POLLUTION PROBE
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A New Approach to Water Management in Canada

Vision and Strategy

March 2008

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In the period February 2006 to October 2006, water experts from government agencies, the private sector, academia and non-governmental organizations gathered for a progressive series of five workshops on water policy in Canada. The *Water Policy in Canada: National Workshop Series* was organized by Pollution Probe in cooperation with a wide range of government and non-governmental sponsors and partners. The workshops took place in Winnipeg (February 2006), Lethbridge (March 2006), Wolfville (April 2006), Guelph (June 2006) and Moncton (October 2006), benefiting from almost 70 expert presentations and the input of several hundred participants.

Towards a Vision and Strategy for Water Management in Canada, the final report of the *Water Policy in Canada: National Workshop Series*, is available at www.pollutionprobe.org/Publications/Water.htm.

Based on this comprehensive review and the wealth of information and perspectives that were presented and discussed, Pollution Probe has worked to synthesize this information and to turn it into a concise and progressive Vision and Strategy, titled, ***A New Approach to Water Management in Canada***.

A New Approach to Water Management in Canada is available at www.pollutionprobe.org/Publications/Water.htm.

Table of Contents

Acknowledgements

Pollution Probe extends appreciation to the *Water Policy in Canada: National Workshop Series* Advisory Committee and to its sponsors and partners, all of whom are listed below.

Advisory Committee Members:

- Oliver Brandes, POLIS Project, University of Victoria
- Norm Brandson, Lake Winnipeg Implementation Committee
- David Brooks, Friends of the Earth Canada
- Bernadette Conant, Canadian Water Network
- John Cooper, Health Canada
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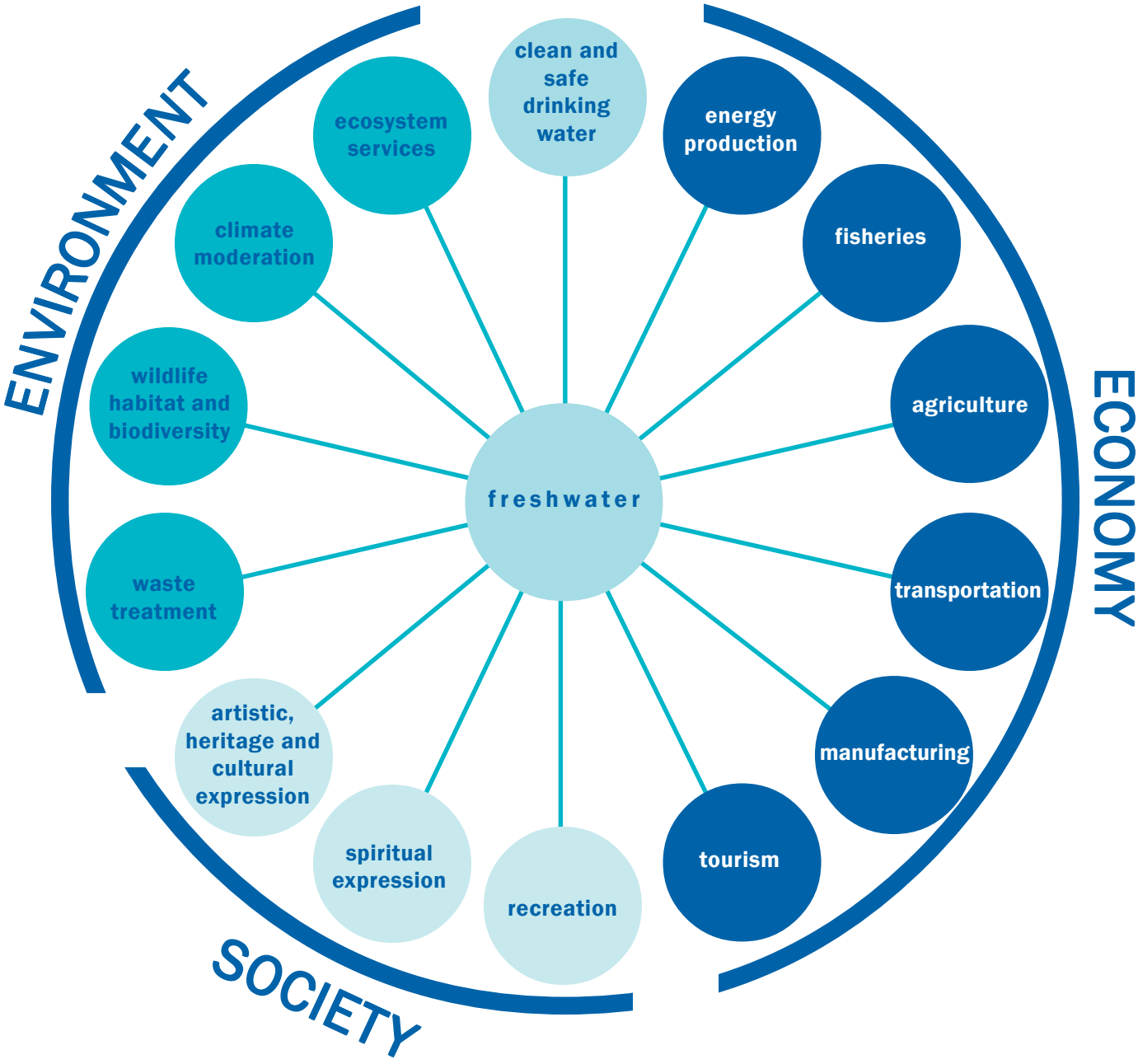
Pollution Probe specially thanks the Salamander Foundation, which in 2001 supported our early research and analysis on water policy and encouraged us in our work to develop a New Approach to Water Management in Canada.

