

Shediac Bay Watershed Association
Annual Report

Fiscal Year 2022-23



Report prepared by:
The Shediac Bay Watershed Association

June 2023

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1 Introduction

The Shediac Bay Watershed Association (SBWA) was founded in 1999 as a result of growing concerns from local community residents over the ecological health of Shediac Bay. In order to establish a long-term water quality-monitoring program, a community-based association was formed.

The Shediac Bay Watershed Association vision and mission statements are as follows:

Our Vision – Communities working together to foster a healthy ecosystem that will sustain the quality of water for future generations.

Our Mission – The SBWA will accomplish its vision through education and community stewardship.

The Board of Directors is composed of the following members:

David Dunn, President	Wendy Bourque, Ville Régionale de Cap-Acadie	Helen Wedge
Niels Hansen, Vice-President	Alexis Robitaille	Josephine Vandenburghe
Helen Hall, Treasurer	Bill Belliveau	Petrina Ferris
Armand Robichaud, Past- President	Denis Haché	Pierre Landry
Shawn Wilkie, Secretary	George Welling	
Germaine Gallant, Town of Shediac	Gerry Dionne	

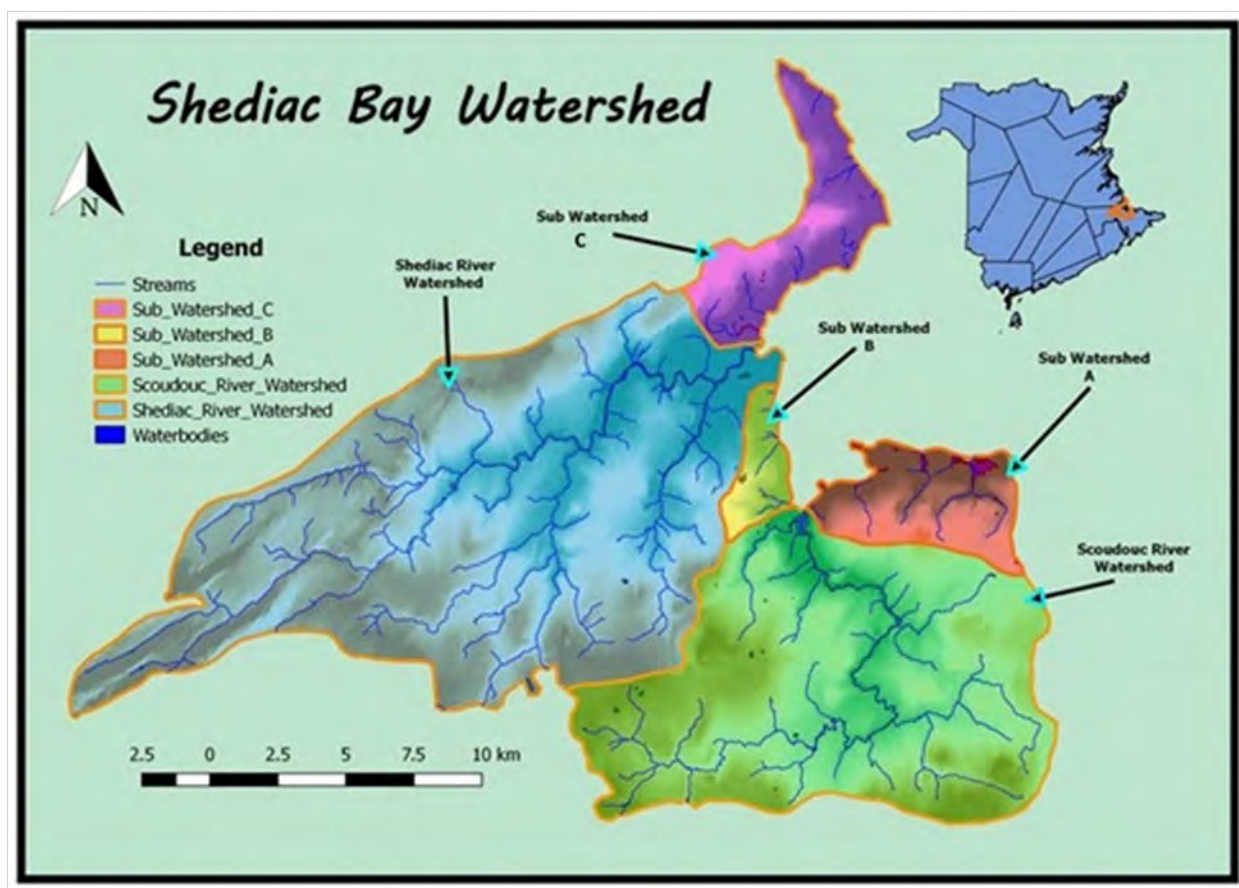
The Shediac Bay Watershed Association gratefully receives guidance, donations and in-kind support from various organizations and interest groups consisting of business owners, industry, foresters, farmers, residents, cottage owners, recreation boaters and swimmers, conservation groups and community organizations within the Shediac Bay Watershed.

Public education has always been an integrated part of all the Shediac Bay Watershed Association's initiatives. Every year, the Association organizes activities meant to engage the public in environmentally friendly practices such as litter cleanup and tree planting, hoping to raise awareness and to build good habits.

Our strong presence in the public eye is a major factor to the success of many of our initiatives, and to keep the public informed of the great work being accomplished by the association.

