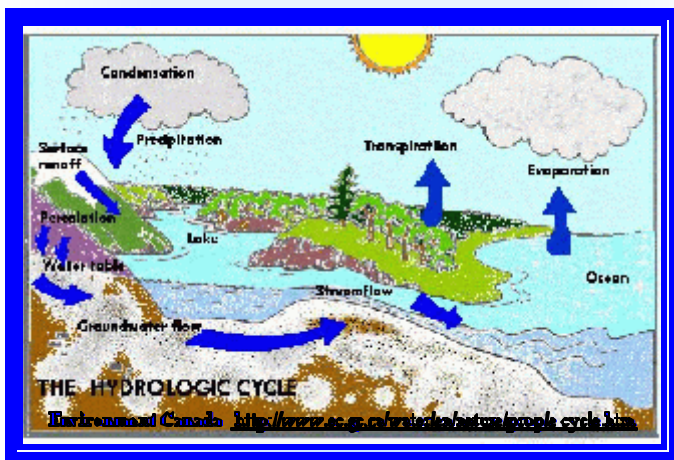


The Water Cycle

Water is an essential part of our everyday lives. We wash with it, drink it, swim in it, and use it to water our lawns and gardens. Did you know that water is recycled more than any other consumer product? Over 70% of the earth is covered in water, but only about 5% is fresh, and even less is available for our use. Water occurs as precipitation in either the form of snow or rain and falls onto the ground surface. Some of this water runs over the ground surface into water bodies like lakes and rivers. Some of the water infiltrates into the ground and enters the groundwater below the land surface. Evaporation and transpiration occur and water vapor returns to the clouds where the whole process began.



Did you know?

The chlorine taste can be removed by filtering your water through an activated carbon filter to remove unpleasant tastes and odours. Placing a jug in the fridge will allow time for chlorine to decrease naturally.

Sources of Water

In Nova Scotia we rely on two main sources of water: groundwater and surface water. Groundwater is water that is stored below the earth's surface and can supply water to wells, springs, and surface water. Surface water is all the water found in lakes, streams, and rivers. Groundwater derived from properly constructed wells is usually a safe water source, because the overlying soil acts as a filter, removing disease-causing microorganisms and particulate matter. Surface water has a greater potential for contamination based on human activity in the watershed near or upstream of the water source. Runoff from industrial sites, forestry, and agricultural operations can cause water quality impacts in surface waters. If you have an individual water supply, whether groundwater or surface water, test it regularly for bacterial and chemical quality. Testing is the only way to know that your water supply is safe. Sometimes water supplies do become contaminated from natural or manmade sources.

A few examples of contaminant sources include:

- industrial and municipal wastes
- underground storage tanks and other petroleum products
- domestic sewage
- road salt
- agricultural activities (fertilizers, manure)
- geologic formations (salt, arsenic, uranium)
- sea water intrusion
- pesticides

Did you know?

95% of roadside springs tested between 1999 and 2001 had total coliform present. Most roadside springs are not routinely tested and monitored, and are not adequately constructed and protected against surface contaminants. Therefore most springs are NOT considered as reliable, safe, water supplies for human consumption. IF you still choose to use such springs, it is best to consider them as under a boil water advisory, and to boil the water for 3 to 5 minutes for any uses involving human consumption.

How to Protect Your Source

About half of Nova Scotians depend on groundwater for their water supply. If you have your own groundwater supply from a well, you can check this list for some measures to protect your water supply:

- ‘ Properly locate your well at an elevation higher than potential sources of contamination, and meet required separation distances from these sources.
- ‘ Prevent ponding of water at or near the well and direct surface runoff away from the well.
- ‘ Use a vermin proof cap with shielded and screened vents and make sure it is securely placed and undamaged.
- ‘ Make sure that the casing has no holes or cracks and that there are no gaps between the casing and the ground around it.
- ‘ For dug wells, ensure that all joints and connections in the well casing are not leaking, and that vents are shielded and screened.
- ‘ Do not pour waste oil, paints, pesticides, and other products on the ground. Dispose of them at the proper facilities.
- ‘ Do not bury brush piles, stumps or other such debris on your property, especially near to or upgradient of a dug well.
- ‘ Keep animals from urinating or defecating near the well.
- ‘ Grow a grass buffer around the well and avoid the use or storage of fertilizers, pesticides, bark mulch, wood chips, and other products near the well, especially for dug wells.
- ‘ Have unused wells properly abandoned.

