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Environment Canada

The Canada Water Act

Annual Report

1998-1999

Canada

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Minister of the Environment Ministre de l'Environnement

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Her Excellency
The Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.
Governor General of Canada
1 Sussex Drive
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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 1998-99.

Yours sincerely,

David Anderson, P.C., M.P.

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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. The report describes a wide range of federal activities conducted under the authority of the Act, including significant water research, participation in various federal–provincial agreements and undertakings, and a public information program. This, the 27th report, covers operations to March 31, 1999.

The following is a summary of the major provisions of the Act:

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, 1998–99

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

1. Federal–Provincial Programs

1.1 Apportionment, Monitoring and Survey Programs

Collection of Water Quantity Data

Under hydrometric agreements administered with the provinces and territories since 1975, water quantity data is gathered, analyzed and interpreted to meet a wide range of client needs in the hydrologic community. Following modifications to the hydrometric network, a federal-provincial working group was established in 1997–98 to analyze the existing agreements against a set of principles for a renewed partnership. In October, this working group presented its recommendations at a national meeting. In order to address outstanding issues, additional working groups were established to examine matters related to the equitable sharing of costs; access to data, information, and services; national standards; and the decommissioning of hydrometric stations.

Federal and provincial efforts were continued to modernize the field infrastructure by replacing analogue with digital technology, and by providing real-time communication technology at all sites together with the development and implementation of related software. By year-end, approximately 55 percent of the modernization had taken place, including all field infrastructure in New Brunswick, Prince Edward Island, Quebec, and the Northwest Territories. Completion of the modernization is targeted for 2002.

Water Quality Monitoring Agreements

Since 1982, agreements on water quality monitoring have been concluded in several provinces and territories, including British Columbia (1985), Manitoba (1988), New Brunswick (1988), Newfoundland (1986), Northwest Territories (1995), Prince Edward Island (1989), Quebec (1983), and Yukon (1995). The responsibilities under the Agreement with New Brunswick were informally modified in 1995 when the provincial government undertook to collect, analyze and manage the data for the water quality monitoring program, while Environment Canada continued to manage the hydrometric monitoring program. The Agreement with Quebec was terminated by the parties in 1995 because the activities were similar to those being undertaken under the St. Lawrence Action Plan.

In 1998-99, activities included the following:

As part of an effort to modernize activities, a new Inductively Coupled PlasmaBMass Spectrometer (ICPBMS) system was installed in the Atlantic Region Environmental Science Centre located in Moncton, New Brunswick. This initiative will enhance the analytical capability (sensitive, selective, and faster multi-element analysis) required to support water quality monitoring agreements and other aquatic monitoring requirements.

The Management Committee appointed under the provisions of the Canada–Prince Edward Island Water Annex continued to coordinate various studies to address priority water quality issues such as the effect of agricultural pesticide use on Prince Edward Island's water resources. The Water Annex, which replaced the provisions of the Canada–Prince Edward Island Water Quality Monitoring Agreement in 1996, expired at year-end (see Section C). Plans were reviewed to continue the monitoring arrangement.

In partnership with BC Ministry of Environment, Lands and Parks, Environment Canada conducted biweekly water quality monitoring activities at 27 stream or river sites in British Columbia. Technical reports on the state of water quality were finalized for 14 of these sites.

Environment Canada has reduced the number of locations at which it provides water quality monitoring in Manitoba. These reductions were based on discussions of priorities with Manitoba officials. Negotiations to finalize the new arrangement under the CanadaBManitoba Water Quality Monitoring Agreement were continuing at year-end.

Cooperative Modeling in the St. Lawrence River and the Great Lakes Connecting Channels

The Atmospheric Environment Branch (AEB)* in the Quebec Region, and the Institut national de la recherche scientifique-Eau (INRS–Eau) continued work under a cooperation agreement for hydrodynamic modeling of the St. Lawrence River between Cornwall, Ontario and Trois-Rivières, Quebec. INRS–Eau is an internationally recognized research institute of the University of Quebec that specializes in hydrology and hydrodynamic modeling.

The modeling project is aimed at developing a capability to forecast the transport of pollutants (from oil spills and industrial and municipal sewers) as well as developing applications in other areas of interest such as bank erosion, dredging, shipping activities, and assessment of the impacts of fluctuations in water levels on St. Lawrence River biota. Expertise in the

* Name changed to a branch of the Meteorological Service of Canada in late 1999.

practical application of models and real-time data assimilation is brought to the partnership.

