

EDUCATE FOR CHANGE

EMERGING ENVIRONMENTAL TOPICS IN GREATER SAINT JOHN



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SAINT JOHN

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The Educate for Change project is a true grassroots initiative that only exists through the selfless efforts of thousands of community volunteers, and through the organizations, community groups, and businesses that contribute to its success. We are proud to say that the list of dedicated contributors is large and ever-growing, and we sincerely appreciate the contribution of every individual, in making Saint John a more sustainable and environmentally conscious city.



Executive Summary

For almost 30 years, ACAP Saint John has been a leader in environmental stewardship throughout the Greater Saint John area, conducting successful community-based environmental initiatives that have engaged thousands of citizens and organizations over the years. Through funding from the New Brunswick Environmental Trust Fund, ACAP Saint John's Educate for Change project has been able to organize countless cleanup events removing litter, debris and illegally dumped materials from green spaces, critical habitats and waterways; planted thousands of native trees throughout the region and delivered multiple educational outreach activities on various ongoing ACAP projects and, citizen science opportunities (Figure 1).

ACAP Saint John expanded environmental awareness and education initiatives to residents of all ages and demographics including decision makers, city staff, developers, community members, and students. These ambitious initiatives have advanced environmental awareness and action in the region and will continue to protect our environment by improving our watercourses, wildlife habitat and urban green spaces.

