



annual report 78/79

Environment Canada Environnement

Canada. Environmental Protection Service. Atlantic Region. Annual report
Date: 1978/79

3405843D
CIRC # 1

NSDE

ENVIRONMENT CANADA
ENVIRONMENTAL PROTECTION SERVICE
5TH FLOOR, QUEEN SQUARE
15 ALDERNEY DRIVE
DARTMOUTH NOVA SCOTIA B2Y 2N6

ENVIRONNEMENT CANADA
SERVICE DE PROTECTION DE L'ENVIRONNEMENT
5^e ETAGE, QUÉBEC SQUARE
15, PROMENADE ALDERNEY
DARTMOUTH, NOUVELLE ÉCOSSE B2Y 2N6

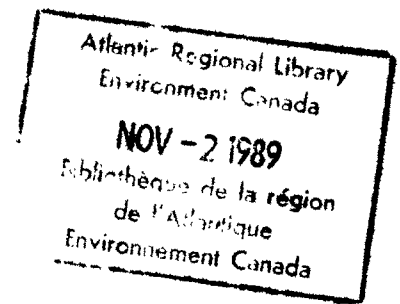
Dartmouth Env. Can. Lib./Bib.



39 066 752



ANNUAL REPORT 1978-79
ENVIRONMENTAL PROTECTION SERVICE



INTRODUCTION

Many changes in attitudes have taken place in the last few years which have a tendency on occasion to de-emphasize the importance that individuals place on the environment. This trend seemed to continue in Atlantic Canada until about the middle of March, when the oil tanker Kurdistan broke in half while attempting to navigate through the heavy spring ice near the entrance to the Gulf of St. Lawrence, spilling several thousands tons of bunker oil. It was amazing how quickly attitudes changed following an incident such as this. People suddenly became concerned about the fact that the fishery was being threatened, their beaches oiled, seabirds were dying, and the stability of the environment was in danger. As a result of this one single incident, it has become evident that environmental protection will have a much higher priority in this region in the immediate future.

Relationships with the Departments of the Environment of the four Atlantic Provinces have become increasingly harmonious and productive during the last year. This is a continuation of the trend which was established last year, and much of the credit must go to the District Directors. As a result of this increased co-operation, a Nova Scotia District Director was established on a part-time basis. Since these positions have been established, a much improved level of communication has been developed. It is obvious, however, that this improved working relationship could not have developed without the effort and support of all Environmental Protection Service Atlantic Region staff.

One of the highlights of co-operative federal/provincial environmental protection programs was the enthusiastic support by the provinces to the EPS leadership in developing a regional hazardous wastes management program. On the debit side, however, was the concern directed to the Department for its handling of the Federal Facilities Clean-up Program.

Operational Planning through the District Directors was initiated and has proven to be very beneficial. This has led to the development of detailed project plans to enable our staff to more readily identify with the discrete activities that are required to meet national goals and regional responsibilities. The region's capability in program development, planning and socio-economic studies was enhanced during the year by the filling of the position of Program Development Officer.

The division of the Department of Fisheries and the Environment and the proposed establishment of the position of the Regional Director General (Environment), has led to much speculation on the future role of the Environmental Protection Service. This, undoubtedly, continues to have an adverse effect on staff morale and output. Final decisions on national and regional organizational changes are needed to assist in reinforcing staff confidence.

At the beginning of the new fiscal year, Dr. C.J. Edmonds, former Regional Director General, EPS, assumed his new responsibility as Regional Director General, Environment (Atlantic). We take this opportunity to thank him for the contribution he has made to EPS during the past six years and wish him every success in his new position.

The following information describes the region's efforts in terms of outputs and achievements in relation to the use of the resources available.

HIGHLIGHTS OF ACHIEVEMENTS

- (1) Coordination of efforts to reduce the adverse impact on the ecology from the spill of oil from the tanker Kurdistan.
- (2) Changes in the New Brunswick and Newfoundland spray program resulting from EPS studies and comments.
- (3) Implementation of the Asbestos Milling & Mining Emission Regulation.
- (4) Implementation of chlor-alkali emission regulation at two plants in the region resulted in a significant reduction of mercury discharged to the environment.
- (5) Development of control measures for the Potash Developments in New Brunswick. The discharge limits are the first of its kind in Atlantic Canada.
- (6) The Masonite Canada plant in Chester, Nova Scotia, made major advances in effluent quality, through substantial changes in its biological treatment system to the point where it now complies with Federal Regulations.
- (7) Installation of two secondary oil and grease removal facilities at the Imperial & Texaco Refineries in Dartmouth, Nova Scotia, resulted in a substantially reduced amount of oil discharge into the Halifax Harbour.
- (8) Criteria were developed for the conditional closure of shellfish harvesting in Mill River, Prince Edward Island, and prompted efforts to identify and control sources of contamination.
- (9) Initiated and provided technical assistance in the removal of 117 barrels of PCB material from a sanitary landfill at Amherst, Nova Scotia, and had them transported to United States for eventual incineration.
- (10) Initiated a comprehensive regional information program to inform the public, provincial and federal government departments of our role and activities.
- (11) Verified that the pH of Maritime fresh water lakes is in fact rapidly declining with many lakes approaching the lower critical tolerance limit for salmonid fish stocks.
- (12) Completed the Environmental Atlas for the southern Gulf of St. Lawrence area including Prince Edward Island.

