

Winter River-Tracadie Bay Watershed Association
2014 Summer Field Work Report



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Preface

The 2014 field work season was one of great success. At the peak of work, there were eight staff in the field on a daily basis. Staff for the summer of 2014 included Derian Vessey, Joe Ready, Janelle Cheverie, Jared Vriends, Carter McQuaid, Steve Bruce, Matt Costain, and supervisor Luke Peters. In the office, and in the field for some technical assistance, was watershed coordinator Bruce Smith. The main area of focus was a 1.6km stretch of the lower portion of the main branch of the Winter River. Near the end of the summer, the crew began work below Officer's Pond, but work was limited in that area due to time constraints. Other areas of sporadic work included; Union pumping station, Peters' creek, and the Union Road pit. There were two main focuses of work in this area. The first, at the beginning of the field season involved the crew planting both sides of the 1.6km stretch of river in an attempt to add a diversity of native tree and shrub species to the riparian zone. The second work focus was to add fish cover. This was achieved by adding a variety of wooden structures (e.g. slab cover logs), adding conifer trees, and repositioning debris blockages

Surveying

The beginning of the work season comprised of Steve and Luke walking all tributaries of the river and marking any point where work may need to be done on a GPS unit. All springs on the entire system were marked with the GPS and numbered with flagging tape. Tree survival rate surveys were also conducted on all previous areas planted.

Tree Planting

A wide variety of native trees and shrubs of the Acadian Forest were planted in the riparian zone of the Winter River. Although the areas planted in 2014 were mostly healthy with quite a bit of mature trees, we planted to add to the diversity of the area, paying particular focus to add long lived species and ones that are of great benefit to wildlife. In total, there were 2300 trees and shrubs planted during 2014. Species of trees and shrubs included but were not limited to; yellow birch (*Betula alleghaniensis*), red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), white pine (*Pinus glaucis*), red oak (*Quercus rubra*), service berry (*Amelanchier spp.*), and red osier dogwood (*Cornus sericea*).



Fish Cover

Adding cover for fish, in particular brook trout (*Salvelinus fontinalis*), was the major focus for the field crew. In past years, too much debris had been taken out of the main branch which left little to no areas for fish to hide. Furthermore, throughout much of the main branch, there is no natural cover or areas

where potential cover could attach due to the hardpan substrate. There were five techniques that the crew used to add cover into the river. Techniques were chosen and used in specific areas of the river based upon the physical characteristics of the area of river in which the cover was to be added.

a) Slab Cover Logs

There were 50 slab cover logs installed in the main branch of the Winter River during 2014. A slab cover log consists of a thin piece of slab wood with two holes drilled in either end. Wooden spacers six inches in length were placed below each hole and the entire structure is held in place by driving a length of rebar through the slab and the spacers then into the bottom of the stream. The result is an area in which fish of various sizes can rest underneath, away from predators. This was the preferred technique used by the crew as it was the most natural (blends in to the river substrate quite well), the slabs are easy to install, and they last for roughly ten years in a river.

b) Cover Rafts

In areas where the substrate was too hard to affix slab logs to the river bed, cover rafts were installed instead. A cover raft consists of 3-5 logs approximately 3.5 feet in length, held together with two cross logs. The raft is then anchored to a solid structure (e.g. tree trunk) on the river bank with a length of steel wire or rope. Rafts provide a larger area for fish to hide under, but due to the rafts distance from the river bed, it is normally only larger fish that use them for cover (smaller fish find it too open below the surface of the water to act as adequate cover). Cover rafts were a less



favourable alternative to slab logs because they do not blend in to the natural environment, they are more difficult to install and they do not last as long in the river as do slab logs (roughly two to three years). It is also recommended that cover rafts be removed in the fall of the year when water levels begin to rise to avoid them being ripped off of their anchor point.

c) Tree Tops

Trees from outside of the buffer zone (15 meters away from the river) were cut and the top ten feet were removed. The trees tops were then dragged into the river and placed in an area of slack water. Trees were affixed to a solid structure on the riverbank (e.g. tree trunk) with either steel wire or rope. It was important to ensure that the trees were positioned with the stump of the tree facing upstream so that the chances of debris floating downstream and getting stuck within the branches of the tree would be reduced. Tree tops make an excellent place for fish to hide away from predators. Although this is one of

the more labour intensive techniques used to add fish cover to the stream, it is one of the preferred methods because it is the most natural looking form of cover and it has a relatively long lifetime within the river (roughly six to eight years).

