

Atlantic Salmon

— Derek Hogan

Salmon smolt assessment was conducted by DFO and Aboriginal Fisheries Strategy partnering communities. Smolt wheels started fishing April 26th when the river temperature was 3.9°C and fishing continued through May 30th. A total of 131 smolt were caught, and 113 were marked and released upstream of the smolt wheels to estimate the smolt wheel efficiency. In addition to the smolt wheels, we installed a fyke net downstream of the smolt wheels, in part to increase catch for the mark-recapture study. The fyke net operated for eight days between May 18th and May 25th.

The fyke net caught 197 smolt, 124 of which were marked and recycled. Six marked fish were recaptured. From these data the preliminary statistical estimate of the smolt population leaving the river above the Durham Bridge is approximately 5,200 fish.

Electrofishing surveys were conducted throughout the Nashwaak River this summer. Preliminary assessment of the data shows that fry and parr were detected at 13 of 14 sites surveyed. The average densities were 1.6 fry/100m² and 2.7 parr/100m². These densities were unfortunately well below

the reference values for juvenile abundances in Maritimes rivers (29 fry/100m², 38 parr/100m²). However, high water in the Nashwaak river for most of the summer made electrofishing difficult and likely led to an underestimate of fry and parr numbers because electrofishing efficiency goes down as water depth and water velocity increase.

The salmon counting fence started operation downstream of the Durham Bridge on June 16th and was removed September 6th. Counts at the fence were very low this summer. Only one salmon and four grilse were caught. The rains this summer presented significant challenges to the operation of the counting fence. Several high-water events through the duration of the season led to sustained high water levels, requiring the fence to be down for extended periods of time. Water levels remained too high in the early fall so far to attempt seining in the pools.



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Connect with Us!

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

Let us know if you're interested in volunteering!

WaterWays



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WaterWays

NEWSLETTER OF THE NASHWAAK WATERSHED ASSOCIATION, INC.



Fall
2023

President's Report

2023 has been a year of incredible change for both the Nashwaak River and the Nashwaak Watershed Association. Our provincial partners have decided to make significant conservation investments in the area protecting the river and its tributaries between Stanley and Nashwaak lake, totalling 3,600 hectares and counting. Much of this conserved area was recommended by the people of the Nashwaak and our own staff and board, and for that we are all grateful.

2023 was also one of the association's greatest restoration years – we planted more than 12,000 trees, starting the reforestation path for another seven hectares of incredibly important floodplain forests. These new forests, coupled with our past and future restoration

efforts, stand to make a huge difference in keeping our river, and the people within it, healthy.

It has also been a big year of change for the Association. We said goodbye to our Executive Director, Marieka Chaplin, as she moves on to the next stage of her career. We owe Marieka a great deal of thanks for her work in growing the Association over the past seven years. Peter Toner stepped down as President of the board after many years of service. Peter continues to serve the board of directors as the Past President. While goodbyes are always hard, these changes bring new faces poised to define the next chapter of the NWAI. Allyson Heustis is our new Executive Director and I, Ian Lodge, am now one year into my term as president.

Despite the changes in personnel, our projects are moving ahead full-steam. In keeping with our strategic plan, we continued to deliver successful projects. To name just a few highlights, this year we connected with 860 elementary school students in person and over 4000 online. We hosted 31 public programs, workshops, and volunteer events, kept up with our water quality monitoring, and hosted the first annual volunteer salmon redd survey on the Nashwaak (which was a great event, looking forward to the second!).

I am continuously humbled by the talent and determination of our staff and volunteers and am looking forward to my next year with the NWAI.

— Ian Lodge

EDUCATION & OUTREACH

— Francie Morgan

This past year has been another great chapter of growth and connection for the NWA. We have seen the expansion of our Education and Outreach department in ways that has forged several new partnerships and opened up the Nashwaak watershed to the hearts of many new volunteers and community members.

From nest box building and installations to garbage clean ups, species-at-risk monitoring to tree planting, the youth of the Nashwaak watershed have been hard at work stewarding this special ecosystem and modeling the importance of being active in your community. The program numbers highlight just how many young minds have been hard at work learning about, connecting to, and caring for this beautiful watershed.

The winter of 2022-2023 had the NWA tackling a fun new project in partnership with Leo Hayes High School, where 65 duck nesting boxes were built by students and installed by community members along waterways within the watershed.

2023 saw the development of the NWA's ESL-adapted programming, designed to welcome new immigrants into the natural playground that is New Brunswick. While all our programming is open to everyone keen to participate, this year we ran five watershed themed programs specifically for the kids within Fredericton's newcomer community. We also hosted a family-friendly "Nature in your new backyard" celebration at Odell Park, highlighting and exploring the many wonders New Brunswick nature has to offer. In attendance were Nature

NB, Nature Trust of New Brunswick, Atlantic Ducks Unlimited, and GNB; we couldn't be more grateful for their continued support of our work.

Other new programming offered this year included:

- A pollinator gardening workshop in partnership with Nature NB and Scott's Nursery; their support helped to fund the Leo Hayes Envirothon Club's native pollinator garden project.
- A winter animal tracks event in partnership with Nature NB and the Penniac Rec Center.
- Big canoe tours with Second Nature Outdoors on the beautiful Wolastoq and Nashwaak rivers.