1.1 Overview of the Shediac Bay Watershed

The Shediac Bay Watershed covers 420 km² of land area and stretches along 36 km of coastline, from Cap Bimet to Cap de Cocagne (Fig. 1). The Shediac Bay Watershed is composed of two major river systems emptying into Shediac Bay: the Shediac River and the Scoudouc River. The Shediac and the Scoudouc Rivers are characterized by small tributaries covering a watershed of 201.8 and 143.3 km², respectively. The Shediac River is composed of two major water arms. The northern water arm is created by the convergence of the McQuade Brook, the Weisner and the Calhoun Brook. The southern water arm of the Shediac River is the continuation of the Batemans Brook. Water velocity in both rivers is generally weak due to the gentle regional elevation. The watershed boundaries stretch into both Kent and Westmorland County and cross into both the Shediac and Moncton Parish.



Map of the Shediac Bay watershed

1.2 List of Funders and Financial Supporters

Municipal

Town of Shediac

Ville Régionale de Cap-Acadie

Provincial

New Brunswick Environmental Trust Fund

New Brunswick Wildlife Trust Fund

Student Employment and Experience Development (SEED)

Federal

Environment and Climate Change Canada (Multiple Programs)

Department of Fisheries and Oceans Canada (Multiple Programs)

Canada Summer Jobs (CSJ)

Other

Atlantic Salmon Conservation Foundation (ASCF)

Université de Moncton

Nature NB

TD Friends of the Environment

Anglican Parish of Shediac

New Brunswick Environmental Network

Vision H2O

Groupe de Développement Durable du Pays de Cocagne

Parlee Beach Provincial Park

Ecology Action Centre (EAC)

Ocean Surf Campground

2 Water Quality Monitoring

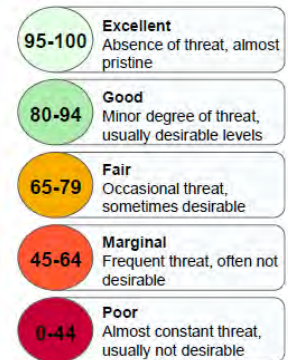
Two water quality monitoring programs were carried out by the SBWA in 2022. These include Shediac and Scoudouc rivers sampling (inland freshwater) and small streams sampling (coastal tributaries). Water samples were taken once per month from June to September.

2.1 Water Quality Index

In 2022, the water quality data was analyzed using the Water Quality Index (WQI) calculator. Using the Canadian Council of Ministers of the Environment (CCME) water quality guidelines, the Water Quality Index combines multiple parameters into a single value that summarizes water quality at a site. It is calculated based on:

- the number of parameters that exceed guidelines,
- the number of times guidelines are exceeded,
- and the amount by which they are exceeded.

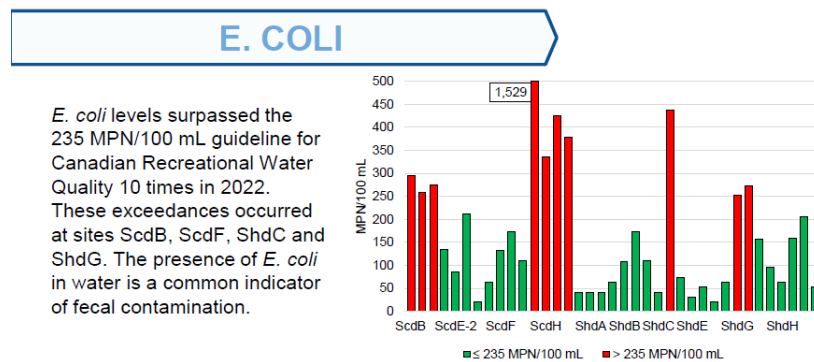
For an accurate WQI, a site is required to have 4 samples per year with at least 4 parameters measured.



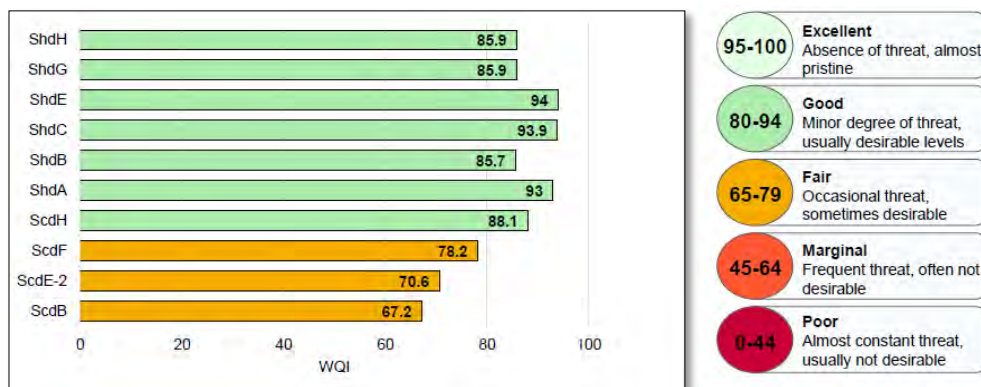
WQI Score Values

2.2 Shediac and Scoudouc River Sampling

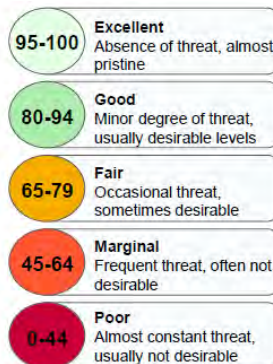
With six sites in the Shediac River watershed and four sites in the Scoudouc River watershed, a total of ten sampling sites make up the Shediac and Scoudouc river water quality monitoring program. The following figures summarize the 2022 results:



