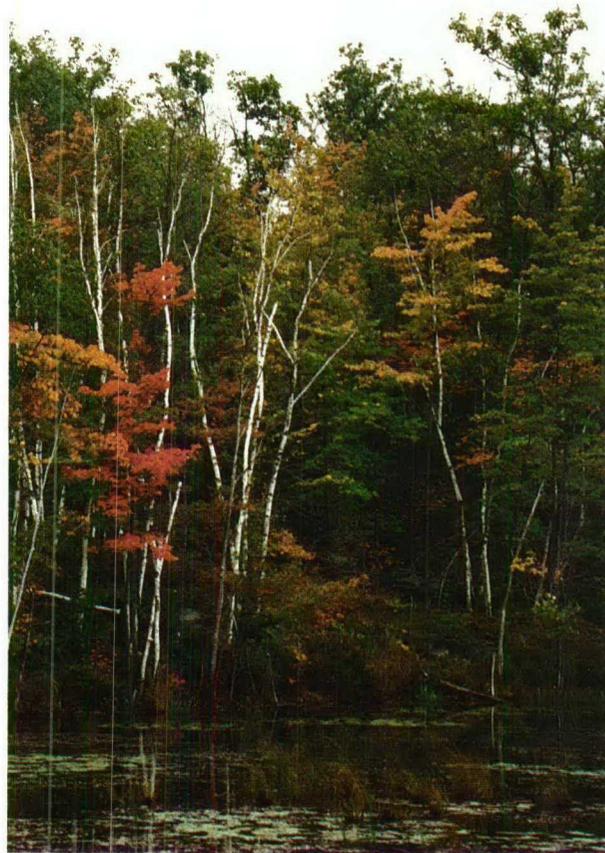


WETLANDS A CELEBRATION OF LIFE

FINAL REPORT OF
THE CANADIAN WETLANDS
CONSERVATION TASK FORCE



**SUSTAINING
wetlands**

ISSUES PAPER, No. 1993 – 1



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This paper was prepared by Mr. Kenneth W. Cox, Chairman of the Canadian Wetlands Conservation Task Force (CWCTF).

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Cover: A Pre-Cambrian Shield wetland in Fall colour.

Photo: K. Cox

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**WETLANDS
A CELEBRATION
OF LIFE**

by

Kenneth W. Cox

Chairman

Canadian Wetlands

Conservation Task Force

**SUSTAINING
wetlands**

Issues Paper, No. 1993-1



North American Wetlands Conservation Council (Canada)

**THE CANADIAN WETLANDS
CONSERVATION TASK FORCE**



*The Canadian Federation of Agriculture
la Fédération canadienne de l'agriculture*



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**National Round Table on the Environment and the Economy
Table ronde nationale sur l'environnement et l'économie**



Ducks Unlimited Canada

**WILDLIFE HABITAT
CANADA**



CANADA'S GREEN PLAN



**Environment
Canada**

**Environnement
Canada**



North American Wetlands Conservation Council (Canada)

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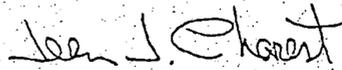
At the Sustaining Wetlands Forum in 1990, Prime Minister Brian Mulroney urged all Canadians to make "restoring our own habitat" a priority, and sustaining wetlands is a vital part of that commitment. The Prime Minister spoke of involving all Canadians in wetland conservation - "there is no room for anyone on the sidelines" - and he identified partnership as the key to success.

The Canadian Wetlands Conservation Task Force, established as a result of that 1990 Forum, has now produced its final report, *Wetlands: A Celebration of Life*. The report challenges governments, industry, conservation agencies and the general public with specific actions that will contribute to sustaining those vital ecosystems. In keeping with the spirit of the Forum, the Task Force emphasizes the value of co-operative partnerships. This report translates the Forum discussions, characterized by insight, innovation and leadership, into strategic actions that will directly contribute to sustaining wetlands in Canada.

The significance of *Wetlands: A Celebration of Life* goes beyond wetland conservation in Canada. It provides a model for implementing sustainable

development. The model demonstrates that, by focusing on ecosystems or landscapes, groups with common interests can be brought together, issues more clearly defined, partnerships consolidated, consensus built, and solutions developed and implemented. Ecosystems or landscapes provide a manageable common ground about which people can get together to discuss their environmental and economic objectives, and work out mutually acceptable courses of action.

