

# Hunter-Clyde Watershed Group

## Summer 2008 Final Report



### Introduction

The Hunter-Clyde Watershed Group is a community based organization, formed to help manage the vital areas within the Hunter-Clyde watershed that contribute to the overall health of the streams, rivers and estuary in the area. The watershed expands from Hartsville and Fredericton to North Rustico, with many branches throughout the countryside in between. Beginning in 2000, the Hunter-Clyde watershed group has employed summer students who work to further improve the health of the watershed through stream enhancement projects such as tree planting, brush mat construction, riparian enhancement, clearing of debris and abandoned beaver dams and picking up garbage in the surrounding areas.

This summer the crew was managed by Phil Pineau and Andrew Lush, supervised by Samantha Doucette and the workers were Robin Wells, Evan Gallant and Jon Wedlock. This year we also employed Michael Willcock as a Watershed Technician.

This report indicates the work completed this summer as well as projected projects for next summer. The HCWG plans on continuing throughout the winter with planning and preparation for next spring and summer. For more information you can visit our website (<http://hcwg.editme.com/>) and any updates will be available there.

## 2008 Summer Work-crew Accomplishments

### Tree planting

Thanks to the Greening spaces program we were once again able to add 979 more trees to areas within the Hunter-Clyde watershed. Trees provide a great natural buffer to aid in lessening the effects of soil erosion and runoff into the streams, as well as improve bank stability. This summer we planted trees in eight different locations with species ranging from white and yellow birch, elm, green and white ash, sugar maple, red and white spruce, to balsam fir, eastern hemlock and cedar.

This summer we also began collaring the trees. This effort was made to attempt to reduce the number of trees killed by mice over the winter as in the past we have seen large numbers of our planted trees damaged or even killed due to mice. We used some white spiral collars and a large amount of flexible drainage pipe, which was cut to size and split lengthways.

This table represents the location and species of trees planted throughout the summer:

Land Owner	Location	Species Planted	Comments
Marilyn and Ivan Hughes	Hunter River, above the water treatment plant	Green Ash, Elm, Sugar Maple	
Randall Nieuwhof	End of Line Road	White Pine	Continued work from last year, planted another terrace to stop soil erosion.
Phil Pineau	Hunter River	Green and White Ash, Elm, Sugar Maple, Red and White pine, Balsam Fir, Black and White Spruce.	
Hunter River Memorial Park	Hunter River	Yellow and red twig willow, Eastern hemlock, sugar maple, elm, white and green ash, yellow and white birch	We planted along the river trail as well as behind Clarence feeds.
Brian and Barbra Prouse	New Glasgow, headwaters of Campbell's pond.	Green and white ash, Elm, sugar maple, yellow and white birch.	Cleared Alders around a spring and replaced them with hardwoods, as well as created some new riparian zones.

Kenneth Parker	Hazel Grove	Green and white ash, Elm, sugar maple, yellow and white birch	Planted trees along a stream that has been overgrown with weeds, the trees will eventually shade out the weeds, allowing the stream a better natural flow.
Paul and Laurie Ellis	Hunter river	Green and white ash, Elm, sugar maple, yellow and white birch, eastern hemlock, eastern cedar.	Planted over 200 trees Reforestation project on steep slope above stream and old pasture land.

### Stream restoration

This summer a number of stream restoration projects were undertaken. Streams on PEI for the most part are of very high quality, but the largest threat to our streams and rivers is siltation. The Hunter-Clyde watershed is fortunate to have responsible residents who graciously allowed the crew access to their land in order to work on improving the health of the areas streams through brush matting and debris clean up.

The ice storms last winter were most likely to blame for the large amount of debris cleaned from streams this summer. Debris can block streams, restrict fish passage and impede flow causing algae to grow that can interfere with oxygen levels.

One other large problem we encountered was abandoned beaver dams, not only do they restrict water flow and fish passage but they also can trap large amounts of sediment that can completely destroy fish habitat.

This table lists the areas where stream restoration was done:

Land Owner	Location	Work done	Comments
Paul and Laurie Ellis	Hunter River	20 + brush mats over the course of the stream  Extensive removal of debris from stream.	Very nice stretch of stream. Old brush mats were noted along stream from previous work and were doing a great job of collecting silt.

Rosewood residence	Hunter River	Removal of old beaver dam.  Extensive brush mating of area behind old dam.  Removal of debris and garbage from stream	This area still needs more work. Was assessed by Mark Arsenault and deemed a suitable area to be dredged and a silt trap installed due to large amounts of silt in the stream.
Kenneth Parker	Hazel Grove	Extensive removal of weeds that were restricting water movement through stream. Removal of silt and debris blocking culvert.	A number of hardwood trees were planted along the banks of the stream as they mature the shade will help to choke out the weeds naturally and at the same time keep the stream cool.
Elizabeth Spangler and Robert MacGregor	Clyde road	Removal of debris from stream. Some brush mating.	Old beaver dam at site, extensive siltation up stream from dam.

