

## President's Report continued from front cover

We were disappointed that the government's assessment of more than 70 areas of concern raised by community groups, environmental organizations, First Nations, and concerned citizens relied so heavily on the mining company's own interpretations, rather than conducting their own independent research and adopting a more objective and critical stance toward industry claims. Environment and Climate Change Canada gave final approval to the project over the summer. But regardless of this outcome, there is still an important role to play for the NWA and other concerned individuals and groups, to ensure that the provincial government's 40 conditions surrounding their own environmental impact assessment approval are fully met.

As a professional organization, the Nashwaak Watershed Association has continued to grow from strength to strength and has become an important voice within the world of environmental NGOs in our province. The next challenge, in my estimation, is to grow our membership base. From

Napodogan to Barkers Point, we have a knowledgeable, and vibrant community of wonderful people, many of whom are deeply committed to the Nashwaak River as a beautiful place and an important ecosystem. However, our organization has not had a total membership of even 100 people in the past several years. My personal and rather lofty goal is for every single household in the watershed to possess a membership in the NWA. Your support to our organization, through feedback, volunteerism, and membership fees, is an essential ingredient in our success. So if you are not currently a member, please consider joining us! If you are a member, please encourage a friend or neighbour to join. If you have some free time, please consider joining us for one of our many volunteer activities. It is through your support as members that the NWA will continue to grow, and to act as a steward for one of New Brunswick's most pristine rivers.

— Peter Toner

## 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 to:

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

Let us know if you're interested in volunteering on committees, at the tree nursery, or in other outdoor activities.



**2018-19 Board of Directors** from L to R: Josh Noseworthy, Brian Perry, Jean-Guy Leaman, Melony McCarthy, Stephanie Merrill (skypes from Saskatchewan), William Millar, Julia Carpenter and Peter Toner. Absent: Mark Gautreau

### Staff



Marieka Chaplin  
Executive Director



Jillian Hudgins  
Project Coordinator

## The Public is Invited to attend the NWA ANNUAL GENERAL MEETING

**Wednesday,  
November 13th, 2019  
7:00 - 9:00pm  
The Ville Cooperative  
241 Canada Street,  
Fredericton, N.B**

In addition to short presentations on the work of the Association, we will have a guest speaker, Dr. Janice Lawrence of the University of New Brunswick to discuss cyanobacteria (blue-green algae). She will describe the genetic approach her lab uses for assessing the health of New Brunswick's lakes and rivers.

**ALL ARE WELCOME**

## Connect with us



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

## WaterWays



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# WaterWays

NEWSLETTER OF THE NASHWAAK WATERSHED ASSOCIATION, INC.



Fall  
2019

## President's Report

2019 has seen the continued growth and developing professionalism of the NWA across all sectors of our mandate, and we continue to position ourselves as one of the most active and engaged watershed organizations in the province. This comes at an important time, as much of our work relates directly to issues of pressing public concern. As our society begins to see much more obvious and frequent effects of climate change, such as rising water temperatures, more regular and substantial seasonal flooding, and the pressing need for carbon sequestration, our projects around riparian floodplain restoration take on a significance not apparent a decade ago. As provincial and federal governments continue to grapple with the correct balance between economic development and environmental protection, our work on erosion control and water quality monitoring provide us with important public policy responsibilities and opportunities. And as Atlantic Salmon returns from the North Atlantic continue to show alarming trends, culvert assessment and habitat restoration allow us to do our part to support fish populations in whatever ways are possible. These are regional, national, and global problems that require local solutions, and the continued support of our membership will allow us to rise to those challenges.

In the pages that follow, you will see snapshots of our accomplishments this year. Our strategic planning exercise, involving both board members and permanent staff, provided us with an excellent opportunity to look back at the work that we have done, to clarify our priorities and our mandate, and to develop a clear vision to take us into the future. Our Executive Director, Marieka Chaplin, and our Project Coordinator, Jillian Hudgins, have continued to develop and manage projects and to attract funding from a wide variety of sources. The Nashwaak Greenway remains a central component of the NWA's work, with extensive restoration of the Marysville

Flat property continuing apace, as well as working with the City of Fredericton on other strategic partnerships. If you have taken a walk along the Marysville Flat recently, you will have seen that many years of hard work are really beginning to take shape, with rapidly maturing clusters of silver maples and healthy young saplings returning that landscape back to its original form. Over the past 15 years, the NWA has planted well over 10,000 tree seedlings, and over 18,000 willow, dogwood, and alder cuttings, restoring more than 7000 metres of shoreline along the Nashwaak River, an accomplishment that we can all be proud of.