For a copy of the final report of the *Water Policy in Canada: National Workshop Series*, visit Pollution Probe's website at www.pollutionprobe.org.

- The workshop series report is referenced as:
  Towards a Vision and Strategy for Water Management in Canada. April 2007. Pollution Probe.
- The Vision and Strategy report is referenced as:
  A New Approach to Water Management in Canada. March 2008. Pollution Probe.

Water and Life



The Issues

There are many serious water-related issues in Canada. They include:

- **Climate change** impacts on the quality, quantity and distribution of water resources.
- **Pollution** from nutrients, pesticides and micro-organisms from agricultural sources; organic and inorganic chemicals; antibiotics, hormones, and other chemicals in pharmaceutical and personal care products.
- **Loss of ecosystem services** resulting from the near-shore zones of waterways being stressed and aquatic invasive species threatening biodiversity.
- **Population growth and urban development** and the enormous pressure they put on watersheds and the communities they support.
- **Competing demands** for limited water resources by communities, industry and agriculture.
- **Water diversion threats** from increasing demands in the United States.
- **Inadequate drinking water treatment** in First Nations communities and small towns in Canada.

Canada	The World
Home to 0.5 per cent of the world's population and seven per cent of the world's renewable water supply.	Worldwide, 1.1 billion people lack access to safe drinking water, and 2.4 billion lack adequate sanitation.
100 per cent of households in major cities are connected to piped water.	43 per cent of households in major cities in Africa are connected to piped water.
Health problems related to water pollution cost Canadians about $300 million per year.	Currently, 5,400 children die every day from waterborne disease and lack of sanitation.
The Great Lakes contain roughly 18 per cent of the world's supply of non-saline surface water. Water levels in Lake Superior are the lowest in more than 100 years.	Global climate change is expected to exacerbate the loss and degradation of many wetlands and the loss or decline of their species and to harm the human populations dependent on their services.
Of the 10 most highly-valued species of fish in Lake Ontario, three have disappeared.	More than 20 per cent of the world's 10,000 known freshwater species have become extinct, threatened or endangered.

A New Approach is Needed

A New Approach to Water Management

Water defines life in Canada. Relative to other parts of the world, Canada is blessed with abundant quantities of fresh, clean water. Our history, culture, communities, ecosystems, and the economy on which we depend have all been shaped by water. Water resources sustain our nation and represent an asset that few, if any, countries can match. We have a moral and ethical responsibility to manage our water resources wisely.

Vision

A new Vision is needed to guide water management in Canada. Water resources will be best protected by:

A broadly shared ethic of stewardship and responsibility for sustainable watershed management in Canada.