E. coli summary for the Shediac and Scoudouc Rivers 2022 Sampling

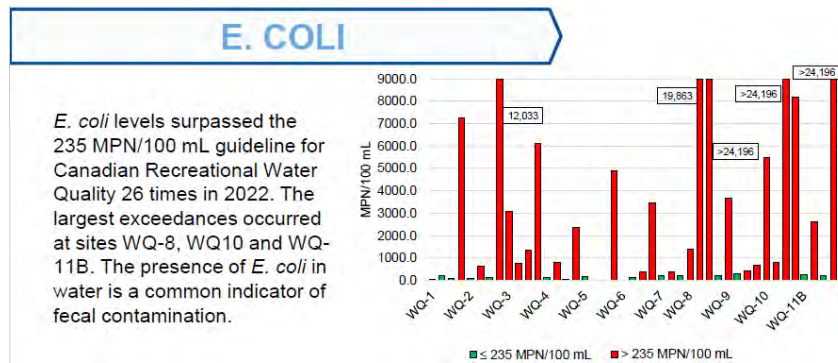


WQI Scores for the Shediac and Scoudouc Rivers 2022 Sampling

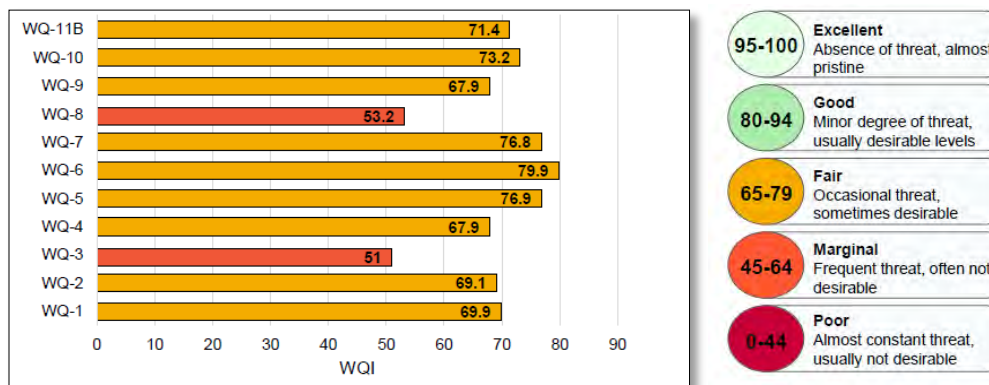


2.3 Small Stream Sampling

There is a total of 11 small streams sampling sites located along the coast of the Shediac Bay watershed. The following figures summarize the 2022 results:



E. coli summary for the Small Streams 2022 Sampling



WQI Scores for the Small Streams 2022 Sampling

2.4 Water Quality Report Cards

In partnership with the Atlantic Water Network (AWN), a new communication tool for water quality monitoring was developed for each of the 21 monitoring stations. These report cards provide a description of our watershed, information on the Water Quality Index calculator, and present water quality data charts. All these report cards can be found on our website (<https://shediabayassociation.org/reports-archives/>).

Water Quality Report – Shediac & Scoudouc Overall Results
2022 Field Season

OUR ORGANIZATION
The Shediac Bay Watershed Association (SBWA) was founded in 1959 as a result of growing concerns among residents from various local communities over the ecological health of the Bay of Shediac.
Our Vision – Communities working together to foster a healthy ecosystem that will sustain the quality of water for future generations.
Our Mission – The SBWA will accomplish its vision through education and community stewardship.

OUR WATERSHED
The Shediac Bay watershed covers 420 km² of land area and stretches along 36 km of coastline, from Cap Binet to Cap de Cocagne. The Shediac Bay watershed is composed of two major river systems emptying into Shediac Bay: the Shediac River and the Scoudouc River. The Shediac and the Scoudouc rivers are characterized by dendritic patterns of small tributaries covering watersheds of 201.8 and 143.3 km², respectively.

OUR WATER QUALITY INDEX SCORES
The WQI was calculated using ammonia, arsenic, chloride, copper, dissolved oxygen, iron, nitrate, pH, phosphorus, turbidity, and zinc. These are the same parameters used by the NB Department of Environment and Local Government.
WQI scores for 2022 in the Shediac and Scoudouc rivers fell within the "Fair" and "Good" categories. A rating of "Good" means water quality rarely exceeds the guidelines, and conditions rarely depart from natural or desirable levels. A rating of "Fair" means water quality occasionally exceeds the guidelines, and conditions sometimes depart from natural or desirable levels.

PARAMETER EXCEEDANCES
The graph on the left shows the number of exceedances of each parameter per site (values above the established guidelines). The combined effect of these exceedances lower the overall WQI score for each year. Iron had the most exceedances in 2022 across all sites, followed by phosphorus.
It is common to have elevated iron concentrations in the Bay of Fundy due to natural geological influences. Phosphorus occurs naturally in the environment but can be introduced into a water body through runoff from agriculture, residential fertilizers, and even household cleaning products.

