CANADIAN WILDLIFE SERVICE

ATLANTIC REGION

BRIEFING BOOK

May 1989

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NATIONAL PROFILE

The Canadian Wildlife Service (CWS) is responsible for the protection and management of migratory birds through development of regulations, habitat management, and supporting research and surveys. With the provinces and territories, the Service undertakes programs of research and management related to other wildlife where there is a national interest and advises other federal agencies on wildlife matters. CWS participates in international agreements and programs on wildlife conservation.

Administratively, CWS is one element of Environment Canada's Conservation and Protection Service with regional Headquarters in Dartmouth. National program direction and support is received from CWS Headquarters in Hull.

The Canadian Wildlife Service derives its mandate from Acts, Treaties or Conventions, various agreements, and national/international obligations, and sectors of DOE priority programs which relate to wildlife (e.g. toxic chemicals and acid precipitation).

CWS has the lead nationally on State of Environment (SOE) Reporting and the promotion of the philosophy of sustainable development. Regionally, the director, CWS, chairs the SOE Steering Committee, although the principal coordination rests with the Environmental Protection branch.

Conventions, Treaties, and Agreements

- Britain/Canada/USA Migratory Birds Convention (1916)

- North American Waterfowl Management Plan (1986)
  - Joint Venture Agreements (1989)

- International Polar Bear Conservation Agreement

- Convention on International Trade in Endangered Species - Flora and Fauna (CITES) (1975)

- Convention for the Preservation of Wetlands of International Importance (RAMSAR) (1971). Canada became signatory in 1981.

- Latin American Program - Letters of Arrangement with various Latin American countries

- Whooping Crane Memorandum of Understanding with the U.S. Fish and Wildlife Service (1985)

- International Porcupine Caribou Agreement

- Western Hemisphere Shorebird Reserve Network (1986)

- Federal-Provincial Migratory Bird Management Agreements

Client Groups

Eighty-five per cent of Canadians express a direct and active interest in/or interaction with wildlife. The wide variety of photographers, hunters, hikers, tourists, and recreation industry operators are formally represented by name organizations with the key national ones being the Canadian Nature Federation, Ducks Unlimited the Canadian Wildlife Federation, Wildlife Habitat Canada, the World Wildlife Fund, and the Nature Conservancy of Canada. The activities of Canadians result in an annual expenditure of $4.2 billion and creation of 185,000 jobs.

In addition to the above values, the commercial use of wildlife (guiding, trapping, subsistence harvest by native people, Canadian wildlife safari tours, etc.) add significant real values yet to be documented. The CWS is well recognized as an organization by the Canadian public thanks principally to long-standing promotional campaigns such as Hinterland Who's Who. The work of its researchers is well known and respected internationally.

ATLANTIC REGION

The Atlantic Region of the Canadian Wildlife Service (CWS-AR) covers the four Atlantic provinces: New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland. The regional headquarters is located in Sackville, N.B., and there are three field offices located in Fredericton, N.B., Dartmouth, N.S., and St. John's, Nfld. Fredericton is slated to be phased out in 1990.

Waterfowl are important game species in the region, especially in P.E.I. where there are no big game species. Major game species are the Black Duck, Canada Goose, and seaducks, especially the eider. There are about 50,000 registered migratory bird hunters in Atlantic Canada.

Newfoundland and Labrador have had a long tradition of hunting seabirds and a very significant hunt of murres continues. Approximately 15,000 hunters take an estimated 750,000 birds annually. Due to vagaries of the legal regime, control of that hunt is currently inadequate.

Illegal hunting remains a significant problem in many areas. In some of the Maritimes, spring hunting remains a tradition. In Newfoundland, there was no consistent enforcement effort until very recently, and thus compliance to regulations was generally poor. Enforcement in Labrador remains sporadic.

Native people hunt migratory birds in numbers only in Labrador to our knowledge where there are demands for a legalized spring hunt as in other parts of Canada.

Marine birds represent by far the most important group of birds numerically in the region. In Newfoundland, there are huge colonies of Common Murres, puffins, gannets, petrels, and other species. Colonies of gulls and terns dot the coastline. The tidal mudflats of the Bay of Fundy are invaded by millions of shorebirds each summer during their southward migration. Phalaropes in equal abundance congregate at the mouth of the Bay en route to eastern Africa. The offshore provide winter feeding grounds for millions of birds which nest in Canada's Arctic, Greenland, Iceland, and points east. In our summer, the Grand Banks are the home to shearwaters from the South Atlantic during their winter.

Thick-billed Murres are thought to be under pressure from over-harvesting. All seabirds suffer from pollution of their environment, especially with oil and plastics. Fishery practices also impact on populations, most notably through gill-netting close to colonies or draft-netting. Commercial fisheries of capelin may be in direction competition with some seabirds.

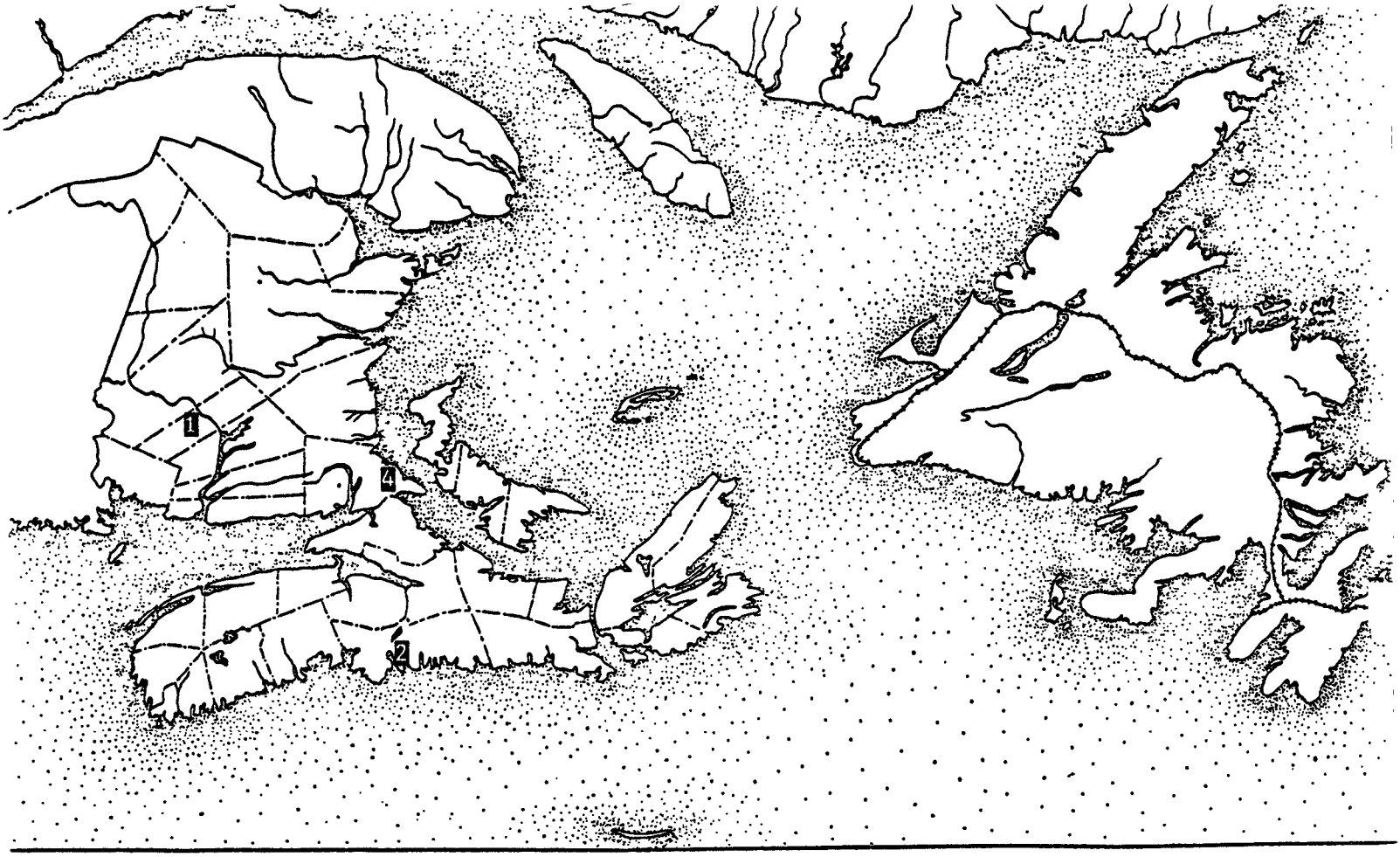
Land-based, non-game species are most influenced by broad based habitat changes. Forestry is an extremely important industry in Atlantic Canada, and provincial governments are moving towards integrating wildlife values in forestry management practices. Implementation of the policy remains a challenge.

