FIELD RECORD
LIVE-STREAM YOUR RIVER

Name

Observation Date

Education
and Water Monitoring
Action Group

PRODUCTION

Education and Water Monitoring Action Group (G3E)

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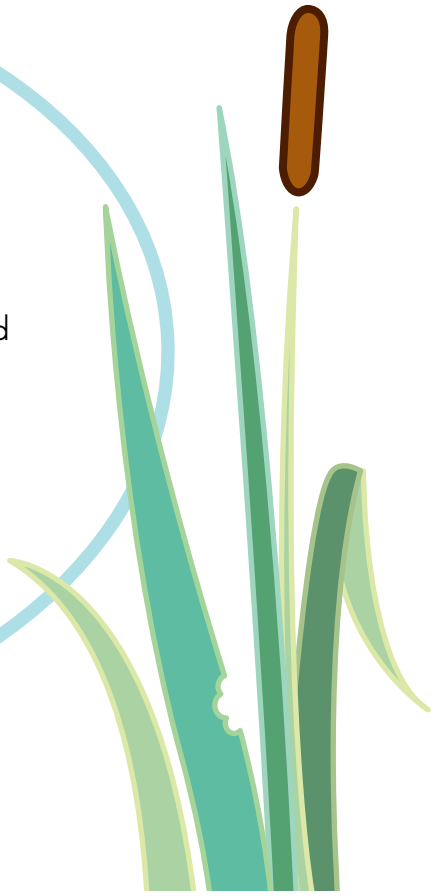
TELUS MD

How's your river doing?

Rivers and streams play vital roles in our communities. They are sources of drinking water, places to relax, and wildlife refuges. They have shaped our history and supported our development.

Is your river doing well? Here's a chance to explore it, assess its health, and share your discoveries.



1

Observations and commentaries

Take action!

Now that you know a little more about the river and its health, why not do something to improve or conserve it?

Here are a few ideas:

1. Go to the G3E website to upload your results and share your discoveries.
2. On the G3E webpage, discover some of the river-friendly actions and gestures you can make.
3. Take part in a water-monitoring educational program.
4. Get involved with your local watershed organization.
5. Talk to your friends and family about this field record.
6. And above all, continue to learn about and enjoy the diversity of our rivers and streams.

G3E

The Education and Water Monitoring Action Group

Since 1989, G3E has developed programs that encourage people of all ages to learn about aquatic ecosystems and take an active part in protecting them.

Our team of professionals enjoys sharing its knowledge of rivers and streams and training "water agents" so they can then work in partnership with citizens.

Our goal is for every community to keep an eye on one of its most precious resources: water.

How the *LIVE-STREAM YOUR RIVER* field record works.

1. **Gather your equipment :** GPS*, camera*, pencil.

   * ***Optional.*** *Please note, however, that if you want your station's results to be included in the G3E database, you will need to determine its GPS coordinates and take a photograph. You will also need to enter your results into the database.*

2. **Choose a river or stream.**
3. **Select a 50-metre stretch** as your study station.
4. Observe the environment of your station and **answer the eight questions** in the field record.
5. **Record your results** in the "Diagnostic" section of the field record to get an overview of your river's status.
6. **Upload your results at www.g3e-ewag.ca.**
7. **View your results on the G3E interactive map.**

Have fun!

Diagnostic

Compile your answers here to get an overview of your river's health.

Step	Answers a.	b.	c.
2. Human activity	2	1	0
3. Garbage	2	1	0
4. Vegetation	2	1	0
5. Riverbank stability	2	1	0
6. Water appearance	2	1	0
7. Macroinvertebrates	2	1	0
8. Other animals	2	1	0
Subtotals			
Total			

0 to 5 points: A number of significant factors appear to be disturbing your station.
6 to 10 points: Several significant factors appear to be disturbing your station.
11 to 14 points: Your station appears to be relatively undisturbed.

Did you know…

A wildlife habitat is any place inhabited by at least one animal species.

The animal must find everything it needs to satisfy its basic needs there: breeding sites, sources of food, shelter and places to rest, and, of course, water in sufficient quantities and of sufficient quality.

