

**PROJECT REPORT (2004)  
WILDLIFE TRUST FUND**

**PRESENTED BY:**



**OCTOBER 26 2004**

## INTRODUCTION

### Overview of project description

Within the Petitcodiac watershed, like other watersheds in New-Brunswick, there are numerous impacts on our rivers and streams. For example, urbanization, forestry and agriculture all have certain impacts on our water resources. Agriculture in this watershed has been going on since the early 1800's. With this long history of agriculture, there have been cumulative effects on our waterways. Sediment loading, E-coli, high nutrient counts and the loss of fish habitat are all indications of a need to improve the way we do agriculture. Agriculture is a noble trade and it is very important to this region. To keep this tradition going, it is important that all components of the ecosystem work in harmony. In proposing the installation of cattle fencing and alternate watering systems, this will contribute in minimizing sediment output within the streams and also minimize the chances of contaminating our watercourses with harmful bacteria. This fencing will keep cattle from the streams and will stop bank erosion due to trampling.

### Modifications to original project

As discussed in an e-mail that was sent out to Claire Caron of the WTF on June 24<sup>th</sup> 2004, a few changes have been made to the original project. The allocated funds were split between two other farms rather than only one. The initial farmer decided to retract from the project after retiring his farm.

- The first project was located on a tributary of the Pollett River named Lee Brook. Nearly 400 meters of barbed wire fencing were installed on the only accessible side of the stream. Holes for the cedar posts were dug using a manually operated hydraulic auger. Instead of stabilizing two fording sites, we convinced the farmer to completely fence off the stream and have a windmill installed to pump water from a retaining pond to a watering tub.
  
- The second project was located on a tributary of the Petitcodiac River named Hasty Brook. Almost 700 meters of barbed wire fencing was installed on cedar posts. The holes were dug by a hired heavy-duty auger in reason of the hard soil on that site. An already existing fording site was stabilized by first using a backhoe to soften the angle of the approach on each side. Afterwards, a sheet of geo-textile fabric was spread on each site and then covered with crushed stone. A few steep and eroded banks were stabilized using Geo Jute©, hay and seed.

## Partners

This project was made successful thanks to participation of the New-Brunswick Wildlife Trust Fund, the New-Brunswick Environmental Trust Fund, the Agricultural Environment Management Initiative and Young Canada Works (Municipalité Francophone du Nouveau-Brunswick).

## OBJECTIVES

There were two main objectives to this project:

- I. To restore the buffer strip along the brooks/streams
  - cattle fencing was installed
  - bank erosion was minimized
  - natural restoration of fish habitat now that excess sediment input has stopped
  - fecal coliform runoff in water course is reduced
  - alternate watering device were installed
  
- II. To help the native vegetation to re-grow in the buffer zone
  - shrubs help filter runoff from rain and/or spring runoff
  -

The installation of cattle fencing assures that fish habitat is rehabilitated and that spawning grounds are kept in good conditions. Preserving/rehabilitating spawning grounds assures a good environment for fish reproduction such as trout.

## COMPLETED FIELD WORK

### Lee Brook

A manually operated hydraulic auger was rented from The Home Depot© and holes were dug approximately 6 meters apart along a temporary electrical fence originally installed by the farmer. Cedar posts were dropped in the holes and stabilized with the earth that was extracted with the auger. Once the posts were in, three rows of barbed wire were stapled to the post and tightened using a wire puller provided by the farmer. Finally a windmill was installed with the help of the farmer. Installation of this assembled windmill was fairly simple. This project took over a week to complete.



**Before**



**After**



**Windmill and tub**

### Hasty Brook

At this location, because the soil was very hard and rocky we had to hire a local entrepreneur to dig the holes using an auger attached to a farm tractor. Sixty-two holes were dug at eight dollars a hole in less than three hours using that method. After the cedar posts were dropped-in and stabilized. Three rows of barbed wire fencing were stapled to the posts. Since the wire puller provided by this farmer wasn't working very well we purchased a ratchet system that worked perfectly. After the fence was installed we had 20 tons of 3-6" crushed stone delivered and we hired the service of a local backhoe operator to reduce the approach angle on the fording site. We then spread a layer of geo-textile fabric and the backhoe operator spread the crushed stone for the two approaches to the stream. The stream bed was already stable so it was unaltered. Eroded stream banks were also stabilized with Geo Jute© This project also took over a week to complete.



**Before**



**After**



**Before**



**After**

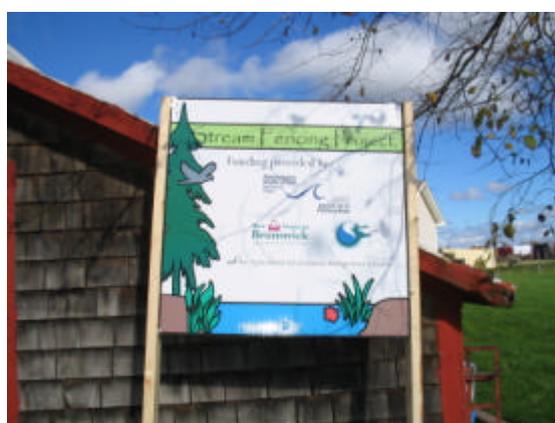
## RESULTS

A total of 1100 metres of fencing was installed in the Petitcodiac river watershed this summer (400 metres = Vangeest's property; 700 metres = Vanderbrand's property)

On the Vangeest farm approximately 100 head of cattle will no longer have direct access to Lee Brook, thus enhancing the water quality of this little watercourse.

As for the Vanderbrand farm, a total of 300 head of cattle will have limited access to Hasty brook, also helping it regenerate after years of abuse. In the near future we hope that the farm owner will consider completely blocking off all of the watercourses running throughout is property.

Poster signs were installed at each site to thank funding agencies.



### Short and long term gains

A list of short-term success items are listed bellow.

- Cattle will not have access to the streams/brooks
- Sediment due to bank erosion will no longer be able to reach the watercourse
- Having an adequate buffer zone will minimize the chances of harmful bacteria entering the watercourse.

A list of long-term success items are listed bellow. Achieving these goals will be our indications of long-term success for this project.

- Improvement to water quality for years to come (less fecal coliforms and nutrients)
- Stream banks will be stable due to strong vegetative cover (biodiversity)
- Improvement of fish spawning habitat for years to come
- Return of trout and other aquatic species
- A self sustaining aquatic ecosystem
- Long term environmentally sustainable agriculture

## RECOMMENDATIONS

### Hasty Brook

Regular maintenance of the fence stemming mainly from snow damage will be required, however one section of the stream is still accessible by cattle on this farm and we recommend the following.

- Fence off the remaining part of the brook still accessible by the cattle (approximately 400 meters).
- Furthermore, access could be completely restricted to the stream by replacing the fording site by a bridge. Watering of cattle could be provided by a windmill powered water pump from the stream to a watering tub.
- The farmer should continue working on recommendations outlined within his environmental farm plan.

### Lee Brook

- Regular maintenance of the fence and windmill are the only recommendations associated to this site.
- The farmer should continue working on recommendations outlined within his environmental farm plan.

## CONCLUSION

Overall the two projects were a success in terms of improving fish habitat & water quality. Furthermore, the education provided to the participating farmers will hopefully make them more aware of the impacts that farming can have on the environment. Hopefully the visibility of this project will entice other farmers to do the same. The Petitcodiac Watershed Monitoring Group will continue working with the local Agro-Conservation Club to ensure continued environmental sustainability within the agricultural sector.

## FINANCIAL OVERVIEW

See Appendix A