CWS-AR manages thirteen National Wildlife Areas and fourteen Migratory Bird Sanctuaries. Most were acquired or designated to complement the waterfowl conservation program with some notable exceptions (e.g. Mary's Point for shorebirds). Provincial governments have the principal responsibility for habitat conservation. With the aid of Ducks Unlimited and Wildlife Habitat Canada, provincial programs for wetland conservation have become much more active in the Maritimes during the last decade. The CWS role here has evolved to become one of coordinator of regional activities, cooperator in some federal-provincial projects, and influencer of programs and policies of other federal agencies.

In Newfoundland, provincial habitat conservation activities for migratory birds has focussed principally on the major seabird colonies, many of which are ecological reserves. Wetland programs are just beginning with the stimulus of the Waterfowl Management Plan and Ducks Unlimited agreements.

The principal endangered or threatened bird species in the region are the Peregrine Falcon, Piping Plover, and Roseate Tern. Several other species, such as the eastern Harlequin Duck, are rare and warrant careful attention. Many species are believed to be well below optimal numbers such as the Common Eider in Newfoundland and Common and Arctic Terns. The eider has apparently suffered from over-exploitation while the terns appear to be victims of a burgeoning gull population and, more particularly, invasion of the Black-backed Gull from Europe.

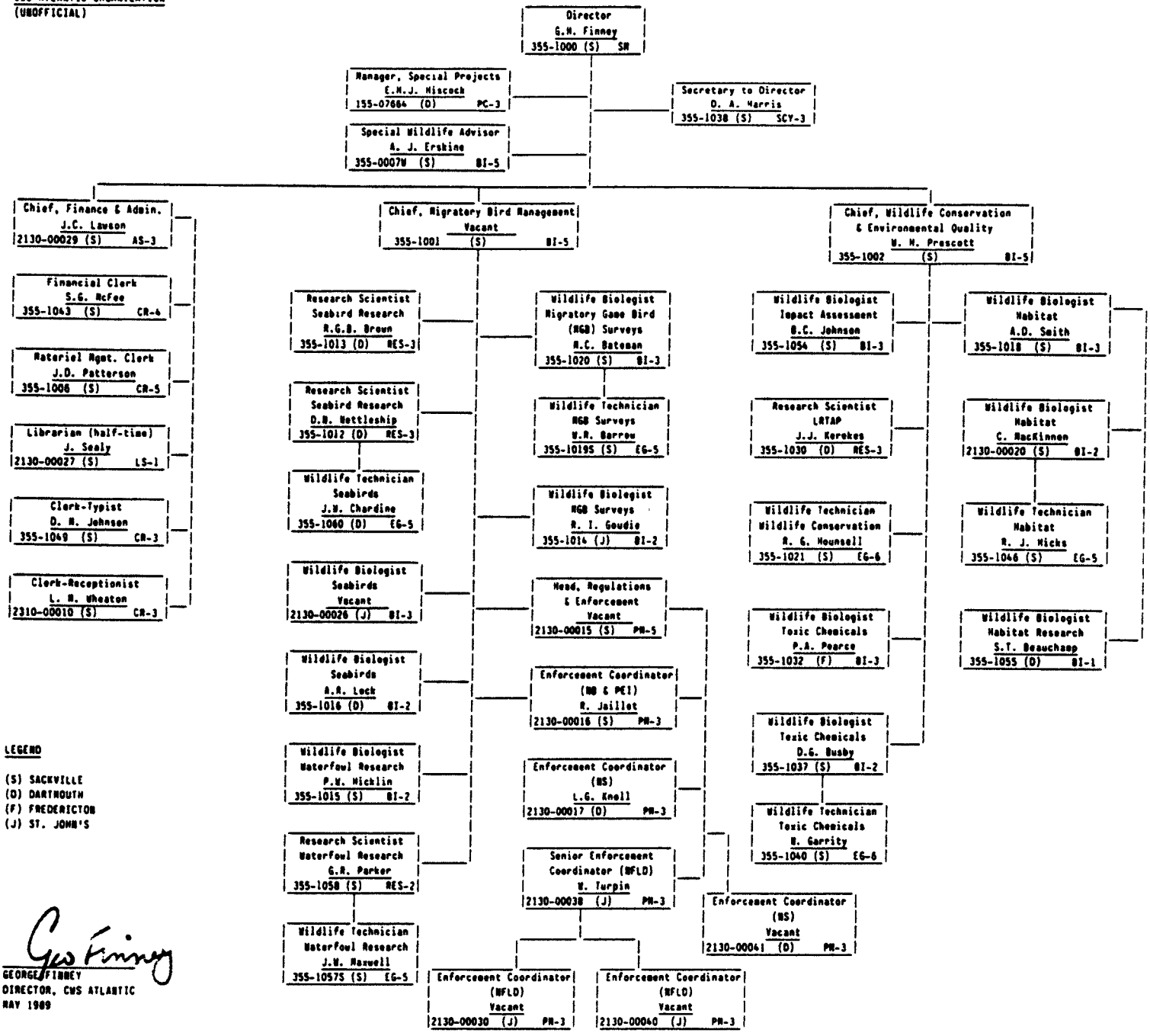
General degradation of the environment has its impacts on wildlife as well as other resources and the economy. Acid precipitation has clearly impacted fish-eating aquatic species such as the Common Loon. The wide-scale application of pesticides and herbicides has in the past had dramatic impacts on some species such as the hawks, eagles, and falcons. A wide array of those chemicals are in use, particularly in forestry and agricultural application, and careful monitoring of their effects is prudent. The loading of surface and coastal waters with toxics and nutrients is of particular concern in some areas of the region.



