

# Working towards a Water Strategy for New Brunswick :

## Monitoring and Reporting



### New Brunswick Today

In New Brunswick, both drinking water and non-drinking water sources are monitored for water quality and quantity.

As part of provincial monitoring programs, water quantity is measured by collecting data from hydrometric, ground water level and precipitation gauges. Water quality is measured by collecting water samples and analyzing the water to make sure it meets water quality standards. Some of the water monitoring programs are part of Provincial / Federal agreements and partnerships.

Water quality monitoring programs are carried out to determine if there have been any changes in water quality and if so, why?

Monitoring programs are an important aspect of water planning, assessing, and understanding long-term trends of water quality. They also indicate when protective measures may be required to address a problem.

### Water Quantity

New Brunswick has a good supply of water overall, but variations in geography, geology, climate and the hydrologic cycle can have an impact on the quantity of water available in a given area.

Information about water quantity (e.g. groundwater levels, streamflow data and geological information) is used by a wide audience in infrastructure planning, developing drinking water supplies and forecasting water availability.

Each month the Department of Environment and Local Government prepares a water resources report. These reports provide information on precipitation (amount of rain and snowfall that have fallen), the volume of water flowing in rivers and streams, and water levels in selected groundwater monitoring wells that are used to keep track of groundwater levels. An outlook is also provided, giving general information on potential water availability.

In addition, River Watch is a monitoring program that assesses ice conditions and forecasts water levels in the St. John River and its tributaries. This is used to inform the public about potential threats from flooding and ice damage.

### Water Quality

#### Surface Water

The water quality of a river or lake determines what it can be used for. Water that is acceptable for some uses

may not be suitable for others. For example, the quality of water in a lake or river may be suitable for swimming but not for drinking.

On the other hand, scientists are interested in the types and amounts of substances found in water and what those substances can do to the ecosystem. Different land use activities have the potential to contaminate drinking water supplies and the water resources on which aquatic life depends.

While there are a variety of naturally occurring bacteria and minerals that can affect water quality, human activity has the potential for having the greatest impact on water quality. This could include substances in the air that are collected by rainfall and enter the hydrologic cycle, run-off from urban areas, as well as industrial, farming, mining and forestry activities.

Drinking water supplied by surface water watersheds, such as lakes and rivers, is analyzed on a regular basis at specific locations (e.g. where the water is collected) as part of the water quality monitoring plan.

### Watersheds

A watershed consists of two major components, water and land, and is made up of many watercourses and the land surrounding them, all of which drain into a specific point at a lower elevation.

New Brunswick is made up of 13 major watersheds. They are the: Acadian Peninsula Composite, Chaleur Bay Composite, East Fundy Composite, Fundy Islands Composite, Inner Bay of Fundy Composite, Miramichi River, Nepisiguit River, Northumberland Strait Composite, Petitcodiac River, Restigouche River, Saint John River, West Fundy Composite and St. Croix River.

Surface water quality varies throughout New Brunswick. There are three main factors that affect water quality:

- Water quantity – the amount of water available affects its quality. The less water there is, the lower the capacity to dilute wastes;
- Point sources – end of pipe sources of contaminants, such as discharge of treated wastewater, known as effluents;
- Non-point sources – these are sources of contaminants that cannot be easily traced, such as contaminants that enter water bodies through storm drains.

We all have a responsibility to care for our watersheds. When we do not take precautions, the health of our lakes and other water bodies may be compromised.

Healthy, functioning watersheds provide clean and abundant water resources to agricultural, municipal, industrial and recreational users and they contribute to the overall health of the environment and the quality of life of New Brunswickers.

## Groundwater and Aquifers

Much of the world's fresh water is found underground in the small spaces between soil particles and fractures of rock, much like a sponge holds water. Porous layers of rock and soil where large quantities of water are stored are called aquifers.

Many aquifers are composed of thick deposits of sands and gravel previously laid down by glacial systems. For example, this type of aquifer provides most of the water supply for the Fredericton area of New Brunswick.

Drinking water can be extracted from aquifers by drilling water wells. Both private wells and municipal wells obtain their water supplies from groundwater.

Certain activities carried out around water wells could directly influence the quality of the drinking water. If a groundwater source becomes contaminated it can affect the lives of an individual or an entire community.

The protection of these ground water sources is essential to maintaining the health and quality of life of New Brunswickers.

One drop of oil can render up to 25 litres of water unfit for drinking.

## Protection in New Brunswick

The *Clean Water Act* and its various regulations provide a framework for water protection in New Brunswick. The *Potable Water Regulation* establishes drinking water requirements. This

Regulation requires regular testing of public water supplies, and testing by domestic well owners when new wells are constructed or existing wells are deepened or redeveloped. The *Water Well Regulation* ensures proper well construction standards are followed.

The *Watershed and Wellfield Protected Areas Designation Orders* identify the allowable activities in designated drinking water supply areas.

Approvals are required under the *Water Quality Regulation* to discharge used water (effluent) or any substance into a body of water as part of an industrial process. Approvals are also issued for the construction and operation of water and wastewater facilities.

What you can do to protect water quality:

- Use environmentally friendly products when possible.
- Properly maintain your private septic system.
- Avoid using pesticides or other hazardous materials in your garden.
- Avoid dumping hazardous products into storm drains.

For more information contact:

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