## **Miscellaneous Summer Accomplishments**

### Canada Day North Rustico

The Hunter-Clyde watershed crew spent some time at North Rustico's Canada day celebrations promoting the watershed group. The day proved to be productive and the group showed support to their community. We took sample trees along as well as a game with prizes for younger children.

### Bat and Swallow boxes

During rainy weather, the work-crew worked inside and built bat and swallow boxes. A number of these were placed in trees. Some of these were put up in the new park in Hunter River, the Dr. Kent G. Ellis Memorial Park. Brush piles were created for wildlife and a Watershed interpretive sign was designed for the park.

### Nitrate Clinic

On Saturday 21st June, at the New Glasgow Christian Church, we hosted a Nitrate Clinic with the Provincial Department of Environment and the Wheatley River Improvement Group. A total of 86 tests were done, with a few needing re-

tests because of the high nitrate level. We are currently awaiting the final reports of the nitrate samples that were collected, at which time the HCWG plans to utilize this data to profile the trends of nitrate levels in our drinking water and create GIS maps in order to share these results and trends with the public.

### Young Environmentalists

The Young Environmentalists helped with beaver dam removal and brush matting in Hunter River. Their efforts were much appreciated.

### Sea Cadets Work-day

On June 7<sup>th</sup>, the Blue Heron Sea Cadets planted 250 trees adjacent to the river in New Glasgow. Thanks to MP Wayne Easter and the Guardian for attending this event and to the Dingwells for letting us plant on their land. The first task for the summer work-crew was to put collars on these trees which, because they are in an old hay field, are susceptible to mouse and hare attack.

### **Summer 2008 Watershed Technician Accomplishments**

This year marks the first time in HCWG history that we were able to employ a special position related to watershed health and management. This position will hopefully be an ongoing endeavour as we have been able to expand upon our usual summer activities because of this. Future plans are to continue to expand our resources and abilities within the watershed while promoting watershed health as an important issue across PEI.

### Fish Farm Research

This year we were fortunate to have had the opportunity to research a derelict fish farm located within our watershed boundaries. The owner of the land has told us that we can do whatever we want with it as he would like to see it up and running again.

This was great news as during the January 2008 – March 2008 round of funding from the provincial government many community members expressed their interest in seeing the rivers re-stocked with fish as we have a lot of recreational fishermen who have been seeing the numbers drop every year.

After much research into this matter, we concluded that at this time we are unable to take on this project as we do not currently have the resources available to ensure the success of this project. In order to operate a fish farm properly you need to be able to give it quite a lot of attention and put a lot of money into the actual operation of the site and at this point in time the HCWG does not have the resources or personnel available for such a large project. Attached is an e-mail

we received on this matter from Rosanne McFarlane who is a Freshwater Fisheries Biologist with the Department of Environment, Energy and Forestry.

“ I'm not sure what type of fish farm you may have found, e.g. tanks or a pond. At risk of sounding negative, I would ask that your group think twice about getting involved in any fish rearing activity. I've seen various groups participate in these activities in the past and they come with a whole lot of headaches. First of all, our streams are very productive in comparison with other regions of the Maritimes. The emphasis needs to be on habitat. If it is there, you will have all kinds of fish. The stream can produce many more times fish, and more economically, than any hatchery or aquaculture program. Secondly, it is expensive to operate a fish rearing operation. Most of the expense is in terms of manpower. There are also risks of disease in any aquaculture set-up.

Everyone wants to see restocking, believing that it is the magic bullet for fishing on PEI. There are situations where stocking is warranted, e.g. in a river which experiences intensive angling (e.g. Morell), or in very short rivers with productive estuaries (e.g. Foxley River). They are also useful in kick starting populations in a river affected by a fish kill. If salmon angling is a goal, then stocking is a necessity as our rivers are not producing enough salmon on their own to support a recreational fishery. If local fishermen are seeing a decline in the sport fishery, it has a lot to do with habitat. Plus, the places that people used to fish, in particular freshwater ponds, are deteriorating.

They are now often shallow and covered with weeds and no longer serve as good holding areas for trout. When we do our electro fishing surveys, we see that there are all kinds of little fish but they need pools and places to grow. This is where habitat enhancement and in some cases, pond restoration, is key.

If your group wishes to pursue this, they require permits from DFO to raise and release fish. Fish also need to be tested for disease prior to any release, which is a condition of the permit. You would need a source of wild fish to put into the tanks/facility and currently, these are not available. As you might be aware, our provincial stocking program has been in a state of flux since the federal government divested itself of our only hatchery. It is now in private hands and they have been contracted to raise fish for enhancement purposes for two years. After next year, there is no guarantee that there will be any public stocking. I have been involved in collecting brood stock for this program and we have about five rivers - Mill/Trout, Dunk, West, Morell and Brudenell that we collect brood stock from. The young produced will go back into their native river or nearby rivers. This fall, for example, fish of Dunk River stock will go into Dunk River and Tryon River to compensate for the fish lost in the 2007 fish kills on those systems. If your group wished to raise fish, they would more than likely have to contract the hatchery to collect brood stock and raise the

fish. From what the hatchery owners tell me, it is not economically feasible for them to be involved in such projects.

