Environment Canada Environnement Canada

The Canada Water Act

Annual Report

1995-96

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Minister of the Environment

Ministre de l'Environnement

Ottawa, Canada K1A 0H3

His Excellency
The Right Honourable Roméo LeBlanc, P.C.,
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Governor General of Canada
Rideau Hall
Ottawa, Ontario
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Your Excellency:

I respectfully submit to Your Excellency and to the Parliament of Canada the annual report on operations under the *Canada Water Act* for the fiscal year 1995-96.

Yours sincerely,

Christine Stewart

Canada

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A. INTRODUCTION

The *Canada Water Act*, proclaimed on September 30, 1970, provides the framework for joint federal-provincial management of Canada's water resources. Section 38 of the Act (*Revised Statutes of Canada, 1985*) requires that a report on operations under the Act be laid before Parliament after the end of each fiscal year. This, the twenty-fourth report, covers operations to March 31, 1996. The fiscal year 1991–92 served as the base year for this update and thus only significant changes from previous years are reported.

In addition to reporting on joint federal-provincial undertakings, this report describes other federal activities under the Act, including water research, water conservation and public information programs. Highlights of 1995–96 activities include the initiation of the Canada-Prince Edward Island Water Annex on January 30, 1996 (details on page 4), and completion of the Northern River Basins Study on March 31, 1996 (details on page 5).

A departmental review of the *Canada Water Act* legislation, begun in 1994, continued throughout 1995–96 as part of Water Programs Review. Possible amendments to the Act were considered within a context of ecological systems, budgetary constraints and wider partnerships with governmental and non-governmental interests.

A paper celebrating the 25–year history of the Act was prepared and published in September 1995 by the *Canadian Water Resources Journal.*

The major provisions of the Act are summarized below.

Provisions of the Canada Water Act

Part I of the Act provides for the establishment of federal-provincial consultative arrangements for water resource matters (Section 4) and for cooperative agreements with the provinces to develop and implement plans for the management of water resources (Sections 5, 6 and 8). Section 7 enables the Minister, directly, or in cooperation with any provincial government, institution, or person, to conduct research, collect data, and establish inventories associated with water resources.

Part II envisages federal-provincial management agreements where water quality has become a matter of urgent national concern. It permits the joint establishment and use of federal or provincial incorporated agencies to plan and implement approved water quality management programs. The provisions of this Part have never been used.

Part III, which provides for regulating the concentration of nutrients in cleaning agents and water conditioners, was incorporated into the *Canadian Environmental Protection Act* (CEPA) by a proclamation on June 30, 1988. Information concerning the regulation of nutrients is reported in the CEPA annual report to Parliament.

Part IV contains provisions for the general administration of the Act. In addition, Part IV

provides for inspection and enforcement, allows the Minister to establish advisory committees and permits the Minister, either directly or in cooperation with any government, institution or person, to undertake public information programs.

B. HIGHLIGHTS, 1995–96

B-1. REPORT ON PART I OF THE ACT: COMPREHENSIVE WATER RESOURCE MANAGEMENT

1. Federal-Provincial Programs

1.1 Regulation, Apportionment, Monitoring and Survey Programs

Collection of Water Quantity Data

Program Review resulted in a 35% cut to federal funding for the hydrometric monitoring program over fiscal years 1995–96 to 1997–98. The cuts are being met by streamlining administration costs, modernizing operations, increasing cost-recovery and discontinuing certain federally funded stations unless external funding is secured. As a result, the 1995–96 hydrometric network comprised 705 stations funded by the federal government and another 828 that were cost-shared with the provinces and territories.

The specific implications of Program Review with respect to the provinces and territories were discussed at a national federal-provincial meeting in October 1995. It was agreed that bilateral discussions were required to renew the partnership and maintain a viable hydrometric monitoring program.

The Canada - Prince Edward Island Hydrometric Agreement was terminated in 1995. All remaining hydrometric stations are now jointly managed under the Canada-Prince Edward Island Water Annex (details on page 4).

Water Quality Monitoring Agreements

Discussions continued during 1995–96 with respect to the proposed cancellation of the Canada-Quebec Water Quality Monitoring Agreement.