It is my hope that Canadians across the country will take up the challenges identified by *Wetlands: A Celebration of Life* with vigour and commitment. The Canadian government, for its part, will do its best to deliver wetland conservation policies and programs and continue its long history of wetland conservation.



Jean J. Charest
*Minister of the Environment
and Member of the National
Round Table on the Environment
and the Economy*

Preface

The Chairman of the Canadian Wetlands Conservation Task Force (CWCTF) would like to thank the following agencies and individuals for both their financial and/or logistical support over the lifetime of the CWCTF. The accomplishments of the CWCTF are due principally to: Mr. Jim McCuaig, Environment Canada, Canadian Wildlife Service; Mr. David Neave, Wildlife Habitat Canada; Dr. James Patterson, Ducks Unlimited Canada; Mr. Mike Kelly, National Round Table on the Environment and the Economy; Mr. Jean-Pierre Martel, Canadian Pulp and Paper Association; Ms. Sally Rutherford, Canadian Federation of Agriculture; and, Mr. David Sherwood, Canadian Institute of Planners.

The members of the Canadian Wetlands Conservation Task Force (CWCTF) would like to thank the many organizations, agencies and individuals who provided information and/or help as well as offered advice for the compilation and writing of this report.

Appreciation is also extended to Hoechst Canada Inc. for their financial sponsorship and to Ms. Margaret Gadsby, of that corporation, for her support and input. Thanks are extended to Mr. Clayton Rubec of the North American Wetlands Conservation Council (Canada) for his advice and counsel. Appreciation is further extended to Ms. Dana Imbeault of Wildlife Habitat Canada who acted as financial controller for the CWCTF. Thanks are also due to Ms. Pauline Lynch-Stewart for her review and comments and

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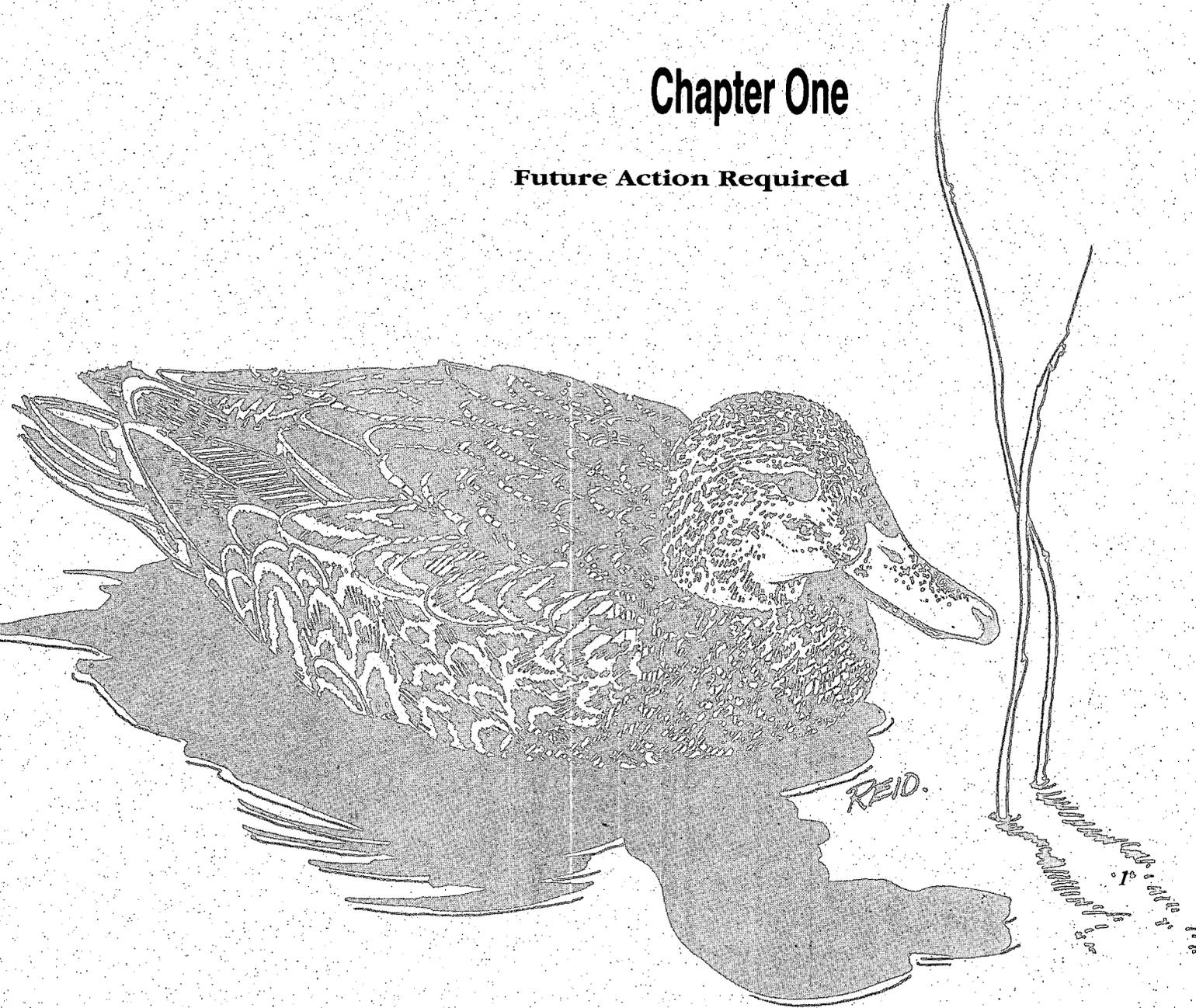
Material for Appendix B (Wetland Programs in Canada) was kindly provided by: Mr. Syd Barber, Wildlife Habitat Canada; Mr. Mike Cahill, Newfoundland and Labrador Department of Environment and Lands; Mr. Lorne Colpitts, Manitoba Habitat Heritage Corporation; Ms. Margaret McLaren, Ontario Ministry of Natural Resources; Ms. Rosemary Curley, Prince Edward Island Department of the Environment; Mr. Patrick Kehoe, New Brunswick Department of Natural Resources and Energy; Mr. Ernie Ewaschuk, Alberta NAWMP Centre; Mr. Lindsay Jones, Pacific Estuary Conservation Program; Mr. Randy Milton, Nova Scotia Department of Natural Resources; Ms. Isabelle Ringuet, Canadian Wildlife Service, Quebec Region; Mr. Robert Bromley, Northwest Territories Department of Renewable Resources; and Mr. Don Toews, Yukon Territory Department of Renewable Resources.