There is merit in getting fingerlings (10+ fish) from the hatchery and holding them in a facility until they are older. The success of stocking these larger fish has been well documented. However, the best results are raising the fish in a "Semi-natural" pond where the fish are contained but have lots of room to move around.

Their natural feed is supplemented with fish food and by the time they are released, they are big healthy fish with a great chance of contributing to the fishery. I'm not sure what sort of set-up you are dealing with but we are interested in finding some good sites in which we could hold young salmon to bring them up to a bigger size before release. Stocking larger brook trout is also a great way to provide angling opportunities in urban areas and we've seen good success with stocking small ponds in different communities in support of youth fishing.

So, while I'm not telling you that it is impossible, I am certainly quite hesitant to encourage your group to get involved in such a venture. The return just is not there for the time and money which would have to be invested. This is something that would need to be well thought out. ``

Although we have decided at this point to put our plans for operating a fish farm within our watershed on hold, if any opportunities arise in the future that would allow us to effectively manage the fish farm then we would be very excited about it.

### Riparian Zone Assessment

Through a partnership with the PEI Soil and Crop Improvement Association, the HCWG has begun its own riparian zone assessment. Once completed, this assessment will be used to help identify areas alongside our rivers and streams that need improvement work in that area.

Riparian zones are defined typically as the transitional land surrounding a watercourse between the stream and the dry land. They are the lands adjacent to streams, rivers, lakes, ponds and wetlands, including the flood plain, stream banks and plant and animal communities. A healthy riparian zone plays an important ecological function such as improved water quality, water absorption and storage, flood control, recharged groundwater reserves, protecting stream banks from erosion, and habitat for aquatic and terrestrial wildlife.

### Watershed Water Quality Data Collection

This year the HCWG embarked upon a data collection routine looking at pH, D.O, Temperature and Conductivity at several different points throughout the

watershed. Unfortunately due to equipment issues the sampling regimen could not be completed. However, the data that has been collected is going to be put on the website for public display. In the future we hope to embark upon this data collection project again in order to get a better understanding of how our water chemistry changes throughout the year.

### Campbell's Pond Data Collection

On July 25th, 2008 the Summer Crew kayaked the entire area of Campbell's pond and the surrounding streams to collect data on the water quality parameters feeding into the pond itself. We plan on gathering this type of data on Campbell's pond around the same time every summer so that we can profile the pond and monitor any changes in water chemistry.

This data is currently being interpreted into GIS maps which will then be available for viewing on our website.

### **Future Plans**

#### Silt Trap in Hunter River

It was recommended that we build a silt-trap before removing further beaver dams in Hunter River. \$2000 should be reserved in next year's budget for this purpose.

#### CABIN Program

The Canadian Aquatic Bio monitoring Network (CABIN) is a national, collaborative program and network for collecting, assessing and distributing information on the biological condition and biodiversity of aquatic ecosystems in Canada. As a network of networks, EC collaborates with others to understand the status of Canada's freshwater while providing partners with tools and reference data to apply to their own biological monitoring programs.

The HCWG plans to incorporate this program into next year's work plans in order to better understand the overall health of our watershed. For more information about this program, please visit

<http://cabin.cciw.ca/Application/welcome.asp?Lang=en-ca>.

#### School Presentations

During the January 2008 – March 2008 round of funding, it was expressed by many individuals throughout our watershed that environmental education for our students is key to the future sustainability of our watersheds here on PEI as they will eventually become the stewards of our environment.

Because of this we have developed a presentation for the two schools located within the watershed, Gulf Shore and Central Queens. This presentation showcases our watershed and will try to create a new interest about the watershed in our younger generation. This presentation will also be very informative and be able to explain to the students what exactly a watershed is and also explain how important they are to our overall health.

### Water Quality Index

The HCWG is currently in the process of developing its own water quality index that will be used to better understand our watersheds overall health. This water quality index (WQI) will be developed around water parameters that our watershed currently has the ability to monitor and in the future will be expanded upon as our resources grow. Previous and future water sample data that has been collected throughout the watershed will be analyzed once the WQI is completed and this data will be available to the public through our website.

### **Acknowledgements**

Thanks the following people and groups. Without your support, ideas, enthusiasm and generosity this year would have been less of a success!!

- Clyde View Girl Friday for printing brochures that we were able to pass out at public events.
- North Rustico Canada Day Committee for allowing us to use their venue to promote our watershed group.
- The Greening Spaces Program for providing the watershed with beautiful trees over the summer.
- Phil Pineau for allowing us to use his home as a work base over the summer, and for lending a helping hand when he could.
- Donald Doiron and Jim Newson for the continued support for our endeavours with the fish farm.
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- The Watershed Management Fund, without this funding we would not have been able to accomplish as much as we did this year!
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- The Wildlife Conservation Fund for funding one of our work-crew members.
- The Jobs For Youth program for providing the funds for two summer workers.