

# Lot 11 & Area Watershed Management Group Annual Report: May 2009 – April 2010

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The Lot 11 & Area Watershed Management Group acknowledges and thanks the following parties for their support and input.

- The PEI Department of Environment, Energy and Forestry
- Service Canada
- The Evangeline Credit Union
- The entire watershed management community on PEI



## Executive Summary/Background

The 2009 – 2010 contract year has been our first year as a Watershed Management Fund (WMF) funded group. Before submitting our application in February 2009 we familiarized ourselves with the science and practical logistics of watershed management on PEI. We saw substantial cause to embrace community-based watershed planning using the emerging model recommended by the Department of Environment, Energy and Forestry. We were delighted that we had an opportunity to start our journey towards our vision with a systematic roadmap and we have made a considerable start in our community-based watershed planning process.

In addition to planning, we committed ourselves to a methodical approach to watershed protection and improvement. Stream improvement is an engineering process and enhancement strategies must have scientific underpinnings. There are many resources for conducting effective projects. Perhaps the best one for work on PEI is: *A Technical Manual for Stream Improvement on Prince Edward Island*. Its authors have extensive training and experience in stream improvement that is Island-specific. It provides the project timetable that we adopted (pp. 59, 60):

Project Timetable

Year 1, June – September Stream Habitat Surveys
Year 1, Fall – Winter Develop Work Plan
Year 2, Spring Prepare to Implement Plan
Year 2, June – September Implementation
Subsequent – Monitor, Assess, Maintain

With community-based watershed planning and habitat assessment as our priorities, we stated our goals in our 2009 – 2010 funding proposal:

- ⇒ **Watershed planning** We seek a solid foundation and a substantial beginning for the planning process in our first year. We need to promote active, informed community involvement, and we need to develop an organized planning initiative.
- ⇒ **Watershed assessment** We need to understand the current state of our geophysical watersheds. This is a research/assessment effort that will accomplish the following goals: foster public awareness/public education for informed community planning, determine the need for habitat enhancement activities, contribute to the PEI knowledge base for our area, and identify emerging environmental issues, if any.

This proposal was formally accepted on April 28, 2009. We began work immediately to realize our objectives. During the contract year we successfully implemented our proposal and we are substantially prepared for our future work.

## **Preparation**

### ***Human resources***

We hired Karen Rank to serve as our group coordinator. Karen had previous experience in forestry and in community planning related to the Island's waste management program.

We also hired Heidi Ellis through the Service Canada, Canada Summer Jobs program. Heidi was supervised by Karen and provided critical support for planning and survey efforts.

We also had considerable volunteer support.

### ***Training***

Doing our jobs effectively required us to be properly informed and trained. The most significant source of training was the network of experienced professionals in the watershed management community. We used the expert resources of other groups with proven track records (both in our western region and in greater PEI). Our regional coordinator, Ross Bernard, and other capable professionals of the Department of Environment, Energy and Forestry's Environment Division – particularly the Watershed Management Section – provided us with information, guidance, and support.

The University of Prince Edward Island conducted a course entitled: *Integrated Watershed Management*. The professor, Darryl Guignon, has extensive, relevant experience and he taught the multifaceted subject with vivid clarity. Our chairperson took this course with the understanding he would pass it on to the group's staff persons and, ultimately, to the community. Our chairperson – using the island specific material covered in the UPEI course, extensive literature review, substantial input from the watershed management community, and his professional experience in environmental science/engineering – developed and implemented a five part training program with units covering: private wells and nitrate, stream hydrology, riparian and riverine ecosystems, wetlands and tidal estuaries, and preventive measures/corrective actions. We prepared a book entitled *Technical Information for Lot 11 and Area Watershed Managers*. This will be discussed later under *Public Information*.

Training included our coordinator taking a course entitled *Emergency First Aid with Level C CPR*. This course was conducted by a private contractor (coordinated by Ross Bernard) and was held in Kensington for the benefit of watershed group field supervisors. In addition, our coordinator took the one week chain saw certification course (*Silviculture Worker Training*) conducted by the Forestry Section in Wellington.

Finally, our chairperson took the two day *Trapper Eertification* course. Beaver management is a critical part of watershed management for the Lot 11 & Area Group. The course provided valuable insight into beaver behavior and management strategies. It also provided background on cultural and regulatory factors. The textbook alone was worth the cost for the class.

