

EXTENSION NOTES



PRESERVING WATER QUALITY

We call it “Earth” but three-quarters of our planet is actually covered in water. Of that amount, 97 per cent is salt water in oceans and seas. The remaining three per cent is fresh water, but nearly all of it is trapped in glaciers and polar ice. In reality, only a fraction of the world's water can sustain creatures like us.

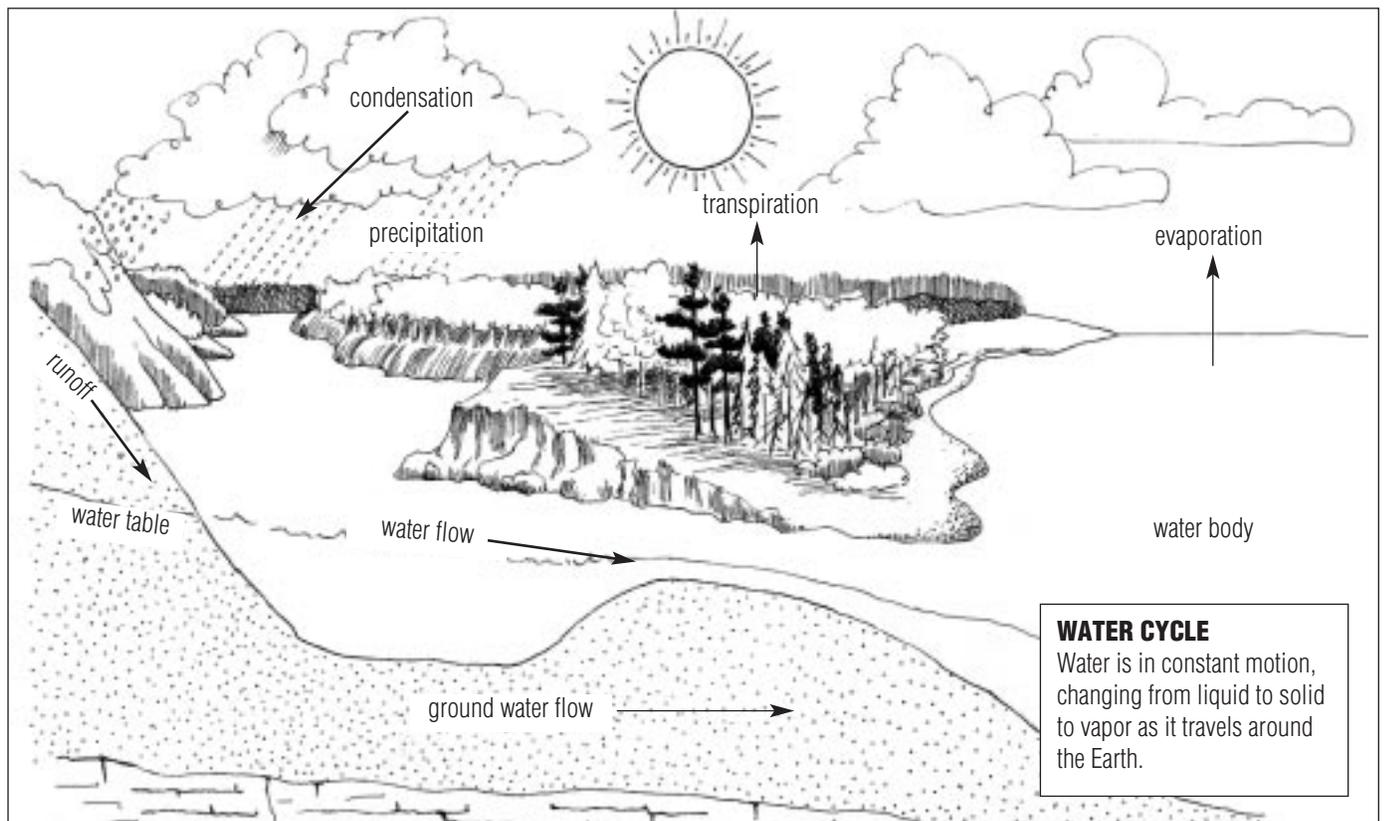
Which is why preserving water quality, for drinking as well as habitat, is so crucial.

This Extension Note identifies some things that can be done to protect the quality and quantity of our water supply.

THE WATER CYCLE

Water is in constant motion, travelling around the planet as it changes from solid to liquid to vapor. It begins with precipitation, such as rain and snow, that falls from the atmosphere and replenishes lakes and streams, as well as

groundwater below the Earth's surface. Some surface water eventually flows into oceans. Water returns to the atmosphere when it evaporates and forms clouds.



