

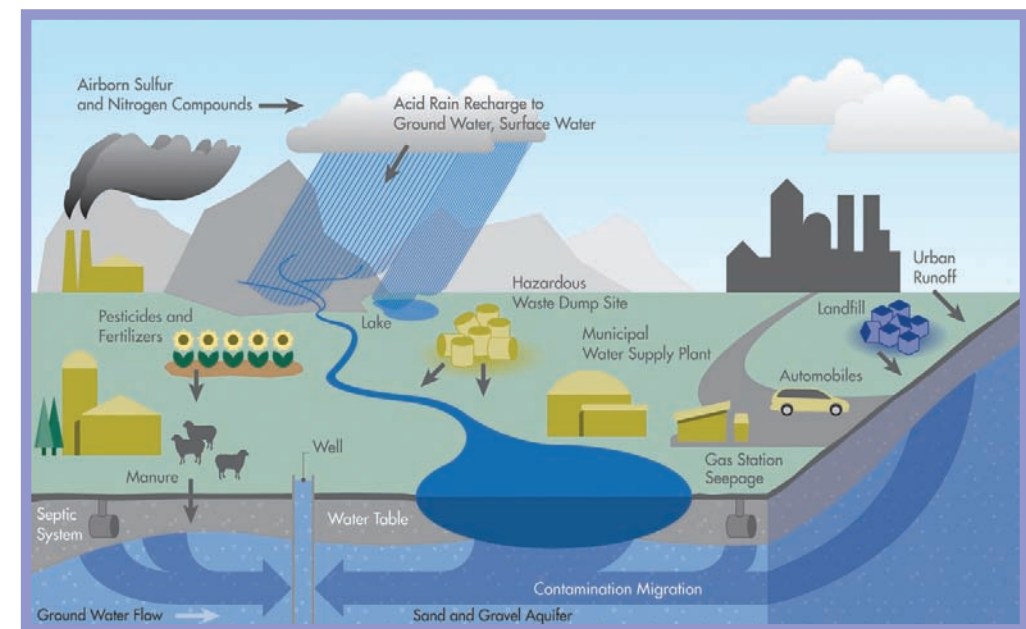
## What is Source Protection?

Depending on where you live in Canada, “source water” comes from underground or surface water supplies. Groundwater is water that is found in soil or cracks in underground rock or aquifers. Of all the fresh water in the world, two-thirds is underground, making groundwater one of the world’s most valuable resources. Surface water is the water found in oceans, lakes, rivers, streams and ponds. For the majority of Canadians, drinking water comes from surface water sources. In Ontario, about 80 per cent of residents get their drinking water from surface water and 20 per cent from groundwater sources.

Both types of source water — groundwater and surface water — are interconnected. Each affects the other. If one water source becomes contaminated, there is a good possibility that the contamination will eventually make its way into, and contaminate, the other water source.

Source protection is about safeguarding current and future sources of drinking water — Ontario’s lakes, rivers and groundwater — by preventing contamination or depletion.

### Some Human Activities Affecting Source Water



Source: [www.groundwater.org/gi/sourcesofwcontam.html](http://www.groundwater.org/gi/sourcesofwcontam.html)

## Pollution Probe’s Source Water Protection Primer

For more information about source water protection, see Pollution Probe’s *The Source Water Protection Primer* and *Mainstreaming Climate Change in Drinking Water Source Protection*.

*The Source Water Protection Primer* outlines the importance of understanding the water cycle and interconnectedness of pollution discharges to water courses and contamination of water sources. It identifies types of contaminants and specific threats to source water, including point and non-point sources, such as municipal effluent and urban runoff.

The *Mainstreaming Climate Change in Drinking Water Source Protection* report provides an overview of how Ontario’s climate is expected to change and how climate change will affect Ontario’s water resources. The report also recommends approaches for adapting to climate change when developing and implementing source water protection plans.

These documents are available at [www.pollutionprobe.org/publications/water.htm](http://www.pollutionprobe.org/publications/water.htm).

For more information, contact  
Pollution Probe  
416-926-1907  
[pprobe@pollutionprobe.org](mailto:pprobe@pollutionprobe.org)

Dated February 2007.