This is true of both land animals and aquatic animals. So a healthy river or stream will promote greater biodiversity.

Step 1

If you have access to the necessary equipment.

Note the coordinates of your stream with the GPS:

_____ *Latitude*

_____ *Longitude*

Take a picture of the river or stream.

Position yourself at the downstream end of your station and look upstream.

Take a picture that includes both riverbanks. Your station extends 50 metres upstream.

Example of picture – Source: MDDEP

DOWNSTREAM
The lowest section of the stream or river, in the direction of the water flow (water always flows from upstream to downstream).

UPSTREAM
The highest section of the stream or river, in the direction of where the water is coming from.

Did you know...

Water is the source of life!

Some people travel kilometres every day just to get water. We use this resource in many different ways to meet our everyday needs. For instance, we use it in electricity production, farming, recreational activities, and in our homes. So water is something we must pay special attention to.

We all need to get our feet wet to protect streams and rivers. Every act, however small, can make a difference. But before you act, it's important to get to know your river, and understanding a few key concepts will help.

Step 8

Fish, birds, frogs, insects, and squirrels are some of the wild animals you may observe or hear near your stream or river.

Do you see or hear any wild animals at your study station?

I can see or hear :

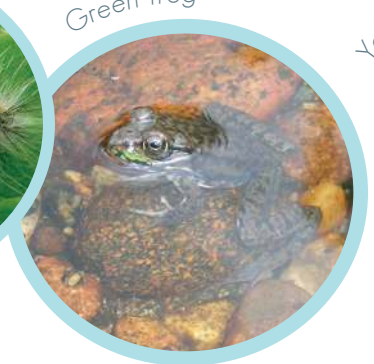
- ○ **a.** Five or more different wild animals
- ○ **b.** One to four different wild animals
- ○ **c.** No wild animals


Eastern chipmunk


Black-capped Chickadee


Flower fly


Yellow-spotted salamander


Green frog


Gypsy moth caterpillar

Did you know...

Benthic macroinvertebrates are an important link in the food chain. They are a food source for many fish, amphibians and birds.

The presence of certain species, and their abundance, are signs that a river or stream is in good health.

BENTHIC MACROINVERTEBRATES
Animals that lack spines, are visible to the naked eye, and that live at the bottom of lakes and rivers.

Step 2

Does your river show signs of human activity?

(Do not consider footpaths as a sign of human activity.)

- ○ **a.** No sign of human activity
- ○ **b.** One or two signs of human activity
- ○ **c.** More than two signs of human activity

Examples: building, **retaining wall**, bridge, pipe, lawn, farmland.

RETAINING WALL
Wall whose purpose is to hold back soil or resist other materials.

Source: MDDEP

Source: MDDEP

CONDUIT NETWORKS
All of the pipes and conduits used to distribute water, gas or electricity and to drain away wastewater and rain runoff.

SHORELINE DEFORESTATION
Deforestation is the result of logging and land clearing to create farmland, of excessive or unplanned exploitation of certain forest species, and of urbanization.

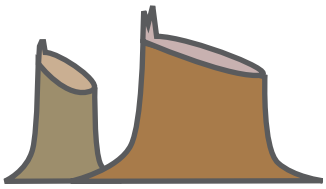
STRAIGHTENING
Development work that straightens a portion of a riverbed, especially in order to increase water flow rate.

BIODIVERSITY
Also called river's *biological diversity*, it refers to the variety of species (plants and animals) that live in or near it and the ecosystems it encompasses.

Did you know…

Humans have long modified rivers and aquatic environments for their own purposes (conduit networks, dams, shoreline deforestation, straightening, etc.). Unfortunately, such changes can degrade aquatic and riparian habitats.

So human activity can have important repercussions on how aquatic ecosystems function. This can lead to a loss of biodiversity and cause these environments to become unsuitable for certain human uses such as swimming, recreation, and drinking water.



Step 7

Insect larvae, crustaceans and molluscs are called benthic macroinvertebrates.

Observe the riverbed. If there are rocks, lift up three of them. Do you see any small organisms living on them?

