

Welcome to your Bedford Sackville Connector Greenway BioKit Circuit. Use the activities in this circuit, along with the HRM Urban BioKit, to explore the natural treasures and unique places in this park – utilizing your keen powers of observation. In addition to the material required for the BioKit, you will need a **clear plastic jar**.

**Location:** Along the Sackville River, beginning at the Bedford Place Mall (River Lane) and ending at the junction of the Sackville River and the Little Sackville River (Lynn Crescent).

## Floodplains

**1** *Near the Range Park parking lot*  
**GPS: N 44° 44.360' W 63° 39.358'**

*This rich diverse landscape is one of the more complex ecosystems in the Acadian forest. Many plants here are adapted to seasonal flooding and can live on land and in water. Floodplains can fill with water at certain times of the year and become different ecosystems that provide habitat to a new variety of species.*

*Imagine a plant that could live in water and on the land. Draw one of the plants that you see and look for differences that help it to live in both environments.*

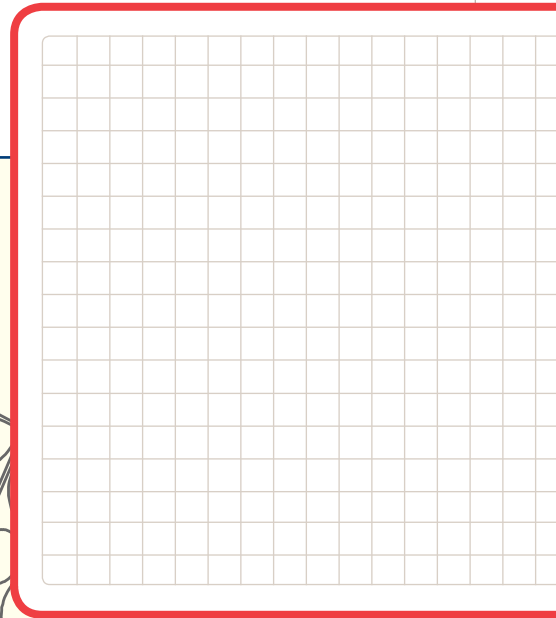


Photo: © Sackville Rivers Association



## HISTORY

Before Europeans settled in the Sackville River area, the region was an important meeting place for the Mi'kmaq First Nations during summer months. The first major settlement of the area began in 1749 when the British constructed Fort Sackville to defend Halifax from French and Indian attacks. During the 1800s, industrial development along the river included sawmills, paper mills and woolen mills, which flourished alongside farms and resort businesses until the late 1920s. Today the Bedford–Sackville area is a major suburban region of about 60 000 people, most of whom live within the watershed.

Endangered species of this habitat include the monarch butterfly, wood turtle, Peregrine Falcon, Short-eared Owl, Atlantic salmon and Barrow's Goldeneye Duck. Thanks to community groups such as the Sackville River Association, efforts have been made to clean and restore this waterway.



Map: © HRM

**2 Along Highway 102, close to the small marsh**  
**GPS: N 44° 44.566' W 63° 39.534'**

During the spring melt, this area of the marsh becomes flooded. After the water recedes, fish, aquatic insects and amphibians are left trapped in the marsh. Many will spend a great deal of time in this location, then are either consumed or manage to escape.

## Quaternary Consumers



**Osprey**



**Eagles** Photo: © Parks Canada, A. Guindon



**Foxes** Photo: © Parks Canada, J. Pleau

## Tertiary Consumers



**Mink** Photo: © Parks Canada



**Raccoons** Photo: © Parks Canada, P. Lavers



**Hérons** Photo: © Parks Canada, A. Guindon



## Secondary Consumers



**Fish** Photo: © Parks Canada, J. Pleau



**Mice** Photo: © Parks Canada, I. McDonald



**Frogs** Photo: © Parks Canada, W. Lynch

## Primary Consumers



**Minnows**



**Geese** Photo: © Parks Canada, A. Guindon



**Grasshoppers** Photo: © Parks Canada, A. Guindon



## Primary Producers



**Plants** Photo: © Parks Canada, D.A. Wilkes



**Algae**



## Decomposers



**Flies**



**Other invertebrates**



**Fungi** Photo: © S. Deland

## Predator's Prey

Explore the surrounding area and create your own food web for the river system:

1. Scan the skies and waters for 10 minutes, then in the chart below circle any creatures you've seen.
2. Try to connect the different levels of the food chain by drawing a line between a consumer and what it eats.
3. If you see a species not listed below, draw or label your observation in the appropriate empty box.





Photo: © Getty Images

## ROCK SILLS

**3** On the bridge near the Bedford Rifle Range  
GPS: N 44° 44.850' W 63° 39.589'

Looking upstream from this point you may notice some breaks in the water flow that are created by straight lines of stones across the river.

