

## Eelgrass Bed Monitoring and Restoration



Eelgrass is an essential seagrass that creates habitat and nurseries for fish, crabs, shrimps and other aquatic organisms. By setting up monitoring transects to conduct density surveys, we are studying the impact of the invasive green crab on the eelgrass beds in the Shediac Bay. These surveys will be conducted annually

to determine if there is a loss of eelgrass in the long term.

This summer, in partnership with Homarus Eco-Centre, we have also tested different methods of transplanting eelgrass for future restoration projects. Eelgrass plants were collected from a site in the Shediac River where the future four-lane highway bridge will be built.

## Beach Sweep 2018



In celebration of World Oceans Day, the annual beach cleaning event was once again a success. On the second weekend of June, volunteers joined us at the Homarus Eco-Centre to get garbage bags and gloves. A total of 21 large bags of trash were collected at different sections over 4 km of our beautiful coastline. These cleanups are important to remove harmful litter from our waters to protect aquatic life.

## Watershed Association Manager's Message



Rémi Donelle is the Manager of the Shediac Bay Watershed Association since 2013. A board of directors, consisting of 20 citizens from the region, is responsible for administering the organization.

Summer 2018 was hot and dry, but our fieldwork team was still able to complete several projects during this period.

I am particularly pleased with the eelgrass bed assessment and restoration project, which was carried out in partnership with the Homarus Eco-Centre and the Southern Gulf of St. Lawrence Coalition on Sustainability.

Working in partnership is one of the keys to the success of our projects. We have established good working relationships with neighbouring watershed organizations, municipalities and various federal and provincial departments.

The result is a great diversity of projects that we present in this newsletter.





## Culvert Assessment for Better Fish Passage

During the summer our organization has put a lot of effort in implementing culvert assessments in the streams and rivers flowing within our watershed. Our staff received training and is collaborating with surrounding watershed groups using the Atlantic Canada Culvert Assessment Toolkit (ACCAT), a standardized protocol for culvert assessments.

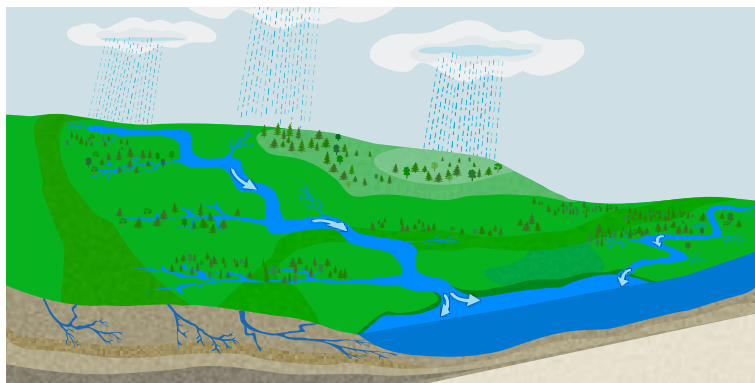
Aquatic connectivity is crucial for the health of a watershed, as it allows proper water levels and

flow for the passage of fish and other aquatic species. In our watershed, these culvert assessments focus on two important species, the Atlantic salmon and the rare Brook Floater freshwater mussel that needs host fish to reproduce.

Over the years, culverts sometimes prevent aquatic connectivity by creating barriers to fish passage. The classification of culverts determines if a culvert is passable, a partial

barrier or a full barrier for fish, therefore requiring restoration. Remedial options can be determined depending of the culvert measurements using the chart in the assessment protocol. So far, over 20 culverts have been assessed and classified within the Shediac and Scoudouc Rivers and tributaries where there are salmon populations and possible presence of the brook floater mussel.

## We all Live in a Watershed



A watershed is a region in which rainwater and snowmelt flow toward a common body of water, such as a river, lake, or bay. Following the natural slope of the landscape, water travels over the surface and across farm fields, forests, lawns, parking lots and streets, or it seeps into the soil and travels as groundwater.

Our watershed is composed of various ecosystems like streams, rivers, forests, fields, wetlands, marshes and coastal estuaries. They serve as habitats to numerous species of fish, animals and plants. Just like them, we all live in a watershed, since our towns and villages are a part of them.

The Shediac Bay watershed area covers 420 km<sup>2</sup> of land and stretches along approximately 36 km of coastline, from Cap-de-Cocagne to Cap-Bimet. Its boundaries extend inland from Scoudouc to Lutes Mountain.

## Restoration of Streambanks for Water Quality and Biodiversity

Conserving natural vegetation along watercourses and around marshes is important for preserving water quality and biodiversity. For several years, we have been using various riverbank restoration techniques. First we identify areas where there are few trees and shrubs and replant native species that adapt to this environment.

Some trees come from local nurseries while others are transplanted from restoration nurseries we have set up in some schoolyards and in Shediac's community garden.

If you have land located along a stream or marsh that you want to reforest, please contact us.