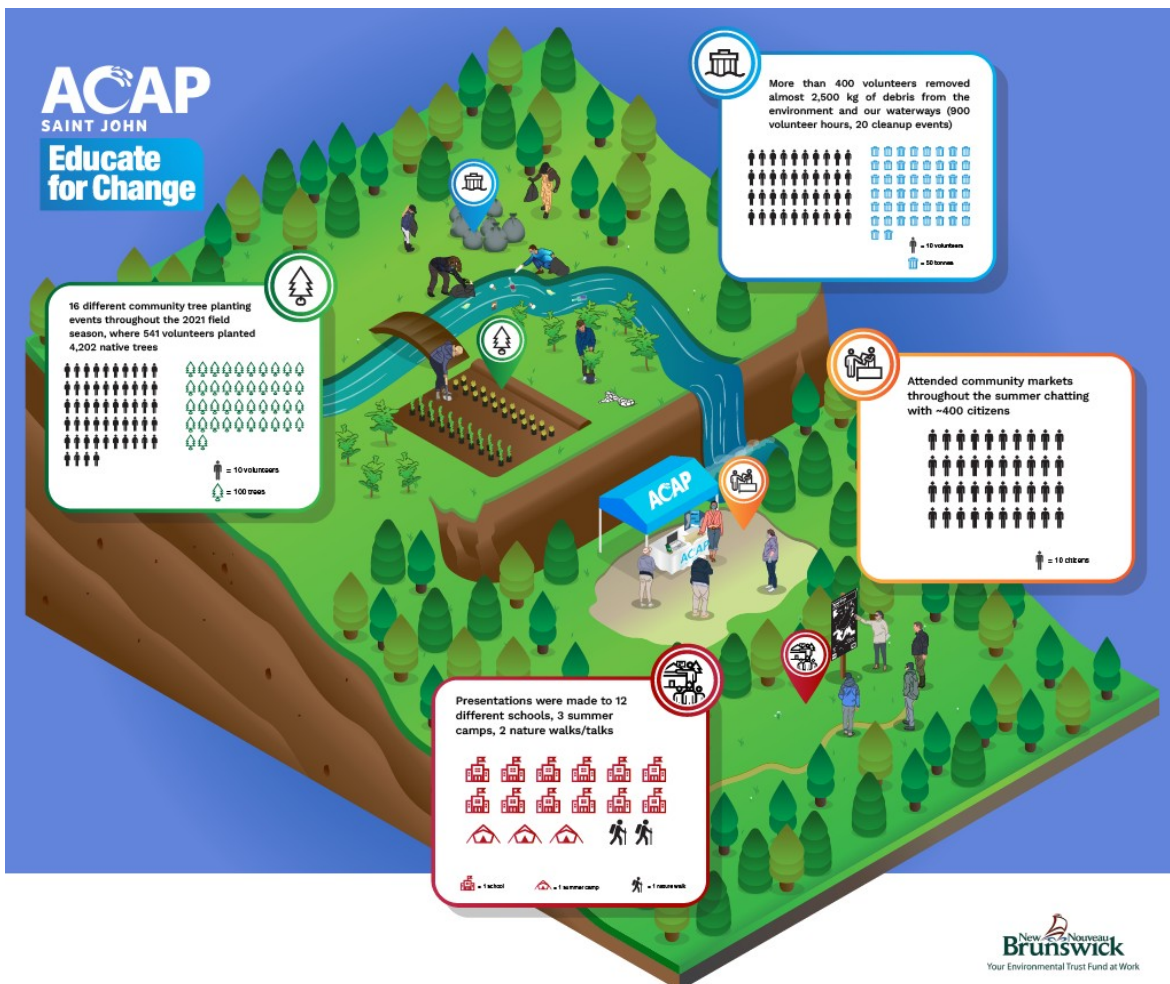


Figure 1. Graphic demonstrating all the activities that were completed in ACAP Saint John's Educate for Change project (2021-2022).

Introduction

ACAP Saint John's *Educate for Change: Emerging Environmental Topics in Greater Saint John* project aimed to continue our essential role as environmental stewardship leaders throughout the Greater Saint John region by building on the success of past projects while incorporating new emerging environmental issues and interests.

The goal of this project was to increase environmental awareness and actions by engaging with our network of volunteers, recruiting new volunteers, and promoting and providing environmental education events/initiatives with the general public, students and youth, and other organizations across the city.

With support from the New Brunswick Environmental Trust Fund (ETF), ACAP Saint John staff were able to continue to coordinate initiatives to fulfill two ETF priority areas: increasing environmental awareness/education, and protecting our environment. Focusing on emerging topics such as cyanobacteria and microplastics, as well as general issues (i.e., climate change and its impacts, water quality, harbour monitoring, healthy riparian areas, etc.), ACAP Saint John has increased environmental awareness for residents of all ages and demographics including decision makers, city staff, developers, community members, and students.

Despite the ongoing global pandemic and COVID-19 restrictions, "Educate for Change" was able to fulfill all project deliverables including presentations to schools and community groups; hands-on field tours with school classes; organization of community cleanups and tree planting events; and creation of online outreach materials that were posted to our webpage and multiple social media platforms.

The efficiency of this project lies in its ability to maintain a strong partnership with the City of Saint John for logistical support, the New Brunswick ETF for financial support, and in ACAP Saint John's ability to maintain an established, growing, and dedicated network of volunteers. Through direct engagement, in-field and in-class education programs, and tree planting and outdoor activities, citizens develop a sense of understanding and ownership of their environment, and are more likely to support other initiatives that promote good stewardship and sustainable development. The following report demonstrates the achievements of the 2021-22 project season.

Priority area measures

Despite the global pandemic and the ever-changing health restrictions, this project met both the priority area measures that were outlined in the ETF application: increasing environmental awareness and protecting our environment.

1. *Increasing Environmental Awareness* - ACAP Saint John was able to increase environmental awareness in Saint John through hands-on field tours with local schools,

volunteer cleanups and tree planting events, through the distribution of educational materials, and through social media outlets. Through the ETF funding, ACAP Saint John was able to reach over 1,000 active-learning participants and 10,000 observing participants.

2. *Protecting Our Environment* - Through this category, ACAP Saint John was able to complete 3 events/initiatives and were separated into three different themes: Climate Change Education, Microplastics Education, and Cyanobacteria Education. Although in-person events, such as conferences, were very limited this year, ACAP was able to host online webinars reaching over 100 participants, lead nature walks and attend community markets reaching over 500 citizens, as well as reaching over 15,000 participants through online media (i.e., social media and our website).