Front cover photo credits — left from [www.gov.ns.ca](http://www.gov.ns.ca), middle and right from the Great Lakes Image Collection, US EPA Great Lakes National Program Office at [www.epa.gov/glnpo/image](http://www.epa.gov/glnpo/image).

## For More Information on the *Clean Water Act* and Source Protection

For more information on the *Clean Water Act* and how you can become involved in the source protection planning process in your local community, contact your local municipality, local conservation authority, or one of the organizations listed below.

Ministry of the Environment  
[www.ontario.ca/cleanwater](http://www.ontario.ca/cleanwater)  
416-325-4000 or 1-800-565-4923

Ministry of Natural Resources  
[www.mnr.gov.on.ca](http://www.mnr.gov.on.ca)

Conservation Ontario  
[www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)  
905-895-0716

For more information contact:



# Act for Clean Water

## An Introduction to Source Water Protection



## Introduction

Water is our most precious natural resource. Life in Ontario is very much defined by our relationship with water. It is of critical importance — for transportation, recreation, manufacturing, food production, power generation, home and personal care, and safe reliable drinking water.

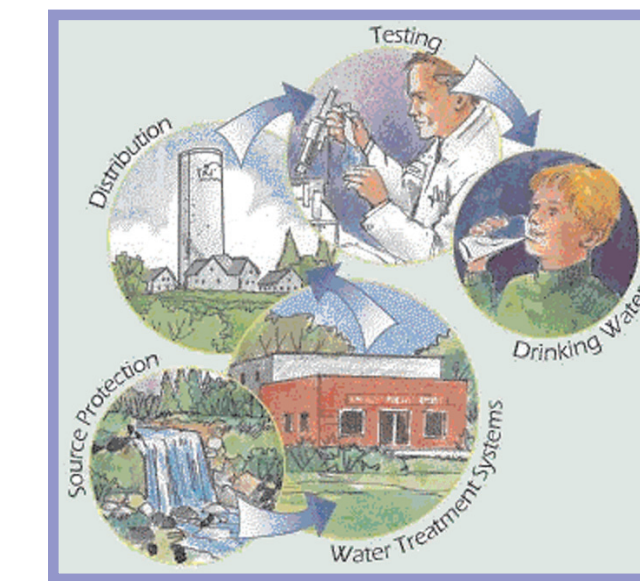
However, incidents of water contamination in Walkerton and North Battleford have shown how damaging the consequences can be if we do not protect our water resources. Human activities and land use practices have the potential to adversely affect both the quality and quantity of ground and surface water resources.

## Protecting Ontario’s Water — From Source to Tap

In the past, emphasis has been placed on treating water to ensure it is safe to drink. As a result, we have developed considerable expertise in treating water to make it safe for drinking. Yet, as treatment and infrastructure renewal costs rise and unfortunate cases of drinking water contamination occur, we now recognize that much more can be done to protect drinking water sources through a multi-barrier approach. By taking a preventative approach, we can protect water sources before they become contaminated.

Protecting drinking water at the source is the first step in a multi-barrier approach and an important part of ensuring the health of people, ecosystems and economies. Provincial laws, such as the *Safe Drinking Water Act* and the *Ontario Water Resources Act*, regulate steps in the multi-barrier approach, including effective water treatment, adequate testing, rigorous monitoring, operator training, water takings and preventing industrial pollution. The new *Clean Water Act*, with its emphasis on prevention, completes the multi-barrier approach of “source to tap” protection of drinking water.

### Selected Steps in Ontario’s Multi-Barrier Approach to Drinking Water Safety



Source: Conservation Ontario. 2006.