Under the Canada-British Columbia Water Quality Monitoring Agreement, data assessment and review of network design were priorities during the year. In 1996–97, it is expected that these tasks will be completed and the agreement schedules renewed.

Prairie Provinces Water Board (PPWB)

During the year, all apportionment requirements for interprovincial rivers and streams were met. The Board approved the Committee on Hydrology's report entitled "Interprovincial Lakes Apportionment Study". The report identifies 101 interprovincial lakes situated on the Alberta-Saskatchewan and Saskatchewan-Manitoba boundaries and recommends a procedure to follow if there is a need to apportion the lakes in the future. The Board has agreed that Cold Lake should be apportioned. The Board also approved a Committee on Hydrology report on what is meant by equitable apportionment.

The Committee on Water Quality agreed to hold a workshop on nutrient issues during 1996. The workshop will be a cooperative effort with the National Hydrology Research Institute.

In June 1995, the PPWB Secretariat was disbanded. Support for the PPWB is now provided by the Transboundary Waters Unit of Environment Canada. For further information, please contact the Prairie Provinces Water Board at the address on page 12.

1.2 Water Management Programs

Canada-Newfoundland Agreement Respecting Water Resource Management

The studies conducted under this Agreement expired on March 31, 1996. Study highlights during the year include a study of the economic value of water and its contribution to the economy of Newfoundland; an assessment of costs and benefits of protecting drinking water sources; and the development of models to assess circulation patterns and the potential impact of sewage outfalls in the open ocean outside St. John's Harbour. A final report to Ministers is due on September 30, 1996.

Canada-Nova Scotia Water/Economy Agreement

The objective of this four-year agreement, signed in June 1994, is to provide for joint federal and provincial efforts to encourage the integration of water resource management into economic decision making. A variety of projects were undertaken including an investigation into land-based sources of pollution and a project to evaluate artificial wetlands for the treatment of farm and municipal waste waters; the development of a water resource and fish habitat certification course to be used as

a standard for reviewing the impacts of proposed developments; the publication of a waterfall site development guidebook; the development of a special use data base on salt water marshes ; and a project on the conservation of regional water resources in partnership with the Micmac Indian communities on Cape Breton Island.

Canada -New Brunswick Water/Economy Agreement

This 5-year Agreement expired on March 31, 1996. Major accomplishments during the year included the completion of three Integrated Coastal Zone Management projects in the Bay of Fundy coastal area of the province, pursued in collaboration with the Atlantic Coastal Action Program (ACAP); completion of an Underground Thermal Energy Storage (UTES) pilot project at a health centre in Sussex; and an assessment of ecosystem health and stresses in the Richibucto watershed and estuary. A final report with recommendations to Ministers is due on September 30, 1996.

Canada - Prince Edward Island Water Annex

Signed on January 30, 1996 under the 1994 Federal-Provincial Framework Agreement for Environmental Cooperation in Atlantic Canada, this new agreement will streamline federal and provincial water management and conservation activities on Prince Edward Island. It contains the best aspects of the former federal and provincial water programs and has created a single, integrated program leading to less administrative duplication within an ecosystem approach to the water resources of the province. Similar water annexes are under negotiation with Newfoundland, Nova Scotia and New Brunswick.

Canada-Quebec Studies on Sustainable Development of Water Resources

The Canada-Quebec Agreement Respecting Flood-Risk Mapping Applied to Floodplain Preservation and Sustainable Development of Water Resources contains a provision for special studies. With flood-risk mapping projects nearing completion, study activities for the sustainable development of water resources were commenced in October 1995. These activities will continue throughout the 1996–97 fiscal year. To date five projects have been undertaken with the aim of providing new tools to municipalities to facilitate the integrated management of floodplain regions.

Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem

The First Report of Progress under the 1994 Agreement was released in September 1995 and documents the progress achieved against each of the more than 55 targets specified in the Agreement. Some highlights of the report include:

- The delisting of Collingwood Harbour as an Area of Concern (AOC); seven other AOCs have submitted their Remedial Action Plans to the federal and provincial governments.
- The enactment of Ontario's clean water regulations for seven industrial sectors under its Municipal-Industrial Strategy for Abatement program.
- Decommissioning and placement into storage of more than 35 per cent of Ontario's high-level PCBs, along with the associated wastes.
- The completion of a bi-national assessment of environmental issues relating to Lake Superior, including identification of critical pollutants.