Volunteer Engagement

Organized cleanups

For decades, ACAP Saint John has helped community stakeholders organize cleanups throughout the Greater Saint John area and is recognized as a credible and trusted environmental champion. ACAP staff have proved successful in their effort to develop a strong volunteer base and educate the public on the extent of littering and illegal dumping in the region. These actions are maintained through a trusted partnership with the City of Saint John for logistic support, the New Brunswick ETF for financial support, and in ACAP Saint John's ability to maintain an established and dedicated network of volunteers.

To support volunteers who are interested in organizing a neighbourhood cleanup, ACAP provided essential items, such as gloves, garbage bags, safety tips, garbage disposal (via the City of Saint John), and a cleanup site if necessary. This helped volunteers to be prepared and ensured they had all the materials to complete a fun, safe, and successful cleanup. Through a wide array of media channels including social media, ACAP Saint John's webpage, local media outlets, as well as community outreach events, ACAP Saint John was able to engage more than 400 volunteers to remove almost 2,500 kg of debris from the environment and our waterways in 2021.

Despite the global pandemic and COVID-19 restrictions, ACAP Saint John provided supplies for a total of 20 cleanups throughout the Greater Saint John area (Figure 2). Throughout 2021, 423 volunteers helped with these cleanups for a total contribution of 900 volunteer hours (Figure 3).