As we look forward to the coming year, it's hard not to be motivated by the amazing community in

which we find ourselves. There is so much willingness and care amongst the students, residents, and visitors of the Nashwaak watershed, that beautiful things are bound to continue growing! Keep an eye on our social media and e-newsletter to find out about upcoming events. If you are an educator in the area and would like to book a field trip or are a community member with skills you think might make sense for a workshop offering, please reach out to coordinator@nashwaakwatershed.ca.



AQUATIC PROGRAMS

— Lauren Murdock

This year presented some unique challenges for our aquatic programs due to the unprecedented amount of summer rainfall. This resulted in higher-than-average water levels and strong flows. Water quality monitoring still went ahead during the brief dry periods.

CAMPBELL CREEK

We are now at two years post-dam-removal at Campbell Creek and the site is restoring itself nicely. There were some lessons learned with planting certain tree species at the site. A very rainy summer did nothing to encourage the growth of the 2022 willows and dogwoods that were staked at the site. On average, the water quality has improved and there is a beautiful natural pool and waterfall that has been exposed in the bedrock. The most exciting results are those from the 2022 environmental DNA (eDNA) samples that showed a strong positive for the presence of Atlantic salmon upstream from the former dam. While not definitive, this is a good indication that this species is now travelling upstream to use this formerly inaccessible stretch of habitat.

Highlights 2022-2023

Over 2500 swamp milkweed distributed to promote pollinator gardens and Monarch butterflies.

Over 2500 red-tipped willows and red osier dogwood planted.

5 volunteer tree and shrub planting events hosted + 5 school planting events.

Implemented Year 3 of our 2021-2030 strategic plan.



39 temperature loggers were deployed.

Over 12,800 trees planted in the watershed: 1578 bur oak, 203 butternut, 600 red maple, 9545 silver maple, 55 white elm, 50 red oak, 80 black cherry and 50 serviceberry.

Delivered outdoor programming to over 860 elementary school students in the Fredericton area and online programming to over 4000 students across New Brunswick since October 2022.

Hosted the first annual volunteer salmon redd survey event.

Have hosted 26 public programs and workshops since October 2022.



17 sites were monitored for water quality.

Led 5 elementary school tree planting events.

Forest Stewardship Program

— Kate Turner

NWA's Forest Stewardship Program provides free, ecologically-focused forest management assistance to forest owners in the Nashwaak Watershed. 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. We offer 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. To date this year we have carried out 7 of these site visits and have received positive feedback on the reports and recommendations we provide.

We also offer annual workshops on forest management topics. This year, we collaborated with instructors from the Maritime College of Forest Technology to provide a workshop on managing forests for wildlife habitat. Thirty-six participants learned about the habitat requirements of several species at risk and enjoyed a guided walk of a private woodlot where restoration activities are taking place. We are grateful for the support of our partners and funders (including Environment and Climate Change Canada and the New Brunswick Wildlife Trust Fund), and are keen to continue providing free, conservation-focused forestry advice in the watershed.

Do you have 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 or check out our project page on the NWA website.

This year saw greater awareness and education for species-at-risk in the watershed. Since our watershed is home to many sensitive species with unique habitat and food requirements, it is important for the organization to take steps to mitigate the risk our programs pose to these species while still seeking to improve the quality, access, and quantity of habitat for all the watershed inhabitants. This resulted in new species-at-risk management plans for two properties in the watershed. Further to this, the NWA received support from the Environmental Damages Fund to conduct surveys in the area to identify any current, potential, and past nesting habitat for the endangered Bank Swallow (*Riparia riparia*). This information will give us data to help support future protection and awareness around this bird species.

SPECIES AT RISK

— Lauren Murdock



It is well known that forests and water share a vital connection, safeguarding against erosion, regulating temperatures, and providing habitat for wildlife. As climate change continues to bring challenges, forests play a key role in maintaining and even improving water quality. Our collective efforts have made considerable strides in the restoration of our historical silver maple floodplain forests and the illustrious Nashwaak Greenway. Together, we've added silver maple, bur oak, red oak, red maple, white elm, and butternut seedlings to this growing legacy.

As we look back on 2023, we're excited to celebrate our achievements in tree planting and the incredible unity within the Nashwaak watershed community. Almost 13,000 trees found their roots within the watershed this year, a true testament to the power of our restorative efforts. Our gratitude extends to the remarkable organizations that joined hands with us to bring these restoration projects to life. Some of these organizations include the Scouts of Canada, Nashwaak Valley School, Gibson Niell Elementary, New Maryland Elementary, and Elephant Thoughts. Together, we planted thousands of seedlings in Nashwaak River floodplain soils over the spring and fall months.

We also implemented our Natural Edge Program on several properties within the watershed. This program works to protect water quality and restore wildlife habitat by reducing erosion and restoring the riverbanks. The dedication and impact that our community members have left on the land is profound. Interested in being a part of the Natural Edge Program? Reach out to staff@nashwaakwatershed.ca for more information!

Restoring Floodplain Forests

— Tori Ruigrok