Northern River Basins Study Agreement

The purpose of this agreement, signed by Canada, Alberta and the Northwest Territories in 1991, was to assess the cumulative effects of industrial, agricultural, municipal and other development on the aquatic ecosystems of the Peace, Athabasca, and Slave river systems. Under a one-year extension signed during the year, the study was completed on March 31, 1996. A final report summarizing key findings and recommendations will be transmitted to Ministers in mid-1996.

During the course of the Study, some 150 technical reports and reviews were completed. Environment Canada provided direct expertise and support to the management of the science program and to the conduct of the scientific and technical projects. Special attention was given to involving the public and soliciting the knowledge of aboriginal people in the assessment of these ecosystems. There was particular emphasis on the presence, distribution and effects of contaminants, effects of Peace River flow regulation, nutrient enrichment, drinking water quality, water use and fish quality, health and behaviour.

Fraser River Estuary Management Program

An Agreement Respecting the Fraser River Estuary Management Program was signed by Canada, British Columbia, Greater Vancouver Regional District, and local harbour commissions in 1991. The objective of the Agreement was to guide economic development in the estuary while protecting the environment. The main accomplishments during the year included preparation of a report on the environmental quality of the Fraser River Estuary, and increased efforts towards community and public involvement in the program.

With Canada Water Act funds no longer available for the program, this Agreement was allowed to expire on March 31, 1996. However, a business plan covering the next five years (1996–2001) was prepared, and a new Memorandum of

Understanding signed to provide continuing support using regional resources. The Memorandum of Understanding will also ensure more efficient and effective coordination of the Fraser River Estuary Management Program with a related Environmental Action Program in adjacent Burrard Inlet.

1.3 Flood Damage Reduction Program

Under agreements signed with nine provinces, the respective governments agree not to engage in, or provide assistance to undertakings vulnerable to flood damage in designated flood risk areas. During the year, 17 new designations (and one redesignation in the City of Laval area) were approved in Quebec; five new designations in British Columbia; two in Alberta; and one in Saskatchewan. The mapping and designation of these additional flood-risk areas brought the total coverage to approximately 900 communities, with 310 designated areas since the inception of the program in 1975.

The Agreement for the Continuance of the Canada-Nova Scotia Flood Damage Reduction Program expired on June 22, 1995. The flood-risk mapping provisions of the Canada-Newfoundland Agreement on Water Resource Management, and the Canada-Manitoba Flood-Risk Mapping and Studies agreements expired on March 31, 1996. Work under the Canada-Quebec flood-risk mapping program was completed by March 31, 1996.

The final year of the Canada-New Brunswick Agreement for Developmental Flood Forecasting was completed. The focus of the development work was to reduce the operating costs of the Saint John River Forecast Centre while maintaining a beneficial service to the public. The Canada-New Brunswick Flood Damage Reduction Maintenance Agreement continued during the year. Working maps were completed for the southwest Miramichi area and a public information map was initiated.

A summary of flood-risk mapping activities, for each province or jurisdiction, is displayed on page 11.

2. Water Research

Environment Canada's water research institutes conduct ecosystem-based science programs in support of major river basin programs, and initiatives in the sustainable management of natural resources.

2.1 National Water Research Institute

Research included the following highlights:

Great Lakes Basin

Under the Great Lakes 2000 Action Plan, significant investigations and research included the following:

- completion of a series of studies related to the development of Remedial Action Plans for Hamilton Harbour, St. Lawrence River, Severn Sound, Bay of Quinte, St. Clair River and the Spanish River.
- development of potential biological sediment guidelines for the Great Lakes.
- inventories of pollutants found in stormwater management ponds in the metropolitan Toronto area.
- examination of the causes and impacts of changing Lake Erie water quality.
- initiation of a study on the occurrence of nonylphenol (NP) in the aquatic environment.
- examinations of the role of groundwater in transporting contaminants (Smithville contaminated site in the Niagara Peninsula), and its role in transporting septic-system derived nutrients to surface water bodies (Point Pelee National Park).