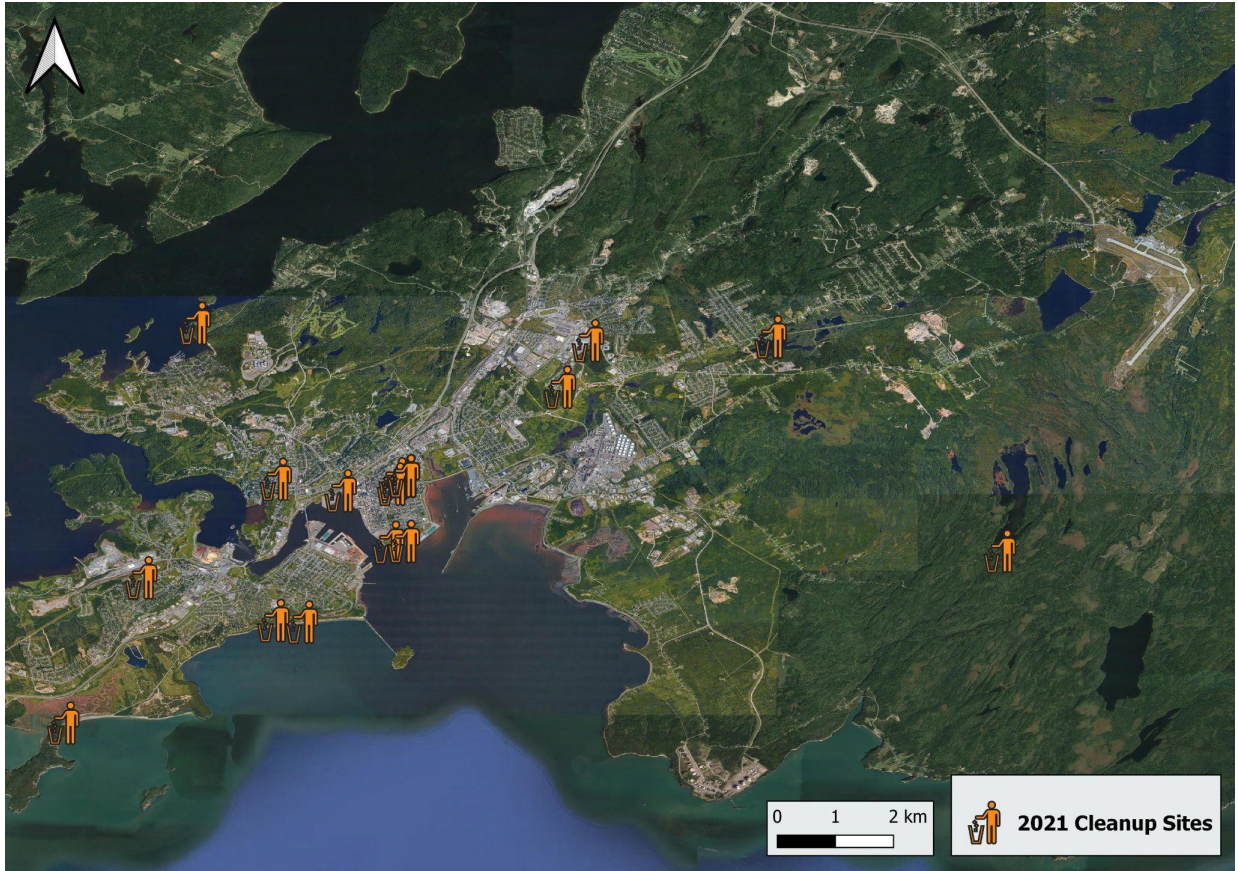


Figure 2. Locations of the 2021 community or volunteer cleanups facilitated through ACAP Saint John's "Educate for Change" project.



Figure 3. Various community cleanups were conducted throughout the 2021 field season totalling almost 2,500 kg of waste collected by over 400 volunteers.

Tree Plantings

Planting native trees has the ability to protect our environment by managing stormwater, stabilizing erosion, and filtering nutrients and pollution that would otherwise wash into our waterways. Additionally, trees provide environmental benefits such as clean air and water, and can help moderate temperature and muffle noise.

As part of a larger project funded by WWF-Canada, *Growing Canada's Forests in WWF-Canada Priority Places*, native trees and shrubs were planted to enhance parks, riparian zones, and greenspaces throughout the Great Saint John region. This project could not have been successful without the help from our volunteers who contributed time and energy to improving their local environment, gaining hands-on experience planting trees, and providing immediate and long-term benefits to our urban ecology.

All native trees were ordered from local nurseries around the Maritimes and Quebec providing a variety of species and sizes. The planting sites were chosen either to enhance riparian zones,

parks and green spaces, or due to the lack of trees in the area. For each site native species selection was determined based on the site conditions and the availability of desired species.

ACAP Saint John was fortunate to facilitate 16 different community tree planting events throughout the 2021 field season, where 541 volunteers planted 4,202 native trees throughout the region (Figure 4). Volunteers had the opportunity to be involved and learn about habitat restoration while experiencing nature first-hand and getting their hands dirty. A diversity of volunteers participated in planting events including a wide range of ages, experience, and backgrounds.



Figure 4. Locations of the 2021 volunteer tree planting events facilitated through ACAP Saint John’s “Educate for Change” project.

Schools

In the Greater Saint John area schools are a major property owner and are an important stakeholder of the urban environment. Studies show that students are able to concentrate, complete tasks, and follow directions better after playing in natural settings (Strife & Downey, 2009). ACAP Saint John partnered with six different schools throughout the region, engaging with students of all ages (ranging from 5-17) and providing them with native trees for their school outdoor classrooms or around their school property (Figure 5). Planting trees through

ACAP's "Educate for Change" project has helped connect students to the benefits of trees and fosters environmental stewardship in today's youth.



Figure 5. Student volunteers planting native trees throughout their school property.

Parks, Green Spaces, and Riparian Zones

ACAP Saint John partnered with the City of Saint John and the Town of Rothesay to provide parks and other municipal properties with native trees to beautify the area and enhance its urban ecology. Tree planting sites included areas such as the Caledonia Stormwater Pond, Wells Recreation Trails, Tucker Park and Queen Square West (Figure 6).



Figure 6. Volunteers planting native trees throughout city parks and green spaces.

