

# Water/Ways

NEWSLETTER OF THE NASHWAAK WATERSHED ASSOCIATION, INC.



Fall  
2022

## President's Report

The Nashwaak Watershed Association is an organization that takes science seriously. Our hardworking staff are trained in a number of overlapping scientific disciplines that are relevant to our mandate; our various programs utilize scientifically-grounded field research methodologies; and we make evidence-based decisions about how best to approach riparian restoration, river bank stabilization, aquatic connectivity, and water quality monitoring. We regularly invite leading scientists to our Annual General Meetings to tell our membership about the latest data on fish biology, cyanobacteria, and other aspects of aquatic ecology. As someone whose appreciation for science far outstrips his meagre scientific training, I am personally very proud to be involved with an organization dedicated to rational solutions to pressing environmental problems.

And yet, our relationship to our rivers is also a human one. I have always thought that rivers loom large in the cultural identity of our province. For the Mi'kmaq, Wəlastəkwiyik, and Passamaquoddy peoples, New Brunswick's rivers were and are both beautiful and sacred, and integral components of a harmonious relationship between humans and their environment. New Brunswick's river valleys are socially and culturally distinctive in many ways that transcend ecology. A person who is born and bred on the Miramichi feels a strong sense of identity quite different from that of a person living along the Kennebecasis. The Nashwaak, too, partakes of our

deep human attachment to our rivers. People living in the communities along the Nashwaak feel a kind of kinship with one another, in recognition of the fact that, among their fields and wooded hills, they are linked by the same flowing waters.

"Eventually," wrote the American author Norman Maclean, "all things merge into one, and a river runs through it." He was writing about a series of human relationships mediated by the flowing waters

of his youth on the Big Blackfoot River in Montana (along with healthy doses of fly-fishing). But in a larger sense, he was writing about the capacity of a river to forge a sense of identity at a deep, existential level. Those living along the Nashwaak are fortunate to have the same opportunity as our beautiful river flows through our lives. The work of the NWAI is grounded in science, yes—but it is also undoubtedly good for the soul.

— Peter Toner



What is a watershed? Why are trees important to our lives? What is a native species? If you don't know, just ask one of the many children that we have had the pleasure of doing programming with this past year.

From school groups to the Multicultural Association of Fredericton, we have done outdoor programming with over 500 youth in the past year! With more staff and additional funding, this coming year stands to easily increase our outreach.

# OUTDOOR EDUCATION

— Francie Morgan

This summer saw the implementation of our new travelling watershed program. Students from the Stanley reading club and the Taymouth Community Center were able to interact with our watershed model, explore natural history artifacts and get hands-on with aquatic ecology through our portable pond option.

Many new and smiling faces discovered the Marysville flats with us this spring and summer. Our Upstream/Downstream program explores the concepts of cycles and reciprocity, habitat restoration and biodiversity. Students get to put their learning into practice while critter dipping and studying the aquatic life they find in the ponds that line this special section of the Nashwaak River.

Kids don't need to be told that our natural systems are important - they know it instinctually. For this reason, teaching them the skills to care for these places is a dream. These mini community members love their ecological neighbors, and we are so thrilled that we get to celebrate the magic of the watershed with them.

This fall we will be exploring restoration sites and school grounds with students from Stanley Consolidated School, Nashwaak Valley School, Gibson Neill Elementary, Fredericton Christian Academy, Barkers Point Elementary and more. If you work with children within the watershed and would like to book a program, please contact us at [coordinator@nashwaakwatershed.ca](mailto:coordinator@nashwaakwatershed.ca)



The Upper Nashwaak River Valley (from Nashwaak Lake to the Stanley area) and the Headwaters of the Penniac Stream are **new Crown land protected areas** in New Brunswick's Nature Legacy.

Water temperatures and levels were high due to an anomalously hot, wet summer

Over 500 youth reached through outdoor programming

38 temperature loggers deployed

Over 900 swamp milkweed plants were distributed to promote pollinator gardens and Monarch butterflies

Implemented Year 2 of our 2021-2030 Strategic Plan

## Highlights 2021-2022

Campbell Creek Dam post-removal monitoring and restoration implemented - restoring 32.5 km<sup>2</sup> of habitat for Atlantic Salmon and American Eel



## AQUATIC PROGRAMS

— Lauren Murdock

### CONNECTING THE RIVER

This year was a big one for a variety of our aquatic connectivity projects. The Campbell Creek dam removal project has officially been completed and is showing positive signs of recovery. In early September there were a significant number of brook trout, American eel, and blacknose dace caught during electrofishing surveys, conducted both upstream and downstream from the former dam. This hints at the ability for multiple species to migrate upstream now that the dam has been removed. We will continue monitoring and working with our partners for the next few years post-removal.