EXECUTIVE AND ADMINISTRATIVE PROGRAM

OBJECTIVE:

To provide direction to national and regional Service programs and to provide administrative, financial and information support for an efficient and effective operation.

SELECTED ACHIEVEMENTS:

Library expenditures were more tightly controlled and significantly reduced.

Significant improvements in the planning and training process were made resulting in more efficient utilization of time and dollars.

Fiscal year 1978/79 was the first full year in which information services were provided to EPS in the Atlantic Region.

Good working relationships with the media in the region were established.

AIR POLLUTION CONTROL PROGRAM

OBJECTIVE:

To define the air pollution problem, to promote that attainment of desirable air quality levels to control emissions of air contaminants deemed a significant danger to health or environment.

SELECTED ACHIEVEMENTS:

Assessment of ambient mercury in air in the vicinity of a chlor-alkali plant at Dalhousie, New Brunswick, over a period of nine weeks after the installation of air pollution control equipment, found the levels to be below those considered hazardous to health.

1500 hours of SO₂ data collected at the proposed tree farm site, now the Springhill Penitentiary, showed the SO₂ levels were high enough to cause vegetation damage at the facility. As a result, plant modification will be made.

In September/October, an EPS technician helped to set up the total suspended particulates survey in Western Labrador near the Iron Ore/Wabush mine. Survey results have been partly responsible for the establishment of an Industry/Union/Government Program to investigate dust levels leading to the attainment of acceptable air quality.

The single secondary lead smelter in the region was visited four times. Lead oxide and melting pots were brought under control with the benefit being a reduction of lead emissions of Pb by 95 per cent.

It is hoped that the successful completion of the scrubber at Ste. Anne Nackawick to control odour SO₂ and particulates, will encourage pollution reduction at other pulp and paper operations in Canada.

The survey of 23 lakes in Nova Scotia and New Brunswick resulted in the preparation of a report which indicates that lakes in the two provinces are becoming very acidic. It is estimated that about 75 per cent of the sulphur deposited in Nova Scotia originated in emissions outside the province.

A preliminary audit at Advocate Mines confirmed sampling and analytical procedures and indicated the mine should be well within the Regulations. Asbestos reduction of 99 per cent was achieved through the installation of pollution controls, regulation implementations and follow up.

Two federally funded projects were reviewed resulting in one company installing two bag-houses for dust control. A second company has installed cyclone collector to eliminate dust from processing area.

WATER POLLUTION CONTROL PROGRAM

OBJECTIVE:

To identify and define water pollution problems, and develop, implement and advance environmental protection by prevention and enhancement measures to achieve water quality adequate to provide the medium for the management of renewable resources and support a maximum diversity of other water uses.

SELECTED ACHIEVEMENTS:

In the Domtar Wood Preserving Plant in Truro, it was found that while the flotation techniques used did not reduce the toxicity of the effluent to any great extent, they did remove 95 per cent of the phenols and the pentachlorophenols from plant effluent. The toxicity, meanwhile, can be removed by activated carbon. The 2,000 analyses were used as background information for regulation development.

The study on Maritime Coal Mines resulted in a draft report which will be used as a basis for preparation of guidelines for minimizing water pollution in existing and future coal operations.

Criteria gathered from the interim discharge of brine into the Kennebecasis River will be fitted into the operation of the Potash Company of America so as to protect the fish population.

One sanitary survey was conducted at Eel River in New Brunswick to identify and evaluate municipal waste control impact on the Shellfish Closure. Surveys revealed several sources of raw sewage input into the River. The Department of Public Health was informed for corrective action. At a public meeting, EPS recommended the installation of a collection system for the remaining section of the reserve not connected to the treatment system.