In-Person Engagement

Presentations

Schools

Even during a global pandemic, ACAP Saint John staff had the privilege of visiting 12 different schools to engage with students about ongoing projects being conducted at ACAP, play environmental educational games, or attend outdoor field trips that align with the school

curriculum. Activities were selected for each class based on the age of students and topics of interest. These ranged from scavenger hunts to tag-like games with habitat or climate change themes. Each session encouraged hands-on learning where youth had the opportunity to get outdoors and experience nature as a part of their education (Figure 7).



Figure 7. Students from various schools participating in outdoor activities with ACAP Saint John staff.

Summer Camps

ACAP Saint John visited three day camps over the summer of 2021: Big Brothers Big Sisters, YMCA of Greater Saint John (Glenn Carpenter Centre), and BGC Greater Saint John. Each year we are delighted to visit these camps to provide hands-on educational activities. Activities included: fishing demonstrations, seal spotting, scavenger hunts, and other educational games (Figure 7).



Figure 8. Campers engaging in educational activities led by ACAP Saint John staff.

Special Events

This year, ACAP was invited to participate in special events happening in our community. ACAP staff teamed up with Nature NB for the Festival of Nature, and with the Irving Nature Park during their Mother's Day event to host educational nature walks with families interested in learning about Harbour seals and the current research being done in the Saint John Harbour. During these two events, 26 people participated in educational hikes which included dialogue regarding research on Harbour seals, provided displays to visualize their anatomy, and allowed a hands-on opportunity to look for seals using high-precision spotting scopes (Figure 9).



Figure 9. Educational nature walks focusing on harbour seals hosted by ACAP Saint John and partners.

Distribution of materials

Throughout the 2021 field season, ACAP Saint John attended local farmers markets and informational sessions to reach a wide range of people and community members. An educational booth focused on various ongoing projects was set up for the public to learn about the current work being conducted in the community (Figure 10). Being present at these events allowed for interested citizens to ask questions about ACAP's work and to become members of the volunteer network. Through attendance at these events, ACAP staff were able to reach over 400 citizens providing informational handouts to interested community members and sharing the spirit of environmental stewardship to the region.

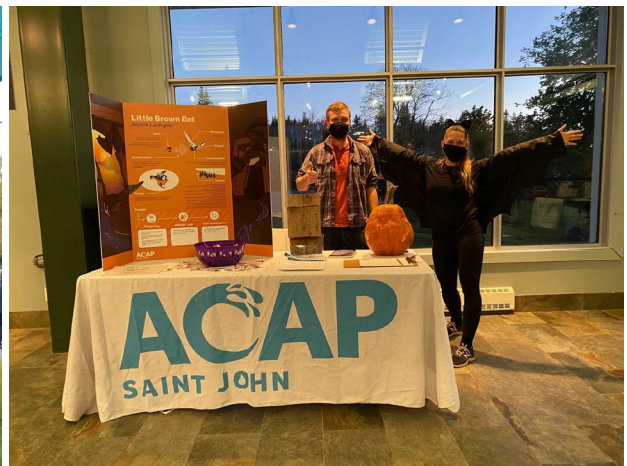


Figure 10. ACAP Saint John staff at various community events throughout the 2021 field season showcasing ongoing projects.

Social Media

As technology advances and users increase their time on various social media platforms, ACAP Saint John utilized this opportunity to keep followers connected and informed through educational posts and virtual engagement, encouraging a connection between community members and nature like never before. ACAP Saint John found that engagement through social media was most effective, where posts are easily and quickly distributed through wide networks.

Throughout the Educate for Change project, ACAP made 20 social media posts focusing on various environmental awareness topics in the City of Saint John, reaching close to 10,000 people. This form of communication allows for educational content to be shared easily and directly to people who are interested in helping our environment.

By the end of February 2022, ACAP Saint John had 4,307 followers on the organization's Twitter account, 1,300 followers on Instagram, 2,458 followers on Facebook, and 165 followers on LinkedIn. ACAP Saint John's webpage also remains a vital component for sharing information. The website was visited by an audience of 11,000 visitors with over 21,000 page views this past year.