A New Approach to Water Management must contain the following elements:

- An inclusive **watershed-based approach** to governance;
- A **stewardship ethic** that motivates Canadians in all walks of life to contribute to sustainable watershed management;
- A **knowledge base** that informs effective decision making; and,
- **Financial investment** to ensure full implementation of the New Approach.

What are the Policy Gaps and How Can They Best be Closed?

What guides water management in Canada? Currently, there is no single rallying point for taking action on water, and the country has a patchwork of policies, strategies, accords, legislation and regulations. Integrating all of these mechanisms and initiatives, and getting them to point in the same direction, requires a shared vision, strategy, leadership and commitment.

The Challenge

In Canada, multiple water issues are being addressed at multiple levels of government. The interrelationships are complex and water is often poorly managed. This reality underlies the challenges we are experiencing today: challenges of role and mandate that affect leadership and effective communications with the public.

Water quantity management affects water quality, and land use planning affects both. An impressive collection of valuable data exists; however, the databases are often inaccessible or incompatible. Moreover, a capacity deficit exists in the water research community, leading to a situation in which our knowledge and understanding of water management is inadequate and often not effectively applied to the needs and problems that Canadians face.

Water allocation is becoming an increasingly serious issue in many parts of the country. Decisions related to whose water, why and for how long, exist in every region and at every jurisdictional level, including binationally with the United States. Competition between industrial and household demands, and between urban and rural users, drive water management decisions, with the needs of ecosystems and the related ecological goods and services that ultimately sustain us too often falling by the wayside.

Across Canada there is a growing realization of the need for a more inclusive, **watershed-based approach** to decision making and water management. But watershed boundaries rarely align with political boundaries, so watershed-based management brings with it challenges in terms of governance.

The need exists for new institutions that manage both the human and ecological dimensions of the watershed. The concept of Place and the restructuring of decision making models to include the ecological needs of the watershed offer the potential for implementing more robust and distributed governance, as well as the development of a broadly shared **stewardship ethic**.

A Sense of Place

A person's Sense of Place emerges from a mix of the natural and social features of their surrounding landscapes. Fostering a strong identity, or Sense of Place, within a watershed can help create an ethic of stewardship and shared responsibility for its protection.

The new governance structure and stewardship ethic require a widely shared **knowledge base** fueled by appropriate, useful and timely data. Common standards are required to ensure that databases are accessible and can be shared. This is fundamental to managing water, both within and among watersheds. Effective watershed management requires coordinated monitoring and research agendas that are responsive to the needs of communities. Strong science-policy linkages are essential to ensure that important scientific knowledge regularly informs the decision making process and that the research agenda is responsive to policy priorities and needs.

Water Management

Approaches to water management are shifting:

- **from process to outcomes;**
- **from water management to watershed management;**
- **from regulating to shared responsibility; and,**
- **from government to governance.**

Bev Yee, ADM Water Stewardship, Alberta Environment

Substantial **financial investment** is needed to implement the New Approach to Water Management. Financial decisions will use a long-term, asset management approach that views water resources as natural capital that must be sustained for future generations.

A more inclusive approach to governance that enables local watershed leaders and stakeholders to step forward, be heard and share leadership, will bring a new kind of political energy to water management. Empowered by a growing Sense of Place, access to information and more opportunities to engage in local decision making, citizens will increasingly expect elected leaders to make decisions appropriate to both their needs and the ecological needs of the watershed. Where local leaders and community representatives are working in partnership with decision makers, a new dimension of trust will emerge, as well as broader coalitions of support for the decisions made. Decision making will become less risky politically, empowering both politicians and government officials to implement more innovative solutions, and facilitating the healthy evolution of a New Approach to Water Management.

Principles

Eight fundamental principles guide the New Approach to Water Management.

