

**THE IMPORTANCE OF WATERSHED
MANAGEMENT
IN PROTECTING ONTARIO'S DRINKING
WATER SUPPLIES**

EXECUTIVE SUMMARY

MARCH 20, 2001

PREPARED BY: CONSERVATION ONTARIO



LETTER OF TRANSMITTAL

March 20, 2001

Conservation Ontario, on behalf of all Conservation Authorities and specifically in partnership with Saugeen Conservation and the Grand River Conservation Authority respectfully submits this paper, entitled ***The Importance of Watershed Management In Protecting Ontario's Drinking Water Supplies***, to the Honourable Dennis O'Connor, Commissioner, for the Walkerton Inquiry.

Conservation Ontario wishes to acknowledge the financial support of the Walkerton Inquiry Office and the assistance and direction provided by Dr. Harry Swain and Mr. James VanLoon. In addition, Conservation Ontario wishes to extend its appreciation to its writing team, under the direction of Dr. Tony Smith of the Grand River Conservation Authority

Ontario's Conservation Authorities look forward to the development of new relationships with the Province of Ontario and its many partners for the protection of Ontario's valuable drinking water resources. It is our hope that the recommendations in this submission will be considered a valuable contribution toward ensuring the safety of Ontario's drinking water.

Respectfully submitted,



Chair
Conservation Ontario



Chair
Saugeen Conservation



Grand River
Conservation
Authority



EXECUTIVE SUMMARY

Watershed Management

Water systems are life supporting, and a healthy water system is essential for a robust economy and a good quality of life. History has demonstrated that almost every action we take on the land shows up in the water systems, for better or for worse. This paper is written from the perspective of local watershed managers, Ontario's Conservation Authorities. It describes how integrated watershed management is an important part of selecting and maintaining cost-effective water supply with minimal impact on the environment. While watershed management is broader in focus than drinking water supply, adequate, safe, and contaminant free water supply can be achieved while maintaining a healthy aquatic ecosystem.

In contrast to the simple, end of pipe solutions (treating the symptoms), this paper focuses on reducing or eliminating problems at their source. The integrated watershed management approach attempts to influence how water is managed at each point of contact: by farmers, landowners, recreationalists, industry, land developers, municipalities, wastewater managers, and water supply managers. Rather than focussing piecemeal on individual problems, an integrated watershed approach takes a holistic view, exploring the cause-effect relationships of human activities on natural functions and processes that extend across jurisdictional boundaries, and finding solutions that minimize negative environmental impacts. This is usually done through the implementation of a watershed action plan that describes what each must do to ensure a safe and secure water supply and a healthy aquatic ecosystem. Therefore, the plan must be prepared in collaboration with those who must take action (e.g., interested parties, government, industry, and the general public).

Recommendations

Based on a review of watershed management in Ontario, the following recommendations focus on ways that the province could improve upon current practices, and thus strengthen the role that watershed management plays in protecting the long-term security of drinking water supplies.

1. The protection of drinking water sources should be recognized as a permanent and integral part of a long-term, secure water supply strategy.

Source protection represents the first layer in a multiple defence system for ensuring that clean water is available to all water users. Source protection is especially vital to water users, such as rural residents and businesses, whose geographic location and low water usage afford them few alternative drinking water supply options and may limit the economic viability of employing end-of-pipe treatment measures. Source protection programs are consistent with practices being adopted by water supply agencies in other international jurisdictions.

2. The watershed should be recognized as the viable unit for managing water.

This is the appropriate unit for the management of both surface and groundwater resources. Valerie Gibbons in her report *Managing the Environment: Executive Summary* (Executive Resource Group, 2001) states that there should be a strategic shift in managing the environment "towards a place-based approach with boundaries that make environmental sense and facilitate a cross-media, cumulative approach (such as watershed management)". While groundwater aquifers sometimes extend beyond surface water drainage boundaries, the human activities and resulting influences occur and can be managed within a surface watershed context. Drinking water source protection programs should be developed as part of an overall watershed management strategy.

