

waterlines

COVEHEAD-BRACKLEY WATERSHED NEWS

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WATERSHED ENHANCEMENT WORK 2010

2010 was a very busy year for our watershed. FCBB employed 8 people including the Coordinator to complete the ambitious 2010 Workplan. We accomplished all the activities planned plus some extra work using the available resources.

This work includes:

- Cleaned all 5 streams from springs to estuaries.
- Installed 68 brushmats (37 in 2009).
- Planted 616 native trees and shrubs.
- Dug out 17 springs.
- Placed 24 cover rocks.
- Installed 2 digger logs.
- Built & hung 5 American Kestrel boxes.
- Built and placed 7 tree swallow boxes.
- Watched local eagle and duck banding.
- Participated in Canada Day celebrations with booth.
- Tested 3 stream summer temperatures with Dataloggers.
- Worked with Abequeit First Nations cleaning streams.
- Hosted a Coastal Zone Conference tour and presentation.

- Hosted tours for schools, politicians, resource persons and media.
- Designed and installed 2 interpretative signs at Cass's and Marshall's ponds.
- Tested 10 springs and 3 streams for nitrates.
- Completed an in-stream silt trap.
- Stabilized steep stream banks with rocks.
- Hosted an Eco-Learning and Adventure day.
- Monitored 4 anoxic events in bays.
- Built a fence along steep bank.
- Pond restoration water testing and planning.
- Built a low-cost shoreline erosion reduction demo site.
- Completed a Shoreline Erosion booklet and CD.
- Planted salt-resistant shrubs along shoreline erosion.
- Installed an osprey pole.
- Developed a Wildlife Habitat Assessment Plan.
- Excavated Bell's Creek silt trap.



Watershed crew: Meghan, Alex, Nathan, Marcie, Miranda, Geoffrey. Missing: Wanson, Jennifer

ENHANCED ENVIRONMENTAL FARM PLANS

FCBB and PEI Federation of Agriculture are promoting Enhanced Environmental Farm Plans (EEFP).

EEFPs are free, they identify environmental strengths and risks and encourage Beneficial Management

Practices that enhance agricultural sustainability, contributing to a cleaner, healthier environment. Farmers with existing Environmental Farm Plans are able to upgrade to Enhanced Plans. Other farmers are also encouraged to

develop their first Environmental Farm Plan. Ten of fourteen farmers in our watershed have Environmental Farm Plans. Farmers may contact Jennifer Roper of PEI Federation of Agriculture at 902-368-7289 or jenn@peifa.ca.

INTERPRETATIVE SIGNS AT LOCAL PONDS

Have you even wondered what creatures live in and visit your local ponds?



FCBB has developed and installed two interpretative signs at Marshalls and Cass' Ponds. These signs will help local residents understand and appreciate the rich and abundant wildlife living and visiting at the pond frequently. Twenty-six different wildlife species are pictured and identified on 32 inch by 40 inch signs with a description and interesting facts. FCBB staff first completed sampling from the pond water and substrate as well as observing

and picturing wildlife visitors on and above the ponds. The images of the wildlife were then hand drawn, scanned into a computer and coloured using a computer program.

The signs will be stored during the winter and put up each spring. Residents and visitors are invited to view the Marshalls Pond sign at the intersection of Cass's and Covehead Roads. You can see Cass's Pond sign off Cass's Road in West Covehead.

WATER SAMPLING AND NITRATE LEVELS

Every 2 hours during the summer, Data loggers monitored the temperature on Auld's Creek, Bell's Creek and Black River. FCBB also tested for nitrates at 10 source springs across our watershed. Nitrate levels ranged from a low of 0.1 ppm (parts per million) to 8.4 ppm. Anything above 3 ppm is detrimental to fish health. Groundwater nitrate levels seem to be rising and perhaps contributing to



A white hue during an anoxic event shows a lack of oxygen in Brackley Bay

pond algae, sea lettuce growth and the 5 anoxic events in Covehead and Brackley Bays this summer.

An Elevated Nitrate Concentrations map of the North Shore Municipality by TerrAtlantic shows several "hot spots" where drinking water may be above 10 ppm. Perhaps better agricultural nutrient management programs can help reduce these levels over time.

SEA LETTUCE RESEARCH PROPOSAL

When excessive amounts of nitrogen are released into the water, as is happening in PEI bays and estuaries, sea lettuce grows very quickly. It has an extremely thin leaf-like structure two cells thick, facilitating the uptake of nitrogen from the water. It can reproduce by the production of spores and fragments that break off can continue to grow. While normally attached to the substrate, it often detaches and continues to grow while floating in the water. When the sea lettuce dies, it settles to the bottom and begins to decompose. The breakdown

of sea lettuce, carried out by bacteria, requires oxygen and therefore, as it decomposes, it uses up the oxygen in the water around it. For this reason, many of our estuaries have low oxygen concentrations in the summer and completely anoxic zones are becoming more common and more frequent.

A research proposal by Dr. Kevin Teather at the Dept. of Biology, UPEI and Dr. Simon Courtenay, Research Professor, UNB Dept. Biology proposes to conduct the following research; A nutrient assessment workshop, develop nutrient models, measurements of nitrate concentrations and sea lettuce removal with an aquatic weed harvester.

Any short-term strategies, such as sea lettuce removal will have little impact if nitrate amounts coming into

estuaries are not drastically reduced. Other research has indicated that some ways to reduce excess nutrients from waterways include: nutrient management planning, wetland development, grassed headlands, cover crops and manure and septic maintenance.

Some research also suggests sea lettuce is an excellent source of dietary fiber, iron and vitamin C, and has been eaten in Scotland for hundreds of years. It also could be used as a supplement to animal feed or composted and used to improve soil health. In Ireland, the Irish Seaweed Centre in Galway has proposed setting up a processing plant where sea lettuce would be dried and used as a seaweed-based ingredient to replace the synthetic chemical additives that are currently used in animal feed.