Canadian Wildlife Service - Atlantic Region

Offices	Person-Years	Staff
1) Fredericton	1	15.9 Scientists & Wildlife Managers
2) Dartmouth	8	5.5 Technicians
3) St. John's	3	3.0 Enforcement Coordinators
4) Sackville	21.9	9.5 Management & Administration
	33.9	

CWS ATLANTIC ORGANIZATION
(UNOFFICIAL)



LEGEND

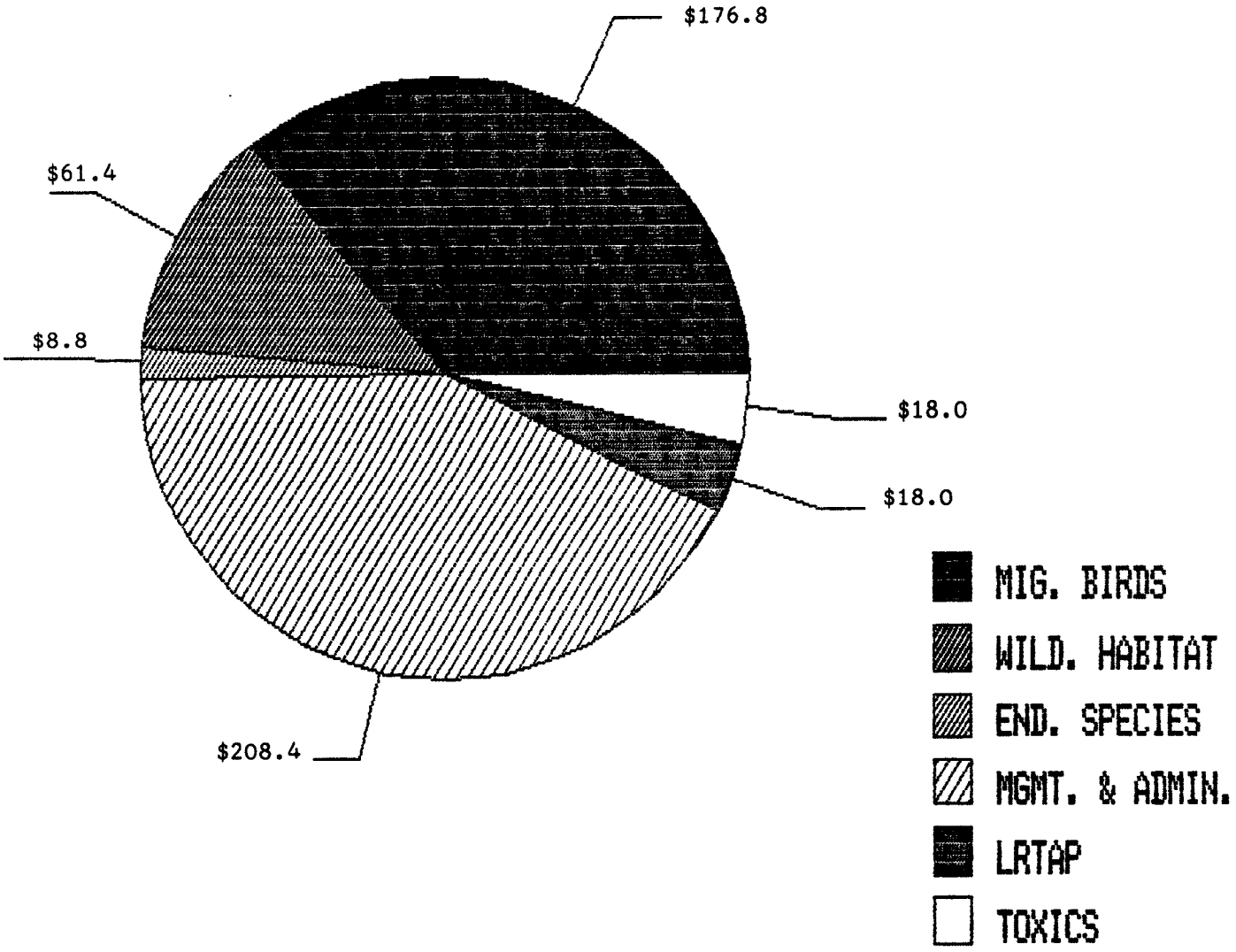
(S) SACKVILLE
(D) DARTMOUTH
(F) FREDERICTON
(J) ST. JOHN'S

Geo Finney

GEORGE FINNEY
DIRECTOR, CWS ATLANTIC
MAY 1989

BUDGET 1989-90 A-BASE

OPERATING AND MAINTENANCE*



Person-Years

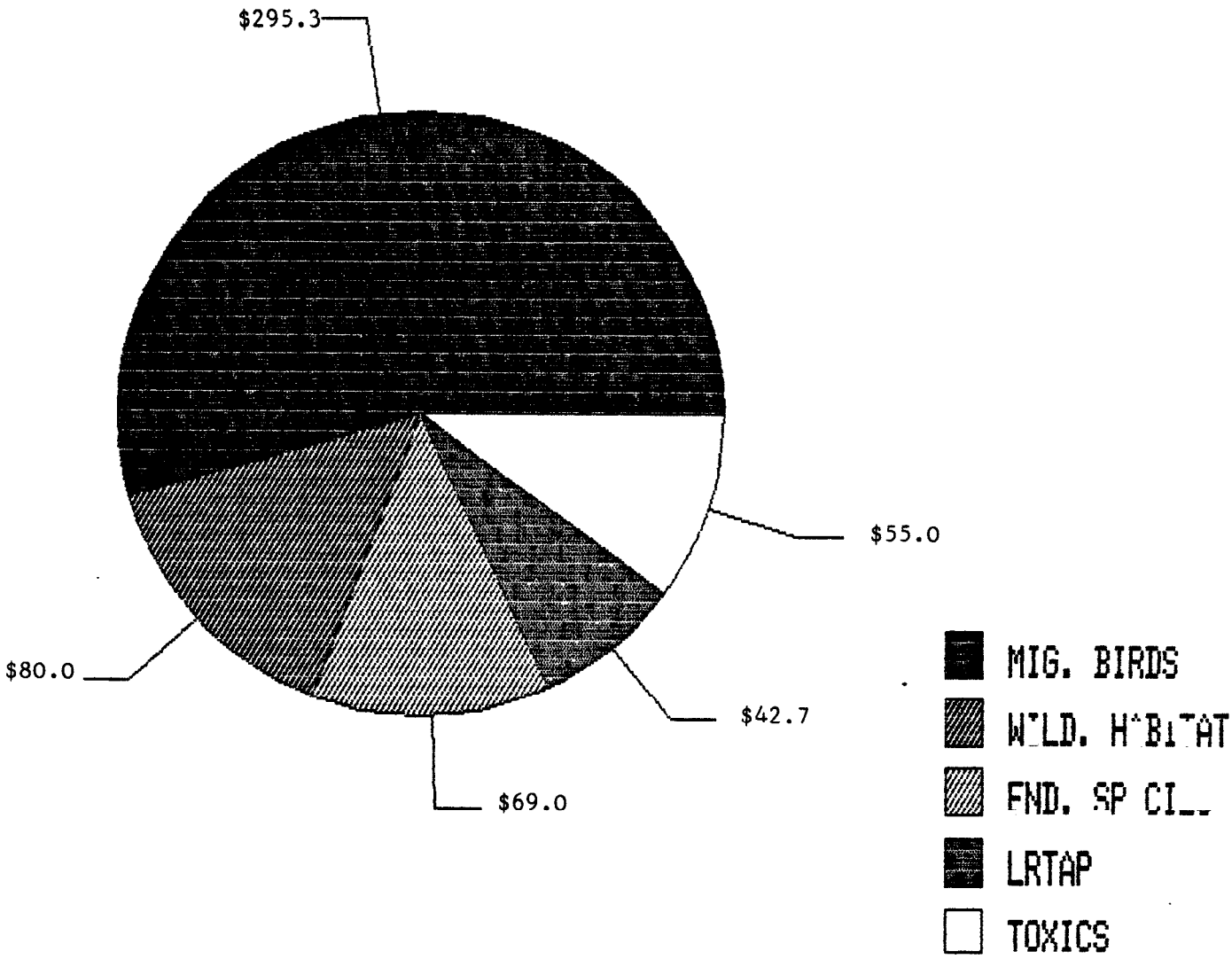
1.1 Migratory Birds	17.4
1.2 Wildlife Habitat	6.0
1.3 Endangered Species	1.0
2.1 Management & Administration	5.5
3.2 Air & Water Emissions/Effluents	1.0
3.3 Toxics	18.0