Other Research and Support

In addition to research carried out in the Great Lakes Basin, the Institute continues to provide support to other Canada Water Act activities across Canada through the provision of analytical services and advice to regional offices which ensures that analytical activities are nationally consistent, accurate and cost-effective. Significant progress was made in research on the presence, sources, effects and management of toxic chemicals. Collaborative activities during the year included studies in support of the Fraser River Action Plan, Northern Rivers Basin Study, the Atlantic Canada Action Program, and the Arctic Environmental Strategy. As part of the Fraser River Action Plan, the final year of benthic invertebrate field sampling was completed for the establishment of ecosystem health based management objectives and priorities for the basin.

2.2 National Hydrology Research Institute

Research included the following highlights:

Northern River Basins Study

Final reports on nutrients, hydraulics and hydrology, and synthesis modelling were completed and submitted under the Northern River Basins Study. The recommendations contained in the final reports will form the basis of an integrated sustainable management strategy for northern aquatic ecosystems.

Fraser River Action Plan

There was significant progress in a prototype project to develop a citizen-based water quality monitoring program. Using benthic invertebrates as eco-indicators, a simple sampling methodology was devised whereby local residents can take proactive steps in monitoring water quality in the Salmon River.

Wetland and Lake Ecosystems

In collaboration with a research institute in Germany, a new facility known as a photosynthesizer (PHOTOSYN) was developed and built to examine the effects of natural and anthropogenic stressors on aquatic food webs in wetland ecosystems. The PHOTOSYN enables precise manipulation of temperature, pH, visible light and ultraviolet radiation in measuring the impacts of pesticides and other stressors. This is a component of the Institute's research program to determine the impacts of stressors such as increased solar radiation and pesticides on lakes and wetlands.

Water Balance of the Peace-Athabasca Delta

Working within the Peace Athabasca Delta Technical Studies program, a major study on the water balance of the Peace Athabasca Delta was completed. The delta has suffered significant "drying-out" in recent years with serious implications for the aquatic, riparian, and terrestrial ecosystems. A report was completed which presents significant data on the relative contribution of climate variability and the flow regulation regime of the Bennett dam located in British Columbia.

B-2. REPORT ON PART II OF THE ACT: WATER QUALITY MANAGEMENT

There were no activities conducted during the year pursuant to Part II of the *Canada Water Act*.

B-3. REPORT ON PART IV OF THE ACT: PUBLIC INFORMATION PROGRAM

The public education program extended its accessibility by becoming a visible presence on the Internet. A Canadian freshwater information package was developed on the Green Lane, Environment Canada's Web site. It provides easy to digest versions of information and educational materials such as *A Primer on Fresh Water* and the full text of the *Federal Water Policy, Canada Water Act* and *Canada Water Act Annual Report.* It includes links to other government and non-governmental sites across the country – specific to topics and issues. The Web site may be accessed at ***http://www.ec.gc.ca/water/index.htm***.

Environment Canada participated in water awareness events such as World Water Day and Drinking Water Week with the help of many partners. A community water education program, the Blue Thumb Campaign, was successfully introduced to Canada as part of World Water Day activities. This Campaign was promoted during Drinking Water Week May 5-11, 1996.

Furthermore, a brochure outlining the rationale and promoting the benefits of a water conservation program to municipal officials and a media kit of camera-ready articles, advertisements and public service announcements for use by all elected officials were developed by the Water Efficiency Task Group of the Canadian Council of Ministers of the Environment. The federal role in these projects was significant.

For more information on these publications, contact the Enquiry Centre at the address listed on page 12.

