

# Rehabilitating and Restoring Unique Landscapes



October Newsletter  
2019



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The Maritime Aboriginal Peoples Council's Five Watersheds Project will address areas of fish habitat concern in the **Chiganois, Debert, Folly, Great Village, and Portapique** Watersheds. Four of the five watersheds within the project scope are identified as critical habitat for the endangered inner Bay of Fundy (iBoF) Atlantic Salmon.

The Five Watersheds Project is funded by the Department of Fisheries and Oceans Canada, through the Oceans Protection Plan, under the Coastal Restoration Fund.

In order to identify areas of habitat concern, the project manager with field technicians performed a wide range of field work including, habitat assessments, fish surveys, water quality monitoring, and culvert assessments. Based on these assessments along with traditional and local knowledge, a restoration plan is created. When adding a

location to the restoration plan, many factors are taken into consideration. These factors include areas that will become accessible to fish species, suitability of the habitat area above the potential restoration location, landowner cooperation, and of course, economic viability.

The Project Manager and Field Technicians of the Five Watershed Project had a very successful 2018-19 field season! The project has many great milestones and have tackled a number of projects on the current restoration plan 🤝

### Galloping Brook Denil Project:

This fish passage barrier on Galloping Brook was originally identified in June of 2018 while doing water quality. When the project manager and field technicians visited the site in early June, they noticed a large school of fish below a hung culvert and it was evident that the fish were not able to



continue their migration. The Five Watersheds team crew had a large beach seine and were able to sample the fish.

Using the one sweep method, field technicians and the project manager caught nearly 1000 Gaspereau and a few other species in the beach seine. Galloping Brook extends from the main channel of the Chiganois River to MacElmons pond, and continues further upstream with linear habitat. The total catchment area behind this culvert is 15.5km<sup>2</sup>, with approximately 23.3km of linear upstream habitat, and 0.5km<sup>2</sup> of upstream lake habitat in MacElmons pond.

Upstream of the culvert is optimal spawning habitat for Gaspereau in MacElmons Pond. Additional technical survey assessments of the culvert and flow velocities was undertaken by the NSLC Adopt-A-Stream program to prepare for any future construction work.

The Five Watersheds Project applied for and received additional funding for a Steep Pass Denil structure. This structure slows the water velocity down inside, and also creates small pools for the fish to rest while they travel through. The Denil was installed during the first week of April, 2019. The field technician and project manager monitored the denil twice a week until the arrival of the Gaspereau.



Figure 1: Downstream of Newly Installed Denil



Figure 2: Upstream of Newly Installed Denil

On May 27 2019, the project manager and field technician witnessed what they have been waiting for, FISH PASSAGE THROUGH THE DENIL! Hundreds of fish were traveling through the denil to an optimum spawning ground in MacElmons Pond. This was a significant accomplishment for the project team and the project!



Figure 3: Gaspereau Upstream of Denil Structure

### Folly River Culvert Remediation:

The second location that was added to the restoration plan, is an undersized culvert located on a tributary of the Folly River. The Folly river is considered critical habitat for the inner Bay of Fundy Atlantic Salmon. This culvert is made from corrugated steel pipe, and is approximately 32 meters in length.

When initially surveyed in the spring of 2018, it was evident that this culvert was severely damaged.

It was suggested that ice formation in the pond located upstream of the culvert caused the metal to crack and bend upright (Figure 4).



Figure 4: Upstream end of Folly River Culvert

On the downstream end, there is a vertical barrier making it nearly impossible for fish to travel through (Figure 5). Also, because of the water depth, the length of the culvert, and the limited burst speed of the fish, traveling through this culvert is very likely impossible for fish.



Figure 5: Downstream of the Folly River culvert

After explaining concerns to the Department of Transportation and Infrastructure Renewal, it was decided that there is an urgent need to have a temporary fix of the culvert until this culvert could be added to the capital plan for replacing damaged culverts. The Department of transportation contracted Bob Rutherford, and his consulting firm (Thaumas Environmental Consultants) to prepare and design a solution for the downstream end of this location. The Department of Transportation removed the damaged end of the culvert with an excavator upstream, and stabilized the bank with armour rock. This would reduce debris build



up and provide a more “fish friendly” entrance (Figure 7).

Further survey work and measurements were taken of the culvert and surrounding area to develop an intermediate plan. Often times, a small chute is attached to the culvert which allows the fish to get up into the culvert. Unfortunately, in this case, the culvert was too high for a chute attachment, and an alternative option was required. An aluminum attachment was fastened to the culvert, and the denil was fastened to the attachment, while it rested on a rock gabion. The attachment helps to backwater the culvert, and the denil allows the fish to travel into the culvert (Figure 6).



Figure 6: Downstream of the newly installed chute system



Figure 7: Upstream of the Folly River Culvert

During the installation, small Brook trout were trying to migrate through the newly installed denil. Fish passage will also be monitored through this culvert continuously during the remaining term of the Five Watersheds Project.

#### Digger Log Installation on Cook Brook:

After completing habitat assessments during the summer of 2018, the data and images taken were compiled and sent to Adopt-A-Stream to be analyzed. Based on the compilation report that was provided, the project manager selected three locations that would benefit most from instream restoration work. The location that was chosen is a tributary off the Portapique River called Cook Brook. This brook has great canopy cover, substrate for spawning, and food availability, but lacked pools.

Digger logs are regularly used instream to increase the quantity and quality of pools in the river for trout, and salmon. The size and location of the logs were determined by Adopt-

A-Stream, as they have to be placed in the natural riffle run sequence of the river. Digger logs have many advantages, they create pool habitat, remove sand and silt from the substrate, and pools capture leaf litter which supports a larger insect population for food, provides better spawning grounds, and cover and over wintering grounds.



Figure 8: Downstream of Digger log Installed on Cook Brook, Portapique, NS

The project manager with the project lead field technician installed 8 digger logs this field season. Although installing the digger log is a very labour intensive task, it is very rewarding to see how quickly the digger log begins working in stream!

For more information about the Five Watersheds Project and our work and how to become involved, please call us or e-mail us at the number below and ask to speak to the project manager, Chelsey.

The next community engagement session is being held at MacElmons Pond (219 MacElmons Rd, Debert) on November 8th, 2019 from 10am to 3pm.

This work could not be done without the help of the project partners, and

stakeholders. We thank them for their time and support.

To see past newsletters, please visit the Maritime Aboriginal Peoples Councils website at: <https://mapcorg.ca/project-initiatives/>

Please follow us on Social media for more updates about field work, and upcoming events.

 @ FiveWatershedsProject

For more information, or how to get involved Call: (902) 895-6899 or e-mail [cwhalen@mapcorg.ca](mailto:cwhalen@mapcorg.ca)



**Maritime Aboriginal Peoples Council**