Totals

PYs	33.9
O&M	$491.4
Capital	$94.9

* Dollars in thousands

SUPPORTING NON A-BASE RESOURCES 1989-90*



1.1 Migratory Birds	$295.3
1.2 Wildlife Habitat	80.0
1.3 Endangered Species	69.0
3.2 Air & Water Emissions/Effluents	42.7
3.3 Toxics	55.0
	$542.0

* Dollars in thousands

Canadian Wildlife Service - Atlantic Region

Supporting Non A-Base Resources 1989-90

Project	Amount	Source
Duck Banding	$43,000	U.S. Atlantic Flyway
Black Duck Monitoring	$30,000	Black Duck Joint Venture CWS-HQ/USFWS
	$15,000	Ducks Unlimited Canada
Eider-Gull Predation Study	$4,500	Univ. of Western Ontario N.B. Wildlife Division
Eider Enhancement - Hare Bay	$35,000	Ducks Unlimited Canada
	$58,000	CEIC
Peregrine/Harlequin Survey - Labrador	$10,000	World Wildlife Fund
	$10,000	Nfld. Wildlife Division
	$7,000	Baseline Studies
Colonial Seabird Surveys	$40,000	Polar Cont. Shelf Project
	$8,000	CWS Western & Northern
Puffin Reintroduction, U.S.	$29,000	National Audubon Society
Forest Bird Research	$20,000	N.B. Wildlife Division
Acquisition of Portobello NWA	$80,000	Wildlife Habitat Canada
Peregrine Recovery Project	$35,000	World Wildlife Fund
	$7,000	Parks
Toxic Chemical Assessment	$15,000	CEPA
Pesticide Studies	$40,000	Pesticide Action Plan
Acid Rain Studies	$42,700	C&P-HQ
Seabird Conference	$6,000	Memorial University
Hunter Information Brochure	$300	P.E.I. Wildlife Division
Black Duck Conference	$6,000	N.B. Wildlife Division
National Wildlife Week	500	Communications
TOTAL APPROVED	**$542,000**	

CWS Atlantic Region

Issues and Initiatives (1989-90)

Migratory Birds Conservation

* Regulate the harvest of murres off Newfoundland to arrest/prevent population declines

  Approach:
  - promote assignment of murre to game bird status or other parliament legal remedy
  - provide information to public
  - upgrade enforcement to reduce selling of birds
  - monitor population trends at Arctic breeding colonies
  - undertake research to support management strategies

* Ensure proper management of game species

  Approach:
  - maintain improved breeding pair surveys of inland duck species
  - undertake population management research (e.g. distribution of species, impact of hunting mortality, etc.)
  - improve enforcement, especially in areas with large chronic problems (e.g. northeastern New Brunswick - in spring); South and East Shore, Nova Scotia; Newfoundland - in winter; Labrador)
  - modify regulations as required
  - implement provisions of provincial Waterfowl Management Plans
  - coordinate program to reintroduce eiders to Newfoundland in the context of an Atlantic Eider Management Plan

* Protect and rehabilitate endangered, threatened, and vulnerable species

  Approach:
  - develop a regional recovery plan for Piping Plovers with all governments and interested NGOs
  - aid Parks in protection of birds at Prince Edward Island and Kejimkujik National Park
  - undertake surveys of Labrador breeding sites for Harlequin Ducks
  - continue mass hack program in Bay of Fundy for Peregrine Falcons
  - develop a recovery plan for Roseate Tern

* Protect areas of national significance in Atlantic Canada to migratory birds

  Approach:
  - designate Portobello NWA (1989)
  - declare Green and Shepherd Islands, Nfld. as Migratory Bird Sanctuaries
  - develop management plans for Newfoundland seabird sanctuaries (provincial) with Newfoundland Parks Service

* Protect important wetlands, estuaries, and coastal areas in the Maritimes

  Approach:
  - negotiate with provinces and other federal departments to designate most important wetlands for restricted development
  - coordinate implementation of the Eastern Habitat Joint Venture in eastern Canada and Atlantic Canada
  - assist in implementation of approved projects under the EHJV
  - lead in development of Estuary Joint Venture to rehabilitate important estuaries and coastal areas
  - examine potential for the Grand Codroy Ramsar site to the designated as a migratory bird sanctuary

* Develop and implement inter-governmental agreements to facilitate cooperation

  Approach:
  - implement Newfoundland/Labrador Migratory Bird Habitat Protection Plan
  - pursue agreements with France and Denmark for management of migratory birds, i.e. St. Pierre et Miquelon
  - promote internationally the designation of Western Hemisphere Shorebird Reserves

* Build wildlife values into the management of forests

  Approach:
  - research habitat requirements in order to prescribe desired management practices
  - advise provincial agencies on management practices

* Minimize the negative impacts on wildlife from the use of pesticides to control forest and agricultural pests

  Approach:
  - experimentally monitor the impact on wildlife of pesticides proposed for registration
  - provide advice to Agriculture Canada, the provinces, and industry

* Monitor persistent toxic chemicals in the environment and provide research related to CEPA priority chemicals

  Approach:
  - once every four years, sample seabird populations
  - spot checks and other surveys of potential trouble sites
  - improve monitoring capability
  - undertake and coordinate research on the biological effects of CEPA priority chemicals

* Assess the impact of acid rain on the wildlife and the ecosystem

  Approach:
  - participate in DOE multi-disciplinary study on the Kejimkujik Watershed to provide information and effects on the biota

* Minimize the impacts of pollutants and fishery activity on seabirds

  Approach:
  - undertake research and surveys on seabird distribution and ecological interactions
  - participate in environmental impact hearings
  - establish baseline data on colony size and do periodic monitoring
  - monitor impacts of oil, plastics, and other pollutants
  - research the impact of gill nets, drift nets, and commercial fisheries on seabirds
  - advise Coast Guard, EP, and other regulatory agencies on the importance of mortality factors on seabirds
  - participate in developing mitigation plans

* Control the impact of expanding gull populations on people and other bird species

  Approach:
  - implement the Atlantic Gull Management Plan
  - survey to confirm population status and trends
  - carefully monitor impacts of gulls on other species and man
  - undertake public consultations and communications
  - establish pilot programs to assess effectiveness of various control techniques

* Provide State of the Environment Reports to the public

  Approach:
  - oversee the regional DOE Steering Committee
  - participate in preparation of the regional report

Regional Activities 1988-89
Atlantic Region

Regulations and Enforcement

Reduction of RCMP staff necessitated the development of a strategy to ensure their continuing support. All provincial Divisions were asked to adopt a plan for MBCA enforcement in their respective areas.