1. **Precaution —** Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.
2. **Shared Responsibility —** A stewardship ethic emerges through an aware, educated, engaged and animated public. Connecting people with watersheds and the environment provides a driving force for integrated water resources management.
3. **Living off the Interest —** We must recognize the environmental value of water, and rather than degrading and depleting this precious natural capital, we should work to live off the interest of the ecological services that water provides, leaving water resources intact for the use of future generations.
4. **Right to Know —** The public has a right to know about the use and management of water. There should be a presumption in favour of a public right to access data and information about water quality and quantity.
5. **Net Gain —** To achieve restoration and the long-term sustainability and integrity of watersheds, we need to redress past abuses and strive for a Net Gain in ecological assets when economic development and other activities are undertaken.
6. **Jurisdiction Best-Placed —** Policy development should take place at all jurisdictional levels, but implementation should be the responsibility of the level most appropriate to resolving the issue. The "jurisdiction best-placed" principle should be supported with adequate money, data, human resources and legal authority.
7. **Pollution Prevention —** It is better for the environment and more cost effective to prevent pollution than to clean it up after the fact.
8. **Polluter Pays —** The polluting party should pay for the restoration of damage done to the natural and built environments.

"Leave our planet's water in better shape than we found it"

The Honourable Steve Ashton, Minister of Water Stewardship, Government of Manitoba, 2006

Water is fundamental to all forms of life. Clean water is a public good that is essential to human health. We must earn the right to benefit from the use of our water resources. Only through efficient use and effective management will Canada be respected and recognized as a faithful steward of water. The best way to maintain sovereignty over our water is to manage it wisely and to be an inspiration for wise water resource management everywhere on the planet.

A Strategy

Putting the Vision and Principles into Action

1 Watersheds

To achieve the Vision, human demands for water need to be placed in the context of watersheds. Accordingly, meeting the ecological needs of watersheds is a top priority. Responsible authorities and water managers need to bring their skills and resources to bear on agreed upon actions to protect and enhance watersheds.

- Align the needs of the watershed with the principle of jurisdiction best-placed, clarifying roles and responsibilities.
- Develop approaches for managing watersheds that are shared among more than one jurisdiction. Link watershed management planning within a nested basin framework.
- Integrate watershed-based planning with other planning processes, such as source water protection planning, official planning by municipalities, growth planning and infrastructure planning.
- Water Trusts should be established in Canadian watersheds; the goal of each Water Trust would be to achieve a Net Gain in the ecological assets contained in the watershed.
- Practice conservation within the watershed and, whenever possible, move beyond demand management towards soft path tools that question the need for water uses and the ways in which water is used.
- Develop a Sense of Place and connect society with the environment through promoting watersheds as the Places where we live.
- Build the social capital and capacity needed for civil society to play an active role in watershed management.
- Ensure the necessary scientific capacity is in place to measure and understand the ecological needs of the watershed.
- Measure, map and understand groundwater interactions with watersheds.
- Understand the implications of climate change and climate variability on watersheds. Plan for climate change when developing watershed plans, and minimize vulnerability through building adaptive capacity.

Watershed management requires shifting from a "top down" jurisdictionally-based approach to a "bottom up" watershed first, place-based approach.

2 Distributed Governance and Distributed Information Management

In contrast to the current approach that emphasizes political and bureaucratic territories and jurisdictions, enhance the ability of individuals and organizations operating at all levels to act responsibly and in a coordinated way to protect, restore and improve the ecological assets of the watershed, while meeting a range of societal objectives.

- Hundreds of existing organizations are potential partners in watershed management. Develop a framework to engage them effectively and capitalize on the broad range and distribution of governance instruments already in place at all jurisdictional levels.
- Decision makers need to let go and employ a distributed governance approach for identifying, prioritizing and meeting the needs of watersheds.
- Leverage the value of distributed governance through ongoing investment in watershed-based networks and partnerships.
- Enhance education and outreach by using a place-based approach in order to connect people with their watershed and broaden understanding of what water means to them in their Place.
- Presume water data are for public use, unless there are legitimate privacy or security concerns that justify restricted access.
- Require the use of consistent and appropriate national standards for the collection, storage, mapping, sharing and dissemination of water data to ensure quality and usability.
- Set up distributed information management networks so that providers can enable others to access their data without losing control of the content.

Distributed approaches to governance and information management are needed to:

- **encourage cooperation and shared responsibility;**
- **rebuild capacity to measure and understand; and,**
- **ensure coordination for efficient use of resources.**

3 Build on Strengths: Enhance the Existing Framework

A number of progressive policies, laws and regulatory mechanisms are already in place across Canada, but they are not always being fully implemented or provided with the resources needed to be effective. Furthermore, competition and contradictions can arise between and among departments and various levels of government. These mechanisms should be updated and brought together in a forward-looking, national strategy for sustaining Canada's clean water heritage.