AEB is responsible for simulating accidental discharges into the St. Lawrence River and for modeling the distribution of currents upstream of Trois-Rivières. It has also concluded agreements with various governmental agencies (e.g., Hydro-Quebec) to facilitate hydrometric data exchange.

In the Great Lakes connecting channels, a cooperative effort continued between the AEB (Ontario Region), the U.S. Army Corps of Engineers, the Ontario Ministry of Natural Resources, and local conservation authorities to develop a two-dimensional numeric model of the St. Clair and Detroit Rivers. This model will help agencies determine potential cumulative impacts of shoreline and channel developments on water levels in and along the rivers and develop a bi-national framework for regulating and assessing such development. The model is also being used in water quality studies on the Detroit River.

Prairie Provinces Water Board

In 1969 Canada, Alberta, Manitoba, and Saskatchewan signed a Master Agreement which provides for the equitable apportionment of eastward flowing Prairie rivers and the consideration of water quality problems. Under Schedule C, the Prairie Provinces Water Board was reconstituted to administer the provisions of the Master Agreement. In 1992, the Master Agreement was amended to include a new Agreement on Water Quality (Schedule E) in response to concerns for protecting these water resources. Schedule E specified acceptable water quality objectives in each river reach and further defined the duties of the Board with respect to its water quality mandate.

During the year, government approvals were sought for Canada, Manitoba, Saskatchewan, and Alberta to amend the Master Agreement on Apportionment. The amendments will modify the apportionment period for streams crossing the Saskatchewan–Manitoba boundary from the water year (April 1 to March 31) to the calendar year and change the definition of "watercourse" to clarify that interprovincial lakes are subject to apportionment. The change in the apportionment period will make it consistent with the period already used along the Alberta–Saskatchewan boundary, and used in published water survey data. The revised definition of "watercourse" will benefit the Parties by enabling the Board to address any apportionment issues along the 101 interprovincial lakes situated on the Alberta–Saskatchewan and Saskatchewan–Manitoba boundaries (e.g., concerns over low water levels periodically experienced at Cold Lake).

The importance of considering instream flow needs* in the allocation of water rights and the management of river systems is receiving increasing recognition from governments. As a result, the Board established the Instream Flow Needs Committee in 1997–98 to collaborate on a review and evaluation of the methods currently available to determine these needs for the Prairie provinces. In 1998–99, the Committee commenced preparation of a report, planned for provision to the Board in 1999–2000.

Since 1997, Environment Canada has consolidated the number of locations where it collects atmospheric data. Because this information is used in apportionment calculations, Environment Canada agreed to consult with the Board on changes to meteorological stations. For this purpose, the Board will annually provide a list of the meteorological stations it uses to Environment Canada.

The apportionment of the natural flow of Lodge and Middle Creeks at the Alberta-Saskatchewan boundary is specified in Article 6, Schedule A of the Master Agreement. Lodge Creek is also subject to international apportionment under the 1909 Boundary Waters Treaty and the subsequent 1921 Order of the International Joint Commission. Since the inception of interprovincial apportionment monitoring in 1985, deficits in delivery to Saskatchewan have occurred in 1988, 1989, 1992 and 1998. The need and options for improving the effectiveness of apportionment monitoring have been under discussion since 1985 by the Committee on Hydrology (COH). In 1999, the Board approved three changes to the natural flow computation procedure recommended by the COH to improve the accuracy of apportionment monitoring for these two interprovincial streams.

Nutrients cause excessive weed and algae growth. For this reason, the Committee on Water Quality recommended to the Board that existing information on nutrients be analyzed as the first step in developing objectives for nutrient concentrations in interprovincial waters. An analysis of literature and existing data on nutrient-plant relationships in Prairie rivers was completed in 1999, and a report drafted to determine the feasibility of establishing nutrient water quality objectives. In 1999–2000, the report will be expanded from its focus on glacier-fed streams (originating in the eastern slopes of the Rocky Mountains) to include streams originating in the Prairies.

Mackenzie River Basin Transboundary Waters Master Agreement

The Mackenzie River Basin Board, created under the Master Agreement signed in July 1997, became fully operational in 1998. Members have been

* An “instream flow need” may be defined as the amount of water required in a river or stream to sustain aquatic organisms and processes.

appointed representing all Parties: Canada, British Columbia, Alberta, Saskatchewan, the Northwest Territories, and Yukon. A member nominated by Aboriginal organizations was also provided by each of the three provincial and two territorial governments. Federal members include representatives of Environment Canada, Indian and Northern Affairs Canada, and Health Canada. An Executive Director of the Board Secretariat was hired within Environment Canada, Prairie and Northern Region, to plan, direct, and manage Board operations.