As a result of the concerns of bacteria pollution, the Mill River Concerned Citizens Committee was formed for the purpose of initiating action leading to the identification, control and elimination of pollution to the River. A number of meetings were held with this group during the winter months at which federal and provincial representatives from the Departments of Environment, Fisheries, Agriculture and Tourism assisted in the preparation of a program to be implemented in 1979.

In co-operation with U.S. agencies, through the International Joint Commission (IJC), EPS has contributed to installation of appropriate waste treatment facilities at Georgia-Pacific pulpmill. The result is impressive rehabilitation of the benthic condition of the River, and the improvement of water quality to a level to allow safe passage of Salmonids.

WATER POLLUTION CONTROL PROGRAM (CONTINUED)

SELECTED ACHIEVEMENTS:

A multi-faceted approach to the design and use of water quality objective as an aid to problem identification in pollution control was recommended to the Shubenacadie Stewiacke River Basin Board.

Report to NSDOE, strongly recommended the future location of the Fish Reduction Ltd. plant at Clements Pond, Nova Scotia, be located near marine water and not fresh water because the receiving environment does not have the requisite assimilative capacity.

In conjunction with provincial agencies, EPS successfully encouraged the Canso and Connors Bros. fish plants to reduce herring processing to a minimum to reduce oil and solid discharges to the enclosed harbour. Improvement in inplant effluent control and recommendation for proper location of the outfall pipe will be reviewed by the company.

Implementation of four conditional shellfish growing area closures to protect public health, provide a focus for the need for pollution control and to allow exploitation of shellfish resources.

Reduction of one shellfish growing area closure (Lockeport Harbour, N.S.), indicating progress in pollution abatement.

Data from the evaluation of a biological and chemical contaminants in a P.E.I. estuary will assist in the development of a non-point source pollution model. The model will evaluate the effects of land use and environmental factors on the movements of bacteria into an estuary.

All DREE offers have been reviewed and all projects funded meet the requirements of the Environmental Protection Service. Thirteen fish processing facilities and two fish meal processing plants in Newfoundland comply with the Fish Plant Guidelines. A wastewater treatment plant is being constructed at a hog abattoir; the effluent will meet the Meat and Poultry Processing Plant Guidelines. Solid waste from four sawmills, one concrete manufacturer and other industries in Newfoundland is disposed of in a manner acceptable to EPS.

Significant advances were made in negotiations with Price and Bowater pulp and paper mills in Newfoundland to develop compliance schedules. Schedules should be finalized in the next few months. ERCO has agreed to investigate removal of phosphorus which is suspected to exist inside the wharf and install a second electrolytic cell on its effluent line. National Sea Products in St. John's was forced to limit production to prevent discharges of stickwater to the harbour.

WATER POLLUTION CONTROL PROGRAM (CONTINUED)

SELECTED ACHIEVEMENTS:

Golden Eagle Refinery, Newfoundland Zinc, Wabush Mines, Iron Ore Company of Canada, East Coast Recyclers, Dunville Mining were determined to meet EPS requirements consistently. Negotiations or further studies are underway with others to develop programs to meet EPS requirements.

Masonite Canada Limited is currently modifying its biological treatment system in an effort to produce an effluent of better quality than has previously been discharged from the plant. Modifications are expected to be complete by August, 1979.

An air flotation unit has been installed at Imperial Oil's Refinery in Dartmouth, Nova Scotia, as part of their continuing program to achieve full compliance with the Petroleum Refinery Liquid Effluent Guidelines. The unit substantially reduces oil and grease discharges to Halifax Harbour.

Progress has been made towards elimination of the metals contaminants of the Restigouche estuary in the area of the Brunswick Mining and Smelting Ore Loading Facility in Dalhousie, New Brunswick, through the construction of a settling lagoon which accepts runoff from the ore storage area and allows for settling of suspended particulates.

An inspection of base metal mines in Northeastern New Brunswick was completed to establish the status of compliance with the metal Mining Liquid Effluent Regulations/Guidelines. All mines were in compliance with the exception of Brunswick #6 and #12, where substantial improvements in effluent have occurred due to improved mine water treatment systems and recirculation of process water.

Kimberly Clark Canada Limited in Saint John, New Brunswick, achieved full compliance with the Pulp and Paper Liquid Effluent Regulations/Guidelines.

Partially as a result of aquatic monitoring of 1977 experimental spray by EPS of Spruce Budworm, the Newfoundland forestry selected aminocarb because it had a lesser effect on aquatic invertebrates.

The knowledge gained from the study of the effects of ash on water quality will permit appropriate clean up measures to be undertaken in conjunction with NSDOE in the vicinity of generating stations.