## Stormwater Runoff and Water Conservation

Streets, parking lots, roofs and compacted lawns do not absorb water. Rain and melting snow that flow over these surfaces are called stormwater runoff. This runoff picks up pollutants such as pesticides, petroleum products and animal waste that are present on some of these surfaces. These pollutants are washed into storm drains, ditches, small streams and rivers that flow into the Shediac Bay.

There are many solutions that can help prevent stormwater runoff in our watershed. Rain barrels that collect water from roofs retain and slow down the flow of water. As a bonus, they also help conserve drinking water that would be used for watering gardens and other uses.

Natural and artificial wetlands, infiltration trenches, permeable pavement and rain gardens soak up, filter

and slow down polluted stormwater runoff before it reaches the storm drains. These solutions are cost effective because they also help prevent erosion and damage to municipal infrastructures like streets and storm drain systems.

In recent months, we have been raising public awareness on the importance of reducing stormwater runoff and conserving drinking water. Our efforts include public presentations, a kiosk at the Shediac market, pamphlets and social media publications.

In addition to distributing over 100 free rain barrels to the residents of the watershed since 2016, two rain gardens have also been built. One of them is located near the St. Joseph Vestiare parking lot and another one was built with the help of students at the Shediac Cape School.



## Invasive Species: Green Crab Population Monitoring Continues

Since 2013, we have been monitoring the European green crab in Shediac Bay. Our survey involves setting traps once a month in 10 locations around the bay for a 24-hour period.

Green crabs consume several species of molluscs and crustaceans. They are also a threat to vital eelgrass habitat that many migratory birds and fish species rely on.

We post a report on our website that is updated every year. Here are the sampling results from 2013 to 2018.

	May	June	July	August	Sept.
2013	15	28	22	43	59
2014	5	47	67	106	46
2015	3	1	5	9	59
2016	119	154	275	263	117
2017	65	72	116	197	158
2018	39	49	222	99	*

The figures in the table indicate the total number of crabs for each of the sampling periods. \* The results for September 2018 will be posted on our website at the end of the month.

## Using DNA to Find a Rare Freshwater Mussel



Freshwater mussels are shellfish that live in our rivers. Just like their saltwater cousins, they are filter feeders. That means that they provide the ecological service of improving water quality by filtering out organic particles.

Again this year, our fieldwork team has been on the lookout for a rare freshwater mussel species called the Brook Floater, whose population status is of special concern on the Species at Risk Public Registry. The mussel was once said to inhabit the Shediac and Scoudouc Rivers,

however, no sign of the species has been detected in recent years.

In partnership with the Department of Fisheries and Oceans, we have increased environmental DNA sampling in the hope of confirming its presence in our rivers. Water samples were taken from habitats suitable for this rare mussel. These samples will be analyzed to detect the DNA of the brook floater in water. The results will be known this winter.





## Water Quality in Streams and Rivers in our Watershed

Water quality is a concern and has become an important topic in the media. The association has been measuring water quality in the Shediac and Scoudouc rivers since 2000.

In 2016, we added new monitoring sites along the small streams that flow into Shediac Bay. The vast majority of the samples we take indicate good water quality in our streams and rivers. On the other hand, some sites appear to have an excess of nutrients or the presence of bacteria.

We have identified priority areas and we are working with waterfront landowners to improve the streambanks over the next few years.




### Contact Info

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For more information please visit our website or follow our Facebook page:

[www.shediabayassociation.org](http://www.shediabayassociation.org)

 [www.facebook.com/shediabaywatershedassociation](https://www.facebook.com/shediabaywatershedassociation)

### Current News

#### Contributors:

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## Featured species - Atlantic Salmon



Young salmon (parr)

The Atlantic Salmon is native to rivers draining into the North Atlantic Ocean. It's one of 87 species of fish that migrates from freshwater to salt water.

We can find the Atlantic Salmon in the Shediac Bay when they return from the ocean swimming upstream in the Scoudouc and Shediac Rivers to spawn. They lay their eggs in sections of the rivers that have gravelly bottoms. The depression that the female makes to place her eggs is called a redd. The Shediac Bay Watershed Association staff have found redds in sections of the Shediac River.

Young Atlantic Salmon will spend one to three years in the rivers before migrating to the Atlantic Ocean. They then spend one to four years in the ocean before returning to spawn in the same river where they were born.

Salmon are sensitive to the water temperature in rivers. Temperatures over 25°C can reduce survival rates. Keeping trees along the riverbanks helps control the water temperature.

Other threats to Atlantic Salmon in the Shediac Bay watershed include barriers in rivers such as



Adult salmon

culverts and dams that can prevent adult salmon from migrating to their spawning grounds. Our organization works in collaboration with the Atlantic Salmon Conservation Foundation and the NB Wildlife Trust Fund to improve salmon habitat and reduce barriers to fish migration.

*Phylum: Chordata (the Chordates)*  
*Class: Osteichthyes (the Bony Fishes)*  
*Order: Salmoniformes*  
*Family: Salmonidae*  
*Genus: Salmo*  
*Species: Salmo salar*



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This project was undertaken with the financial support of:  
Ce projet a été réalisé avec l'appui financier de :



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Climate Change Canada

Environnement et  
Changement climatique Canada