The Master Agreement endorses the principle of managing water resources for future generations in a manner consistent with the maintenance of the integrity of the aquatic ecosystem and provides for early and effective consultation on potential developments in the basin. Under the Master Agreement, Environment Canada is responsible for managing expenditures of the Board and is providing finance and administrative support to the Secretariat.

By letter of agreement among the Parties to the Master Agreement, the previously existing Mackenzie River Basin Committee was dissolved November 21, 1998, whereupon the Board assumed formal responsibility for administration of the Master Agreement. At its business meeting in December 1998, the Board initiated a long-term strategic planning process. A key component of the process will be the Board's commitment to consult with the public and Aboriginal peoples in carrying out its work. A workshop was held in March 1999, and preparations begun for a second workshop at a later date to initiate the process and develop a five year work plan.

The Parties continued negotiations on some of the seven bilateral water management agreements to be attached to the Master Agreement. These agreements will address water issues at the boundaries of neighbouring jurisdictions and facilitate the provision of quality, quantity and flow parameters of the water resources to reflect regional and local concerns. At year-end, a draft bilateral agreement between the governments of the Northwest Territories and Yukon and Indian and Northern Affairs Canada, awaited approval of the Parties. Progress on other bilateral agreements was expected over the next year.

A relationship was established between the Mackenzie River Basin Board and the Northern Rivers Ecosystem Initiative (NREI). Because of the relevance of research under the NREI to the management of water resources throughout the Mackenzie basin, reports will be exchanged and close ties maintained by the two organizations. NREI is discussed below.

1.2 Water Management Programs

Follow-up Activities to the Northern River Basins Study Agreement: Northern Rivers Ecosystem Initiative

Undertaken pursuant to an agreement signed by Canada, Alberta, and the Northwest Territories in 1991, the Northern River Basins Study assessed the cumulative effects of industrial, agricultural, municipal, and other developments on the aquatic ecosystems of the Peace, Athabasca, and Slave River systems. The final report, with key findings and recommendations, was completed and transmitted in June 1996 to the Minister of the Environment (Canada), the Minister of Indian Affairs and Northern Development (Canada), the Minister of Environmental Protection (Alberta), and the Minister of Renewable Resources (Northwest Territories).

A joint governmental response to the recommendations was released in November 1997. In this response, a number of federal government departments (Fisheries and Oceans, Indian and Northern Affairs Canada, Health Canada, Heritage Canada, and Environment Canada), as well as Alberta and the Northwest Territories, made commitments to undertake follow-up activities such as research to improve the understanding of the effects of nutrients and contaminants on the river system.

The follow-up activities are being cooperatively undertaken by Canada, Alberta, and the Northwest Territories through the Northern Rivers Ecosystem Initiative (NREI). This five-year initiative began in April 1998 under the direction of a Steering Committee co-chaired by Environment Canada and Alberta Environment. The Committee has reviewed and approved approximately 20 projects submitted by "implementation teams". These projects focus on subjects such as pollution prevention, drinking water, and research into contaminants, nutrients, endocrine disruption in fish, dissolved oxygen, and hydrology. A newsletter has been established to share results directly with the public, and a Web site is under development.

An annual report on NREI activities will be provided to the Mackenzie River Basin Board to keep the members apprised of progress. This initiative is expected to conclude in 2003.

1.3 Flood Damage Reduction Program

Under the policy provisions of agreements signed with eight provinces, the respective governments agreed not to engage in, or provide assistance to, undertakings vulnerable to flood damage in designated flood-risk areas. During the year, 20 new designations were approved under these agreements across Canada. The mapping and designation of these additional flood-risk areas brought the total coverage to approximately 982

communities, with 341 designated areas since the inception of the program in 1975 (see Section D).

The application of flood damage reduction policies continued under the Canada–Quebec Agreement Respecting Flood-Risk Mapping Applied to Floodplain Preservation and Sustainable Development of Water Resources. Although this agreement does not expire until March 31, 2002, the Parties commenced negotiations for the long-term renewal of the policy framework of the program, and for revisions to the derogation procedure in designated flood-risk areas.

The flood damage reduction agreements signed with Manitoba and Alberta expired on March 31, 1999.