OCEAN DUMPING CONTROL PROGRAM

OBJECTIVE:

To prevent the degradation of the oceanic environment by dumping of hazardous materials.

SELECTED ACHIEVEMENTS:

A pre-screening procedure was established to further speed up the process on repeat applications thus reducing lost time and dollars to various government agencies. Closer liaison with the Department of Public Works has resulted in more complete application and reporting from them.

ODCA application for areas of environmental concern (e.g. Dalhousie Public Wharf, Miramichi River) were satisfactorily resolved through coordinated responses of EPS and the Department of Fisheries and Oceans and thus prevented any inputs of contaminated materials in unpolluted areas at sea.

Successful protection of the marine environment was achieved through suggestions of suitable dump sites and time restrictions to protect marine fishery resources. Suggestions were made of alternate disposal methods to prevent further input of pollutants into the sea, e.g., infilling.

Developed improved sampling system for use by proponents to ensure more accurate analysis of sediment.

Contaminated material was contained to a prescribed area close to shore in the Dalhousie situation where heavy metals, specifically cadmium, contamination is known to exist.

ENVIRONMENTAL EMERGENCIES PROGRAM

OBJECTIVE:

To enhance the environment and protect it from the effects of environmental emergencies.

SELECTED ACHIEVEMENTS:

Most of the bulk storage facilities inspected in Newfoundland required upgrading, with about 50 with DCAE and the Fire Commissioner to develop a priority list for improvements, prior to meeting with each oil company. Plans submitted for review have shown more environmental concern however. Several plans have required modification and some have been refused a permit by DCAE.

Prevention seminar/workshops were established with the provinces of New Brunswick and Nova Scotia in conjunction with DOE representatives of the two provinces. This has resulted in increased awareness on the part of industry in preventing spills.

Environmental Emergency Division liaised with the Atlantic Region Petroleum Co-op to ensure that development of effective prevention techniques were identified as a major goal of the Co-ops in the future.

Attended as an observer, participant and referee in the "hands-on" equipment exercise held by Halifax-Dartmouth APA Co-op, Silver Sands Beach, April, 1978. Such exercises prepared the co-ops for dealing with real situations. Some have gone as far as to purchase spill control equipment, including booms.

EPS assisted in the development and conduct of a 3-day major marine exercise held by Gulf Oil Limited in Port Hawkesbury, Nova Scotia. Such an exercise with total deployment of men and equipment, simulating a major spill, is of invaluable assistance and excellent preparation for the real thing.

Review of contingency plans by oil companies drilling off the eastern Canadian seaboard constituted a major portion of our contingency planning program. Approval of these plans is necessary before drilling can commence. EPS reviews ensure that should an accident occur, the oil companies will be more effective in coping with it.

The Gulf of St. Lawrence environmental atlas was successfully completed in 1978/79 and has been in demand both in government agencies and in the private sector.

ENVIRONMENTAL EMERGENCIES PROGRAM (CONTINUED)

SELECTED ACHIEVEMENTS:

Unique experimentation and research costing in excess of \$250,000 in the Newfoundland and Labrador areas will be conducted. With the amount of industry activities offshore of these areas, such research should lead to an increased capacity to protect the coastline in case of spills of hazardous materials.

Tests concluded in the Bay of Fundy under regional supervision demonstrated the effectiveness of the Orion spill tracking buoy in accurately following the path of the oil.

Texaco was prosecuted in February for spillage of 29,000 gals. of furnace oil into Halifax Harbour. The rationale was not only the alleged contravention of the Fisheries Act but a means of ensuring a prevention oriented approach to oil.

Several spills of gasoline handled in an environmentally sound manner by fire departments which had received EPS training (e.g. Montague, P.E.I., 1100 gals. contained; Wheatley River, P.E.I., 2325 gals. of gas prevented from reaching a brook and field where cattle were grazing by North River Fire Department).

Input from the Service as a result of its coordination of advice from various environmental services and agencies led to clean up of oil from the Kurdistan in an environmentally acceptable manner. Consequently, little damage has resulted to the shoreline areas of Nova Scotia.

The Newfoundland DCAE has adopted a 24 hour on-call system at EPS's urging. The pollution reports have increased in number as a result of constant pressure from EPS and DCAE to report all spills ensuring proper response action for clean up activities.

FEDERAL FACILITIES PROGRAM

OBJECTIVE:

To ensure environmental protection from the impact of all facilities operated or under the jurisdiction of the Federal Government.