Two term Enforcement Co-ordinators were retained in Newfoundland with a resultant four-fold increase in charges laid.

Staffing of up to four new enforcement positions was also initiated.

Market hunting continued in Newfoundland and Labrador (murres and eiders), New Brunswick (scoters) and Nova Scotia (black duck and geese). Based on this and other enforcement problems, plans were made for significant increases in an effort to address these problems.

Some progress was made with regards to enforcement under the Canada Shipping Act which controls the discharge of oil at sea. One ship which allegedly caused the loss of several hundred seabirds, was charged and required to post a $300,000 bond before leaving port.

Habitat Protection and Management

Malpeque Bay, P.E.I. was declared a Wetland of International Importance under the RAMSAR convention.

The Southern Bight, Minas Basin, N.S., proclaimed a RAMSAR site in 1987, was declared as Canada's second site in the Western Hemispheric Shorebird Reserve Network during a special event in August.

Purchase of parcels of land continued at Portobello Creek, New Brunswick for establishment of the province's fifth National Wildlife Area (NWA).

The administration and management of NWA's continues. New management plans are underway for Boot Island in Nova Scotia and Portage Island in New Brunswick.

CWS participated on Eastern Habitat Joint Ventures (EHJV) coordinating committee in the region.

Three first-step projects under EHJV have begun at Grand Lake Meadows, N.B., Yarmouth salt marshes in N.S. and Grove Pine-Big Brook Wetlands in eastern P.E.I. A regional five year prospectus has also been completed.

New sanctuaries are being established at Green and Shepherd Islands in Newfoundland for eider ducks and P.E.I. National Park for Piping Plover.

CWS participated in Wildlife Habitat Canada/Environment Canada wetland economic evaluations for Nova Scotia and in the development of a Region estuary project.

The wetland inventory has been revised and updated to correspond to P.E.I. and N.S. watersheds. A pilot study for a wetland inventory has started in Newfoundland.

Environmental Assessment

Participation in the Environment Canada Working Group on the Fixed Link crossing to P.E.I. continued with reviews of a general IEE followed by evaluations of specific project proposals by several groups of companies.

The project has been delayed pending the results of a FEARO Panel review in 1989.

Rare and Endangered Species

The endangered species display continues to be in demand at County Museums, for Environment and Wildlife Week programs and other NGO functions. A display schedule is being developed.

CWS coordinated the release of 28 peregrines in the Upper Bay of Fundy as part of the peregrine (anatum) recovery program with major funding by World Wildlife Fund Canada and sponsors, Denison Mines Ltd. and the Tecolote Foundation. Continued collaboration by Fundy National Park, Nova Scotia Wildlife Division and the New Brunswick Ministry of Natural Resources resulted in a successful program. Three territorial pairs were reported for N.B. and two returning single birds were seen in N.S.

An Atlantic Piping Plover Recovery Team was formed in November following a national team meeting in April. Actions plans were developed with support of Quebec and Atlantic Provincial agencies to assist in determining efforts and costs of recovery objectives.

Labrador Harlequin Duck and Peregrine Falcon surveys continued along the northern coast with the support of World Wildlife Fund, the Newfoundland Wildlife Division and the Natural History Society. Several more records of both species were made as well as the observation of two musk oxen.

Population Monitoring and Surveys

Black duck breeding pair surveys were conducted in all four provinces in 1988; all of these except P.E.I. were helicopter surveys. Funding for the aerial surveys came through the Black Duck Joint Venture. The Newfoundland survey used 10 km x 10 km plots, rather than the 5 km x 5 km plots used in N.B. and N.S., to minimize the number on which no Black Ducks were found. The P.E.I. ground surveys in spring and summer (4 coverages) were continued for the 6th year, with collaboration by provincial wildlife personnel. The results indicate a stable to increasing breeding population in Nova Scotia and New Brunswick while a declining trend was suggested in P.E.I.

Surveys for monitoring populations and harvest of woodcock were maintained. The spring singing-ground counts were coordinated with the U.S. Fish & Wildlife Service, and with provincial wildlife agencies including Ontario. Efforts to assess harvest per unit effort were increased in 1988.

Waterfowl banding, with major support from the Atlantic Flyway cooperative banding fund, continued, with over 3000 birds banded in 1988, including 1700 Black Ducks.

The new (1987) trapping method for migrating shorebirds resulted in 10,000 sandpipers banded in 1988 - double the previous best year's catch. The new method is becoming popular among shorebird banders elsewhere.

A study to determine the impact of lead shot ingestion on Maritime waterfowl was initiated in 1988.

Two projects were started under the Latin American Program. In Mexico investigations were made on deterioration of coastal habitat used by Canadian bred waterbirds and raptors. Assistance to Brazil was given to determine the impacts of hydro developments on aquatic communities.

A management strategy for the Newfoundland murre harvest was drafted and the public information program was continued in Newfoundland coastal communities.

Data collection and screening for the Maritimes Breeding Bird Atlas continued at an accelerated rate. Much effort is needed to keep up the volunteer effort and to ensure uniform coverage of remote areas. About 750 data cards comprising around 21,000 records were received in 1988 from nearly 300 observers.

The Maritimes Nest Records Scheme was coordinated and a report prepared and sent out to all contributors. Contributions were below average with 1054 cards received. The 94 cooperators were above the average number, but fewer observers in all provinces turned in fewer records than in 1987.

In support of an initiative by New Brunswick to model wildlife habitat supply under different forest management strategies, forest bird censusing was initiated in a number of different forest habitats. The results will be used to ensure the maintenance of forest bird populations in New Brunswick forests which are increasingly under more intensive management.

Research

The second year of a 2-year study of Black Duck movements and mortality from fledging through to autumn migration was undertaken, using radio-telemetry, at the Shepody NWA, N.B. Movements through August and September were minimal in both years and losses in that period were mostly attributed to Great Horned Owls. Approximately 50% of radio-marked juvenile Black Ducks were killed by hunters in the first six weeks of the season (October 1 - November 15). Of that number, approximately 1/3 were crippled and nonretreival. After autumn migration radio-marked Black Ducks have been recovered in southern Nova Scotia, New Jersey, and Massachusetts. Management strategies on the Shepody NWA will be implemented to reduce this high loss of Black Ducks to hunting, especially the loss to crippling and nonretrieval. In 1989-90 juvenile Black Ducks will be captured in forested and unmanaged wetland habitat in southwestern New Brunswick. Rates of dispersion and mortality will be compared to those for juveniles on the Shepody NWA.