E. COLI
E. coli levels surpassed the 235 MPN/100 mL guideline for Canadian Recreational Water Quality 10 times in 2022. These exceedances occurred at sites SC03, SC07, SH02 and SH05. The presence of E. coli in water is a common indicator of fecal contamination.

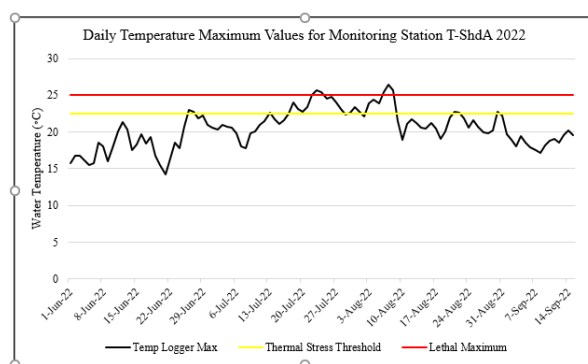
TOTAL PHOSPHORUS
Total phosphorus across all Shediac and Scoudouc river sites exceeded the provincial objective of 0.03 mg/L 12 times in 2022. Elevated phosphorus levels in rivers can lead to an increase in growth of algae and aquatic plants. This excessive growth can decrease the amount of dissolved oxygen available to other aquatic life, like fish.

TEMPERATURE & DO
The amount of dissolved oxygen (DO) available to aquatic organisms decreases as water temperature increases. Impacts on aquatic life may occur at DO concentrations below 6.5 mg/L. DO levels were below the 6.5 mg/L guideline on five occasions across all Shediac and Scoudouc river sites in 2022.

2.5 Water Temperature Monitoring

As part of the water management efforts in the watershed, water temperature monitoring also continued in 2022. Temperature loggers were placed in strategic locations from June to September.

The strategy for the water temperature monitoring program is to monitor temperature fluctuations in strategic locations. Areas of interest are those determined to be high risk for thermal stress in juvenile salmonids and other cold-water species. Other areas of interest are those determined to be colder zones suitable for thermal refuge. Results from the 7 temperature monitoring sites can be found in the final report on water quality on our website (https://shediabayassociation.org/wp-content/uploads/2023/03/ETF-Integrated-Water-Management-in-the-Shediac-Bay-Watershed-2022-2023-Final-UpdatedE.coli_.pdf)



Temperature logger data from a site in the Shediac River, Irish Town area (T-ShdA)

3 Water Conservation and Stormwater Management

In order to enhance water quality throughout the Shediac Bay, there must be proper management of surface water and land uses in the watershed as a whole. The SBWA has put in place a number of projects aimed at absorbing stormwater runoff which contains bacteria and other pollutants. Projects such as rain gardens help reduce the volume of stormwater entering our storm sewers and small streams, all of which drains into the Shediac Bay. The following projects were all carried out during the 2022 field season.

3.1 Rain Garden and Bioswale Monitoring

3.1.1 The polyvalent Louis-J. Robichaud Bioswale

With the help of students from the Environmental Science class at Polyvalent L.-J. R, a 60m² bioswale was built on school ground. This bioswale was maintained by weeding regularly throughout the 2022 growing season and the interpretive sign that was produced the previous winter was also installed. The survival rate of the plants originally planted was 85 percent. The milkweed plants at this site also successfully attracted monarch butterflies; a monarch survey revealed eggs and monarch caterpillars on most milkweed plants.



Bioswale

3.1.2 Maximum Signs & Time2Shine Bioswale

The bioswale, or bioretention system, installed in fall of 2021, collects a portion of the stormwater runoff from the parking lot of the neighbouring business and part of the rooftop runoff from surrounding buildings, which totals approximately 920 m² of impervious surfaces.

A total of 116 plants were also planted in 2021 and maintained by weeding throughout the 2022 growing season. The survival rate of the plants originally planted was 90 percent and the added value of planting milkweed plants successfully attracted several monarch butterflies. Adults were witnessed visiting the plants on two occasions, and a monarch survey revealed eggs and monarch caterpillars on most milkweed plants.



Time2Shine's commercial bioswale in 2022

3.1.3 Residential Rain Garden – Rue Rachel

This rain garden is located in the front yard of a resident on Rue Rachel in Shediac. It was the first one completed in 2021. The rain garden was strategically placed in their front yard and intercepts stormwater runoff from going into the storm drain.

A small educational sign was installed near the rain garden in a visible location for pedestrians. This project became a demonstration site for residential rain gardens for two in-person workshops in 2022 and several online presentations. No maintenance was required on our part. Monitoring for survival rate of the plants showed that the sensitive ferns that were transplanted from a wild donor site did not survive. All other plants that were purchased are thriving, making the survival rate 95 percent. We would like to thank the homeowners, who've been wonderful partners in the education and outreach part of this stormwater management project.



Rain garden on Rue Rachel

3.2 Commercial Bioswales – Homarus Centre

In partnership with the Town of Shediac and the Homarus Centre, two bioswales were incorporated in the parking lot of the new centre and the resurfacing of the Shediac Rotary Park. The bioswales were designed in the building plans by Englobe in 2019. The two bioswales will collect most of the stormwater runoff from the parking lot, which is about 2,600 m² of impervious surface area.