These V-shaped barriers were installed by the Sackville Rivers Association to help restore the river to its natural flow path, which is S-shaped. They are designed to boost fish survival by creating natural resting and feeding areas for spawning salmon.



Photo: © Sackville Rivers Association

## Riverside Forest

**4** GPS: N 44° 44.878' W 63° 39.685'

To be healthy, a river ecosystem must be surrounded by trees and other plants. Trees and other plants help to protect delicate aquatic life, by controlling the influences of the sun, wind and water.

From this point, note the transition in temperature and climate as you enter the shaded grove of trees. **How have the following elements changed?**

Temperature: \_\_\_\_\_

Wind: \_\_\_\_\_

Amount of wildlife: \_\_\_\_\_

Level of shade: \_\_\_\_\_

Level and type of noises: \_\_\_\_\_

During the summer, more insects are present in this forested area, because the trees and shrubs provide protection. So keep your eyes and ears open for:

### Dragonflies



Photo: © Parks Canada, J. Pleau

### Cicadas



Photo: © Insectarium de Montréal, André Payette

### Damselflies



Photo: © Parks Canada, A. Holbrook

## BRIDGE TO DEVELOPMENT

### 5 On the bridge close to Highway 101

GPS: N 44° 45.065' W 63° 39.916'

This bridge is a good place to observe how much the river has been changed. You can see how this once S-shaped river has been made straight to allow for the construction of the highway. The highway and surrounding residential area have become an enormous source of pollution.

**Which of the following harmful sources of pollution can you observe around you?**

- ☐ **Roads** (oil, gas and litter)
- ☐ **Houses** (state fertilizers, sewage, garbage and debris from construction)
- ☐ **Cars** (exhaust, litter and oil)
- ☐ **Construction sites** (debris, chemicals and paint)
- ☐ **Landfills** (garbage)

Photo: © Getty Images



Photo: © Getty Images



## Two Rivers

### 6 GPS: N 44° 45.182' W 63° 40.101'

Looking out from the bridge here, you can clearly see the coming together of two rivers: the Sackville and the Little Sackville. This is a great location to observe fish and other aquatic life in both rivers, including the movement of Atlantic salmon upstream during the autumn spawning run.

### Did You Know...

Atlantic salmon have the ability to swim up to 30 kilometres per hour and jump up to 4 metres into the air. They can swim 4000 kilometres at sea and yet still find their way back to the streams where they were born.



Monitoring Atlantic salmon in the Kouchibouguac National Park

Photo: © Parks Canada, P. Lawn

## Life Cycle of the Atlantic Salmon

**Stage 6:** Spawning occurs in late autumn. Males change to reddish brown and develop a hooked lower jaw. Females change to a reddish colour, more muted in tone than the male.

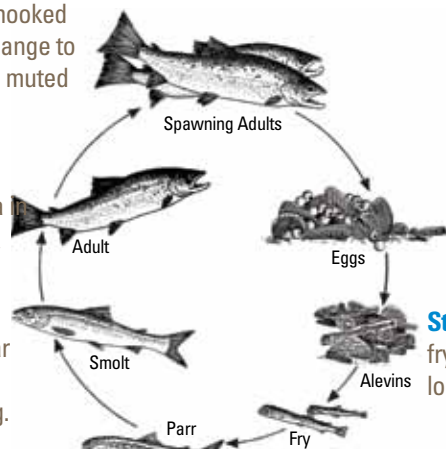
**Stage 5:** Adult salmon returning from the sea in late spring are silvery, with a touch of lilac.

**Stage 4:** Smolts appear as small adult salmon, 10-24 centimetres long. The parr markings are replaced by silvery scales. They also develop the ability to live in salt water.

**Stage 3:** Fry grow into parr, which are recognized by their dark vertical markings and single red dot between each mark.

**Stage 1:** The eggs hatch into alevins in late spring. Alevins still have the yolk sac attached.

**Stage 2:** Alevins grow into fry, which are 5-8 centimetres long and look like minnows.



*If you can see any salmon, try to match their colour and shape to one of the transformation stages above.*

**Draw a picture of any fish you spot in the river, and indicate their colours:**

**When you return home, try to identify the fish you observed with an identification guide available at your library or on the Internet.**

## Resources:

- Sackville Rivers Association  
[sackvillerivers.ns.ca](http://sackvillerivers.ns.ca)
- Nova Scotia Salmon Association  
[novascotiasalmon.ns.ca](http://novascotiasalmon.ns.ca)
- Biosphere  
[ec.gc.ca/biosphere](http://ec.gc.ca/biosphere)