A second year of study of the relative importance of coastal and inland habitats to breeding Black Ducks in Nova Scotia was carried out under contract by a university researcher, using Black Duck Joint Venture funding. The importance of coastal salt marshes to breeding and migrating Black Ducks is now being documented.

A study of eider bioenergetics in the lower Bay of Fundy progressed well and is now in the final data analysis stage. Preliminary results indicate that winter habitat near St. Andrews, N.B. is the primary source of nutrients for spring egg production. The first field season of a related study of eider-gull interactions supports an earlier hypothesis that predation rates on eider ducklings by Black-backed Gulls is related to the presence/absence of winter herring stocks in the Quoddy Region of New Brunswick.

The initial phase of development of a computerized registry for seabird breeding colony data was completed. A description of the registry was presented at the Colonial Waterbird Conference in Washington, D.C.

Papers were published on the influence of ocean currents on distribution of dovekies, phalaropes and storm petrels. A draft seabird atlas was produced from aerial surveys to complement the published shipboard atlas. A model for simulating trends of Thick-billed Murre populations has been refined.

Bird Problem Mitigation

A draft gull management strategy for the Atlantic Provinces was completed and distributed within DOE for comments. It was necessary to consider some priority issues such as control of waste disposal sites before the strategy was completed.

Great Blue Heron predation at fish aquaculture sites and recreational fishing ponds was perceived to be an increasing problem.

The impacts of seaduck depredations on cultured mussel operations were investigated under contract. Included were visits to Scotland and Maine where similar problems occur. Recommendations to reduce the losses will be suggested.

Long Range Transport of Airborne Pollutants

Studies on the influence of acidity on the retention and release of benthic nutrients in the Kejimkujik Calibrated Basins (NS) were completed along with the baseline characterization of the benthic invertebrates. The Kejimkujik Calibrated Basin Symposium (Keji '88) was successfully organized with over 100 local and visiting scientists in attendance. Atlantic Region LRTAP studies in the Kejimkujik area were summarized and reviewed. Canadian Wildlife Service - Atlantic Region presented seven papers or posters. The transactions and papers delivered will be published in scientific journals.

A waterfowl population and habitat monitoring project was initiated in Kejimkujik National Park including a combination of aerial and ground surveys. These surveys will allow investigation of relationship of Common Loons to the presence or absence of fish and determination of habitat preferences and requirements of other waterfowl. Kejimkujik National Park is located in a very sensitive area of Nova Scotia with moderate acid deposition.

Toxic Chemicals

A complete review of the effects of fenitrothion on forest songbirds was conducted. Results are to be combined with two other reviews (pollinating insects; aquatic organisms) and published as an Environment Canada report. Expertise and laboratory services were again provided to the province of Newfoundland in support of their environmental studies of the risks of the hemlock looper spray program. A long term monitoring study of contaminants in a variety of seabirds was continued. Projects to monitor contaminants in wild ducks and terrestrial birds were initiated.

A study to determine the effects of pesticide spraying on birds in orchards was started in the Annapolis Valley of Nova Scotia.

WORK PLAN

1989-90

CANADIAN WILDLIFE SERVICE

ATLANTIC REGION

NOTE: Consult the "Guidelines for Preparation of Work Plans"
Pour remplir ce formulaire consulter "Les instructions pour la préparation des plans de travail"

2. Organization - Organisation

Canadian Wildlife Service, Conservation and Protection, Environment Canada, Atlantic Region

3. State highlights of major products by C&P program and program effects and provide performance indicators
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement

Program - 1.1 Migratory Birds

Canadians comply with legislation affecting migratory bird management. (A2)

Major Products (1989-90)	Performance Indicators/Milestones
- Annual hunting regulations under the MBCA, eg. Waterfowl seasons, murre harvest restriction, are established and enforced in cooperation with RCMP and the provincial governments.	- 1989 harvest regulations are established for each province (May). - Finalize proposal for rezoning of Newfoundland waterfowl hunting zones (November).
- Develop and deliver a strategy to amend the MBC to reclassify murres as game birds; finalize and implement murre harvest management plan.	- Review advice by legal counsel regarding options and re-establish schedule and strategy by Federal-Provincial Wildlife Conference (June). - Strategy is developed to amend MBC to reclassify murres as game birds (May). (Issue may be linked to Protocol).
- Joint federal-provincial enforcement strategy is implemented to ensure effective involvement of RCMP and provincial enforcement components; includes staffing of new positions and opening an office in Labrador.	- Prepare annual enforcement plan for each province (July). - Reduce infractions throughout region with emphasis on N.B. Acadian Peninsula (May); SW Nova Scotia (February); NE Nfld. (March). - Gain RCMP and provincial acceptance of CWS enforcement strategies (August). - New staff on duty (August). Complete training in CWS enforcement strategies (October). - Training courses are provided to RCMP and provincial officers (September).
- Develop and implement regional strategy for issuance of permits under the MBC Act in accordance with National Permits Policy.	- Develop and implement regional permit strategy and procedures (October).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Canadians implement cooperative programs with C&P to increase enjoyment of migratory birds. (A3)

Major Products (1989-90)	Performance Indicators/Milestones
- Ensure that populations of waterfowl shared with the United States are effectively managed by participating in the Atlantic Flyway Council and its Technical Section, establishing harvest controls and developing joint research and surveys programs.	- Nfld./Labrador eider management plan finalized (August); second year of eider enhancement project complete (August). - Management plans for Witless Bay and Cape St. Mary's seabird colonies completed and presented to provincial cabinet (March). - Strategic plan (July) and five year operational plan (January) to rebuild Atlantic Black Duck populations is developed; Black Duck Symposium is co-sponsored (February).
- The four provincial waterfowl management plans are implemented to provide for optimum use of the wildlife resource and to ensure waterfowl populations are maintained or augmented.	- N.B. and N.S. plans circulated to public (May) and finalized (March); P.E.I. and Nfld. plans finalized (July).

Provinces/USA accept harvest limits for game birds. (A4)

Major Products (1989-90)	Performance Indicators/Milestones
- Establish annual harvest levels for waterfowl, woodcock and murres in consultation with the provinces and the U.S.	- Annual harvest regulations are finalized for each province and submitted to HQ (May).