C. TABLE 1: STATUS OF CANADA WATER ACT AGREEMENTS

Regulation, Apportionment, Monitoring and Survey Programs		
Under Negotiation in 1995–96	**New in 1995–96**	**Ongoing in 1995–96**
		• Water quantity surveys with all provinces, and with INAC for Yukon and the Northwest Territories. • Prairie Provinces Water Board. • Mackenzie River Basin Committee. • Water quality monitoring agreements with Quebec, British Columbia, Newfoundland, New Brunswick, Manitoba , Prince Edward Island, Yukon, and the Northwest Territories. • Ottawa River Regulation Planning Board.
Water Management Programs		
Under Negotiation in 1995–96	**New in 1995–96**	**Ongoing in 1995–96**
• Mackenzie River Basin Transboundary Waters Master Agreement. • Water annexes with New Brunswick, Newfoundland, and Nova Scotia.	• Revised Northern River Basins Study Agreement. • Water Annex with Prince Edward Island.	• Water/Economy Agreement with Nova Scotia. • Agreement with Ontario Respecting the Great Lakes Basin Ecosystem. • Developmental Flood Forecasting in New Brunswick. • Canada-Quebec Studies on Sustainable Development of Water Resources • Agreement Respecting the Fraser Basin Management Program. • Studies on Water Resource Management for Economic Development in New Brunswick. • Fraser River Estuary Management Agreement. • Mackenzie River Basin General Agreement. • Yukon and Alsek River Basins Agreement. • Agreement Respecting Water Resource Management with Newfoundland.
Flood Damage Reduction Program		
Under Negotiation in 1995–96	**New in 1995–96**	**Ongoing in 1995–96**
• New General Agreement with New Brunswick		• Agreement on policies with Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec and Saskatchewan. • Mapping Agreement with British Columbia, Alberta, Manitoba , Quebec and Newfoundland. • Study Agreement with Manitoba. • Maintenance Agreement with Nova Scotia, New Brunswick.

D. TABLE 2: SUMMARY OF FLOOD-RISK MAPPING AGREEMENTS AND DESIGNATIONS

PROVINCE / JURISDICTION	AGREEMENTS	EXPIRY DATE	NUMBER OF DESIGNATIONS (TOTAL: 310)	NUMBER OF COMMUNITIES DESIGNATED (TOTAL: 901) **
ALBERTA	POLICIES	MARCH 31, 1999	12	13
	MAPPING	MARCH 31, 1997		
BRITISH COLUMBIA	POLICIES	MARCH 31, 2003	77	198
	MAPPING	MARCH 31, 1998		
INDIAN LANDS	MAPPING ***	MARCH 31, 1995	—	—
MANITOBA	POLICIES	MARCH 31, 1999	17	18
	MAPPING	MARCH 31, 1996		
NEW BRUNSWICK	POLICIES	MARCH 31, 2000	11	78
	MAINTENANCE OF MAPPING	AUGUST 31, 1998		
NEWFOUNDLAND	POLICIES	MARCH 31, 2001	16	24
	MAPPING	MARCH 31, 1996		
NORTHWEST TERRITORIES	POLICIES	MARCH 31, 1993	9	9
	MAPPING	MARCH 31, 1988		
NOVA SCOTIA	POLICIES	JUNE 22, 2000	5	20
	MAINTENANCE OF MAPPING	JUNE 22, 1995		
ONTARIO	POLICIES	MARCH 31, 1997	102	273
	MAPPING	MARCH 31, 1992		
QUEBEC	POLICIES	MARCH 31, 2002	44	249
	MAPPING	MARCH 31, 1997		
SASKATCHEWAN	POLICIES	MARCH 31, 2000	17	19
	MAPPING	MARCH 31, 1995		

* Updated to March 31, 1996. The table refers to both flood-risk mapping agreements and general agreements on governmental policies in designated flood-risk areas. Mapping in the Northwest Territories and on Indian Lands took place under memoranda of understanding between Environment Canada and Indian and Northern Affairs Canada. Prince Edward Island and the Yukon Territory did not join the program.

** One designation can cover one or more communities in a flood-risk area; the numbers are approximate.

*** The Memorandum of Understanding between Environment Canada and Indian and Northern Affairs Canada for the mapping of flood risks on Indian lands expired on March 31, 1995. Some 40 reserves or communities were mapped with the full cooperation of Band Councils. The procedure of designation was not part of this arrangement.

E. LIST OF CONTACTS FOR MORE INFORMATION ON CANADA WATER ACT ACTIVITIES

General Information

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