The Sisson Mine Project continues to be an issue of concern to our membership, and one on which our organization has continued to take a leading role. In March the NWA submitted our formal response to the last stage of the federal government's Metal and Diamond Mining Effluent Regulations amendment process. It is through this amendment process that portions of tributaries of the Nashwaak River would be allowed to be destroyed for the construction of the Sisson Mine and its extremely large tailings storage facility.

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### With thanks for continued support



Fisheries and Oceans  
Canada



Environment and  
Climate Change Canada



New Brunswick  
Your Environmental Trust Fund at Work



# Monitoring

-Dr. Jillian Hudgins

The NWAI tested water quality at twelve sites monthly between May and September. Overall, water quality has been excellent with occasional exceedances in metal or nutrient levels. E. Coli readings have been over the limit (400 MPN in a single sample) on one occasion: on June 7th at Gorby Gulch. Based on previous years' samples, E. Coli tends to be high after a heavy rain. The NWAI recommends not swimming for 48 hours after a rain event.

This summer we partnered with UNB and the St John River Society to test for cyanobacteria (blue green algae). We took grab samples at Nashwaak Lake and deployed a sampling station above the walking bridge in Penniac. The samples are still being analysed at UNB but preliminary results from Nashwaak Lake show that the gene responsible for producing the cyanotoxin, microcystin, was found. This result does not tell

us if the toxins were being produced at the time of sampling. Like previous years, the public should keep an eye out for blooms as the weather warms up. If blooms are observed, please report them to the DELG Fredericton Regional Office (506-444-5149) and follow the guidance that can be found on the Department of Health website.

Thirty-eight temperature loggers were installed throughout the watershed in May and collected in October. They measure the water temperature at six-hour intervals and will continue to help us identify important cold-water tributaries to protect and restore. Cold-water streams are important refuges for salmonids in mid-summer. Water temperatures were moderate thanks to a cool summer. Stay tuned for our monitoring report to be released at the end of 2018.



## Upstream/Downstream Youth Education

— Marieka Chaplin

This year had a record number of students participating in our "Upstream/Downstream" outdoor education program. Ian Smith, recently retired from Parks New Brunswick, and a passionate lifelong outdoor educator is leading the program. The field trip to the Dunbar waterfalls is one of three programs that teachers can select and has been the most popular in recent months. Our goal for the program is to

teach students about various habitats in the Nashwaak watershed through hands-on science, while they learn to responsibly recreate outdoors.



Two memorial donations and tree planting events organized by Accreon and Dr. Everett Chalmers Hospital Staff.

Awarded a new contract to monitor river ice on the Nashwaak

Field trips provided to over 600 students attending schools within the watershed

City of Fredericton and the NWAI are working on a conservation easement for the 28-acre Marysville Flats

Bioengineered riverbank restoration project on Mike Sorenson's property (Nashwaak Valley Farms)

# Highlights 2018-2019

Awarded contract with the Nature Trust of NB to investigate soil mining

50 culverts assessed for fish passage

12 sites in the watershed monitored for water quality from May to October

Over 1,000 live willow stakes planted, predominantly in the Nashwaak Greenway

38 temperature loggers deployed around the watershed

Water temperatures were moderate thanks to a cool summer.

Continued partnership with St. Mary's First Nation (over 200 volunteer hours contributed to NWAI projects)

Over 1,300 trees planted in the watershed

— Roxanne McKinnon

**Cyanobacteria**, or blue-green algae, are naturally occurring photosynthetic bacteria and thrive in warm waters with excess nutrients, particularly phosphorus. When there is enough phosphorus in the water, these bacteria grow quickly and clump together to form a visible bloom. Some species, but not all, can produce toxins that can have varying affects.