Aquatic connectivity is crucial to a variety of at-risk fish species that call the Nashwaak watershed home. Our team continues to survey barriers and identify high priority areas for remediation. Many species including Atlantic salmon, brook trout and American eel rely on access to vital cold water refugia and spawning grounds upstream. This year saw a total of 25 road-stream crossings assessed for fish passage. As we share our data with the Department of Fisheries and Oceans, the Department of Transportation and the Department of Natural Resources of Energy Development, we hope to see a more collaborative approach to fish barrier remediation in the future.

### CYANOBACTERIA

Our cyanobacteria monitoring program in collaboration with ACAP SJ is continuing with an exciting new testing methodology. The new test kits were able to give us immediate results while in the field. They specifically test for two cyanobacteria-produced toxins found in our watershed called "microcystin" and "anatoxin-a". Both toxins can have negative health implications for people and animals if exposed. Luckily, we only came across one positive site in our testing this summer and notified our local authorities.



# Restoring Floodplain Forest with Community

— Mariah Belyea

2022 was a very successful year for tree planting and community collaboration in the lower Nashwaak watershed. Over 24,000 trees were planted at Neill's Flats this year with the help from community volunteers and professional tree planters. We would like to give a big shout out to some of the organizations that partnered with us and volunteered to make this possible: 2nd Hanwell Scouting, Wabanaki Maple, Community Forests International, Elephant Thoughts, the three Rotary Clubs of Fredericton (Sunrise, Fredericton North & Hanwell), New Maryland Elementary, and East Winds Silviculture. Many seedlings were planted in the rich floodplain soils along the Nashwaak River in the span of three weeks thanks to these incredible organizations and volunteers. Your efforts to give back to your community mean the world to us, and this special piece of land is forever changed!

The presence and health of forests in close proximity to rivers is intricately linked to the quality of the water - trees control erosion, reduce water temperatures, and lessen the impacts of flooding, as well as providing critical habitat for wildlife. With climate change increasing temperatures and flooding, forests are more important than ever for maintaining water quality. Tree planting on retired agriculture land along the Nashwaak River is part of a larger effort to restore the Silver Maple Floodplain Forest that once flourished in this area. Along with silver maples, bur oak and butternut seedlings were also planted in the floodplain through this community effort.

8 volunteer  
tree and shrub  
planting events  
hosted

Surveyed 25 road-  
stream crossings  
to improve aquatic  
connectivity

Over 25,260  
red-tipped willows  
and red osier  
dogwood planted

Visited 12  
private forests as  
part of our Forest  
Stewardship  
Project

16 sites in  
the watershed  
monitored for  
water quality  
monthly

Workshops and  
hands-on events  
provided to >600 people  
with topics ranging from  
kayaking to monarch  
monitoring to climate-  
adaptive forest  
management

Over 24,000  
trees planted at  
Neill's Flats: 23,620  
silver maple, 100 black  
cherry, 300 red maple,  
200 bur oak,  
35 butternut

## Floodplain Trees

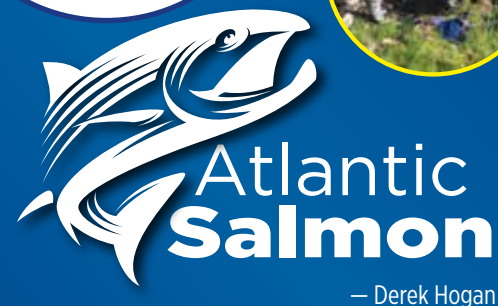
— Jesse Saindon RPF, Liberty Tree Nursery

The vast floodplain ecosystems of our region are blessed with a number of tree species living at the far northeastern fringe of their natural ranges. Among them, silver maple (*Acer saccharinum*), butternut (*Juglans cinerea*), and American basswood (*Tilia americana*) line the Wolastoq (Saint John River), its tributaries and adjacent water bodies. Another of these species, bur oak (*Quercus macrocarpa*) was historically more prevalent but has been reduced and fragmented to such a state that most people are unfamiliar with them due to their scarcity. There is much work to be done to get the species back to a self-sustaining population, but the good news is that unlike others that are endangered by complex and seemingly insurmountable issues like introduced diseases or insects, the path towards restoration for bur oak is more straightforward and optimistic. By protecting existing populations and continuing the planting efforts that organizations like NWA have been doing for a number of years, we will be well on our way to the restoration of this ecologically and culturally important species in our region. The bur oak continues to inspire my work at Liberty Tree Nursery, and I hope that if you come across one in the wild that you are inspired too!

Bridge is approximately 14,000. This is 60% greater than in 2019, the last year for which a smolt estimate is available.