SELECTED ACHIEVEMENTS:

Information from the Bennery Brook study was used to identify the major pollution source(s) in the vicinity of the Halifax airport. The study documented that the airport drainage is not the major contributor to the acid runoff problem. Recommendations for corrective measures were made and discussions on a control strategy were initiated with the Nova Scotia Department of Environment.

Increased protection of the aquatic environment due to improved operation of wastewater facilities by staff of CN, the Department of National Defence, the Department of Indian and Northern Affairs, Penitentiary Services, Municipal and Provincial Governments, resulting from operator training courses.

Level II of the Wastewater Operator Training Program has been validated and subsequently marketed world-wide by the Water Pollution Control Federation as their Intermediate Course for Wastewater Treatment Plant Operator Training.

Three new treatment systems were brought on line (two at Fundy National Park and one at the National Defence Fire Fighting School), thus increasing the protection to the environment from federally owned sources.

Recommendations were made for improving and upgrading the wastewater treatment system at the Cavendish and Stanhope Campgrounds in the P.E.I. National Park area.

ECOLOGICAL IMPACT PROGRAM

OBJECTIVE:

To ensure the protection of the environment from the effects of all activities initiated, funded or under the jurisdiction of the Federal Government or where the national interest is involved.

SELECTED ACHIEVEMENTS:

Through the efforts of the EPS representative, \$3,000 was received for continued work of the Terrain Sub-Committee dune restoration program at Sable Island.

Gull Island Transmission Line Environmental Impact Statement rejected owing to lack of information on a number of potential impacts including river crossings and disposal of waste rock from tunnel excavation.

Constant liaison with DREE implementation officers has resulted in a good working relationship between DREE and EPS. All projects funded under the ten Subsidiary Agreements are submitted to EPS for approval with respect to environmental protection. EPS comments and provides recommendation on all proposed Subsidiary Agreements.

Evaluation of the approximately 100 Navigable Waters Protection Act referrals helped to improve the design of structures in several cases, resulting in less environmental impact than would have otherwise occurred.

Coordinated reviews of environmental impact statements and advice to oil exploration companies resulted in prevention of impact on such resources on fisheries, bird and mammal populations.

Increased liaison efforts between EPS, Energy, Mines and Resources and Industry led to a better understanding of the need for environmental assessments related to offshore exploration and development activities.

WASTE MANAGEMENT PROGRAM

OBJECTIVE:

To reduce, and protect against, the adverse effects of human health and the environment resulting from activities associated with all aspects of solid and hazardous waste management and encourage recovery and conservation.

SELECTED ACHIEVEMENTS:

Phase one of the selection of a site for hazardous waste material was completed. Six possible sites were identified through a consultants report funded by EPS.

Information was provided to the 150-200 calls on how to dispose of hazardous waste material. The waste would be either neutralized, reused or recycled.

A feasibility study discovered that Municipal wastes generated in Charlottetown could be used to provide the Queen Elizabeth Hospital with its required electrical and thermal energy in an economical manner.

A new sanitary landfill being designed by the Town of Sackville, New Brunswick, will result in the elimination and closure of the dump near Dorchester Penitentiary.

The proper burial of existing material at the dump site at Kouchibouquac National Park, should eliminate leachate entering Rankin Brook and thereby eliminating fish kills.

Approximately 20,000 lbs. of waste paper was collected from the Bedford Institute of Oceanography from mid-September, 1978, to the end of March, 1979. All of it will be recycled.

The potentially recoverable portions of oil is 1.46×10^6 litre per year for reuse. Only 390,000 litres is now collected most of which is used for dust suppression. Alternatives were presented to improve collection and to encourage reuse other than road oiling.

Through the efforts of EPS and MOT the Town of Yarmouth dump located near Yarmouth Airport has been closed. All derelict vehicles have been cleaned up, vectors have been eliminated and the dump was properly covered and seeded.

CONTAMINANTS CONTROL PROGRAM

OBJECTIVE:

To limit or prevent the entry of contaminants into the environment.

SELECTED ACHIEVEMENTS:

As of March, 5631 units (transformers and capacitors) containing approximately 600,000 litres of PCB had been labelled.

A total of 117 drums containing 5265 gals. of PCB contaminated waste, were removed from a dis-used landfill site in Amherst, Nova Scotia. They were shipped to the U.S. for storage prior to incineration.

Close monitoring of the New Brunswick Spray Program resulted in inspections ensuring high standards of handling of pesticides and pesticides drums, and control of spills at airports.

As an advisory member of the Newfoundland Pesticide Review Board, EPS was able to incorporate contingency planning for the spruce budworm mixing plants into their licence to spray.

Initial contact has been made with industry, hospitals and universities to set up a Hazardous Waste Management Committee.