HOW TO MAINTAIN WATER QUALITY AND QUANTITY

Little changes can make a big difference when it comes to improving water quality, but education is the key. The more you know about water quality, the more you can modify your own lifestyle and make positive changes. Here are some ways you can protect water quality and quantity at home, on the farm, at the cottage and while boating.

- **USE LESS WATER**

Many of us waste water, which can deplete both ground water and surface water supplies. Using less water on a daily basis can help. Some simple ways to do this are:

- repairing water leaks
- minimizing lawn watering
- collecting and using rainwater
- switching to water-efficient showerheads and toilet dams

- **MANAGE YOUR WASTEWATER PROPERLY**

Never dump harmful contaminants into toilets, sinks or sewers. And, if you have a septic system at your home or cottage, keep it maintained and properly working.

- **TAKE STEPS AT HOME**

There are many things you can do at home to conserve and protect water quality. Here are some easy steps to take:

- use non-toxic cleaners and biodegradable soaps and detergents
- reduce or eliminate your use of fertilizers and other chemicals on lawns and gardens
- use de-icing salts conservatively during winter months
- direct roof downspouts to broad grassy areas

- **CONTROL EROSION AND SEDIMENT**

There's a lot you can do to reduce the negative effects sediment can have on water quality. Landowners, for example, can grow or maintain vegetation along shorelines which can catch sediment and unwanted nutrients before they reach the water. Trees can be planted along hillsides and steep slopes, and livestock can be kept away from river banks, all of which will reduce erosion. Grassed waterways, vegetated buffers and seepage areas are also good methods of reducing runoff as well as removing sediments.

- **PROTECT WETLANDS**

Wetlands are natural filters. They improve water quality, remove nutrients and sediments, and provide habitat for many kinds of plants and animals. To protect and preserve an existing wetland, grow vegetation around its boundary, keep livestock away and eliminate harmful activities like dredging, filling, large-scale logging, dumping garbage and harvesting peat.



Only a small fraction of the world's water is suitable for drinking. Preserving it is crucial.

- **CONSERVE GROUNDWATER**

Groundwater provides a source of drinking water, as well as a water supply for many lakes and rivers. To protect these sensitive areas, the withdrawal of large quantities of groundwater should be closely monitored. Municipalities should minimize the amount of paved and cement surfaces, which can prevent rain water from reaching underground water tables. Headwater areas of a watershed should also remain forested.

- **MANAGE STORM WATER**

Storm water from streets and roads can carry many pollutants, including sediment, nutrients, bacteria, oil, grease, salts and heavy metals into our waterways. Catch basins, detention ponds and artificial wetlands can be built to collect these substances. Municipalities can clean streets and store and filter runoff to prevent pollutants from reaching waterways. If you own a pet, be sure to remove pet waste from any area where it could be washed into lakes and rivers.

- **PREVENT SPILLS**

Be cautious when handling and storing gas, oil, pesticides, herbicides, fertilizers and other chemicals. Similarly, farmers should adopt conservation tillage and cropping practices and ensure the proper disposal of dead stock and farm wastes.

- **BOAT RESPONSIBLY**

Boating can disturb sediment settled on the bottom of lakes and rivers. Reducing speeds in shallow waters and in areas with soft bottoms can help prevent this problem. Reducing speeds near shore will also decrease shoreline erosion from wave wash. Always use a marine pumping station to dispose of black water from toilets and grey water from showers, baths, washing machines and dishwashers. Never discharge black or grey water overboard. Be cautious when refuelling and remember to fill portable tanks on shore, away from the water.



Changes in water quality can have serious consequences. Thousands of fish can die due to toxic spills or depletion of oxygen.



Photo: Rideau Valley Conservation Authority

Unrestricted cattle access destroys shoreline vegetation, causes soil erosion and decreases water quality.

FURTHER READING

- Agriculture Canada and the Ontario Ministry of Agriculture and Food. 1994. *Best Management Practices: Water Management*. 93 p.
- Ontario Ministry of the Environment and Energy. 1994. *Environmental Living: Protecting the Environment in Your Own Home*. Toronto, Ontario. 35 p.
- Ontario Ministry of the Environment and Energy. 1994. *Environmental living: Protecting the Environment in the Great Outdoors*. Toronto, Ontario. 20 p.
- Regional Municipality of Ottawa-Carleton. 1994. *Rethinking Yard Care*. Water Environmental Protection Division, Ottawa, Ontario. 6 p.

The following Extension Notes are a good source of information on shorelines:

- *Preserving and Restoring Natural Shorelines*
- *Restoring Shorelines with Willows*



Artificially altered shorelines reduce runoff-filtering capacity and increase sediment suspension from wave action.



Boaters have an important role to play in protecting water quality.

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