

**Hammond River Angling Association
Annual General Meeting 2024
Projects Update**

1. Educational Classes

Environmental education is part of HRAA's mandate and is a cornerstone of our outreach engagements. This year, we hosted 7 classes for the Ducks Unlimited Wetland Tours, where youth learn about the importance of wetland preservation, wetland ecosystem service, and different types of waterfowl. We hosted 5 Riverkeepers classes, where youth join us for a day on the water learning the basics of water sampling and contributing to water quality data collection using the Water Rangers test kits. We also hosted 8 classes for Splash Days, where youth get to release their unfed fry back into the Hammond River! Additionally, we were virtual presenters for New Brunswick's Science Week with our unit on the Fish of New Brunswick. We also visited Hampton High School for a lesson in fly tying and fish identification, and also hosted the Elizabeth Fry Society to the Conservation Center to learn how to fish! Portions of our field work are turned into educational classes for each week of Nature Camp, including lessons on cyanobacteria, invasive species, water quality, fish identification, fishing regulations and more! In total, we reached 4,780 students in 2024 with our environmentally educational programming.

2. Hammond River Nature Camp

Our Nature Camp was once again a great success! This past summer, we had 230 campers join us for 9 weeks. We sold out of all weeks and had a lengthy wait list! Kids got to enjoy tie dyeing, fishing, kayaking, outdoor concerts, BBQ's, gardening, field games, and crafts. We will be opening registration for the 2024 camp on March 1st, and we are so glad that Sarah will be our new Camp Director!

3. Community Engagement

Another important component of our mandate is community engagement and interaction. This past year, we hosted our Annual Family Fishing Derby, which attracted 311 registrants. While the weather was not ideal, the overall derby was a huge success, and we are so thankful to all of our sponsors and volunteers for making this a great opportunity to engage the surrounding communities with fishing! In the summer, our HRAA field staff assisted the local Central Kings Recreation Center with their annual ducky derby. We launched 250 ducks down the Hammond River, as well as having a BBQ and field games. We were guest speakers at the Sussex Fish and Game's monthly meetings and discussed upcoming opportunities for volunteers as well as our scientific research on salmon and smallmouth bass. Later in the summer, we also assisted the Sussex Fish & Game with their own fishing derby! We hosted a community engagement session with our partners from ACAP Saint John and the Belleisle Watershed Coalition on cyanobacteria identification and the work we are doing to better understand bloom dynamics. We also recently attended the Sussex Area Chamber of Commerce Volunteer Exposition and hosted a Christmas potluck party at the Conservation Center!

4. Birds Canada

We were awarded a small funding opportunity through the Baillie Fund and Birds Canada. This funding allowed us to purchase and install 3 new bird feeders- one of which has a real-time camera and built-in identification software! We were also able to purchase new binoculars and bird identification books, which we will be using extensively this upcoming season in our educational programming!

5. Building Stronger Communities

With funding from the NB Wildlife Trust Fund, we were able to build raised beds for native pollinator plants, trees, vegetables, herbs, and milkweed. We partnered with the Chris Saunders Memorial Elementary, the Elizabeth Fry Society, and Kennebecasis Valley High School to assist each with building and installing raised beds, as well as providing a plethora of plants to fill their gardens!

6. River Cleanups

In 2023, we hosted 3 riverside cleanup events with a total of 27 volunteers. One of our cleanup events was in partnership with Encorp Atlantic and the 1st Kennebecasis Valley Boy Scouts Division- we love partnering with this awesome group! Throughout the year, we removed 20 bags of garbage, 4 bags of recyclables, and covered over 10 kilometers of shoreline. Additionally, throughout the year, we have been maintaining our monofilament recycling bins across our watershed- we have had renewed interest from new groups on installing these in new

waterbodies, and we are hoping to be able to build more units in 2024 to add to the current 72 bins found across the province!