On at least one of the rocks there are:

- ○ **a.** over five benthic macroinvertebrates
- ○ **b.** one to five benthic macroinvertebrates
- ○ **c.** no benthic macroinvertebrates

Examples…

Caddisfly larvae in their cases

Mayfly larva

Dragonfly larva

Source: MDDEP

Did you know…

Many factors affect water clarity…

… such as particles of minerals (sand, silt and clay), suspended organic matter (plant debris, microorganisms, algae), and dissolved organic matter (tannins, pigments). They can be of natural or human origin.

If it is of human origin, a lack of water clarity can indicate problems such as soil erosion, the presence of suspended particulates, or the introduction of organic matter (e.g., from construction sites, farming activities, logging, or industrial or household waste). These suspended particulates can be harmful to fish and other organisms.

Step 3

Do you see any garbage in the water or on the riverbanks?

- ○ **a.** No garbage
- ○ **b.** Between one and five pieces of garbage
- ○ **c.** Over five pieces of garbage

Examples: bottles, cans, plastic bags, cardboard, and tires.

Source: MDDEP

Source: OBV de la Capitale

Did you know…

BIODEGRADABLE
Refers to a material or product that can be completely decomposed by living organisms.

Some garbage is biodegradable, but most will take many years to degrade, and some won't degrade at all. For example, plastics can take from 100 to 1,000 years to degrade. That's why it's so important for everyone to make an effort to remove their garbage.

Did you know that river garbage is a threat to wildlife?
Some animals ingest garbage or get tangled up in it.

Step 6

Is the water clear?

- ○ **a.** The water is clear;
  the bottom is clearly visible to a depth of about 30 cm.
- ○ **b.** The water is slightly cloudy or coloured;
  you can see the bottom, at least partially, to a depth of about 30 cm.
- ○ **c.** The water is cloudy or coloured;
  you can't see the bottom.

Did you know…

FLOODWATERS
Significant increase in water flow (and as a result, in the water level) of a river, lake or a reservoir, usually caused by precipitation or melting snow.

SURFACE SEALING
Making the ground impenetrable so that water cannot seep into the soil or can only seep in with difficulty, for example by paving it with asphalt.

RUNOFF
Rainwater flowing over the soil's surface.

Floodwaters are likely to be higher and occur more frequently when there are no trees, shrubs or vegetation on riverbanks, since this promotes erosion.

Unstable riverbanks can add significant amounts of suspended particulates to rivers and streams, and this can harm the animals that live there.

Human changes to the environment such as surface sealing in urban areas or trampling by livestock can promote riverbank erosion. Surface sealing increases runoff and the risk of flooding.

Step 4

What types of vegetation do you see on the riverbanks?

- **a.** Abundance of trees and shrubs:
  over 20 trees and shrubs observed
- **b.** A few trees and shrubs present:
  fewer than 20 trees and shrubs observed
- **c.** No trees or shrubs:
  presence of grass or bare soil

a.

Source: MDDEP

b.

Source: MDDEP

c.

Did you know…

A riparian strip is a band of vegetation along the edge of a stream or river. Ideally, it is made up of grasses, shrubs and trees. This transition zone is a rich habitat that's home to many animal species.

BENTHIC MACROINVERTEBRATES
Animals that lack spines, are visible to the naked eye, and that live at the bottom of lakes and rivers.

A riparian strip:

- regulates water temperature by shading the river or stream;
- supplies food, such as insects, for fish;
- filters out pollutants;
- stabilizes riverbanks, thereby reducing erosion and, hence, the amount of particulates suspended in the water;
- creates habitats for benthic macroinvertebrates (by accumulating organic debris they can use as shelter);
- creates habitats for fish (when trees, branches and snags fall into the water and create pools).

Step 5

Are the banks of the river or stream stable?

- a. Banks are stables
- b. Banks are somewhat unstable (several signs of instability, but nothing major).
- c. Banks are very unstable (significant slide of embankment over a long distance, lack of vegetation, or completely exposed roots)

EMBANKMENT
Sloped edge of a trench or canal, or the inclined face of an embankment.

A few signs of unstable banks:

- Lack of shrubs and trees
- Steep slope (over 60 degrees)
- Slide or collapse of embankment.
- Damaged vegetation, tree roots visible