### ***Equipment and materials***

Because we were a new group, we had several infrastructure expenses. For a group that focuses solely on stream enhancement projects these expenditures are primarily limited to field equipment/materials. Planning efforts are media intensive and require the tools of public interface. Acquiring the necessary equipment/materials,

getting organized, and setting-up housekeeping for the group was a notable accomplishment for our first few weeks as a funded group.

## **Watershed Planning**

Our group was born after the priority of planning – using the Department's community-based model – was established. We embraced the planning process and its need at the starting gate. Because we are a new group we have been given some leeway for planning objectives. In spite of this we have been quite active and we have a completed draft plan (submitted with this report) .

We have held four general meetings of our stakeholders group and countless one-on-one meetings (*kitchen-table* meetings) with individual members. The first general meeting (April 30, 2009) introduced the concept of planning and centered on recruiting committee members with conviction to the process. Our stakeholders group consists of twelve members that represent the following primary sectors of our community: farmers, shell-fishers, residents, tourism, wood-lot owners, and recreation. Representatives from certain other sectors were not available.

The second meeting (August 9, 2009) was also introductory and featured a presentation by Sean Ledgerwood. Karen prepared a presentation that detailed the planning process, its need, and its structure. This meeting conflicted with another area event and it was our only meeting where our attendance was under twelve (eight attended).

At our third meeting (Jan 28, 2010), we got down to business. A six page workbook was prepared and given to the stakeholders and each page was explained. After this presentation it was clear that the group was substantially interested. The question and answer session and general conversation after the meeting was lively, spontaneous and enthusiastic. Rather than have the members complete their workbooks that night, we felt it best to have them take them home and ponder the ideas before completing the questions. We collected the workbooks at several kitchen-table meetings with individual members and compiled the responses.

At our fourth meeting (March 10, 2010) we held another *down-to-business* meeting where we once again distributed/explained a workbook for the group. After another series of kitchen-table meetings their ideas were again compiled.

The purpose of these initial meetings was to create a draft plan that the group can work to perfect later (hopefully in the Fall of 2010). The workbooks provided starting-point ideas for:

- What is the watershed group's purpose – in one or two sentences? (our mission)
- Where do we want to be as a result of our efforts? (our vision)
- How should the watershed group conduct itself? (our principals)
- What are our area's issues?
- Specifically, what things do we want to do? (our goals)
- How are we going to reach our goals? (our strategy)
- How are we going to make sure we get it right? (ongoing evaluation)

A draft plan that incorporates the input from the stakeholders has been prepared and submitted to the Department of Environment, Energy and Forestry. The workbooks are provided as an appendix to this draft watershed plan. They will not be a part of the final plan document.

## **Watershed Assessment**

Our approach to our beginnings as a group focused on the responsible determination of problems and priorities. Part of this required preparing ourselves to make appropriate observations, interpretations, and recommendations. Given this preparation, we performed comprehensive riverine/riparian health evaluations at each of ten area streams:

- ⇒ MacDonald's River
- ⇒ Foxley River (Both Branches)
- ⇒ Gain's Creek
- ⇒ Canadian Creek
- ⇒ Freeland Creek
- ⇒ An unnamed stream discharging to the Freeland Creek Estuary
- ⇒ Brooks River
- ⇒ An unnamed stream discharging to the Brooks River Estuary
- ⇒ Southwest Creek
- ⇒ Grants Brook

So far, these surveys have resulted in five completed, and two draft, survey documents. In certain cases, related streams were covered in a single report. The report for Gain's Creek and Canadian Creek will be completed after further evaluation of the Canadian Creek this spring/summer. These reports are a tool for problem identification, project prioritization, and enhancement design. They will guide our stream protection and improvement efforts this coming year. But, they are much more than that. We are finding that they are a goldmine for community interest. These surveys provide public information and foster landowner ownership of problems and resources. The executive summaries from the completed reports are provided in Appendix I. (Note: the entire text of these reports has been given to Bruce Raymond for the Department's review.)

Each of the stream survey reports recommends a beaver management strategy for the stream. These strategies have been realized so far through the active involvement of a local trapper. We have prepared a beaver management plan for the Foxley River as required, and specified, by the Provincial Fish and Wildlife Department. This first plan has been approved and now that we understand the fundamental structure for these plans we will submit plans for the other streams.