Focused Initiatives

Climate Change

Throughout the Greater Saint John region climate change impacts are being more frequently observed and ACAP recognizes the importance of education in adapting to these changes. ACAP staff engaged with citizens and youth through the "Educate for Change" project aiming to build community resilience and protect the future of local environments. Information regarding the impacts of changing climate on our region including ACAP's report *Understanding Climate Change in Saint John* and adaptation documents were available at farmers markets. Having a booth setup at local markets allowed ACAP staff to discuss ongoing climate change projects including green infrastructure and coastal erosion monitoring, while also listening to concerns and questions brought forward by the community. The significance of information sharing particularly around climate change is the first step towards building a sustainable and resilient community.

Youth engagement on climate change was less about sharing resources and more focused on hands-on activities that allow for direct connections to climate change issues. ACAP Saint John developed outdoor games with climate change themes including resource management and environmental change, greenhouse gases, as well as ecosystem connectivity. Students responded well to the activities and participated in the discussion following the game where ACAP staff would break down the concepts, sharing scientific information and asking for input or ideas. Overall, the engagement at 12 schools in the region allowed ACAP to deliver climate change topics in a fun and engaging way that promotes sustainable lifestyles and habits in today's youth.

Microplastics

ACAP has been conducting microplastics research in the Saint John Harbour since 2018. With funding from the ETF, staff were able to showcase the ongoing work through a series of

educational workshops. The virtual workshops were held on January 27 and 29th, and were well attended with 30 community members participating. The informative presentation focused on what microplastics are, what research is currently being done, and how the participants can contribute to ongoing microplastic research through a citizen science program.

Participants of the workshops received an innovative filter (Lint LUV-R) that will be placed on their household washing machines to remove untreatable synthetic solids from washing machine discharge, which will reduce household microplastics entering our waterways and oceans (Figure 11).



Figure 11. Example of a Lint LUV-R filter installed to a household washing machine.

Over the next year, these participants will send ACAP the weight of the lint they remove from their Lint LUV-R (Figure 12). Compiling this data over the course of the next 12 months will illustrate how many microfibers and other particles can be removed from our wastewater treatment plants, and will demonstrate how effective microfiber filtering systems are when they are properly hooked up to a household washing machine.



MY ROLE IN REDUCING PLASTICS FROM WASTEWATER

Capturing and removing microfibers from our laundry using the LINT LUV-R filter.

CITIZEN SCIENCE DATA FORM

Name *

First Name

Last Name

Email *

My washing machine is connected to

- Municipal Waste Water Treatment
- Septic Tank

My washing machine is a

- Top load
- Frontload

I wash my clothes with

- Hot water
- Cold water

Number of people in my household

I am using a *

- Lint LUV-R Filter
- Guppyfriend Garment Bag

Number of loads completed before filter cleaning

Only answer if using the Lint LUV-R

Date filter cleaned

Only answer if using the Lint LUV-R

MM DD YYYY

Weight of lint (g) *

Notes

SUBMIT



Your Environmental Trust Fund at Work



Figure 12. Copy of online datasheet where citizens can upload the weight of their lint removed from their Lint LUV-R (www.acapsj.org/microplasticscitizenscience).

Due to the limit of Lint LUV-R filters available, the workshop was capped at 30 participants. This initiative resulted in a sold out workshop and prompted a great deal of media attention (i.e. the Telegraph Journal, CBC Information Morning, CHSJ News) (Figure 13).

ACAP Saint John to host presentation on microplastics

[fj_news/greater-saint-john/101776372](https://www.telegraphjournal.com/fj_news/greater-saint-john/101776372)

NEWS



A map of some of the areas where microplastic samples were collected.

Photo: Submitted

Published 1 day ago

Matthew Daigle | Telegraph-Journal

ACAP Saint John is hosting a virtual presentation next week to raise awareness of microplastics in waterways around Saint John.

There will be two presentations, one Jan. 27 at 6 p.m. and another Jan. 29 at 10 a.m. with more planned presentations on the subject in the spring.

