



WRIG FIELD CREW SUPERVISORS REPORT

Summer 2013

Prepared for the Wheatley River
Improvement Group

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Introduction:

This season the field crew was led by myself, Daniel Watts, and consisted of Collin Jeffries and Justin Ellands. I have a Bachelor of Science from the University of Prince of Edward (2011) with a major in Biology and a minor in Environmental Sciences. In addition, I have experience with UPEI and Fisheries and Oceans (DFO) research, DFO habitat management and leading teams with the Canadian Food Inspection Agency. I was hired by the new WRIG coordinator Tamsyn Cosh-MacKenzie to begin on July 1, and work for eight weeks. Collin Jeffries has a Bachelors degree and a Masters as well as experience in watershed restoration. Collin was a valuable asset over the summer and provided a valuable second opinion on many of our summer projects. He was hired for 12 weeks and will continue on for a further five weeks after I have completed my term. For ten days this summer we were lucky to have a co-op student Justin Ellands join our team. Justin was a high school student who has aspirations of a career in conservation and chose our group as a location for a summer credit. Justin was a joy to work with and would be an ideal choice for next year's work crew.

Our field season got off to a later start than normal, with me starting on Canada Day and the crew not starting till the second week of July. However, this gave me an opportunity to get acquainted with the watershed and plan out our summer field season. The major goals were to plant as many native tree species as we could access in appropriate locations and to complete stream cleaning on all our major tributary streams to ensure fish passage throughout our watershed. In addition, we wanted to maintain Rackham's Pond throughout the summer and continue being involved in community events. This meant attending functions such as the Canada Day festivities in North Rustico and planning *Celebrate our River Day* for the end of August.

This year began with several days of training. The Watershed Alliance Organization put on two days of training for local watershed groups in the second week of July. Both days were organized by Shawn Hill from the Watershed Alliance and are of great importance to providing a brief introduction of watershed restoration techniques to crews. The first day was led by Daryl Guignon and Roseanne MacFarlane. This day consisted of stream restoration techniques such as digger logs, brush mats and sediment traps. This was a very informative day as Daryl is unrivaled in knowledge of stream work on PEI. The second day of training was under the guidance of Gary Schneider. Gary runs the Macphail Woods and gave us a day of training on tree planting and pruning. This day of training was a great help in learning where each tree species we had ordered would thrive and helped ensure we would get the best results out of our available tree species. These two days of training should be attended by all new WRIG watershed crews in future years. Our final day of training was a course in Emergency First Aid and CPR given by instructor Tom Baker.

Tree Planting:

The first phase of our summer work was tree planting. We had a late start to the season so we were limited in what tree species we could acquire from the province and we had to rush to get the trees in before the heat of the summer killed them. Our tree species were: bayberry, chokecherry, white ash, mountain ash, white pine, white spruce, and yellow/white birch. We planted a total of 600 trees this summer and were able to complete this in less than two weeks. We planted at a total of 10 sites throughout the watershed and were able to plant at sites I felt could benefit from the trees as well as areas that had been suggested from past years. Each site was planted with trees that would benefit the site for diversity and potential canopy cover and were spaced out enough to ensure growth was possible long into the future.

We planted at three different sites off Church Road. As per recommendation from last year's report we added trees to Steve Lowe's property as well as two sites across the road on the same tributary. The two sites on the other side of Church Road were chosen as there is potential development planned for this land and I felt it was important to extend the buffer zone to protect the tributary. We were also encouraged and supported by the landowner who rents the property to one of our board members for farming. These sites were given plant diversity and we extended the buffer zones along both sides of the stream.



Figure 1. Justin Ellands planting a yellow birch in the riparian zone.

Planting took place at four sites on Chapel Creek. The first two were located off Buffalo Road (just past Tracy Gallant's) along the upper reaches of the Chapel Creek. The first site was near a natural U-meander in the stream that had no tree cover and very little buffer zone. We were able to extend the planted buffer zone and hopefully provide cover to the stream. The second site was along a spring that feeds into Chapel Creek. The spring was located along a small tributary that runs about 100m up from the stream. We were able to plant along both sides of this section and hope that this will provide shade and cover into the future.