3. A provincial integrated water policy should be developed that:

- *Recognizes the principles of watershed management and deals with all aspects of water.*

The Province should expand its interests in watershed management beyond flood and erosion control operations to achieve maintenance and enhancement of ground and surface water (both quality and quantity) for all users. Watershed management is based upon an understanding of the watershed, its water cycle and its interrelationship with human activities. Watershed management includes identification, protection and enhancement of significant natural features including, headwaters, groundwater recharge and discharge areas, wetlands, vegetated stream buffers and forest areas, while considering historical and current human activities impacting the system.

- *Builds upon the conservation authority model to advance watershed management.*

As a resource that crosses jurisdictional boundaries while lending itself to so many different and conflicting uses, water defies simple division into federal, provincial or municipal responsibility. Protection of water supply and quality requires collaboration and co-ordination at a level where progress can be made through actions determined by long-term watershed management plans. The conservation authority model provides an opportunity to co-ordinate, focus and streamline local delivery of water management and protection actions. Current strengths need to be built upon and the capacity of conservation authorities increased to provide a base level of watershed management for the benefit of 90% of the provincial population.

- *Clarifies the role of the provincial government in water management.*

The Province has the broadest jurisdiction over water and therefore has a leadership responsibility in ensuring the best water management for the citizens of Ontario. A provincial water policy should specify the role of the Province in developing consistent standards, implementation procedures, regulations, and enforcement measures to ensure performance at the local level. It should also recommit to the watershed planning initiatives undertaken by the Ministry of Natural Resources and the Ministry of the Environment in order to provide guidance to local and regional authorities in planning appropriate future land use while at the same time, protecting water resources and the environment.

- *Promotes research into water issues and development of decision support tools to ensure the best science, technology and management practices are shared and available for local application.*

The Province should foster research into water issues and the development, transfer and application of decision-support tools (e.g., water budget models, water quality models) for the implementation of watershed management. These tools provide the basis for implementing provincial regulatory actions (e.g., provincial water taking permits, certificates of approval for wastewater) that support water supplies and quality from a watershed perspective.

- *Supports an adequate monitoring program to measure change and adapt policies and programs accordingly (i.e., adaptive environmental management).*

Monitoring networks need to be improved, maintained and accessible for effective local watershed management. A commitment must be made to the long-term support of state-of-the-art monitoring networks.

- *Supports the improvement, maintenance and accessibility of resource data for effective local watershed management.*

Modelling complex water resource systems requires extensive databases such as streamflow, precipitation, water quality and land use. The Province should establish database standards, facilitate data sharing mechanisms and, where necessary, provide support for database development and maintenance.

4. Adequate and stable source(s) of funding should be established to finance watershed management throughout Ontario.

Provincial, municipal and conservation authority investments into securing water supplies and water quality require long-term stable funding to support watershed management operations. A user pay approach can be taken through the municipal water bill and the provincial Permits to Take Water. Where local “user pay” sources are inadequate, the Province should supplement or provide mechanisms for appropriate distribution of funding to these areas to ensure a base level of watershed management. Incentive-type programs and innovative funding opportunities should continue to be pursued to support capital investments (i.e., projects, studies, structures) necessary to implement watershed management plans.

5 The Province should encourage the Federal Government to develop a national framework for water policy and to strengthen co-operative agreements with provinces under the Canada Water Act.

The Federal Water Policy of 1987 was tabled in Parliament but not extended into a national policy. Funding for co-operative agreements with provinces declined from over \$12 million in the late 1970s and \$8 million in the 1980s to zero in 1998. Since water problems cross political and jurisdictional boundaries and are becoming increasingly global, the Province should encourage the Federal Government to develop a national framework for water policy in close consultation and co-operation with the provinces. The national policy should define the federal government's role in the design of national standards for water quality and environmental monitoring and in providing research, data collection, analysis, and monitoring on a watershed basis to maintain the health of the Great Lakes.