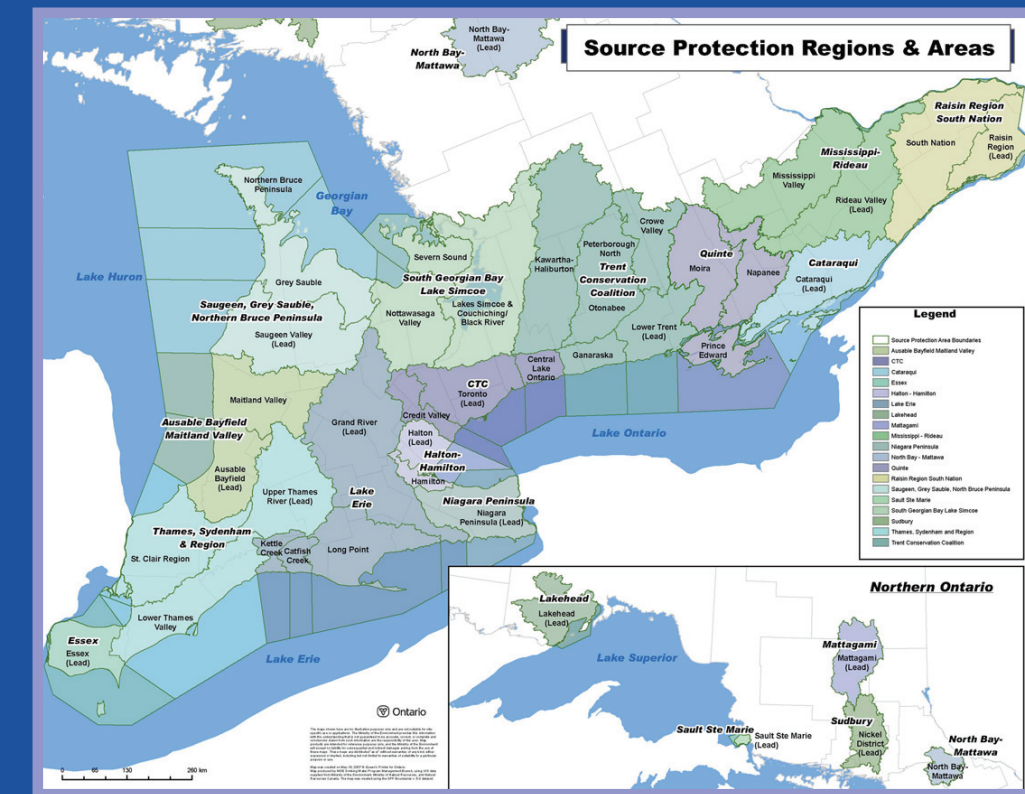
## The *Clean Water Act* Takes a Watershed Approach

Because water often crosses jurisdictional and/or political boundaries, the *Clean Water Act* sets out a framework for source protection planning on a watershed basis. A watershed is an area of land from which surface runoff, including water, sediments, nutrients and contaminants, drains into a common water body, such as a lake, river, stream, creek or estuary. Watersheds include all water and water-dependent land features, including wetlands, forests, farms, towns and cities. They are of differing shapes and sizes,

cutting across municipalities, provinces and countries. In fact, every point on the surface of the Earth is situated in a watershed.

Under the *Clean Water Act*, source protection areas in Ontario will be established based on existing watershed boundaries over which 36 conservation authorities have jurisdiction. Some of these areas will be combined to form larger source protection regions.

### Source Protection Regions and Areas Across Ontario



## The *Clean Water Act* in Your Community

The *Clean Water Act* applies primarily to municipal drinking water supplies and not to private well water systems. It will help prevent contamination before it poses a risk to human health. The *Clean Water Act* sets out a new process for source protection planning that requires collaboration among local municipalities, conservation authorities, provincial ministries, communities and stakeholders to identify and work to prevent source water contamination. Every community will be involved in developing an individualized plan to protect its drinking water source. Because no two watersheds are the same, individualized plans are the best way to ensure that local source protection needs are addressed. Actions to protect drinking water sources include

- identifying threats to water quality and quantity;
- taking action on existing and potential threats; and,
- involving the whole community in finding effective solutions.

## The Source Protection Process

The source protection process will help inform governments, local authorities and residents about the risks to drinking water sources. This information will be used to make informed

decisions about which activities to allow, as well as how to manage activities in vulnerable areas around a drinking water source.