When most people think of an 'algal bloom' they think of a green surface scum. This type of bloom has been found in many lakes and bays through the watershed and may produce microcystin as a toxin. Microcystin can cause liver damage in the long-term and gastrointestinal illness if ingested, and skin/eye irritation with contact.

Another type of cyanobacteria in the Wolastoq/St. John River forms mats along the bottom. These species can produce a potent neurotoxin called anatoxin-a, that can damage and shut down the nervous system of any vertebrate including humans and dogs. These mats are especially dangerous when they dislodge from the bottom and wash up on shore where people, pets, and wildlife are more likely to interact with it.

To reduce the risk of cyanotoxins exposure, visually inspect the water and bottom for cyanobacteria, and avoid contact with the water when a bloom or mat is seen.



## Aquatic Connectivity Survey

-Dr. Jillian Hudgins

Fifty culverts were surveyed for fish passage in 2019 bringing our total number surveyed to 192. Approximately 65% are partial or full barriers to fish passage. We removed garbage from all stream crossings, cleared several large debris jams, and reported on collapsing infrastructure. We have worked with NBDTI and HILCON Ltd. on the design of fish passage structures involving baffles and chutes for two barrier culverts. Unfortunately, our permits were not processed in time to install these this summer, so they will be installed in spring of 2020.

Our long-term goals are to increase fish populations and biodiversity by managing human actions that impeded access to high-quality aquatic habitat and foster a more engaged watershed community.



# Atlantic SALMON

— Sherisse McWilliams

Spring flooding didn't dampen efforts to monitor the migration of Atlantic Salmon smolts this year on the Nashwaak River by DFO and Aboriginal Fisheries Strategy partnering communities. Smolt wheels operated from April 30 to June 5, capturing 321 smolts and producing a population estimate of approximately 8,700 smolts leaving the river from habitat above Durham Bridge. This estimate is similar to recent years and shows a decrease of greater than 60% since 1998.

Electrofishing surveys were conducted throughout the Nashwaak River this summer. Fry were detected at six of ten sites, while eight sites had salmon parr present. The highest fry (<6 fry/100m2) and parr (<8

parr/100m2) densities were unfortunately well below the reference values for juvenile abundances in Maritimes rivers (29 fry/100m2, 38 parr/100m2).

On a positive note, adult counts are higher in 2019 than in recent years. The Nashwaak River counting fence has been operational since June 7, and counts to mid-September were 152 adults: 119 grilse, and 33 multi-sea-winter (MSW) salmon. Estimated returns in 2018 were low (89 grilse, 31 MSW) resulting in an estimated egg deposition of only 2% of the conservation requirement (5.35 million eggs). With greater adult counts observed this year, we hope to see a slight improvement in fry densities on the Nashwaak River in 2020.

## Does Your Waterfront Property Have a Natural Edge?

— Marieka Chaplin

In 2019, eight landowners participated in our landowner conservation program, which promotes shoreline and wetland naturalization. Participants began the process with a free site visit, provided by NWAI staff. During these visits staff provided advice and recommendations for the property then created and implemented a planting plan. A total of 152 silver maple, butternut, and bur oak trees as well as 2,700 willow stakes were planted on private properties this year. Shorelines are one of the richest environments on earth, but they are also among the most vulnerable. Planting native vegetation such as trees and shrubs is both beautiful and useful.

Please contact us to book a FREE site visit if you live adjacent to a river or wetland in the watershed. The NWAI will coordinate the ordering, delivery, and planting of all the plants on your property.

## Strategic Plan

— Josh Noseworthy

In March, the NWAI staff and board met for a lively session on "strategic planning", which is a process designed to help guide the overall direction of the organization. Over the course of a day (and many laughs), we looked at four aspects of our Strategic Plan:

**Vision:** The desired state or ultimate condition that we're working to achieve in the watershed

**Mission:** The approach that the NWAI will take to achieve the vision

**Values:** The guiding principles that form the foundation of our organizational culture

**Strategic Priorities:** The specific areas of focus that will create the most impact towards achieving the vision

We explored many interesting ideas and had great discussion as we defined these four aspects of the plan. If you would like to see the results of the workshop, visit the "About" page of the NWAI website! Thanks to all who participated in the survey; it is helping to guide our five-year plan.

CYANOBACTERIA