Certain of the surveys indicated the need for culvert maintenance and a work-priority plan for next year has been submitted to TPW. It appears in Appendix II.

During our surveys we discovered two emerging culvert blockages on private lands. We responded to these problems by obtaining permits and conducting controlled removal of the blockages. These culverts will need ongoing monitoring/repair in the near future.

## **Public Information**

In preparation for our staff training we prepared a book entitled: *Technical Information for Lot 11 and Area Watershed Managers*. We had the manuscript peer reviewed by Todd Dupuis and Darren Bardati at UPEI and incorporated their comments. (Dr Bardati is quite impressed with the document and plans to use it in his classes.) Our

community has indicated substantial interest in this resource and many requested (and received) a copy of their own... for themselves and their children. The book has been given to Bruce Raymond for review.

Community members asked if we could present our information in the schools. They effectively said: “the secret to solving tomorrows problems is getting the right information into young minds”. We agree. We are developing presentations for our community and, hopefully, for our schools. One short presentation entitled *Our Area: Its Assets And Issues* has already been developed and presented to our stakeholders group.

We hosted a nitrate clinic coordinated by the Provincial Laboratory. Due to our door-to-door promotion of this event, we had a stellar turnout. All but two of the ~fifty participants had nitrate levels at or near background in their well water samples. (The two that had elevated nitrate levels lived adjacent to potato fields.) These findings are consistent with the exemplary condition for our groundwater resources as documented in the *Report of the Commission on Nitrates in Groundwater*, PEI Commission on Nitrates in Groundwater, 2008.

The Lot 11 & Area Community Council has a close relationship with our group. At a cost savings for the group we collaborated on a website: [www.lot11andarea.org](http://www.lot11andarea.org). We plan to make the site better known to the public in our area through a combined brochure this year.

At reasonable cost, the Community Council also provided our group with office space at Warburton Park. Having our headquarters at the park provided a remarkable opportunity for public interface. The park is the center for the summer recreation program and we met with parents and their children every day.

Using volunteer services and mostly donated materials we constructed a float for the Tyne Valley Oyster Festival Parade. Although we didn't get the prize for the best float, ours was well noticed and liked.

## **Preparing for Next Year's Work**

Our stream assessment work has revealed our area's stream improvement priorities with remarkable clarity. We are targeting the Brooks River and the Foxley River for next year's work. Over the past few months we have been formalizing plans for the coming year's work. We have reviewed our ideas with experts with the Department and with other experienced groups. We are writing work plans, securing permissions, and beginning the permitting process.

This work primarily will focus on:

- ⇒ Bank-stabilization/sediment-management by installing brush-mats, starting at the heads-of-tide and working upstream.
- ⇒ Remediation of channel-jam created by alder impaction through pruning of in-stream branches.
- ⇒ Reinforcement of the Foxley River riparian zone through tree/shrub planting.
- ⇒ Conservative removal/realignment of in-stream debris that is creating migratory blockages.
- ⇒ Stabilization (and eventual removal) of channel sediment in the Foxley River through installation of an in-stream sediment trap.
- ⇒ Creation of a two-tier, rock and boulder fish ladder at the head-of-tide for the Brooks River.

We are securing resources for next year's work. We plan to have the Watershed Management Fund and the Wildlife Conservation Fund as funding partners. We are also seeking labour support from Service Canada, EDA and Skills PEI. We have prepared presentations and taken them to the community to enlist their financial support. Of note is the Evangeline Credit Union. They have demonstrated their commitment to our community with their support for us. Several individuals have offered to volunteer services in the summer.

## **Appendix I, Executive summaries from stream assessment reports**

### **MacDonald's River Stream Survey: August 2009**

#### **Executive Summary**

Stream assessments are a fundamental component of community planning and watershed stewardship. They are a focus for our first year's activities, and they are a required preliminary for stream improvement work. Performing these assessments is a substantial part of our agreement under our contract with the PEI Watershed Management Fund.

A stream survey was performed at the MacDonald's River in the Foxley River Watershed. This stream is a small brook that, although unlikely to provide a recreational fishery itself, provides ideal spawning habitat for the estuarine fishery. It also provides critical habitat for wildlife, and the headwaters of the stream store considerable water resources for regional water supply. The system is located in a substantial, well-structured and varied forest that is a model for riparian environment on the island. The riparian and aquatic environments are rich and diverse. It is a remarkably healthy stream for PEI.