ACAP Saint John Conservation Coordinator Shauna Sands said they'll be showing the research they collected and the importance of knowing the presence of microplastics. She said another purpose of the presentation is to show the various ways people in the community can get involved to limit microplastics in their local waterways.

1/3

Figure 13. Snippet of Telegraph Journal article written regarding the upcoming workshops.

Cyanobacteria

Through the *Educate for Change* project and additional funding through Environment and Climate Change Canada, ACAP Saint John delivered education about cyanobacteria, an important and growing concern in our region. The goal of this outreach is to build a community of knowledge where residents and municipal staff can identify cyanobacteria and take the proper caution to avoid harm. Information was distributed over social media including the promotion of the cyanobacteria video created last year with a reach of over 13,000 people. Fact sheets and visual guides were also handed at various Farmers Markets that ACAP Saint John

staff attended over the summer. The shared information included information for the general public about the issue, risks, identification, and ways to help reduce their risk. To engage the pet community further, brochures on “Cyanobacteria and Pet Safety” were created and distributed to veterinary clinics, animal hospitals, and pet stores. To date, approximately 1000 brochures have been sent out to communities across the province.

In February 2022, ACAP Saint John facilitated a webinar regarding cyanobacteria monitoring and current research along the Wolastoq. The webinar targeted individuals researching cyanobacteria in the watershed, nonprofits interested in monitoring, and municipal staff looking to learn more. Over 60 people were in attendance for the all day event where five presenters including Roxanne MacKinnon, project manager and Executive Director of ACAP Saint John, discussed the ongoing research and results. The event presentations allowed for attendees to gain a full perspective of cyanobacteria research in the Wolastoq watershed starting with the smaller nonprofit sector who have been participating in monitoring for two years and the provincial government approach. The webinar then shifted to an academic perspective with presentations from researchers at the University of New Brunswick, and ended with a municipal perspective from the City of Moncton. As the issues of cyanobacteria are incredibly widespread, the opportunity to provide this range of work being done in the watershed is significant. Overall, the goal to bring cyanobacteria education to the general public, nonprofit watershed groups along the Wolastoq as well as municipal and provincial stakeholders was successfully achieved.

Equipment HUB

ACAP Saint John is proud to have continued coordinating the NB Equipment Hub during the 2021 field season. This Equipment HUB is a part of the Atlantic Water Network’s Equipment Bank which provides monitoring equipment to community-based water monitoring programs throughout Atlantic Canada. Equipment that can be borrowed includes YSI Professional Plus Multi-Probes, Secchi Disk Kits, Global Water Flow Probes and CABIN Kits (Figure 14). ACAP Saint John’s role is to ensure that equipment is calibrated and functioning properly so that organizations can collect the most accurate data possible. The program works similarly to a library loan program, where the equipment is borrowed free of charge. Descriptions of each piece of equipment can be found on our website at <http://www.acapsj.org/nbequipmenthub>.



Figure 14. Example of equipment that can be rented through the NB Equipment Bank HUB.

This year was ACAP Saint John's third year administrating the NB Equipment Hub for the Atlantic Water Network. A total of 7 different community groups borrowed equipment through this program in 2021. This is encouraging as it suggests that the number of local groups having interest in and requiring access to community-based water quality monitoring measures is increasing.

Conclusion

ACAP Saint John's "Educate for Change" project was very successful even during a global pandemic and ever-changing restrictions. Throughout this project ACAP Saint John staff were able to engage with our community to educate, inspire change, and get people outdoors to improve the environment. This project's success demonstrates not only ACAP Saint John's ability and passion to improve the environment in our region, but also the power of our volunteers and community connections to participate in our programming and to help complete the hands-on work.

References

Strife, S., & Downey, L. (2009). *Childhood Development and Access to Nature: A New Direction for Environmental Inequality Research*. *Organization & environment*, 22(1), 99–122. <https://doi.org/10.1177/1086026609333340>