Canadians receive and understand information on the status, trends, and behaviour of migratory bird populations. (A5)

Major Products (1989-90)	Performance Indicators/Milestones
- Promote new and ongoing conservation initiatives and participate in media events to enhance the public awareness, understanding and appreciation of migratory bird protection and management requirements, and prepare newspaper articles, brochures, and displays; e.g. RAMSAR sites, shorebird reserves, new harvest regimes, threats to seabirds.	- Presentations are made to provincial wildlife federations (March), provincial wildlife agencies (March), and interested NGOs (March) on CWS programs and priority issues. - Produce brochure on effects of oil on seabirds (March). National Wildlife Week is promoted (April).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Scientific knowledge on the status, trends, and behaviour of migratory bird populations is increased. (A6)

Major Products (1989-90)	Performance Indicators/Milestones
- Implement surveys to determine the trends and abundance of migratory bird populations and assess their reproductive and mortality rates (e.g. waterfowl breeding pair surveys, Canadian woodcock singing ground surveys, Labrador waterfowl surveys).	- Inland breeding pair surveys for Black Ducks are undertaken (August); summary report is prepared and distributed (October). - Canadian woodcock singing ground surveys are coordinated (July); status report completed and circulated (November).
- Implement cooperative banding programs for waterfowl and shorebirds to determine movements and mortality rates.	- Pre-season duck banding completed (September) and report prepared (February); Canada Goose banding completed (June) and report prepared (January); banding program design to be revised (March). - Obtain inter-regional agreement on eider monitoring and banding programs (September).
- Coordinate and participate in regional harvest surveys of waterfowl, woodcock and murres to evaluate the effectiveness of and incorporate hunter attitudes in hunting regulations.	- National Species Composition Survey - regional wings are sorted (January); National Wing Bee is organized in Sackville (January); National Survey revisions recommended to CWS-HQ (December). - National woodcock wing survey completed (December); complete hunter response survey (January); management recommendations presented (February). - Newfoundland hunter opinion survey is analysed (August); recommendations for modifications for other AR provinces are presented (November); - Initial murre harvest monitoring report is completed (May); simulation model of hunting effects on Thick-billed Murres in NW Atlantic prepared (December).
- Monitor non-game migratory bird populations through Breeding Bird Surveys, Maritime Breeding Bird Atlas, and Maritime Nest Record Scheme.	- 1988 Breeding Bird Survey report completed (July); visits to provincial coordinators (March). - 1988 Maritimes Nest Records Scheme report (April) and 1989 report (March) are completed. - Data gaps for Maritime Breeding Bird Atlas are identified (October); action plan for filling gaps presented to cooperators (November). - 2-5,000 Bay of Fundy shorebirds banded (August); report completed (October); band recoveries evaluated (November).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Major Products (1989-90)	Performance Indicators/Milestones
- Monitor seabird colonies in Arctic and Atlantic Canada according to 5-year schedule with CWS-HQ and region.	- Progress report on distribution and status of high Arctic Thick-billed Murres completed (January). - Report on puffin monitoring at Great Island, Nfld. (December). - 5 year colony monitoring schedule finalized after seabird workshop (October). - Progress report on seabird colony registry is presented (December). - Nfld. aerial photo survey of gulls and terns is analyzed (September); report completed (December). - Beached bird and associated oil mortality surveys conducted (March) and product report on first five years (March). - Migrating phalaropes are surveyed in Passamaquoddy Bay (September).
- Undertake research to develop approaches to reduce the direct impacts of fishing, oil spills and other human activities on seabird and other coastal bird populations.	- Revised atlas of eastern Canadian seabirds at sea is completed (September). - Analysis of Georges Bank/Fundy pelagic seabird data is completed (November). - Atlantic Region position paper on bycatch of seabirds in gill nets (July); departmental position paper completed (February). - Research needs for seabirds is determined at seabird workshop (April). - Methods will be developed to estimate extent of annual seabird mortality resulting from oil spills (March).
- Assess migratory bird abundance in various forest habitats in relation to forestry practices, and as a component of a major New Brunswick project to asses forestry impacts on wildlife.	- First year of four year forest bird/habitat study is completed (March); literature is reviewed and field methods determined (pending outside funding).
- Undertake studies of waterfowl mortality factors and movement in relation to hunting pressures in Shepody NWA and other representative habitats.	- Study of Bay of Fundy eider bioenergetics, feeding ecology, and productivity is written up, and management recommendations presented (March). - Report of gull predation on eiders with management recommendations is completed (March).
- Undertake research to assess the effects of special regulations and illegal harvest on waterfowl harvest rates and management recommendations presented.	- Black Duck mortality factors and movements in relation to hunting are studied in unmanaged freshwater marshes (November); progress report completed (March). - Study of effects of special regulations on waterfowl harvest rates and patterns on NWAs is completed, and management recommendations presented (March).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Program 1.2 - Wildlife Habitat

Federal, provincial, and private land managers comply with legislation to protect wildlife habitat. (A8)

Major Products (1989-90)	Performance Indicators/Milestones
- Designate important or unique areas as (e.g. NWAs - Portobello, MBS - P.E.I. National Park, Codroy Valley), prepare management plans and implement enforcement, maintenance and management activities.	- Declare Portobello NWA (October); acquire two more properties (March); prepare management plan (March). - Announce P.E.I. National Park MBSs (December). - Complete protection plan for Grand Codroy (December). - Complete management plans for Boot Island and Portage Island NWAs and Machias Seal island MBS (January). - Undertake inspections, maintenance, and management activities at all NWAs and MBSs (November); complete inspection report (December).
- Develop a cooperative enforcement strategy for enforcement of MBS and NWA regulations with the RCMP and provincial authorities.	- Develop compliance strategies for Grey and Shepherd Island MBSs (November). - Develop and implement revised waterfowl harvest regime at Shepody NWA (May); field check (October); complete report (December). - NWA land use permits are reviewed and issued (May); report (December). - Visitor permits system continued at Machias Seal Island (August).

Canadians actively support wildlife habitat management, enhancement, and maintenance. (A9)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement the Eastern Habitat Joint Venture (EHJV) to protect and manage waterfowl habitat by chairing the EHJV Board, directing the EHJV Coordinator, finalizing the Prospectus, promoting funding, developing a 5-year operational plan and coordinating the delivery of proposals and plans.	- Finalize preparation of Prospectus and promote funding of EHJV (April); develop 5 year operational plan under EHJV (April); coordinate development of 2nd year project proposals (April); and coordinate implementation of successful projects (December).
- Develop and implement strategies for designating wetlands of international importance under RAMSAR and the Western Hemisphere Shorebird Reserve Network.	- Candidate RAMSAR sites identified and three year plan developed (December). - Preliminary assessment of phalarope populations in Passamaquoddy Bay is completed (November). - Develop management plans for Shepody and Minas Basin RAMSAR sites (February).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Major Products (1989-90)	Performance Indicators/Milestones
- Implement Newfoundland Habitat Protection Plan and develop plans for N.S., N.B., and P.E.I.	- Complete second draft of management plans for Witless Bay and Cape St. Mary's (September), present to provincial Cabinet (March); Grand Codroy Estuary (December), finalize creation of two MBSs (December).
- Deliver requirements of P.E.I. Watershed Management Program (1986-1990) and P.E.I. Wetland Protection and Enhancement Program (1987-1991).	- Participate on steering committees; assist in carrying out field season; review products (March).

Canadians receive and understand information on the location, dynamics, and significance of wildlife habitat. (A11)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement a communication plan to promote our habitat conservation activities and events.	- 1989-90 plan implemented (February); 1990-91 plan completed (March). - Attend provincial Wildlife Federation meetings (March). - Promote National Wildlife Week (April); announce creation of NWAs and MBSs as appropriate.
- Develop and implement a plan to promote the EHJV program (subject to EHJV funding).	- Develop an EHJV Communication Plan (Atlantic Region) (September). - Prepare popular version of EHJV Prospectus (June).