2. Water Research

2.1 St. Lawrence Centre

The St. Lawrence Centre (SLC) has carried out a number of major studies since 1993 on the state of the St. Lawrence River ecosystem, including water quality monitoring and a mass balance study of chemical contaminants. In December 1998, a new strategic plan for research was approved and implemented. Ongoing and new research programs include the following activities.

Water Level Fluctuations

- Effects on the biodiversity and biological productivity of ecosystems
- Effects on different uses, including drinking water
- Effects on the physical dynamics of the river, including erosion
- Effects on levels of chemical contamination

State of the St. Lawrence River

- Analysis of the short-term and long-term variation in the diversity of fish species in the St. Lawrence River
- Distribution and invasion rates of exotic species
- Chemical contamination levels in biota, sediments and water
- Development of bioindicators using biomarker responses
- Presence and impacts of parasites
- Chemical characterization and study of the transport and deposition of suspended matter in the Cornwall–Massena region
- Study of the evolution of water bodies in the Montreal area and the impact on urban pollution

Urban pollution

- Assessment of the toxicity of roughly 15 municipal sewage effluents representative of treatment plants in Quebec
- Toxicological aspects of urban sewage effluents
- Impacts of urban sewage on fish and molluscs

Long-Range Transport of Airborne Pollutants

- Overseeing the monitoring of acid precipitation in approximately 40 lakes in Quebec as part of the national long-range transport of airborne pollutants (LRTAP) program and conducting related research activities.

Partnerships

- Biochemical, physiological, immunological, and genotoxicological measurements were performed on the tissue of bivalve molluscs from the Saguenay fjord in order to gain a better understanding of the impact of anthropogenic contaminants on water quality in the fjord and their impact on intertidal biota. The project, carried out by SLC, the University of Quebec at Rimouski (UQAR), and the Berlin University of Technology under a bilateral agreement between Canada and the Federal Republic of Germany, culminated in 1998B99 with the publication of a scientific article summarizing four years of field studies. The study proved useful to appraise the state of health of the Saguenay fjord and enabled the three partners to develop and validate new biomarker measurements (e.g., those relating to endocrine disruption). One result indicated that impacts on clam populations at upstream stations are generally higher than those at downstream stations, probably due to contaminant discharges linked to industrial activities.

- Under a program on impacts of water level fluctuations, research projects are being undertaken with the Quebec provincial government (Ministère de l'environnement du Québec and Faune et Parcs Québec), universities (University of Montreal and l'Institut national de la recherche scientifique-Institut Armand-Frappier), and regional components of Environment Canada (AEB and the Canadian Wildlife Service).

- The structure and diversity of the fish community at a reference site in the St. Lawrence River are being analyzed in collaboration with the Aquarium du Québec. Tagging studies were performed in collaboration with personnel from the aquarium, who contributed to the development of an efficient anesthetic for use when tagging and examining fish.

- Toxicity characterization of municipal sewage effluents was undertaken to support regional Environment Protection Branch activities.

2.2 National Water Research Institute

The National Water Research Institute (NWRI) is Canada's largest freshwater research establishment, with facilities in Burlington, Ontario, and Saskatoon, Saskatchewan. NWRI conducts a comprehensive program of research and development in the aquatic sciences, much of it in partnership with Canadian and international science communities. NWRI's mission is to provide scientific knowledge through ecosystem-based research to support the development of sound government policies and programs, public decision making, and early identification of environmental problems.

Research on Priority Ecosystems

In 1998–99, NWRI conducted an extensive research program in support of Environment Canada initiatives to conserve and restore Canada's aquatic ecosystems. Work included the following activities.

- For the Atlantic program, researchers designed a volunteer-based monitoring program using benthic indicators to assess the ecosystem health of rivers and streams; this is now implemented by citizen groups in the Maritimes. NWRI also began a multi-year research agreement with the University of New Brunswick to develop a framework for assessing the cumulative effects of industrial and agricultural discharges into the Saint John River system.

- In work to ensure a healthy and sustainable Great Lakes basin, researchers completed a major study of water quality in Hamilton Harbour and expanded studies on the transport of polycyclic aromatic hydrocarbons (PAHs) to include PCBs, organochlorines, and heavy metals; developed guidelines for in situ subaqueous capping of contaminated sediments to reduce diffusion of contaminants; and produced biological sediment guidelines for application in Areas of Concern designated under the Canada–U.S. Great Lakes Water Quality Agreement. A study on zebra mussels found they were still spreading over soft sediment, whereas it was formerly believed their spread would be restricted to rocks. In addition, a three-year study was completed using a toxic chemical decision support system to calculate chemical concentrations and residence times and to assess the effectiveness of abatement strategies.