Electrofishing surveys were conducted throughout the Nashwaak River this summer. Fry and parr were detected at 16 of 20 sites. The average densities were 5 fry/100m<sup>2</sup> and 3 parr/100m<sup>2</sup>. These densities were unfortunately well below the reference values for juvenile abundances in Maritimes rivers (29 fry/100m<sup>2</sup>, 38 parr/100m<sup>2</sup>), although one site did show fry densities of 29 fry/100m<sup>2</sup>.

A counting fence was erected to count returning spawning adults at a location downstream of Durham Bridge. The fence started operation on June 12th and will continue through the spawning run. Counts at the fence are below average with 12 salmon and 29 grilse having been caught up until September 16th. However, high water events have occurred on three separate occasions this summer requiring the fence to be down for several days, during periods of time in which adult fish are expected to move upriver. Swim surveys and recapture seining in the fall will help to determine a population estimate for returning adults to the Nashwaak.



— Derek Hogan

Spring Atlantic Salmon smolt assessment on the Nashwaak River was conducted by the Department of Fisheries and Oceans (DFO) and Aboriginal Fisheries Strategy partnering communities. Smolt wheels started fishing April 21st when the river temperature was 2.4°C and fishing continued through 27 May 2022. No smolts were caught during the first seven days nor the last six days the smolt wheels were operational indicating that we captured the entire period of the smolt run. Two hundred and eleven smolts were caught and 135 were marked and released upstream of the smolt wheels to estimate the smolt wheel efficiency. Two marked fish were recaptured. The preliminary estimate of the smolt population leaving the river above the Durham



# Forest Stewardship Project

— Kate Turner

This is the second year of our Forest Stewardship Project. With the aim of promoting forest conservation and restoration in the watershed, we have been connecting with forest owners to provide free advice, support, and resources. For interested landowners, we have offered free site visits with a forester to discuss the state of the forest and to provide recommendations on restoration, conservation, adapting to climate change, and succession planning. In 2022 we carried out 12 of these site visits for a variety of “happy customers.” We have also provided tree seedlings for restoration plantings to a number of forest owners who participated in the program in 2021 and 2022.

In collaboration with UNB and Community Forests Canada, we hosted two successful workshops on climate adaptive forest management, drawing over 60 landowners, students and forestry professionals. We are grateful for the support of our partners and funders and are keen to continue providing free, conservation-focused forestry advice in the watershed. Do you own forested land or know someone who does? Are you interested in finding out more about how you can manage and restore your forest to offer important environmental benefits? Please reach out to us at [forest@nashwaakwatershed.ca](mailto:forest@nashwaakwatershed.ca) or check out our project page on the NWAIA website.

## MEMBERSHIP

The Nashwaak Watershed Association aims to promote, conserve, and restore the Nashwaak ecosystem by using science-based methods, community collaboration, and advocacy for the watershed and its inhabitants.

If you share this objective, we would appreciate your membership. There is a \$10 fee. Membership is available through our website or by sending us your name, address, phone number and e-mail address to:

[info@nashwaakwatershed.ca](mailto:info@nashwaakwatershed.ca)

or

**Nashwaak Watershed Association Inc.**  
PO Box 314, Station “A”  
Fredericton, NB, E3B 4Y2

Let us know if you’re interested in volunteering!

## 2021-2022 Board of Directors

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## NWAI STAFF



Marieka Chaplin  
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Mariah Belyea  
Restoration  
Coordinator



Lauren Murdock  
Conservation  
Coordinator



Francie Morgan  
Education and Outreach  
Coordinator



Kate Turner  
Forest Project  
Coordinator



Ian Smith  
Outdoor Educator

Special thanks to  
summer students  
Ryan Totten and  
Sam Shaw!

## You are invited to attend our NWAI ANNUAL GENERAL MEETING

*We have a special evening planned and we hope that you can participate.*

**Wednesday,  
November 9, 2022  
7-9pm**

**Stanley Mutual Building  
32 Irishtown Road  
Stanley, NB**

In addition to short presentations on the work of the association, we are excited to welcome

Philip Lee as our guest speaker. Mr. Lee is the author of *Restigouche: The Long Run of the Wild River.*



## ALL ARE WELCOME

## Connect with us



[info@nashwaakwatershed.ca](mailto:info@nashwaakwatershed.ca)  
[www.nashwaakwatershed.ca](http://www.nashwaakwatershed.ca)

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Sunrise Rotary Club

Fredericton North Rotary Club

Rotary Club of Hanwell

## WaterWays



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at (506) 261-4664, [info@nashwaakwatershed.ca](mailto:info@nashwaakwatershed.ca), or write to The Nashwaak Watershed Association, P.O. Box 314, Station “A” Fredericton, NB, E3B 4Y2.

Information is also available on our website at <http://www.nashwaakwatershed.ca>