The next two sites along Chapel Creek were also located off Buffalo Road. The first was a small wetland area before Tracy's residence where we planted to protect the area and to provide wildlife habitat. The second site was on Ling property where farm land had been retired to create a larger buffer zone. The land was grown up with grass but trees had not been planted. We planted this large section to provide a wooded buffer as well as shade for the stream.

The other planting sites were Walter Andrew's property on the upper reaches of Crooked Creek, Lloyd MacLeod's off the Stead Road and above Rackham's Pond where the bank is steep. In total we planted all of our trees along 800m of stream and buffer zone. In addition, we visited all of last year's planting sites to prune trees and see how they were doing. For future years it is important to note that trees need to be spaced out according to how big they will grow, especially in areas where they are not competing with existing trees. Figure 1, shows planting sites on a map of the watershed.

Stream Restoration:

The majority of our summer was spent in the water performing stream restoration. Our goal going into the summer was to complete as much stream cleaning as possible to remove blockages as we wanted to ensure fish passage throughout our watershed. We found that many sections of stream had been neglected for far too long and this had resulted in large blockages and debris blocking up entire sections of stream. We also focused on installing new brush mats and added brush to enhance old mats to ensure they continued to collect silt. Whenever possible we also tried to stabilize banks by adding large logs or trees either on or under banks, taking care to secure them to prevent future blockages. We also created hydraulic jumps for fish either by improving natural digger logs or removing blockages but leaving embedded sections of logs and fallen trees so natural pools and riffle sections would be created. In total this summer we have walked all of Lukes Creek, Chapel Creek and many tributaries along the Wheatley River. We have also walked large sections of Horn and Crooked Creek. We are currently working on Wheatley River but have already finished from Oyster Bed Bridge to Route 2 and over to the Little Bungay Road.

Blockages and Debris:

Removing blockages and barriers to fish passage was the biggest chore we completed this summer. We experienced a major spring runoff event this spring across PEI, including the Wheatley River and this exacerbated existing problems throughout the watershed. We began work on the Chapel Creek and were able to walk the entire stream and ensure fish passage was possible by removing blockages and barriers where we found them. We removed over 50 blockages large and small from this river alone.



Figure 2. Collin Jeffrey assessing a blockage on the Wheatley River.

The Wheatley River was our biggest project this summer. We began working from the Art Ford Cross Road and completed work from there to Old Route 2 and then Route 2. We have also completed from Rackham's Pond all the way to the Art Ford Cross Road. We have removed dozens of large, fish impeding blockages and we are proud to say fish passage is now possible

from the estuary all the way past Route 2. We have also cleared out the tributary off the Wheatley that leads to the Little Bungay Road. This section was in need of major work as old spruce trees had this stream severely blocked at many locations. We were able to clear the worst of this area and restore fish passage but a chainsaw will be required at some point to cut some large trees out and prevent future blockages.

Brush Mats and Alders:

To begin we stopped and assessed and old brush mats we came across while removing blockages and walking the streams. We found some brush mats that were doing very well and added brush where needed to keep them functioning appropriately. We also



Figure 3. A section of brush mat along the Wheatley River.

removed some old mats that had become problems with changing stream conditions (mats located in middle of stream blocking flow with stakes

and twine). We installed over a dozen brush mats this year. We focused our efforts on the Wheatley River where we installed and refilled 10 brush mats. We installed many below the Art Ford Cross section and several above here. We also installed one by the Parker Cross section of Crooked Creek and several others on the main branch of the Wheatley River.