Finally, the CWCTF is indebted to Ms. Theresa Dupuis of Ducks Unlimited Canada for her unfailing support, cheerfulness and logistical engineering throughout the life of the CWCTF.

Acknowledgements

Chapter One

Future Action Required



The Canadian Wetlands Conservation Task Force, which was established in early 1991 by the Department of the Environment at the request of the National Round Table on the Environment and the Economy, is a cross-sectoral group of government and non-government agency and industry association representatives. The Task Force was mandated under the guidance of the North American Wetlands Conservation Council (Canada) to identify appropriate action strategies for the 73 recommendations of the Sustaining Wetlands Forum held in 1990 and to report on progress in wetland conservation since the Forum. This section presents the final recommendations of the Task Force on the completion of their two-year mandate.

The Canadian Wetlands Conservation Task Force believes that open discussion and consensus-building between representatives of various economic sectors in Canada, on issues regarding the environment and the economy, should be strongly encouraged. The dialogue and partnerships created through round table discussions, such as the Sustaining Wetlands Forum, are models for implementing sustainable development. The sharing of opportunities and objectives, and the combining of resources among these partners, has contributed to sustainable development and the enhancement of ecological integrity in Canada. This momentum must be maintained.

Furthermore, the numerous groups that are involved in wetland conservation across Canada must be recognized and encouraged. The Canadian Wetlands Conservation Task Force, while heartened by progress being achieved in wet-

land conservation, is concerned that without continued and escalated effort this precious resource will become a remnant component of some of our landscapes. Dialogue, encouragement, and effective wetland programs must be supported by institutionalized changes to public policy which will affect long-term wetland conservation.

Recommendations

General

1. That the Minister of the Environment maintain the advisory function that the Canadian Wetlands Conservation Task Force has provided. This advisory function might take the form of an advisory sub-committee to the North American Wetlands Conservation Council (Canada). The sub-committee should consist of private sector and nongovernment organizations that have an interest in, or are affected by, wetland conservation in Canada. The committee's mandate would be to promote dialogue and understanding regarding the wetland resource in Canada, and to foster partnerships for the conservation of wetland resources.
2. That the North American Wetlands Conservation Council (Canada) establish a procedure and schedule for follow-up to the recommendations of the Canadian Wetlands Conservation Task Force.
3. That the Minister of the Environment acknowledge that the objectives of the Canadian Wetlands Conservation Task Force, including the release of a final report, have been met.