For more details on well construction, see “Before You Construct a Well” booklet, or go to the Department of Environment and Labour webpage <http://www.gov.ns.ca/enla/water/>

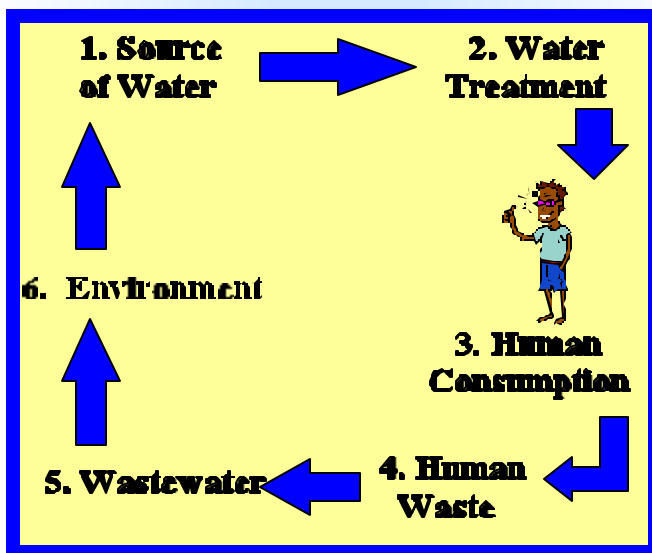
In order to protect water sources for present and future use, many municipal supplies either have, or are in the process of developing, a watershed (surface water) or wellhead (groundwater) protection plan. If you are dependant on a municipal water supply, the main things you as an individual can do to prevent the contamination of your water supply are:

- G Properly disposing of hazardous materials, so they do not end up in your usable water supply.
- G Be environmentally aware, and do your part to keep our land and waters clean.
- G Become involved in water management issues and groups in your community.

Whether you are on a municipal or an individual water supply, water conservation is a wise practice. Our water supplies are not unlimited!

Treatment

The treatment involved in supplying water to your tap follows a cycle. Water is supplied from a source, and treated at a water treatment facility. The water is then distributed to your home to use. Disposal



occurs through the use of drains and toilets. The water then ends up at a wastewater treatment facility, where it is treated and returned again to the environment. The whole cycle is repeated again.

To treat your individual water supply, a similar process occurs. Treatment may be required for hardness, iron, manganese, or other dissolved components. Instead of a water treatment facility, treatment units can be installed in your home. Your water system must be properly maintained to work at its best. Instead of a water treatment facility, your waste is treated by an onsite sewage disposal system. The efficiency of your entire water system depends on the proper selection or design of the system, properties of your soil, and proper maintenance of your onsite system. For more details on these systems, see the booklet 'Before You Construct an Onsite Sewage System' and other information available on the Department of Environment and Labour website <http://gov.ns.ca/enla/emc/qpersons>.

Did you know?

There are 82 Municipal water treatment facilities in Nova Scotia. They serve populations of 508, 000 people. The most common disinfectant used in these treatment facilities is some form of chlorine.

Why do we treat water?

Drinking water should be treated if necessary to ensure compliance with various criteria specified in Health Canada's Guidelines for Canadian Drinking Water Quality. These criteria are based on both health and aesthetic concerns. In Nova Scotia, public drinking water supplies must be monitored according to the Guidelines for Monitoring Public Drinking Water Supplies. These guidelines and the Regulations they are under are available on the NSDEL website at <http://www.gov.ns.ca/enla/water/>. To ensure that public drinking water supplies in Nova Scotia are safe for human consumption, the required monitoring program should be part of a comprehensive water supply protection program, and part of an ongoing maintenance and optimization of the water treatment and distribution systems.

Testing, monitoring and treatment of private water supplies are the responsibility of the owner. If you are an owner, test your water regularly. If you notice a change in your drinking water quality, contact the Department of Environment and Labour office nearest you.

Think about it next time you turn on the tap!