Both bioswales have similar components like an outflow drain and bioretention soil mix. The outflow drain will prevent water from overwhelming the bioswales or causing flooding during heavy rainfall events. The bioretention soil mix is designed to absorb, infiltrate, and filter stormwater runoff. A filter fabric separates the bioretention soil from the gravel layer below which allows for storage of stormwater underground and allows time for infiltration into the ground. The bioswale #1 has an additional component, an underdrain system composed of a perforated drainage pipe imbedded into the drainage stone layer. The underdrain system allows for treated stormwater to flow into the storm drain system. These bioswales were planted late fall 2022. We will be monitoring closely the survival rate of the plants

in the spring 2023 and will finish installing the decorative rocks.



Bioswale #1 - Construction (left) of the bioswale and finished project (right)



Bioswale #2 - Construction (left) of the bioswale and finished project (right)

3.3 Residential Rain Garden – Rue Grand Pré

This rain garden was designed with the help of the homeowner; square in shape and dominant in purple coneflower and black-eyed Susans. A few plants of milkweeds were also added to attract monarch butterflies.

Similar to the other residential rain gardens, a berm was constructed at the back to retain water. This rain garden should make a difference in absorbing and infiltrating larger amounts of runoff, which may also benefit the surrounding properties.



Before (left) and during (right) construction of the rain garden on Rue Grand Pré.

3.4 Residential Rain Garden – Rue Louisiane

A partnership was formed for a residential rain garden with a homeowner on rue Louisiane, in Shediac. This citizen is an ambassador for eco-friendly yards, free of pesticides and pollinator-friendly plants.

This kidney bean-shaped rain garden was created in the front yard. The homeowner's sump pump outflow was connected to the rain garden, by digging a trench to install an underground PVC pipe. This will allow the sump pump water to be directed into the rain garden and a berm was constructed to retain as much water as possible. A variety of flowering plants and grasses were selected including milkweed to support the monarch butterfly.



Before (left) and during (right) construction of the rain garden on Rue Louisiane

3.5 Impervious Cover Mapping

In order to focus stormwater management efforts, measure the impacts of stormwater management projects, and educate on the impacts of impervious cover, the SBWA has been working towards developing an impervious cover map of the Town of Shediac. The impervious cover map demonstrates the extent of development and impervious cover (IC) for specific areas within the town of Shediac and its possible effects on water quality.

This map was created using the 59 stormwater watersheds that were delineated by DELG for the 2019 stormwater study (Hughes 2020), and an impervious cover layer developed by Mount Allison University (updated by SBWA). This map was created using the impervious cover model (ICM), which provides an indicator of the level of impact of stormwater runoff on water quality, based on the percentage of “effective impervious cover” in each sub-watershed.



Impervious coverage map of Shediac

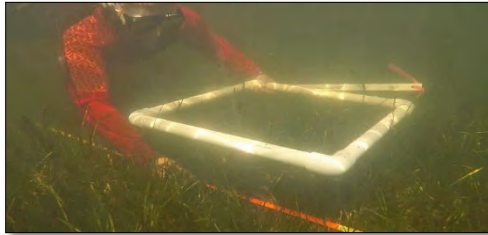
The percentage of “effective impervious cover” can be reduced when stormwater runoff is managed at the source (i.e. rain gardens, bioswales, retention basins, etc.). For example, the Homarus Centre bioswales capture runoff from a drainage area of approximately 2,600 m², reducing the effective impervious cover of stormwater watershed #3 by 3%.

4 Wildlife Monitoring

These following projects were all included in the “Evaluation of the Health of the Shediac Bay” report, prepared for the *Environmental Trust Fund*.

4.1 Eelgrass Monitoring

Eelgrass monitoring transects have been established in the Shediac Bay since 2016. The eelgrass sites are located in the Shediac and Scoudouc rivers, Pointe-du-Chêne, and Grande-Digue. For 2023, continued monitoring of these sites will reveal the extent of damages caused by hurricane Fiona in September 2022.



Eelgrass transects

The decrease in eelgrass cover caused by the impact of Hurricane Dorian is still apparent in 2022. The Grande-Digue and Scoudouc River sites have shown great signs of recovery from the hurricane and the Pointe-du-Chêne site showed some signs of recovery in all parameters (height, ground cover, density). Eelgrass has yet to come back to the heavily affected Shediac River site in 2022.

4.2 Green Crab Monitoring

Green crab monitoring has been carried out by the SBWA since 2013. This invasive species is known to disrupt eelgrass beds, a productive habitat for many juvenile fish species and crustaceans. The green crab population monitoring is composed of 10 sampling sites. Sampling is done using Fukui crab traps baited with sardines.

The amount of green crab caught have been steadily increasing in the Shediac Bay since 2019. The total amount of green crab caught has more than doubled from 2020 to 2021, however, there was only a slight increase in 2022, with a total catch of 403 green crabs.



Green crab caught in Fukui trap

4.3 Smelt Surveys

In partnership with the Université de Moncton (U de M), smelt surveys were carried out by the SBWA in small streams and rivers surrounded by salt marshes in South Eastern New Brunswick from Cocagne to Bay Verte. The primary objective of this study is to observe the importance of salt marshes in the reproduction of smelts, verify the state of salt marshes, and identify those that are in need of restoration. Secondly, the surveys were also carried out in small tributaries of main rivers. The smelt surveys identified the substrate type and overall suitability for smelt habitat.