7. Kids Fishing Club

In 2023, we continued with the Kids Fishing Club program, which had 30 youth who met monthly from April until November. Our meetings would begin with a 1-hour educational unit, teaching the kids about fish identification, proper fish handling, fishing regulations, water quality testing, riverside cleanups, invasive species, fly tying, fly fishing, knot tying, understanding the difference between fishing gear and when to use what set up. We were able to take the Club on two different outings- one was to McCrea's Farm, where the kids also got a tour of the trout hatchery! The second outing was going fishing at the Hampton Lighthouse Center. This program will continue in 2024, and we could use more volunteers to assist with running the program!

8. Be an AmBASSador

This is the 2nd year of our smallmouth bass tagging project. The weather and immense amount of rainfall made targeting smallmouth bass very difficult this past year, and our tagging numbers are well below our initial target, with only 35 tagged bass in 2023, making our 2-year total to be 107 tagged bass. Over the past 2 years, we have had 9 recaptures- some were caught in 2023 that had initially been tagged in 2022, indicating that our floy tags are indeed lasting. Results from the recaptures indicate that the smallmouth bass, specific to the Hammond River watershed, are indeed migrational- they enter the system to spawn, and then return to the lower portion of the river and exit the Hammond and into the Kennebecasis by the fall. This tagging program will continue in 2024; however, it will no longer be a stand-alone funded project, and will rely completely on trained volunteers.

9. Suckers Don't Suck: Debunking the Trash Fish Myth

This is probably our favorite title for a project of all time! This project is examining the distribution of white suckers in tributaries through electrofishing, and comparing their distribution with our water quality, as they are filter feeders. This spring, we will also be endeavoring to track their migrational patterns as they enter the system to spawn, with the goal of determining popular spawning areas. The larger portion of this project will feature educational outreach to encourage the public that all native fish species have their place in our watershed, and that white suckers perform valuable ecosystem services, and should not be thrown in the bushes.

10. Upham Gypsum Mine Compliance Monitoring

We are continuing our annual water quality monitoring program of the southern, eastern, and northern tributaries surrounding the Upham Gypsum Mine, with a specific focus on turbidity and total suspended solids. Random grab samples are collected monthly from each of the three locations, as well as after every heavy rainfall event greater than 20ml- in total, we collected 15 heavy rainfall event samples. We are pleased to report that none of the samples collected indicate any exceedances in allowed levels of total suspended solids. Additionally, we performed electrofishing in the southern tributary, as well as collected benthic macroinvertebrates- both results also show that the mine is not currently having a negative impact on environmental conditions of the receiving environment.

11. Freshening Up Fish Friends

An update to the 2001 classic curriculum was well overdue! We were able to create a 10-part video series, with a new curriculum full of wonderful salmon-based activities, as well as a teacher's handbook on how to deliver the class (including troubleshooting on equipment). All of this material is now available on our website- our goal was to make this publicly accessible, so schools across the province can access new course materials. While the program itself has been given a facelift, the equipment is now in much need of upgrading. The vast majority of the chiller units are no longer functioning properly- the HRAA has now ordered 2 different types of chiller units, both of which will be provided to 2 of the 10 schools within our area that participate in the program. We are working with the New Brunswick Salmon Council on helping with inventory and currently in discussions on fundraising and funding opportunities so we can continue to upgrade defunct equipment. This past year, the Atlantic Canada Fish Farmers Association launched their "Farm on the Sea" program to promote aquaculture salmon in the classroom. Each class is provided with a bilingual book on aquaculture salmon, as well as a plush salmon toy, and the program has a very flashy website. As it currently stands, aquaculture salmon look way cooler than wild salmon- the Fish Friends program needs a financial boost if we are going to compete with this caliber of programming.