Alder removal was also a large part of our work this summer. In many parts of our watershed alders are the only trees present along the streams. This means they are the only source of shade and cover for fish and we cannot clear them entirely. However, alders are a major source of problems in many areas where the branches and roots grow into the water and catch debris



Figure 4. Collin Jeffrey clearing alders on Chapel Creek

creating blockages. We spent a lot of time thinning these sections so that the alders still provide shade but are completely removed from the water and immediately above the water. This ensures they will not create blockages in future spring flows but still function to provide cover for fish. We removed alders from a large section on

Chapel Creek near last year's work site. We cleared from Art Ford Cross Road to Old Route 2 and a thick section between Route 2 and Old Route 2. We also selectively cleared alders above Rackham's pond along Stewart's property.

Culverts, Dirt Roads and Anoxia:

Our watershed contains several problematic dirt roads including; Little Bungay Road, Parker Cross Road and Art Ford Cross Road. Dirt roads are one of this watershed's major source of erosion and runoff that lead to silt entering the streams. It is important for us to monitor these roads throughout the summer and especially after heavy rain. Transportation with the Province installs check dams, diversions and silt fences in many spots but these are often unattended and it is necessary to work with them to ensure they do not become blocked up. It is also important to ask for road grading and re-sloping in certain cases where runoff is a major issue (three aforementioned roads).

Culverts, bridges and road crossing are major sources of fish passage problems all over the province and we have several severe issues in our watershed. Hung culverts are a barrier to all



but the largest fish and we have numerous of these located throughout the watershed. It is important to work with transportation and landowners to remove problem culverts and ensure new ones are installed properly. Debris also has a habit of collecting at bridges and road crossing. We went around the watershed this summer and cleared

out our culverts and small bridges that had been blocked up with wood and debris and this will need to be continued in future years.

Another source of concern in our watershed is anoxic events. The area around the Oyster Bed Bridge goes anoxic on a yearly basis because of excess nutrients entering into

Figure 5. A culvert that iscausing fish passage problems on the Little Bungay Road.

our waterways. This year we had sections that went anoxic in early July and stayed that way for about one month. However, by the end of this year's field season, we did not have as bad of an event as in previous years. Anoxic events will be an issue for the foreseeable futures and we need to monitor this and report it to the correct authorities with the province.

Rackham's Pond:

Rackham's Pond was a major project for our watershed that was completely in the recent past. I felt it was important to maintain this site for the community and to have as a focal point for the watershed. We were very fortunate to have Melvin Ling come and cut back the brush and heavy thistles with his tractor at the first of the season and we were able to cut it weekly after this throughout the summer. We also pruned and cleared around the trees at the pond in the hopes of helping them grow. Rackham's is the site of several community events including the annual *Celebrate our River Day* and needs to be maintained regularly to keep up appearances and keep the community involved. This summer we also received a bit of the spotlight when CBC Compass came and did a piece on Rackham's Pond. Our coordinator Tamsyn was interviewed as were several crew workers and we ended up doing numerous shots for the

story. The story was on both CBC Radio and Compass and provided some major publicity for both Rackham's Pond and our WRIG. Rackham's is the focal point of the watershed and it should be treated as such with regular maintenance and more of a focus on getting the walking trail going.

Community Events and Partnerships:

Over the summer WRIG had several important community events to attend and organize. The first event was our booth at the North Rustico Canada Day Celebrations. We set up a booth with information about our watershed as well as a critter identification spot. We were there to



Figure 6 Collin Jeffrey trimming grass at Rackham's Community Pond.

answer questions and along with the Hunter-Clyde watershed group handed out over 200 trees to eager locals. Our booth has gained a reputation and people were quick to spot the trees and make their way over to the booth. We gave out our first one hundred trees in 20 minutes and had to bring in a second truckload. This is a great way to promote the watershed and tree planting along our watersheds. This event is also a great way to get to know the Hunter-Clyde group who we have a close partnership with. We are able to team up for major projects and get together for season barbeques and this year's deep-sea fishing trip.



Figure 7. End of season deep sea fishing trip, enjoyed by WRIG and HCWG Field crews.