Smelt crowded in a small stream in the Shediac Bay watershed

Only four of the 23 Shediac Bay sites had smelt eggs present during the surveys. In addition, five sites were found to have a barrier to upstream spawning preventing migration.

4.4 Bank Swallow Surveys

The Bank Swallow populations are considered to be threatened by both COSEWIC and SARA. No one singular threat is responsible for the decline in Bank Swallow numbers, the decline is most likely caused by a culmination of numerous threats. The loss of breeding and foraging habitat due to erosion and shoreline hardening is prominent in the Shediac bay watershed.

Bank Swallow surveys were carried out and discovered eight small colonies along the areas that were explored in the Shediac Bay watershed. Two colonies were located in the Parlee Beach area, two in sandstone cliffs in the Boudreau area, two in the Cocagne area and two at Cap-de-Cocagne.



Bank Swallow monitoring near Euclide-Leger Road

4.5 Atlantic Salmon Surveys - Electrofishing



Atlantic salmon caught in the Scoudouc River

Electrofishing is used to evaluate fish populations and observe changes in population trends over time. It can also be used as a presence or absence only tool.

In 2022, a partnership was made with the Friends of the Kouchibouguacis of Saint-Louis-de-Kent, to help conduct the electrofishing surveys.

Three sites were selected for these surveys; the main branch of the Scoudouc River (near Edna's Pond), the Weisner Brook, and the main branch of the Shediac River (Cape Breton area). Atlantic salmon fry and parr were found at all three sites.

4.6 Tern Platform

The tern platform is an artificial nesting habitat built for the Common Tern colony of the Shediac Bay. Since 2014, the platform has been used by the terns for nesting and laying eggs. The platform is anchored in the South Cove estuary near Pointe-de-Chêne.

In 2022, the platform had a successful nesting season. Staff missed the window for a nesting survey, but visited the platform briefly and confirmed the presence of chicks.

In September, hurricane Fiona dislodged the platform from its anchored site. The storm surge floated the platform into the surrounding marsh. Thankfully, it was easily accessible by the walking trail, and a crane truck was contracted to retrieve it. We would like to thank the PDC Harbour Authority for allowing us to take the platform to the wharf, for reassembly and overwintering.



Tern platform being rescued post-

4.7 Monarch Butterfly Monitoring

In order to help mitigate the current decline of the monarch butterfly, a habitat restoration program in partnership with Pollinator Partnership Canada and Nature NB is being carried out by the SBWA. The program has 4 main goals; increase the presence of nectar-producing plants; identify natural milkweed patches within the watershed, educate the public on the monarch butterfly and the importance of milkweed plants; and monitor existing milkweed for the presence of monarchs.



Monarch Butterfly on Milkweed Plant – Time2shine Bioswale

5 Environmental Restoration

A number of environmental restoration projects were carried out across the watershed. These projects have a wide range of benefits including; reducing sedimentation, stabilizing the banks, cooling the temperature of water by providing shade, filtering pollutants, and providing fish with food sources such as insects and seeds.

5.1 Tait Brook Restoration

The Tait Brook underwent modifications as part of a flood protection plan; the area was cleared of trees so that the stream could be widened. This created a stormwater retention system to protect neighbouring infrastructure from flooding. The SBWA partnered with the Town of Shediac to restore the Tait Brook by replanting native trees and shrubs. The restoration took place on an approximate 200-metre section of the stream, between Donat and Clarence Street. A total of 78 trees were planted.



Tait Brook Restoration 2022

5.2 Dune Restoration

The SBWA was contacted by a citizen during the winter of 2021, with concerns about the degraded conditions of the dunes at Belliveau Beach in Pointe-du-Chêne. The public entrances cause breaches in the dune ecosystem because of excessive trampling of the marram grass. With time, these breaches become larger and make the dune more vulnerable to storm waves.

In the summer of 2021 and 2022, snow fencing was installed at beach access points and along the dunes to prevent further damages by foot traffic (trampling). Unfortunately, the entire dune fencing was destroyed by hurricane Fiona and the dunes were severely damaged.



Snow fencing (left) and marram grass planting (right) at Belliveau Beach

5.3 Weisner Brook Restoration Site

The major restoration project of 2022 was at a location along the Weisner Brook on St Philippe Road in Saint-Philippe. The Weisner Brook is a major tributary of the Shediac River. A defining characteristic of this brook is its cold-water temperatures due to long stretches of forested riparian areas and cold spring inputs into its tributaries. It is recognized by the Department of Natural Resources as a “summer resting refuge for mature trout” due to its cooler temperatures.

In 2017-2018, the buffer zone next to the brook in this area was cut and the field was tilled in preparation for planting but alders and shrubs have since recolonized the riverbank area. The SBWA took steps to reduce the amount of sediment and runoff entering the brook in this area through the creation of a sediment catch, a 50 m line of hay bales secured with wooden stakes with a line of native trees, which were provided by the SBWA tree nursery, behind the hay bales to avoid losing them due to agricultural activities. A section of wattle fencing made with alder branches was built on the field side of the hay bales. The tree species include four pines, six maples, and eight spruces.



Weisner Brook restoration site

5.4 Japanese Knotweed Eradication

In 2022, two patches of invasive Japanese knotweed were targeted for eradication. The Japanese knotweed patches were discovered in the south cove marsh and on a private property in the town of Shediac. Both were approached with the same eradication measures, cut the previous year’s growth, cover sites with tarps to prevent new growth and to perform monthly cutting on new growth from May through October.