Future Action Required

Specific

Group 1 – Wetland Policy/Programs

4. That the North American Wetlands Conservation Council (Canada) continue to provide background information on various aspects of wetland management and conservation. That they also provide help, as required, to provinces and foreign countries interested in developing wetland policies and/or legislation.
5. That the Government of Canada establish an Interdepartmental Committee on Natural Resources with the Minister and the Department of Environment being the lead agency. This new committee, with a rotating chairmanship, would comprise the mandates and current membership of the current Interdepartmental Committee on Land and the Interdepartmental Committee on Water as well as representation from additional relevant departments. Policies that would fall under this new Committee's mandate would include the *Federal Water Policy*, the *Federal Policy on Wetland Conservation*, *A Wildlife Policy for Canada*, the *Forest Sector Strategy*, the *Federal Policy on Land Use* and the *Policy for the Management of Fish Habitat*.
6. That governments, industry, conservation agencies and the general public recognize the significance of environmental assessment processes and utilize these processes in the evaluation, mitigation and compensation related to significant negative effects of development on wetlands.



Group 2 – Partnerships

7. That a wide range of government, nongovernment and industry associations and agencies continue to strengthen existing partnerships or form new partnerships in support of wetland conservation. That the North American Wetlands Conservation Council (Canada) continue to foster the establishment of partnerships among all stakeholders, traditional and non-traditional, as an essential link in the environment-economy integration process. It is recommended that the North American Wetlands Conservation Council (Canada) expand its membership to include sectoral representation from agriculture and forestry, both government agencies and private nongovernment organizations.

Group 3 – Agricultural Policy/Programs

8. That government and nongovernment agencies continue to work with farmers to adopt, maintain or improve wetland or habitat incentive programs aimed at the agricultural landscape.
9. That the Minister of International Trade ensure that Canada's response to the efforts of the General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA) include a range of environmental and conservation incentives that are non-trade and non-land use distorting to farmers. These incentives enable Canada to maintain its ability to provide domestic environmental programming.
10. That the federal and provincial Ministers of Agriculture incorporate a range of such environmental and habitat incentives in the form of a non-commodity based payment to farm income support programs into their agricultural policies.
11. That agriculture and wildlife agencies work collectively, and in cooperation with municipal governments, to ensure that the Ministers of Agriculture across Canada include such environmental and habitat incentives "at the farmgate" in agricultural policy and programs.
12. That agriculture and wildlife agencies continue to explore means of alleviating costs to landowners of wildlife damage to agricultural production. This is of particular importance in recognition of the



contribution of private stewardship to habitat conservation, and the growing array of conservation incentives to assist landowners.

Group 4 – Land Tax/ Assessment/Finance Issues

13. That the Department of Finance review and develop a strategy to implement the recommendations that deal with the *Income Tax Act* outlined in *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands* (Denhez 1992).
14. That provincial and municipal governments across Canada review and implement, where relevant, the tax assessment recommendations outlined in *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands* (Denhez 1992).
15. That Canadian private organizations and associations rally the public in support of the recommendations cited in *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands* (Denhez 1992) to ensure their implementation.

Group 5 – Environmental Codes/ Ethics

16. That Wildlife Habitat Canada together with associations of municipalities develop a recognition program for land stewardship to be delivered through municipalities to the landowner.
17. That corporations and industry associations develop and apply environmental codes of practice or guiding principles on resource management,

including wetland conservation. That the North American Wetlands Conservation Council (Canada) should promote and assist such initiatives wherever possible.