The outstanding condition of this stream is a credit to the responsible stewardship of the abutting landowners. Our overall objective should be to preserve this system. Only limited enhancement work should be conducted here. Some minor problems created by earlier work should be monitored and possibly corrected. A beaver-free zone should be established and maintained as specified in the text. Work can be done to improve fish access at the head of tide. This work would involve narrowing and deepening a short section of the stream.

### **Brooks River Stream Survey: July and September 2009**

#### **Executive Summary**

Stream assessments are a fundamental component of community planning and watershed stewardship. They are a focus for our first year's activities, and they are a required preliminary for stream improvement work. Performing these assessments is a substantial part of our agreement under our contract with the PEI Watershed Management Fund.

A stream survey was performed at the Brooks River in the Brooks River Watershed. This stream is a small brook that some area residents fished several decades ago. It provides critical habitat for wildlife, and the headwaters of the stream store considerable water resources for regional water supply. The system is located in lowlands, frequently near agricultural fields. A fair portion of the riparian zone is dense alder swales, but there are limited sections of well-structured and varied forest. The stream bed is plagued with sediment. There is trash (lumber, plywood, plastic, metal) in the channel. There are some point sources of sediment along the stream's banks. There is beaver activity in the primary channel.

There is a limited impoundment at the head of tide. It appears that a bridge/dam along a cart path once crossed this point. The path now leads to the channel then resumes on the other side. There are fish in this area. Fish access to the stream from the estuary is being limited by the barrier created by boulders and a beam that were probably once a part of the bridge/dam structure. Access could be improved if these obstructions were removed, but a better approach would be to install a natural laddering pool on the estuary side of the obstruction. This approach would preserve the channel depth of the stream at this point and promote a better fishery.

This stream has problems with solutions. Recommendations are provided at the end of this document. With enhancement work this stream could once again be a destination for recreational anglers.

## **Foxley River Stream Survey: July, September, October 2009**

### **Executive Summary**

Stream assessments are a fundamental component of community planning and watershed stewardship. They are a focus for our first year's activities, and they are a required preliminary for stream improvement work. Performing these assessments is a substantial part of our agreement under our contract with the PEI Watershed Management Fund.

A stream survey was performed at the Foxley River in the Foxley River Watershed. There is a manmade dam at the head of tide creating an impoundment named Milligan's Pond. There is a run-around stream that discharges the pond to the estuary at the eastern end of the pond. This pond provides habitat for waterfowl. Feeding Milligan's pond are two brook-sized branches of the river: one to the east and one to the west. The lower reaches of both branches are bordered by agricultural fields. These fields were mostly not in row crop production during the survey.

There is a fair amount of sediment in the channel of both branches. There are occasional natural blockages. No beaver activity was identified during the survey of the primary channels of the stream. Stream enhancement work should focus on in-stream sediment management and bank stabilization. In-stream sediment traps may be beneficial at selected points in the channel, but they should not be installed prior to minimizing sediment inputs.

## **Grants Brook Stream Survey: October/November 2009**

### **Executive Summary**

Stream assessments are a fundamental component of community planning and watershed stewardship. They are a focus for our first year's activities, and they are a required preliminary for stream improvement work. Performing these assessments is a substantial part of our agreement under our contract with the PEI Watershed Management Fund.

A stream survey was performed at Grants Brook in the Bideford River Watershed. This stream is a small brook that crosses Route 12 near the boundary between the Lot 11 & Area municipality and the Eilerslie-Bideford municipality. It provides critical habitat for wildlife, particularly in the wetland headwaters west of Route 12. These headwaters

store considerable water resources for regional water supply. The reach east of Route 12 is a healthy, gravel-bottom stream with ideal habitat for trout. The sea trout fishery in the associated estuary is supported by the ideal spawning conditions of this brook. The riparian zone varies from alder swales to well-structured and varied forest.

There are agricultural fields surrounding the eastern reach of the brook but they are not, nor have they recently been, in potato production. Consequently, the stream bed and the point bars are free of excessive sediment (a rare occurrence in PEI). Over the years, trash has been discarded in the ditch that leads to the brook along Route 12. This trash has migrated downstream.