The tarps and regular cutting prevent the plants from performing adequate photosynthesis. This method does not produce immediate results, however, overtime the Japanese knotweed patches might be weakened enough that they are eliminated.



Japanese knotweed patch on private property (left) and during eradication (right)

5.5 SBWA Tree Nursery

To help the Association save costs and maintain a supply of native trees and shrubs, a tree nursery was developed in 2017, with the help of the Anglican Parish of Shediac. The SBWA maintains eight nursery boxes at the Shediac Cape Community garden. These boxes provide a steady supply of native trees that are used in restoration projects. Seedlings and cuttings are planted in the boxes and are left to mature for 2-3 years to increase their survival rate once transplanted to a restoration site.

In 2022, a total of 96 trees from the nursery were used at restoration sites. To replenish the nursery stock, approximately 400 white spruce plugs were planted in late summer.

5.6 Edna's Pond Restoration Site

Every year the SBWA continues to maintain our restoration site on the Scoudouc River, in the area known locally as Edna's Pond. This site is an important Atlantic salmon habitat for the Shediac Bay watershed. Assuring that enough trees will take at this location is crucial for the stabilization of the banks and runoff control to minimize sedimentation in the salmon pool.

The five sediment deflectors in the area were cleaned manually with shovels in the summer of 2022 so that they could continue to work efficiently by capturing sediments from runoff which causes a sediment buildup. ATV traffic will also be redirected from Edna's Pond to the new bridge built in 2022 by a local ATV club to cross the Scoudouc River.

6 Stream Assessments

Following confirmation of Atlantic salmon through electrofishing surveys, a stream assessment was completed along a portion of the Shediac River located in the Cape Breton area. The purpose of this assessment was to determine if any restoration actions may be required along this stretch of river. The assessment covered a distance of 26 m and was comprised of three transects. This section of the Shediac River was found to be suitable for fish, with an abundance of instream cover such as undercut banks and large woody debris. The substrate type was also suitable for fish species such as brook trout and Atlantic salmon. In certain areas, fallen woody debris has become a partial or potentially complete barrier to fish passage. Some clearing of the fallen debris should be considered in future restoration actions for this stretch of the Shediac River.



An example of a large woody debris blockage

7 Environmental Cleanup

Only one environmental cleanup was undertaken in 2022. The continuation of environmental cleanup efforts is important to the health of the watershed.

7.1 Beach Sweep

In celebration of World's Oceans Day, a public beach sweep event is organized every year by the SBWA, in partnership with the Town of Shediac. This year, the event was held on June 4th at the Pointe-du-Chêne community centre. Trash bags, gloves, hand sanitizer were provided to the volunteers. Door prizes provided by Gestion H2O in the Baie de Caraquet were handed out as well as some donated gift cards from local businesses.



Beach sweep event

7.2 Other Cleanups

A trash cleanup was undertaken by staff in the South Cove marsh in Pointe-du-Chêne after Hurricane Fiona in September 2022. Two large bags of garbage and various debris items were removed from the marsh. Also, a trash cleanup was undertaken with the help of students from Louis J. Robichaud high

school at the Shediac Marina. In addition to these cleanups, staff performed and will perform routine litter pickups throughout the summer at water quality monitoring sites and any other problem areas that are identified throughout the field work season.

8 Education and Outreach

Normally, the SBWA does regular presentations to various audiences and stakeholders of our watershed. The following presentations and webinars were held during the 2022-2023 fiscal year by SBWA's manager Jolyne Hébert.

8.1 Workshops



8.1.1 Virtual Workshop – Impacts of Climate Change on Surface and Groundwater

A virtual workshop on underground water quality was held on March 22, 2023, on World Water Day. This initiative was led by Vision H2O, co-hosted by; SBWA, GDDPC, PWA, and facilitated by the NBEN. This workshop was focused on the impacts of climate change on both surface and underground water quality. Topics ranged from private well testing following major storms, what to do when well water tests positive for contaminants and how to protect our homes from floods.

8.1.2 Residential Rain Garden Workshops

Two workshops on residential rain gardens were organized in 2022; one session in French at the Shediac Multipurpose centre, and the second session in English at the Pointe-du-Chêne Recreational Centre. The sessions were organized in partnership with Les Ami.e.s de la nature du sud-est du NB and with the Red Dot Association of the Shediac Bay. Subjects ranged from the types of pollution in a watershed, the concept of green infrastructure for stormwater management to improve water quality, and the steps on how to build a rain garden. Each participant received a copy of the SBWA Rain Garden Construction Guide for Homeowners followed by a visit to 3 local project sites.



Rain Garden Workshop of June 18, 2022

8.2 Webinars

8.2.1 Webinar – “How to Build a Rain Garden”

A virtual presentation was made on “How to build a rain garden” for the School Gardens Initiative, coordinated by New Brunswick Environmental Network (NBEN). The presentation was directed towards New Brunswick teachers who are interested in school gardens of any sort.



"How to Build a Rain Garden" French presentation cover slide

8.2.2 Webinar – Natural Infrastructure for Climate Change Adaptation



This webinar was hosted by *Learning for a Sustainable Future* (LSF), a Canada-wide organization that provides a platform for various educational resources and webinars series for classrooms. The webinar was attended by 54 students from the grades 5-8 and 53 students for the grades 9-12.