Scientific knowledge on the location, dynamics, and significance of wildlife habitat is increased. (A12)

Major Products (1989-90)	
- Undertake cooperative wetland mapping for Newfoundland and Labrador to identify and classify important wetland habitats with IW.	- Analyze 1989 consultants' report and determine methodology for 1990 mapping project (October).
- Update Maritime Wetland Inventory with new water data.	- Train personnel (June); develop strategy for inputting IW data (October), and update inventory (March).
- Develop and implement a 5-year cooperative research program with Ducks Unlimited to determine the impacts on habitat productivity of various wetland management technique and recommend management options for consideration by wetland managers.	- Prepare research proposal (August); negotiate agreement with DU (December); initiate study (January).
- Participate in wetland fertilization research with Acadia, the province of Nova Scotia and Ducks Unlimited.	- Prepare research proposals (December).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Programs are in place to protect/rehabilitate endangered species in cooperation with other stakeholders. (A15)

Major Products (1989-90)	Performance Indicators/Milestones
- Ensure the development and implementation of national and regional endangered species recovery plans and strategies in cooperation with provinces and non-government organizations for species such as peregrine falcon and piping plover.	- Coordinate Peregrine Falcon release program in upper Bay of Fundy (approximately 30 birds per year) in cooperation with N.S., N.B., Parks Canada, and World Wildlife Fund (August), submit report (November). - Implement regional Piping Plover Recovery Plan (December); lead regional Piping Plover Recovery Team.

Canadians receive and understand information on the status and trends of endangered species populations. (A16)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement a communications plan for endangered species program including displays, brochures, etc.	- Update Endangered Species display and circulate it to appropriate audiences (April); produce brochure on regional endangered species (December).

Scientific knowledge on the status and trends of endangered species is increased. (A17)

Major Products (1989-90)	Performance Indicators/Milestones
- Determine and monitor the status of threatened and endangered wildlife species and investigate the factors affecting their populations.	- Submit status report on Common Tern to COSEWIC for review (September). - Survey Peregrine Falcon/Harlequin Duck breeding areas in Labrador (August); complete report (December). - Monitor key Piping Plover nesting sites (July); report completed (November). - Investigate reports of peregrine observations to determine nesting potential (as opportunities arise); report (December). - Record sighting reports of eastern cougar and prepare report (March).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Program - 1.4 International Water/Wildlife Resources

Agreements for the management of Canada - international water/wildlife resources are in place. (A21)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement joint cooperative migratory bird research and surveys programs with Brazil, Suriname, and Mexico to conserve and protect shared wildlife populations.	- Complete second year of Mexico assessment of development impacts on migratory bird habitat (February). - Cooperative program plan prepared with Suriname (August); first year study initiated (March). - Ensure Greenland participation in CWS Seabird Workshop (April); develop strategy for cooperation (October).
- Contribute to the protection of important shorebird habitat by representing Canada on the Western Hemisphere Shorebird Reserve Network (WHSRN) Council and coordinating Canadian proposals for Hemispheric Shorebird Reserves.	- Participate in WHSRN Steering Committee meetings and review submissions for reserves.

Scientific knowledge and expertise on international water and wildlife issues is increased. (A23)

Major Products (1989-90)	Performance Indicators
- Continue to assist U.S. efforts to reintroduce Atlantic Puffin to coastal New England.	- Transfer 200 Atlantic Puffin chicks to Maine (July); update report on Puffin Reintroduction Study (October).

Program - 1.5 National/Regional Water and Wildlife Resource

Agreements on the management of Shared Water and Wildlife Resources are in place. (A25)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement a Wetland Designation Agreement with N.B. to protect important wetlands. Negotiate similar agreements with other provinces.	- Initiate discussions on a Wetland Designation Agreement with N.B. officials (April); set up steering committee (May).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Water and wildlife management plans for major drainage basins and regions are in place. (A26)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and coordinate the implementation of an Atlantic C&P Wetland-Conservation Program to evaluate and protect wetlands.	- Develop 1989-90 Action Plan (May); continue efforts to protect wetlands through WHC, EHJV, Wetlands Designation Agreements, etc.
- Coordinate the development of a regional program to protect estuaries.	- Develop a strategy for continuing the Estuary Joint Venture (April) (subject to results of March Workshop).

Program - 1.6 Natural Hazards

Land managers implement land use practices designed to reduce damages caused by floods and migratory birds. (A31)

Major Products (1989-90)	Performance Indicators/Milestones
- Develop and implement strategies to reduce impacts of eiders on mussel farms and the effects of nuisance gulls on human and other wildlife species.	- Assessment of 1988-89 study of the impacts of eiders on mussel farms completed (August); consultation with industry and provinces (December); first draft of position paper (February). - Gull management strategy is finalized following input from provinces, NGOs, and public (June); consultation with NGOs and regulator agencies (August).
- Work with MOT to reduce problems caused by birds at airports.	- Provide advice as requested on problems caused by birds at airports; evaluate airport-bird problems in N.S.; report completed (March).

Program - 2.2 Ecological and Economic Interdependence

Canadians are provided integrated information on the state of Canada's environment. (B7)

Major Products (1989-90)	Performance Indicators/Milestones
- Ensure the efficient delivery of a regional SOE program to identify major environmental issues, enhance awareness, and influence decision makers.	- Coordinate regional SOE initiative by chairing CORE SOE Committee.
- Draft the 1990 Atlantic Region SOE Report in cooperation with Departmental Services and complete, print and distribute the 1990 Atlantic SOE Report.	- Second draft of regional report (June); final draft (September).

3. State highlights of major products by C&P program and program effects and provide performance indicators (cont'd)
Indiquer les points saillants des produits majeurs par programme de C et P et les effets du programme et énoncer les indicateurs de rendement (suite)

Program - 3.2 Air and Water Emissions/Effluents

Scientific knowledge on impacts of emissions/effluents on air, water, wildlife and land is increased. (C10)

Major Products (1989-90)	Performance Indicators/Milestones
- Publish "Keji 88" proceedings and distribute copies to participants and others.	- Proceedings published in scientific journal (March).
- Implement waterfowl monitoring program in Kejimkujik Calibrated Basins to assess the effects of changes in acid deposition on wildlife and their habitats. Document results and prepare reports for clients.	- Field work to determine the relationships of fish-eating birds and their productivity to habitat acidity is completed (August), report is produced (November).
- Complete data analysis on the effects of acidification on the habitat and food of wildlife in Kejimkujik. Prepare report for distribution to clients.	- Final report produced (August).

Scientific knowledge related to life cycle management of toxics and their impacts is increased. (C16)

Major Products (1989-90)	Performance Indicators/Milestones
- Measure the exposure of wildlife indicator species to toxic substances, identify sources and evaluate effectiveness of control measures.	- Collect wildlife samples at selected study sites (August), complete analyses (November) and submit report (March). - Implement monitoring plan for dioxins and furans in wildlife (September) and submit report (January).
- Provide information to our clients on the levels of toxic substances in wildlife, especially waterfowl.	- Collect waterfowl samples from hunters (December), complete analyses (February), and submit and circulate report (March). - Assess levels of lead and lead shot ingestion in harvested waterfowl (with Acadia University and N.B.) (December).
- Identify and assess the impacts of toxic chemicals, pesticides, and priority substances on wildlife and their habitats and provide advice and recommendations to prevent or reduce impacts.	- Monitor use of fenitrothion in Atlantic Region (August) and report (December). - Update document on industrial point sources of toxic chemicals (February).