Group 6 – Communications/ Education

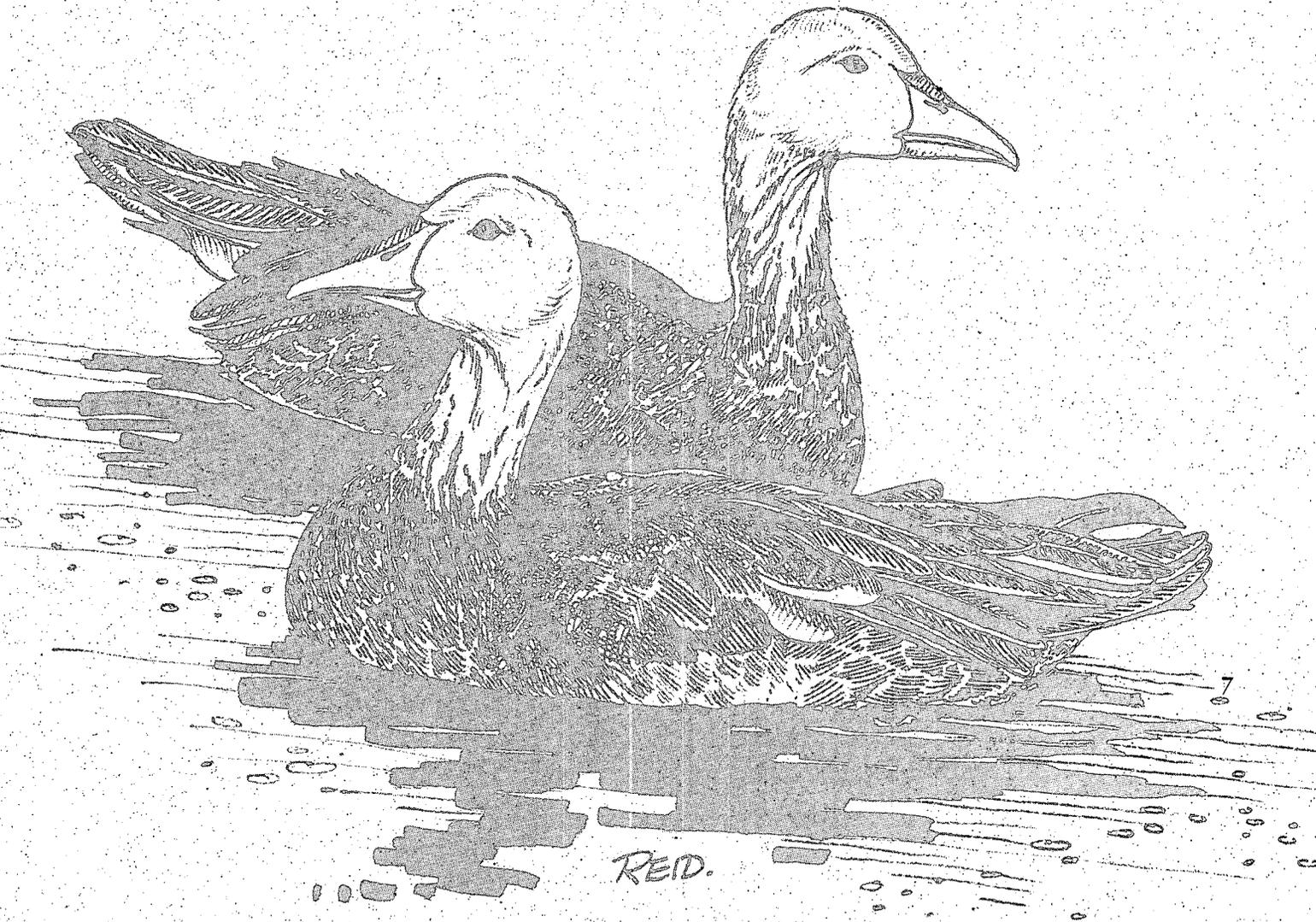
18. That the North American Wetlands Conservation Council (Canada) undertake to organize and establish a "Wetland Resource Centre".
19. That the North American Wetlands Conservation Council (Canada) actively promote and encourage continuing liaison and communications between the conservation community and corporations and industry organizations to encourage wetland conservation on private and corporate lands.
20. That professional associations in conjunction with educational institutions develop and provide wetland ecology and conservation curricula for incorporation into professional training programs.
21. That the North American Wetlands Conservation Council (Canada) explore establishment of a mechanism that would provide national recognition to the business and private sector for outstanding commitment to wetland conservation.
22. That the North American Wetlands Conservation Council (Canada) explore with other agencies the incorporation of a wetland component into special events within various sector activities (e.g. forestry week, soil conservation week).

**Group 7 – Research/
Assessments/Audits**

23. That Environment Canada integrate the existing information and data bases for the wetland resource of Canada in cooperation with the appropriate government agencies and nongovernment organizations.
24. That the North American Wetlands Conservation Council (Canada) promote the assessment of the use of existing natural wetlands and new man-made wetlands for the purpose of sewage treatment, warm water discharge storage, aquaculture and other commercial uses, etc., in Canada.
25. That the North American Wetlands Conservation Council (Canada) develop and promote a priority list of wetland research needs. To this end, the Council should review and assess the recommendations cited in *Wetland Science Research Needs in Canada* (Wedeles *et al.* 1992) and other similar documents.