Beaver activity is prevalent in the headwaters west of Route 12. In the reach east of Route 12 there are no beaver impoundments, but there are ruins of a large dam that has been breached. This breach, which occurred at least several years ago, has a small cascade that may prevent smaller fish from migrating. There are also a few natural blockages in the channel that are potential migration barriers.

This stream is well cared for by its abutting landowners and is in excellent condition. Only minor work is needed here and recommendations are provided at the end of this document. The abutting property owners should be recognized for their responsible use of the land bordering this brook.

## **Freeland Creek Stream Survey: September/October 2009**

### **Executive Summary**

Stream assessments are a fundamental component of community planning and watershed stewardship. They are a focus for our first year's activities, and they are a required preliminary for stream improvement work. Performing these assessments is a substantial part of our agreement under our contract with the PEI Watershed Management Fund.

A stream survey was performed at Freeland Creek in the Freeland Creek Watershed. This small stream is fairly healthy and provides spawning grounds that support the sea trout fishery in the receiving estuary. The stream itself is a potential recreational fishery. There is a moderate to excessive amount of sediment in the primary channel beginning at head of tide and extending ~1 km upstream. There are debris jams at various locations. Stream enhancement work should focus on in-stream sediment management, bank stabilization by planting, and low-impact obstruction clearing. The primary channel between the head of tide and the cart path crossing at coordinates (46.6757°, -63.9775°) is beaver free and should be kept that way through an active beaver management plan.

The headwaters of the stream provide substantial water storage – a valuable resource for area residents. They also provide critical habitat for wildlife. Development of these wetlands should be discouraged. There is an abandoned dump (the Conway dump) in the upper reaches of the headwaters. Area residents have reported ongoing, illegal use of this dump. The rural community of Conway is near this dump and local wells share the uppermost aquifer. Ideally, a provincial groundwater monitoring well should be drilled down-gradient from this dump and the groundwater should be tested for volatile organics and metals. Because there is a potential endangerment to public health, the Department of Environment, Energy and Forestry has been notified of our concern.

There is a separate but related stream east of Freeland Creek. It has a partially blocked culvert on the upstream side of Route 12. The impoundment it creates has been in place for at least ten years and has accumulated substantial sediment. If the culvert becomes fully blocked it will flood property and, eventually, Route 12 itself. If it is indiscriminately and completely unblocked in the course of routine culvert maintenance, substantial sediment may impact the estuary. Because this is a potential endangerment to the commercial fishery in the estuary, the Department of Environment, Energy and Forestry has been notified of our concern.

## Appendix II, Priorities for culvert maintenance

Memo: Road/culvert priorities in Lot 11 & Area Watersheds

To: Shelley Cole-Arbing and Brian Praught  
PEI Department of Transportation and Public Works

Dear Shelly and Brian;

Ross Bernard recommended that our watershed groups prepare a list of priority road/culvert issues in our areas. I have been told that TPW uses the PEINAD27 coordinates provided below. Please advise if you need these coordinates in another format. These are the areas we hope to address this year:

### **Brook's River:**

PEINAD27: 227140, 233780 (Both sides)

⇒ The Brook's River crossing with Route 12 has road sediment passing through stone gabion at both sides of the road. Perhaps jute mesh and hydro-seeding could help out.

PEINAD27: 227025, 234128 (West side)

⇒ A tributary of the Brook's River also crosses Route 12 and there is a discarded culvert in the channel.

### **Freeland Creek:**

PEINAD27:226173, 236712 (South side)

⇒ There is a partial blockage creating a small pond. If it becomes fully blocked there will be flooding. If it is suddenly cleared it will release sediment to the estuary. It needs planned attention.

PEINAD27:225768, 236957 (South side)

⇒ There is a diversion ditch that should be maintained.

The Tory Road Bridge (219771, 23836) is a concern for local residents. I understand that it passed a recent survey but safety concerns persist. It also has an undersized culvert for spring-tide events. Shell-fishers have observed that the water level occasionally exceeds the height of the culvert. We understand that fixing this is a capitol project and is not a maintenance issue.

Please let me know if you have any questions.

Thanks

Mark Bishop, Chairperson  
Lot 11 and Area Watershed Management Group (902) 831-2124

**Appendix III, Financial report**