- Researchers began collaborative studies with Environment Canada's Prairie and Northern Region on questions of concern in northern river ecosystems, including endocrine disruption, dissolved oxygen guidelines, impacts of land use on water balance and river discharge, nutrient guidelines for northern rivers, contaminants in water, and hydro-climatic impacts in the Slave River and Peace–Athabasca River deltas.

- A five-year study developing reference databases for the Fraser River catchment was completed, and a final report containing recommendations on ecosystem objectives was submitted to the Pacific and Yukon Region. Under the Georgia Basin Ecosystem Initiative, research will be expanded, and with NWRI's assistance, more reference and test sites will be included in the database.

Research on the Impacts of Agriculture on Aquatic Ecosystems

$ NWRI began a multi-year study of the impacts of hog manure fertilizer on Prairie water quality and soil productivity, with results to support recommendations aimed at reducing the occurrence or accumulation of environmental or health-related pollutants. A two-year project was initiated to assess nitrate and pesticide leaching in irrigated potato production on the Prairies, with the final goal of recommending environmentally sustainable management practices.

Research on the Impacts of Atmospheric Change on Aquatic Ecosystems

UV-Radiation:

- A three-year study that significantly increased knowledge of the susceptibility of Prairie lakes and wetlands to damage from UV radiation was completed. In a study of 44 water bodies, the degree of penetration of UV-B and UV-A radiation was accurately measured. An important finding was that UV radiation penetrates significantly deeper, for a given dissolved organic carbon (DOC) concentration, in saline systems than in freshwater systems.

- Increases of UV-B radiation associated with declining stratospheric ozone levels can affect the sustainability of arctic fish populations. Research is under way to understand the sensitivity of arctic char eggs to UV radiation, the protective role of dissolved organic matter, and effects on development of char fry.

Climate Change:

- A study of climate impacts on extreme ice-jam events in the upper Saint John River was completed, identifying a trend toward increasing frequency and severity. Researchers also began a new project in the Peace–Athabasca delta to investigate climate impacts on the frequency and severity of ice-jam floods, assess ecological effects on flood-dependent habitats vulnerable to climate impacts, and develop adaptation strategies.

- With partners from the Prairie and Northern Region, researchers began a four-year study of the sensitivity of Prairie wetlands to climate and land-use change. Climate data, streamflow data, vegetation records, and annual spring pond counts going back to 1958 will be assembled in a database to support the development of a water-balance model for study, prediction, and mitigation of impacts of climate and land-use change.

- At Beverly Swamp, Ontario, work is in progress to determine the sensitivity of wetland biogeochemistry to drought. Information about the dependence of CO_2 and CH_4 exchange on wetland hydrology (affected by drought) has been gathered as part of a project that will help determine the ability of natural and restored wetlands to sequester atmospheric carbon.

Emerging Issues and Problem Identification

NWRI's research on emerging issues and problems included studies of endocrine-disrupting substances and new work on contaminants such as haloacetic acids (HAAs) and brominated diphenyl ethers (BDPEs) in the aquatic environment. Work included the following activities.

- Studies proceeded on endocrine-disrupting substances in municipal effluents, agrochemical and hog manure runoff, oil-sands mining effluents, and road runoff. Using bioassays and other tools and indicators, researchers made progress in identifying substances and evaluating their effects.

- A report on the presence and concentrations of HAAs in Canadian waters was completed, showing a correlation between levels of this contaminant and levels of urbanization.

- An improved analytical method was applied in research on BDPEs and detectable levels were found in environmental samples.

Development of New Tools and Technologies for Sustainable Water Management

Work to develop tools and technologies for the conservation and protection of Canada's water resources included the following activities.

- Completion of a set of ecosystem maintenance indicators for transboundary rivers in northern Canada to manage watersheds for optimum ecosystem protection,

- Development of an advanced groundwater modelling method for regional-scale application,

- Linking of atmospheric and hydrologic models to apply in extreme events prediction (e.g., Red and Saguenay River basins),

- Application of remote-sensing technologies to assess hydrologic conditions in remote northern areas,

- Development of techniques for environmental effects monitoring and aquatic assessment programs.