Chapter Two

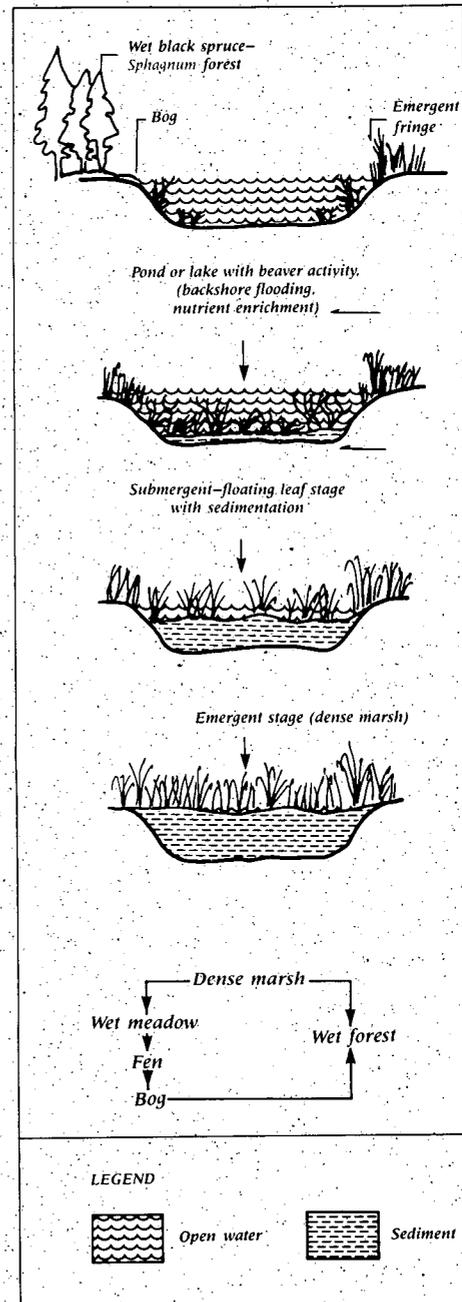
Introduction



In Canada there are five classes of wetlands: bogs, fens, marshes, shallow open waters, and swamps.

Mires...moors...muskegs...peatlands ...wetlands – all these terms describe areas that are waterlogged all or most of the time. They are neither firm “lands” in the conventional sense nor bodies of open water; hence they occupy a transitional position between land and water. The ecosystems that develop on such lands are dominated by the persistent presence of excess water. Wetland is defined as “land that has the water table at, near, or above the land surface or which is saturated for a long enough period to promote wetland or aquatic processes as indicated by hydric soils, hydrophytic vegetation, and various kinds of biological activity that are adapted to the wet environment.”

(Tarnocai 1980)



Theoretical origin and succession of a freshwater basin marsh.

(Source: National Wetlands Working Group 1988)

Bog

Bogs are peat covered wetlands in which the vegetation shows the effects of a high water table and a general lack of nutrients. The surface waters of bogs are strongly acidic. They exhibit cushion-forming sphagnum mosses and heath shrub vegetation both with and without trees. Bogs are subject to increasing interests for peatland harvesting and forestry drainage in some areas of Canada.

Fen

Fens are peatlands characterized by a high water table, with slow internal drainage by seepage down low gradients. They may exhibit low to moderate nutrient content and may contain shrubs, trees or neither. Like bogs, most fens occur in more northern areas generally away from agricultural or urban development impact.

Marsh

Marshes are wetlands that are periodically or permanently inundated by standing or slowly moving water and hence are rich in nutrients. Marshes are mainly wet, mineral soil areas. They are subject to a gravitational water table, but water remains within the rooting zone of plants for most of the growing season. There is a relatively high oxygen saturation. Marshes are characterized by an emergent vegetation of reeds, rushes, cattails and sedges.

The surface water levels of marshes may fluctuate seasonally (or even daily) with declining levels exposing draw-down zones of matted vegetation, mud or salt flats.

Impacts are usually caused by agriculture, dyking, filling for urban development, or impoundment development. They are common along major temperate lakes and in tidal coastal areas as well as in association with prairie ponds.