It is important for municipalities, conservation authorities, property owners and the public to become informed and get involved in developing and implementing plans that are fair, reasonable, and cost effective, and that successfully address drinking water threats.

The source protection planning process involves the following steps:

- establishing source protection authorities and source protection committees;
- preparing the terms of reference;
- mapping municipal wellhead protection areas and intake protection zones;
- assessing threats to determine whether they pose a negligible, low, moderate or significant risk; and,
- developing source protection plans that ensure significant risks to drinking water are managed so that they are no longer significant, and that moderate risks do not become significant.

One of the central principles of the *Clean Water Act* is that source protection plans should be locally developed and implemented. Local source protection committees will be responsible for preparing the terms of reference, the assessment report and the source protection plan. In some cases, it may take several years to fully implement a source protection plan.

## Source Protection Documents

The **terms of reference** outline the steps to be taken to develop and implement a source protection plan. They set out the roles and responsibilities of municipalities, source protection authorities, source protection committees and others. The terms of reference are prepared by a source protection committee and submitted for approval to the Ministry of the Environment by the source protection authority.

The **assessment report** is a science-based report developed locally for each source protection area. It identifies the risks to be addressed in source protection plans. It documents vulnerable areas, including present and future municipal groundwater and surface water sources, areas where large regional aquifers are being recharged, and aquifers that are vulnerable to contamination. It also involves measuring how much water exists, both at the surface and below ground, how it moves, and how much water is withdrawn, so that it identifies areas where there are or may be water shortages.

The **source protection plan** establishes policies on how significant drinking water threats will be reduced or eliminated, identifies who is responsible for taking action, sets timelines and describes how progress will be measured. Plans will build on work currently underway and will recognize or reinforce existing management practices that help protect source water quality and quantity.

## Roles and Responsibilities in Source Protection Planning

Broad public consultation during the development of the terms of reference and the preparation of the assessment report and the source protection plan will provide an opportunity to get involved and provide input. The responsibilities of local leaders within a source protection region are outlined below.

The **source protection committee** will consult broadly across the watershed at three key stages — during the preparation of the terms of reference, the assessment report and the source protection plan. There may be opportunities for the public to participate in working groups that are established to tackle a particular issue or area of concern.

The **source protection authority** is generally the conservation authority and its board, which is composed of representatives appointed by municipal councils. The lead source protection authority will establish the source protection committee and provide support to the committee during the development of the terms of reference, the assessment report and the source protection plan.

**Municipalities** are already responsible for the delivery of municipal drinking water and for land use planning. Their role in the source protection process builds on these responsibilities. Municipalities will develop and implement source protection plan policies for activities located in areas under their jurisdiction.

## What You Can Do to Protect Water Sources

Access to safe, clean water is necessary for the health of our families, ecosystems and the economy. Protecting and conserving water is a shared responsibility, and each of us can do our part to take action for clean water.

Protecting Water	Conserving Water
Don't use drains as dumps. Dispose of unused paints, cleaners, pesticides and medical prescriptions at your community household hazardous waste facility.	Ensure showerheads are water efficient, taps have water saving aerators, and toilets are low flow.
Use non-toxic cleaning products, detergents and environmentally friendly soaps, shampoos and personal care products.	Detect water leaks around your home in pipes and taps, and repair them to prevent water loss.
If you have a private well, it is your responsibility to protect and maintain the well. Water wells should be sampled and tested regularly to help ensure that the water is safe for consumption.	Mow your lawn high and water it at night, and only when needed.
Take your car to commercial car washes designed to prevent pollutant runoff from entering storm sewers. Avoid spilling oil or fuel on the ground when filling gas tanks for cars, boats, tractors and lawnmowers.	Install water efficient appliances, such as washing machines and dishwashers. If you can't replace them, then ensure that they only run when completely full.
Ensure your septic system is properly maintained and emptied regularly.	Maintain a natural shoreline at the cottage.
Grow a healthy lawn and garden. Xeriscape (landscape using water-conserving techniques) your lawn and replace pesticide and chemical fertilizer use with natural treatments and practices.	Use a rain barrel to collect water for use in the garden and lawn and disconnect your eaves trough downspout from the sewer.