12. Carbon Capture Collaborative

This is the 2nd year of a 2-year project in partnership with the Belleisle Watershed Coalition and the Kennebecasis Watershed Restoration Committee, funded through World Wildlife Canada. This year, the HRAA was able to provide training to both partners, as well as our Nature Camp Councilors, on core soil sampling to determine carbon sequestration. In total, we collected 80 soil samples, with our results indicating that mature, riparian areas do indeed sequester greater amounts of carbon than disturbed or developed areas. In total, we planted 1,997 native trees and shrubs, as well as 2,000 willow stakes with the assistance of 58 volunteers over 192 volunteer-hours! We were also able to create a soil characterization video, which has been promoted by the New Brunswick Woodlots Association, as well as used in class at the Maritime College of Forestry Technology. Throughout this program, HRAA has been able to be team leaders, offering our equipment and knowledge to the partnering groups, as well as assisting the Belleisle Watershed Coalition with some of their riparian planting. While this project is now complete, we anticipate furthering our understanding on soil health and carbon sequestration in 2024, and will be continuing our riparian restoration initiatives.

13. Water Quality Monitoring

Funded through the New Brunswick Environmental Trust Fund, the HRAA has been collecting monthly water quality samples from 23 locations in the watershed, including 3 new sites that had not been previously sampled. These sites include Porter Brook, Titus Mill Brook, and Snow Brook- a former provincial dumpsite. Our results from Snow Brook indicate that there may be high levels of manganese within the water, and our results have been shared with the Town of Hampton's Environmental Committee. Additional water quality sample results will be discussed in the State of the Watershed shortly.

14. Lake Monitoring

In 2023, we collected monthly water quality samples and performed various surveys in Henry Lake, Cassidy Lake, Bradley Lake Major and Bradley Lake Minor, Tracey Lake, and Theobald Lake. Water quality results indicate healthy lakes, and no cyanobacteria blooms were documented within these lakes. This monitoring program will continue in 2024, particularly in Bradley Lake and Cassidy Lake, which have the greatest public use and access, and may be more at risk of developing issues in the future.

15. Glyphosate Testing

In July of 2023, the provincial government released their glyphosate spraying map, and we realized that two areas within the Hammond River watershed would receive herbicide treatment- adjacent to Tabor Bridge and North Branch. The HRAA were able to collect one sample from each location for laboratory analysis to determine presence of herbicides, specifically glyphosate; however, both results were negative. This signifies HRAA's first undertaking to test the water column for presence of glyphosate, and we anticipate continuing this in 2024 with the use of rapid test kits.

16. Monitoring Infrastructure

It has been quite a year for infrastructure throughout the Hammond River area! We have documented a collapsed culvert and washed-out road along Brawley Brook, the collapse of the scaffolding at Smithtown Bridge, and the current repairs to the bridge on route 100. HRAA has been in contact with the Department of Transportation and the Department of Environment in regard to all of these concerns.

17. Cyanobacteria Monitoring

In 2022, the HRAA were able to deploy 2 AlgaeTracker devices into Darlings Lake during a cyanobacteria bloom. This past year, we expanded that project to build capacity amongst partners in the Wolastoq-Saint John River watershed by providing an AlgaeTracker to ACAP Saint John for deployment in a municipal drinking water reservoir at Latimer Lake; we provided a unit to the Belleisle Watershed Coalition for deployment in the bay; we provided a unit to the Jemseg Grand Lake Watershed Association for deployment in Grand Lake, and we deployed an additional unit in the Kennebecasis River at Meenan's Cove beach. This became the first foray into real-time monitoring equipment for all groups involved, and we are looking forward to expanding this project in the upcoming year. The cyanobacteria bloom did indeed occur once again in 2023, and our staff also notified the Department of Environment on additional blooms occurring in Lake Utopia, at the confluence area of the Nerepis River, Meenan's Cove, Murphy's Cove, Moss Glen, and the Saint John Yacht Club, as a result of the outreach on our BloomWatchNB page. We also hosted a cyanobacteria information session with our partners at ACAP and Belleisle Watershed Coalition; we provided a presentation to the New Brunswick Watershed Caucus on the use

of these new devices and our results; and we were recently invited to be a presenter at the Atlantic Water Network's Annual Meeting. The Atlantic Water Network encompasses over 200 watershed groups across Atlantic Canada, and we were thrilled to be one of three presenters, and it became very apparent that real-time monitoring equipment is needed across Atlantic Canada. Additionally, we have been working with researchers at Meridian and Dalhousie University, as they are developing satellite technology for early bloom detection, and they have been using our in-situ devices to assist with eliminating 'red flags' from their results.

