</sup> Wednesday of every month at the Souris Striders Ski Lodge. Meetings start at 7pm and are open to the public. The next meetings are scheduled for February 17<sup>th</sup>, March 9<sup>th</sup>, April 13<sup>th</sup> and the Annual General Meeting will be April 27<sup>th</sup>, 2016

**CONTACT INFORMATION:**

Mailing Address: PO Box 692 - Souris, PEI - COA 2B0

Telephone: (902) 687-4115

Email: [sourisareawildlife@gmail.com](mailto:sourisareawildlife@gmail.com)

Website: [www.souriswl.com](http://www.souriswl.com)

Facebook: Souris & Area Branch of the PEI Wildlife Federation

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