Provinces, territories, municipalities, indigenous peoples, watershed authorities, non-governmental organizations, industry, agriculture and the general public should all understand their respective and complementary roles and responsibilities within this framework.

- Federal government support is needed to lead the creation of a Canada Water Council that uses a multi-stakeholder, roundtable approach to provide ongoing national coordination, leadership, strategies and guidance in implementing *A New Approach to Water Management in Canada*.
- Federal coordination of a national research agenda will bring efficiency and support the definition and pursuit of shared, inter-provincial and regional research priorities.
- The health and well-being of Canadians benefit greatly from our public water and wastewater infrastructure. We need to practice long-term sustainable asset management and full-cost pricing to continue protecting the health of Canadians.

- **In 1985, The Pearce Inquiry published *Currents of Change*, an inventory and analysis of Federal water policy.**
- **In 1995, the Canadian Water Resources Association and the Canadian Global Change Program published *Broadening Perspectives on Water Issues* based on a series of workshops held across Canada.**
- **In 2006, Pollution Probe held the series of cross-Canada workshops that has culminated in this report.**

A new Canada Water Council should be charged with the responsibility of reviewing the recommendations of these and other initiatives, focusing on identifying the changes needed to implement the recommendations.

Roles and Responsibilities

Many things need to be done to achieve the three strategic priorities. Effective stewardship of water will depend on widespread citizen awareness and support, and on actions taken in our homes, communities and watersheds. Individuals and organizations at all jurisdictional levels in Canada have roles to play. With a shared Vision as a starting point, Canada's citizens, their leaders and other societal decision makers can use the following strategies as the basis for changing the direction of water policy in Canada.

1 Canada and the World

- Work with developing countries to address their clean water and sanitation needs and promote the exchange of information, perspectives and ideas that result in innovative approaches and new technologies.
- Meet international climate change commitments and enhance capacity to adapt to the impacts of climate change on watersheds.

2 Binational

- Enhance support for the International Joint Commission and other agencies engaged in boundary water co-management with the United States.
- Recognize and understand the national importance of the Great Lakes and Saint Lawrence River, and support it with a shared binational vision and a new suite of programmes to ensure the sustainability of the region.

3 National

- Enhance cooperation among federal agencies and departments, provinces and territories through a newly created Canada Water Council.
- Enable and support community right to know and access to watershed information.

4 Federal

- Based on the provisions and requirements of the Canada Water Act (1970), re-establish a strong federal presence in freshwater management.
- Lead the creation and management of the Canada Water Council.
- Encourage the establishment of Water Trusts in watersheds across Canada. In support of the concepts of public trust and long-term fiduciary responsibility, each Water Trust would function as a non-profit, non-governmental organization and operate in accordance with a strict and clear accountability framework.
- Coordinate water policy among federal agencies and departments and clarify the federal role in watershed management.
- Lead the way in addressing Canada's multi-billion dollar water infrastructure deficit.
- Develop flexible, results-based policy objectives that allow for appropriate regional expression.

- Lead the way on improved delivery of safe drinking water by meeting Canadian Drinking Water Guidelines where there are federal water responsibilities, such as in national parks, military bases, and First Nations reserves.
- Publish regular "State of the Nation's Water" assessment reports reviewing gains made and setting national goals.
- Provide resources to build the scientific, educational, research, monitoring and outreach capacity needed to meet the needs of watersheds across Canada.

5 Indigenous Peoples

- Support First Nations, Métis and Inuit governments and governance structures in the resolution of water rights.
- Communicate policy positions and assume appropriate roles and responsibilities in the management of shared watersheds.
- Contribute traditional knowledge and perspectives to watershed management.

6 Provincial/Territorial/Regional

- Coordinate actions on issues of shared interest.
- Work to link related or adjacent watershed initiatives where it makes sense, with a priority on shared watersheds, such as the Great Lakes and Saint Lawrence region, and the rivers and watersheds of the Western Prairies region, including the Lake Winnipeg basin.
- Collaborate on the development of strategies to achieve national, provincial and territorial policy priorities.
- Modernize legislation to support and enable watershed management.