Swamp

Swamps are wetlands where standing or gently moving water occurs seasonally or persists for long periods, leaving the sub-surface continuously waterlogged. The water table may seasonally drop below the rooting zone of vegetation, creating aerated conditions at the surface. Swamps are nutrient-rich, productive sites. Vegetation may consist of dense coniferous or deciduous forest, or tall shrub thickets. Swamps are most common in southern temperate areas of Canada. Impacts usually occur as a result of drainage for agricultural or urban development purposes or as a result of altered water level fluctuations and forestry development.

Shallow open water

Shallow open waters include potholes, sloughs or ponds as well as waters along river, coast and lakeshore areas. They are usually relatively small bodies of standing or flowing water commonly representing a transitional stage between lakes and marshes. The surface waters appear open, generally free of emergent vegetation. The depth of water is usually less than two metres at mid-summer levels.

Impact to shallow open waters comes generally from drainage for agricultural or urban development purposes as well as harbour, recreational and hydro-electric facilities development.

Wetlands: A Celebration of Life

can there be a more fitting description for one of the most productive ecosystems on earth? This phrase, used by Bob Long in his film "Wetlands", focuses on what wetlands are, rather than what they are not. It is an appropriate title for this final report of the Canadian Wetlands Conservation Task Force (CWCTF). For too long we have been dwelling on wetlands as wastelands, trying to overcome the widely held and narrow viewpoint that wetlands are obstacles to progress, rather than celebrating these extremely productive and beautiful ecosystems.

Canadians have lasting images of their wetlands. Whether it be: thousands of Sandpipers playing in the wind over a coastal mudflat; an island bouquet of waterlilies amidst lush green vegetation; a moose and her calf feeding at the edge of the water; an eagle preying on salmon in an estuary; or, the sun setting over the water silhouetting numerous waterfowl. No matter what the time of year - Spring, Summer, Fall or Winter - our senses are awakened when we explore a wetland. Wetlands are teeming with life - teeming with activity beneath, on or above the water surface.

Humans too are a part of that intricate ecological web in which wetlands play a vital role. We rely on wetlands for a great many products, services, experiences and other benefits (see Figure, p. 11). But, despite a growing recognition of our dependence on these ecosystems, wetlands have in recent times been severely affected by our development activities.

Wetland alteration or conversion has reached 70 percent in central prairie sloughs; 65 percent in our Atlantic salt marshes, 80 to 98 percent in our urbanized regions, 70 percent in our Pacific estuarine marshes, and 70 to 80 percent in southern Ontario and the St. Lawrence Valley hardwood and shoreline swamps. Many efforts are underway to stop, and even reverse this trend. However, many more are needed.

This report provides a basis for ensuring that the functions and values of wetlands are sustained: that Canadians across the country recognize and act on the fact that wetlands are a celebration of life, and that our quality of life is diminished with their continued loss.

Introduction

Province or territory	Peatland area		Total wetland area	
	ha × 10 ³	% of land area in province or territory	ha × 10 ³	% of land area in province or territory
Alberta	12 673	20	13 704	21
British Columbia	1 289	1	3 120	3
Manitoba	20 664	38	22 470	41
New Brunswick	120	2	544	8
Newfoundland-Labrador	6 429	17	6 792	18
Northwest Territories	25 111	8	27 794	9
Nova Scotia	158	3	177	3
Ontario	22 555	25	29 241	33
Prince Edward Island	8	1	9	1
Quebec	11 713	9	12 151	9
Saskatchewan	9 309	16	9 687	17
Yukon Territory	1 298	3	1 510	3
Canada	111 327	12	127 199	14

Occurrence of wetlands and peatlands in the provinces and territories of Canada.

(Source: National Wetlands Working Group 1988)

FUNCTIONS – (CAPABILITIES)	EXAMPLES OF PRODUCTS, SERVICES AND EXPERIENCES SUPPORTED BY WETLANDS	EXAMPLES OF BENEFITS TO SOCIETY DERIVED FROM WETLANDS
Life-support		
<i>Regulation/Absorption</i>	Climate regulation, toxics absorption, stabilization of biosphere processes, water storage, cleansing.	Flood control (lives saved, \$ saved), contaminant reduction, clean water, storm damage reduction; health benefits, erosion control.
<i>Ecosystem Health</i>	Nutrient cycling, food chain support, habitat, biomass storage, genetic and biological diversity.	Environmental quality, maintenance of ecosystem integrity, risk reduction (and related option values).
Social/Cultural		
<i>Science/Information</i>	Specimens for research, zoos, botanical gardens, representative and unique ecosystems.	Greater understanding of nature — locations for nature study, research, education (field trips).
<i>Aesthetic/Recreational</i>	Non-consumptive uses such as viewing, photography, bird-watching, hiking, swimming.	Direct economic benefits to users' personal enjoyment and relaxation, benefits to tourist industry, local economy.
<i>Cultural/Psychological</i>	Wetland uses may be part of traditions of communities, religious or cultural uses, future (option) opportunities.	Social cohesion, maintenance of culture, value to future generations, symbolic values.
Production		
<i>Subsistence Production</i>	Natural production of birds, fish, plants (e.g. berries, rushes, wild rice).	Food, fibre, self-reliance for communities, import substitution, maintenance of traditions.
<i>Commercial Production</i>	Production of foods (e.g. fish, crops), fibre (e.g. wood, straw), soil supplements (e.g. peat).	Products for sale, jobs, income, contribution to GNP.