Our biggest community event is the *Celebrate Our River Day*, which is a fundraising for the group but more importantly a day to promote our watershed to the community. The event will be held on August 31st this year and will feature the ever popular

duck race. Tickets are being sold at several local stores and by our board members and we have a package this year to help promote the sale of watershed memberships. The event is also promoted and tickets were sold at the Rendezvous Rustico day. Tamsyn was able to attend this and sell some tickets for the big day at the end of August. We are hoping for a good turnout this year and look forward to the big day.

Other partnerships that we have cultivated and should continue to maintain are with the University of Prince Edward Island and local landowners. UPEI has students and researchers doing weekly water monitoring at several sites throughout our estuary. They have been very helpful this year with monitoring anoxic events and using their equipment to provide us with useful data and information. They are also monitoring turbidity above Rackham’s Pond and with the amount of silt entering this river this is important information. UPEI has shown a willingness to help and provide information in the past and can be a valuable partner moving forward. As always we need to maintain excellent relations with our landowners. This includes notifying them of issues on their properties and contacting them if they wish when on their land.

Table 1. Recommendations for 2014 Field Crew planning.

<p>Recommendations:</p>	<ul style="list-style-type: none"> • Walk all streams before season starts if possible to assess problem areas (supervisor/Tamsyn can do this in a couple weeks) • Choose planting sites season prior to order correct trees for sites • Remove blockages and ensure fish passage possible everywhere first in stream work • Monitor old brush mats and add brush or extend where necessary • Continue maintaining Rackham’s Pond • Monitor dirt roads, culverts and anoxic events(not a huge priority) • Try to expand community outreach and membership (facebook, events, website) • Wheatley River should be priority and work should be focused here • Silt is a huge issue throughout the watershed, try to address this (good luck)
<p>Wheatley River:</p>	<ul style="list-style-type: none"> • Maintain Rackham’s Pond • Create trail at Rackham’s Pond (mark with stakes/rope and cut) • Huge stretch of alders from Stewarts off Milboro Road up to tributary behind Bulman property • Maintain brush mats • Spots for new brush mats/digger logs between Art Ford Cross and Milboro • Couple of ideal sediment trap locations by agricultural crossings (first one below Art Ford Cross in particular) • Section of alders between Art Ford and Old Route 2 will need more work/maintain • Tree planting above Rackhams if possible (flood plain species only) • Tree planting on Stead and Macrae property if possible (livestock land with zero buffer zone or tree coverage along Milboro) • Alders along upper sections past Route 2

	<ul style="list-style-type: none"> • Little Bungay section will need more clearing as spruce trees are falling annually and chainsaw would be recommended for some of the big stuff (rent Hunter Crew for a day) • Small tributaries (Lings, Steves, etc.) off main branch should be ignored as most are not fish bearing/ephemeral and have seen some work in the past (last spots to work on)
Lukes Creek:	<ul style="list-style-type: none"> • Alder removal • Ensuring fish passage before road crossing (dry section)
Horns Creek:	<ul style="list-style-type: none"> • Work with pond owners (Nancy Smith) • Poirier would like hardwoods planted along stream (not a priority) • Add diversity to Allison Fergusons property in a few years if needed(forestry spruce) • Tree planting sections on upper reaches
Chapel Creek:	<ul style="list-style-type: none"> • Alder removal on large areas along Buffalo Road (completely clear if you can plant) • Tree planting on upper reaches and along several fields (Craswell, Howmac etc.) • Weird blockage where water runs under bank for 15 feet on Howmac property • Culvert that is starting to collapse (Howmac?)
Crooked Creek:	<ul style="list-style-type: none"> • Tree planting on both sides of first bridge (Crooked Creek Road) • Sections of alders throughout • Branch towards Ebenizer needs more tree planting • Sections in Ebenizer could use brush mats • Did not get to much of this system this year could start here after Wheatley River