7 Municipal

- Recognize that watersheds and politics are local and place-based, and integrate watershed management with municipal responsibilities, such as land use planning and development decisions.
- Promote water conservation in the context of local watershed management planning, and undertake long-term sustainable management of assets, including source water protection.

8 Individual

- Know your watershed.
- Become aware. The interest of individuals brings political energy to issues and is a catalyst for political commitment. Resources and improvements will follow.
- Demand your rights, and those of your grandchildren, to clean water and a healthy environment.
- Get involved with activities in your watershed.

9 Non-governmental Organizations

- Provide facilitation and relationship-building to make linkages between people and decision makers in watersheds.
- Support the cultivation of an engaged and energized watershed community through education and communication.
- Lead or support local and regional watershed protection initiatives.

Next Steps

With the release of *A New Approach to Water Management in Canada*, Pollution Probe's water policy work will shift its focus from creating the Vision and Strategy to advancing elements of the *New Approach*.

Projects currently underway include:

- **The Great Lakes and Saint Lawrence River Sustainability Primer —** The latest in Pollution Probe's series of educational Primers, this one will describe and discuss the sustainability of the environmental, economic and social dimensions of the region.

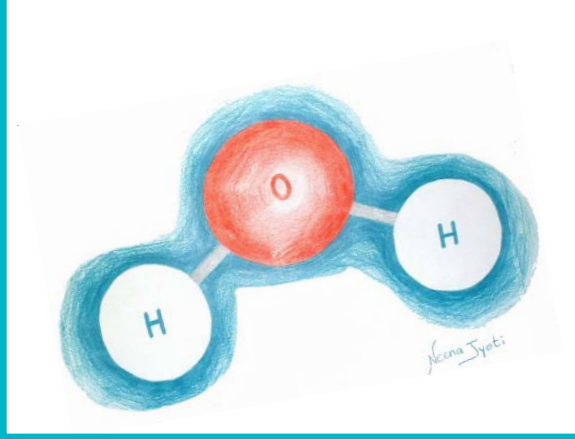
- **Ottawa-Gatineau Watershed Atlas —** In cooperation with a number of project partners, this project is developing and advancing the use of internet-based tools to map and present watershed data and information for the Ottawa-Gatineau region.

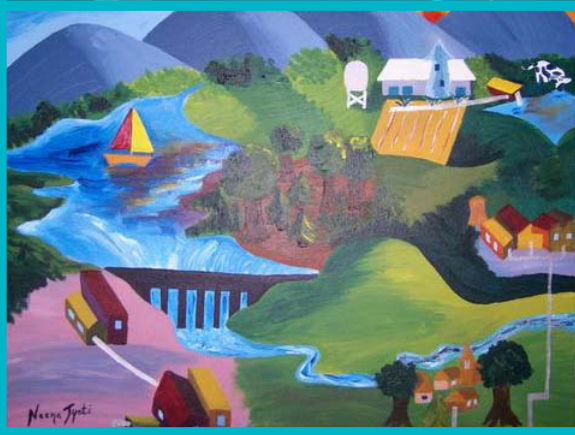
- **Enviroplace —** Visit www.Enviroplace.ca and take the Enviroplace challenge! Enviroplace is a place-based approach that uses web-based technology to provide citizens with the tools and information they need to access and understand environmental, economic and health information.

- **Net Gain —** Pollution Probe believes the Net Gain principle can bring sustainable development together with practical decision making and planning at the local watershed level, and we are working to advance ways to measure and apply the principle.

- **Climate Change and its Impacts on Water Systems —** Pollution Probe believes that when developing and implementing watershed plans or source water protection plans, the opportunity exists to "mainstream" climate change considerations into water management and land use planning. We will continue to advance our work in this area and we encourage you to read *Mainstreaming Climate Change in Drinking Water Source Protection Planning in Ontario* (www.pollutionprobe.org/Reports/mainstreaming_climate_change_swp.pdf).

Keep in touch — visit our website at www.pollutionprobe.org.





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