18. Promoting Fly Fishing

Over the summer, we installed 10 signs highlighting fishing regulations in the watershed. Our goal is to increase the understanding of regulations, particularly that half of the watershed becomes flyfishing only after July 15th. In order to encourage behavioural shift, we built and installed flylibrary bins under the principal of "have a fly, leave a fly. Need a fly, take a fly". We were amazed at how well these bins were used- by the end of the year, each bin had different flies than what we had initially installed- on numerous occasions, flies were taken, and in their place were left treble hooks and barbed hooks. We received a lot of positive feedback on these bins, and we will be expanding this project in 2024 and will be providing flylibrary bins to multiple different watersheds across the province!

19. Electrofishing in the Hammond

With our beautiful new backpack unit, our team was able to survey a total of 45 unique sites using single pass method over 100m² (several sites had multiple areas surveyed; i.e.: lower, middle, and upper portions, to make our total to 64 sites). We documented 2897 individual fish, 16 different fish species, including 214 juvenile salmon, 657 trout, and only 1 smallmouth bass, indicating minimal spatial overlap between juvenile salmonids and bass. We were also able to survey 16 new sites within the Hammond River watershed that had never been electrofished, including finding new sites that contain salmon! We also assisted the KWRC with electrofishing in 4 sites within their watershed.

20. Electrofishing in the Belleisle

We were loving our new backpack unit so much, that we were able to help the BWC with their electrofishing! We surveyed a total of 21 sites, documented 906 individual fish of 16 different species, and we were able to find 3 juvenile Atlantic salmon! This effort represents the largest electrofishing undertaking in BWC's history, and we are so pleased that we were able to help them identify areas within their watershed that contain salmon. We also found it absolutely fascinating to encounter a fish species that we do not have within the Hammond River watershed- brown trout. We look forward to helping BWC with additional electrofishing surveys in the fall, with the goal of collecting tissue samples to determine if there has been any hybridization between salmon and brown trout.

21. Redd Counts

On November 6th, we were joined by 36 volunteers to perform our Annual Redd Count event! Volunteers were split into 5 groups to perform designated survey stretches after initial training and partnering with an experienced team lead. This is one of our most popular volunteer events; however, this year, we were only able to document a total of 8 redds during the event, which was extremely discouraging. Throughout the month of November, our field staff continued to perform surveys in 12 additional sites, as well as using a drone to assist in surveys. By the end of the season, we documented 72 redds in total, which is on par with the past 4 years. We also assisted the Belleisle Watershed Coalition for 2 days of redd counts in the Belleisle watershed and documented 5 redds. As part of this project, we created a redd count training video, so other watershed organizations can learn how to successfully host their own surveys with volunteers. In discussion with Nashwaak Watershed Association, we realized that their salmon spawning was also quite late in the season- collaboration amongst partners for redd count surveys has provided us with greater insights into returning populations of Atlantic salmon in the Wolastoq-Saint John River.

22. Kelt Tagging

This spring was the second year that HRAA was able to participate in a kelt tagging study, lead by the Atlantic Salmon Federation in conjunction with the Environmental Studies Research Fund. Between April to May, the HRAA field staff and Angling Committee volunteers invested a total of 85 rod hours to capture out-migrating kelt, and we were successfully able to tag 4 kelt with acoustic tags, and 4 kelt with acoustic and satellite tags. Graham Chafe from ASF will provide an update on tagging data.