Appendix I: Map of Wheatley River Watershed

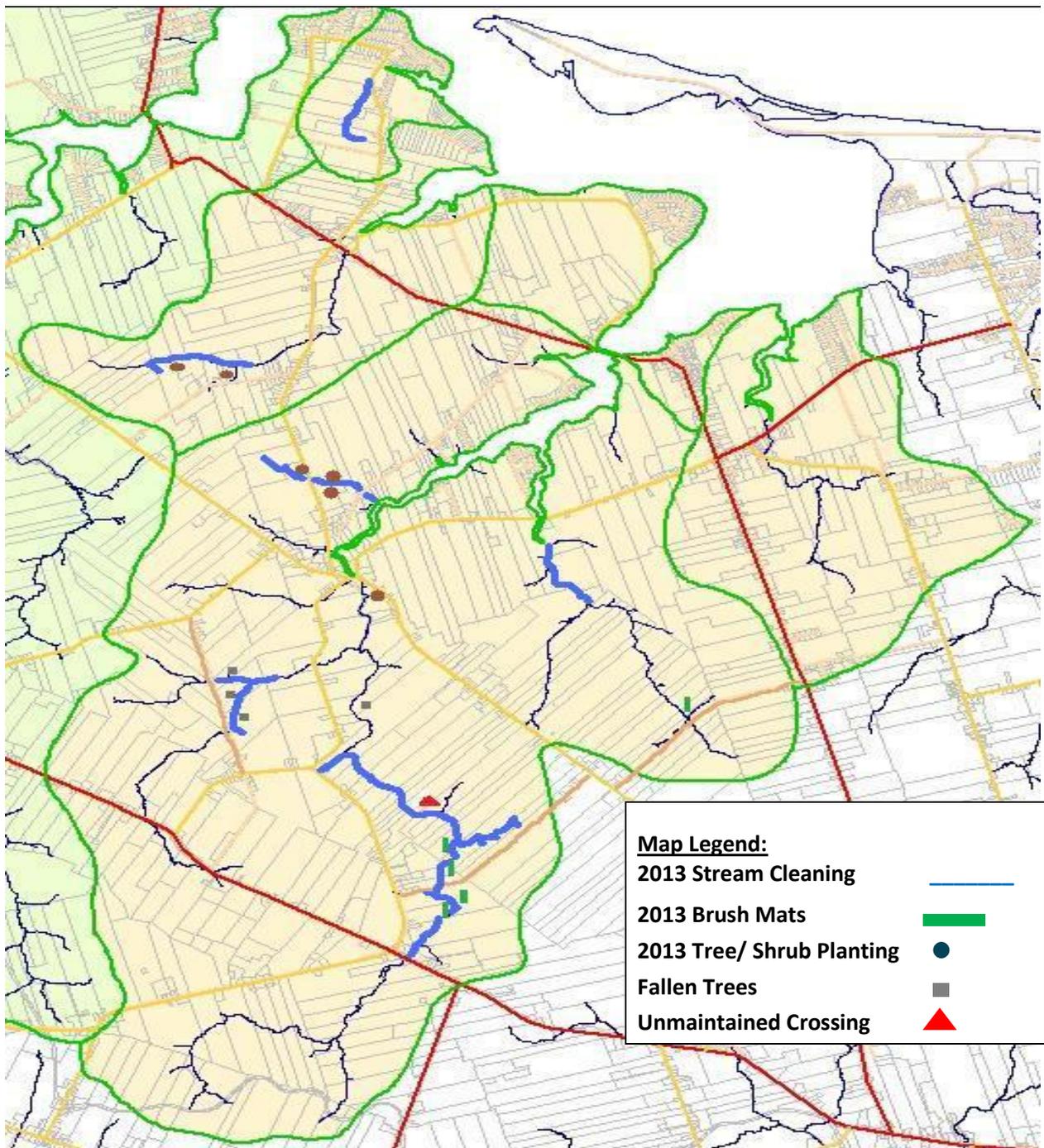


Figure 9 Map of Wheatley River and surrounding Watersheds, indicating locations of Stream restoration and tree planting locations 2013.