8.3 School Programs

The SBWA has been working with local schools and teachers on the development of yearly environmental education programs. This long-term relationship led to the development of a series of presentations that links science curriculum objectives and outcomes to local environmental issues. The main focus of these presentations revolves around water quality, aquatic habitats and biodiversity.

8.3.1 Adopt-a-River

In the 2022 fiscal year, SBWA continued to partner with Shédiac Cape School for the annual Adopt-A-River program. On June 6, two in-person presentations were held at the school gymnasium, touching on the importance of biomonitoring using macroinvertebrates. One session was held for English students and one for the French immersion students. Later in June, the classes went to the Scoudouc River to do the macroinvertebrate sampling and to collect other habitat measurements and observations, not accounting for absences, around 141 students participated in these activities.



Adopt-A-River field trip

8.3.2 LJR Tree Planting Activity

In partnership with the town of Shédiac and students from the Polyvalent Louis-J.-Robichaud, 12 trees provided by the Town were planted at the Shédiac Centennial Park. These trees will help bring shade to the park during the warm summer months. The L.J.R. students were also given a presentation on the Acadian Forest before planting the trees.



Students planting a tree (left) and receiving a presentation about the Acadian Forest (left)

8.3.3 South Cove Salt Marsh Field Trips

On June 3rd, a field trip was organized for a group of 10th grade students from the Polyvalent Louis-J.-Robichaud to the South Cove wetland in Pointe-du-Chêne by Ducks Unlimited Canada Wetland Center of Excellence program.

A presentation on wetlands, notions specific to salt marshes, and ecosystem services of coastal wetlands. A baited minnow trap is placed in the water and left alone until the end of the activities. The trap was then checked and the students identified everything caught before release. The students took a walk through the wetland while observing species. Then with the use of small dip nets, they swept the muddy bed in search of saltwater invertebrates.



10th grade students during the salt



Students planting a monarch butterfly garden at MFB School

8.3.4 Monarch Butterfly Garden at MFB School

The SBWA partnered with a 3rd grade teacher at Monseigneur-François-Bourgeois elementary school to create a Monarch Butterfly garden. This garden is comprised completely of milkweed plants. Students learned about the importance of the monarch butterfly and how these insects depend on milkweed for a portion of their life cycle.

9 EcoVision 2025

The EcoVision 2025 green strategy identifies actions that will help ensure a healthy environment that can support economic development, a high quality of life, and vibrant communities in the reality of a changing climate. Actions are prioritized by short-, medium-, and long-term, ease of implementation, and scale of the impact.

In 2022, Charles LeGresley, our Awareness Campaign Coordinator, published a webpage on the importance of pollinators. The subjects touched were the benefits and vital ecosystem services provided by pollinators, the protection of pollinators in our community, and ways to help our pollinators. Information on the No Mow May campaign was also included with educational videos about the importance of pollinators.



10 Educational Material and Signage

10.1 Signage and Interpretation Panel



Homarus Centre interpretive panel

For the newly constructed bioswales at the Homarus Centre, a bilingual interpretation sign that explains the purpose and construction process of the bioswale was developed over the winter.

The panel explains how bioswales collect and treats stormwater. It also has a segment on the importance of clean water and how it can affect the surrounding areas. The sign is currently in production and will be installed in the spring.

10.2 Pet Waste Awareness Campaign

The SBWA, in partnership with the Town of Shediac, have created an educational campaign around the topic of dog waste and the importance of cleaning up after your pets.

Signs have been developed that will be posted along the Town of Shediac Trail system thanking users for picking up their pet waste and placing it in the garbage. Additionally, a series of infographics and texts have been designed that will be released through social media, highlighting the importance of cleaning up after your pet to protect water quality. A leaflet has also been designed to be given out with each purchase of a Town of Shediac dog registration tag, sold at the Shediac Veterinary Hospital. Issues with staff turnover at the Town of Shediac delayed the advancement of this campaign until spring, coinciding with warmer weather.



Signs designed for the Town of Shediac Trail

10.3 Notice to Anglers – Weisner Brook

A new sign entitled “Notice to Anglers” has been installed near the Weisner Brook, off St-Phillippe Road. The sign is located near a small path leading to the brook, a popular access used by local anglers. The sign contains educational material on the DFO variation order, and the importance of the brook for salmonids. The NB Wildlife Trust Fund logo is displayed along with the Atlantic Salmon Conservation Foundation, New Brunswick Government Environmental Trust Fund, and SBWA logos.



Weisner Brook “Notice to Anglers” Sign

11 Watershed Management Committee

In 2019, a working group was formed by the Department of Environment and Local Government of New Brunswick to develop a watershed management plan for the Shediac Bay watershed. The main purpose of the Shediac Bay Watershed Management Plan (WMP) is to address water quality issues in the watershed namely, anthropogenic or human sources of nutrients and bacteria. This will in turn, help protect and improve water quality at Parlee Beach. The plan was published in both official languages on October 22, 2021.

To further focus on single goals and action items, subcommittees were created for five of the seven goals. The remaining two goals are large in scope and incorporate many action items from the other five goals.

Meetings were held for four subcommittees in the 2022-2023 fiscal year. Documents relating to the integrated management plan and implementation committee, including meeting minutes, the “Terms of Reference” document, annual reports, and a link to the plan in both languages, has been made publicly available on the Shediac Bay Watershed Association’s website.