d) Repositioning of Debris Blockages

There were several major blockages that were addressed during the 2014 field season. In previous years, major blockages were cut out and completely removed from the river. This year we decided to leave as much of the blockage in the river as possible, to act as fish cover. Small portions of the blockages were cut out to allow water to flow freely and fish to pass. Any part of a blockage that was cut out would be moved downstream and fastened to a strong structure on the riverbank (e.g. tree trunk) so that it and the rest of the blockage that remained upstream could serve as cover for fish. This is an effective and low effort way to add fish cover to a river.



e) Boulder Flipping and Rock Piles

In areas where there were large boulders or medium sized cobble, the crew would use pry bars to move the boulders into positions where they would break the flow of water, creating an area where fish can rest and hunt invertebrates from. Medium sized cobble would be piled into boulder sized piles in order to achieve the same sort of break in flow as would a boulder.

Fish Spawning Area Enhancement

The latter portion of the summer saw the crew focus on enhancing available fish spawning habitat throughout the lower portion of the main branch of the Winter River. Due to the lack of water in the upper tributaries where salmonids would normally spawn, it was of great importance to ensure that there would be adequate spawning areas on the main branch. This was done using two methods. In areas where there was semi-suitable gravel and cobble for spawning, rakes were used to agitate the substrate and dislodge any fine sediment that would impede the development of salmonid eggs. The second method was the installation of artificial spawning beds. This technique was used in areas where the substrate may have not been as favourable for spawning but the water properties were (i.e. spring outflows). This method involved digging a hole roughly one by two



meters in length and about six inches deep (this was the size used for salmon spawning beds, smaller holes were dug for trout spawning beds) in the bottom of the river. This hole was then filled in with appropriate sized rock (gravel for trout and cobble for salmon) which fish could then spawn in.

Brushmats

Brushmats are structures that consist of conifer boughs piled and staked into the riverbed on the inside of a turn in the river. The inside of a turn has a lower flow of water and when the water, with suspended sediments, hits the brushmat it slows even more and will drop its sediment. The sediment will eventually be trapped in the brushmat creating a new bank and narrowing the stream. This is a very easy and low cost technique to return proper flow to a section of river. Four brushmats were installed during the 2014 field season. These included 3 small mats (~1.6m) on Peters' Creek and one large (>25m) on the main branch of the river.

Nest Boxes

2014 was a big year for nest box construction and placement. 125 nest boxes were built over the course of the summer. Boxes were built for the following species: American kestrel (*Falco sparverius*), barred owl (*Strix varia*), northern saw-whet owl (*Aegolius acadicus*), wood duck (*Aix sponsa*), tree swallow (*Tachycineta bicolor*), and barn swallow (*Hirundo rustica*). 69 of these boxes were installed during the summer, which consisted of 16 American kestrel, 3 barred owl, 5 northern saw-whet owl, 5 wood duck, 25 tree swallow, and 15 barn swallow. This summer also had great nesting success with tree swallow boxes that were previously placed at Union Road pit, with 15 out of the 24 boxes being occupied.



Other Activities

a) Elementary School Field Trips

Early in the work season, four days spent in the Union Road area where grade five classes from various schools within Charlottetown would come out to learn about where their water comes from, what a watershed is, and about nature in general. This is a follow-up to the program being run by the City of Charlottetown, where instructors go into the classes one to two times per year to give the students some background information on the watershed and water conservation. This program has been ongoing for three years and has been a great success.

b) Garbage Clean Up

Three separate days were dedicated to garbage clean-up. The first day the crew participated in the Great Canadian Shoreline Clean-up. This saw all the shores of Tracadie Bay walked and cleaned by the crew and a team from the Prince Edward Island Department of Environment. The second day included cleaning Tracadie Beach, Blooming Point Beach, Hardy's Pond, Tim's Creek, and various points between. The third day consisted of the removal of a paddle boat that had been lodged in Peter's Creek for the past five years.



c) Door-to-Door Campaign

During the later portion of the summer and into the early fall, some of the crew spent half their day in the stream and the evenings conducting a door-to-door campaign to residents of the watershed. The campaign consisted of the crew handing out pamphlets on various issues faced by the Winter River-Tracadie Bay Watershed, answering any questions that residents may have, and just letting people know about the Association and the work we do.

Recommendations for Next Year

- Continue adding fish cover from Officer's Pond downstream to where worked stopped in 2014.
- Begin work on the Friston Road branch.
- Begin to run fish traps into Officer's and Hardy's Ponds.
- Continue projects that have been previously done (e.g. nest box placement, elementary school field trips).