2.3 Mercury Study and Community-Based Research in the Maritimes

A comprehensive study of mercury levels in Atlantic Canada loons which included mercury cycling in brown-water lakes, mercury in sediments, and mercury in precipitation was made possible by cooperation with the acid rain program – LRTAP. The study assessed the extent of impacts of mercury exposure and acidification on the breeding behaviour and reproductive success of common loons. Parallel with this study, research was continued on the sources, trends, fate and effects of mercury in Maritime lakes, including mercury dynamics in lakes of Kejimkujik National Park, Nova Scotia.

The Atlantic Coastal Action Program (ACAP) continued to assist communities in gaining access to expertise and information (often water and watershed related) required to implement local community-based environmental management plans. In particular, the Miramichi River Environmental Assessment Committee, an ACAP multi-stakeholder group located in eastern New Brunswick and dedicated to conserving this renowned Atlantic Salmon waterway, examined the presence of organochlorines (pesticides) in the Nappan River, a tributary of the Miramichi River.

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 continued to expand its presence on the Internet. The Freshwater Web site, part of Environment Canada's Green Lane, provides basic information and comprehensive educational materials such as *A Primer on Fresh Water,* and the full text of the *Canada Water Act*, the *Canada Water Act Annual Report,* and the *Federal Water Policy*. Links to specific issues at other governmental and nongovernmental sites across the country are being regularly updated and expanded. A new section on the Flood Damage Reduction Program was added this year. The Web site can be accessed at **http://www.ec.gc.ca/water/index.htm**.

Partnerships continued to play a major role in public information activities. Environment Canada continued the promotion of the international Blue Thumb Project and its associated Web site in Canada by providing a French language version for world audiences. Support was also provided in the development of the Water Efficiency Experiences Database (WED). This database was developed in partnership with Environment Canada's Ontario Region and the Canadian Water and Wastewater Association (CWWA) to encourage the exchange of information in this rapidly growing field. Users can search the database and/or enter their own experience on the CWWA Web site at **http://www.cwwa.ca/wed.htm**.

C. STATUS OF *CANADA WATER ACT* AGREEMENTS

Under Negotiation in 1998–99	New in 1998–99	Ongoing in 1998–99
Apportionment, Monitoring, and Survey Programs:		
		• Canada–Quebec Protocol on Administrative Arrangements under the Canada-Quebec Agreement on Hydrometric and Sedimentological Networks in Quebec • Water quantity surveys with all provinces, and with INAC for Yukon and the Northwest Territories • Prairie Provinces Water Board • Water quality monitoring agreements with British Columbia, Newfoundland, New Brunswick, Manitoba, Prince Edward Island, Yukon, and the Northwest Territories • Ottawa River Regulation Planning Board
Water Management Programs:		
		• Water Annex with Prince Edward Island* • Agreement with Ontario Respecting the Great Lakes Basin Ecosystem • Yukon and Alsek River Basins Agreement • Mackenzie River Basin Transboundary Waters Master Agreement
Flood Damage Reduction Program:		
$ Revised agreement with Quebec on maintenance of policies		• Agreement on policies with Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Quebec, and Saskatchewan

* A Water Annex was signed with Prince Edward Island in 1996 pursuant to the Framework Agreement for Environmental Cooperation in Atlantic Canada (concluded by Canada, New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island in 1994). The water quantity survey and water quality monitoring arrangements were incorporated into the Water Annex. The Framework Agreement and Water Annex expired March 31, 1999. Review of the mechanism for continuing the monitoring arrangements was planned.

D. DESIGNATIONS UNDER FLOOD DAMAGE REDUCTION PROGRAM*

PROVINCE / JURISDICTION	NUMBER DESIGNATIONS APPROVED 1998–99 TOTAL: 20	NUMBER DESIGNATIONS TO DATE TOTAL: 341	NUMBER COMMUNITIES DESIGNATED TO DATE** TOTAL: 982
ALBERTA	1	18	20
BRITISH COLUMBIA	—	81	211
ABORIGINAL LANDS* **	—	—	—
MANITOBA	—	17	24
NEW BRUNSWICK	—	13	88
NEWFOUNDLAND	19	35	43
NORTHWEST TERRITORIES	—	9	9
NOVA SCOTIA	—	5	20
ONTARIO	—	102	273
QUEBEC	—	44	274
SASKATCHEWAN	—	17	20

* Updated to March 31, 1999. Prince Edward Island and Yukon 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 Aboriginal lands expired on March 31, 1995. Approximately 40 reserves or communities were mapped with the full cooperation of Band Councils. The procedure of designation was not part of this arrangement.

E. FOR MORE INFORMATION

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