PIPING PLOVER 2010 SEASON SUMMARY, P.E.I. NATIONAL PARK

Many Piping Plovers (*Charadrius melodus*) sighted in early spring did not stay to nest. The maximum number of simultaneous nests was six, thus six breeding pair in PEI National Park in 2010. Traditional nesting areas at Covehead and Robinson's Island had no nests for the first time since data has been recorded in PEI National Park (27 years).

On June 2, 13 birds were counted during the annual Canadian Wildlife Service Index Count. In 2010, thirty four eggs were laid in ten nests. Five nests were successful with seventeen chicks hatching. Fifteen of those chicks survived to fledge for a fledgling rate of 2.5 chicks per pair. This was excellent productivity, well above the goal of

1.65 chicks per pair. Flooding resulted in the loss of three nests, one nest was predated and another was abandoned (total of fifteen eggs lost).

The camera project continued in 2010 under the leadership of Dalhousie graduate student Gabrielle Beaulieu. Six nests received cameras and the footage recorded will be examined to investigate predators and predator behaviour.

Four nests were exposed. Three of these nests were successful, one nest was abandoned.

In 2010, a Parks Canada pilot study on the feasibility of captive rearing piping plover from abandoned eggs was initiated in partnership with the Moncton Zoo. Four abandoned eggs

were collected and hatched at the zoo. Subsequently these chicks were reared and released from a flight pen in PEI National Park. One of the chicks survived to migrate. Many lessons were learned which will improve this new management tool. For more information, please contact Linda Thomas at 902-672-6371.



Photo credit: Martin Paquet

POND RESTORATION



Evidence of siltation and runoff at Cass's Pond after a heavy rain

Cass's and Marshall's Ponds are both quite shallow and filled with lots of vegetation as a result of upstream siltation and runoff for many years.

The ponds heat up during hot summer weather and contribute to warming of the estuaries and Covehead Bay. Oxygen levels are low in shallow areas when ponds warm. Both ponds could benefit from expensive restoration including draining, excavation and silt removal. Each support substantial

numbers of wildfowl populations.

FCBB has begun planning the restoration of Cass's Pond. Residents and landowners have been consulted and are part of the planning process, including permits, funding sources, excavation procedures, long term pond use and enhancements. Provincial political support has been offered for restoration of Cass's Pond and other funding partners will be sought.

LOW-COST SHORELINE EROSION REDUCTION DEMO SITE

Various shoreline erosion reduction methods are in place along PEI shorelines including rock gabion baskets, concrete retaining walls and large granite rocks. FCBB is demonstrating two alternative low-cost methods that local shoreline land owners may use on their shorelines.

The first method uses a sand/gravel/cement mixture in recycled feed bags placed in trenches at the bottom of the bank (toe). The bags are placed in alternating rows to a height above the high

tide mark. Jute matting is placed above around the existing and planted vegetation and seeded with highway grass mix.

The second method uses squared stones from an old basement foundation. The rocks are placed in a trench at the toe and covered with a cement base. Rocks were placed in alternating rows to a height above the high tide mark and the jute matting is placed above the rocks around the existing vegetation and planted with highway grass mix.

Residents and visitors are invited to visit the site along the Bayshore Road just south of the second set of stairs and opposite civic number 3133.



Fish rescue before silt trap excavation at Bell's Creek.



Friends of Covehead-Brackley Bay Inc. (FCBB) is a community-based volunteer organization established in 2000, incorporated in 2001. It was formed by a group of community members concerned with the health and sustainability of the Covehead-Brackley watershed area. Its mandate is to create a watershed area that is healthy: one which nourishes the land and water, one which is sustainable to native flora and fauna, and also balances the interests of residents, including those working in aquaculture, forestry, agriculture, fisheries and tourism.

NUTRIENT MANAGEMENT PLANNING

Excessive use of manures, fertilizers (home owners, businesses and farms) and other soil additives (including leakage of residential septic systems) can result in nitrate leaching into groundwater. In some areas of the province, the level of nitrates in certain wells exceeds Canadian drinking water standards. Nutrient

runoffs can also result in excessive plant growth, including algae in streams and sea lettuce in bays.

During 2010, 165 farmers on PEI saved 4% on crop insurance and 2% on lime by following a nutrient management plan to use only the nutrients required by each crop thereby saving

money and reducing excess nutrient enrichment of nearby groundwater. PEI also has many qualified Nutrient Management Planners.

For more information, please contact PEI Agriculture Environmental Development Officer Erica MacDonald at 902-368-5638 or ecmacisaac@gov.pe.ca.

FRIENDS OF COVEHEAD-BRACKLEY BAY WATERSHED MANAGEMENT GROUP (FCBB)

Anyone looking for information on the group can contact **Wanson Hemphill**, Watershed Coordinator.

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We want your feedback about any of our activities. Give us your ideas for new projects, funding, community connections, topics for public meetings, etc.



Red Fox (silver phase) from Danny Clark's Taxidermy.

FUNDING PARTNERS

Friends of Covehead-Brackley Bay Watershed wish to thank the many funding partners and great volunteers, without which, very little could be accomplished.

2010 Funding Partners:

- PEI Dept. of Environment, Energy & Forestry
- Environment Canada
- Shell Environmental Fund

- Greening Spaces Program
- Parks Canada
- PEI Jobs For Youth
- PEI Employment Development Agency
- PEI Rural Jobs Initiative
- Walmart-Evergreen Program
- North Shore Community Council
- PEI Watershed Management Fund Workers
- Canada Summer Jobs
- FCBB Volunteer Board of Directors

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