Translating Wetland Functions into Benefits Valued by Society

(Source: Bond et al. 1992; as adapted from deGroot 1988 and Filion 1988).

The report provides among other things practical recommendations, which, when implemented, will contribute to maintaining Canada's wetland resources. These recommendations are built on the past efforts of many individuals and organizations in wetland conservation, and represent the culmination of a number of events that led up to the creation of the Task Force. A brief account of recent events follows, with additional detail provided in Appendix A.

North American Waterfowl Management Plan (NAWMP)

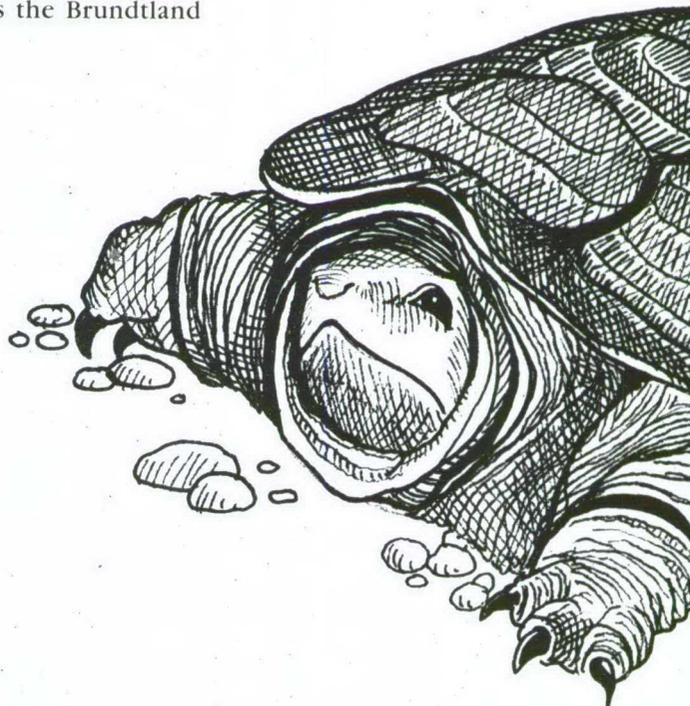
The *North American Waterfowl Management Plan (NAWMP)* was signed by the Canadian and United States federal governments in 1986 and was later endorsed by Mexico in 1989. The Plan promotes a new vision of waterfowl management and recognizes: "wetland conservation" as fundamental to the challenge of waterfowl management; the need to influence land-use practice on extensive areas throughout North America; and the need for partnerships representing federal, provincial, territorial and state government agencies, private organizations, landowners and other citizens. The Plan aims to restore waterfowl populations to the levels of the 1970s by securing over 2.5 million ha of wetland habitat across Canada. The Plan intends to invest \$1.5 billion in waterfowl habitat over 15 years, \$1 billion of which will be spent in Canada.

North American Wetlands Conservation Council (NAWCC) (Canada)

The *North American Wetlands Conservation Council (NAWCC) (Canada)* was established in 1990 by the Minister of the Environment under the authority of the *Canada Wildlife Act* to promote wetland program coordination in Canada. The role of the NAWCC (Canada) is: to provide national leadership on matters related to funding and managing the NAWMP habitat joint ventures; to coordinate the development and implementation of wetland conservation policies and programs in Canada; and to coordinate Canadian involvement in international wetland conservation.

National Round Table on the Environment and the Economy (NRTEE)

The *National Round Table on the Environment and the Economy (NRTEE)* was created in 1988 in response to the challenges identified by the United Nations World Commission on Environment and Development (also known as the Brundtland



Commission). NRTEE's goal is to overcome traditional resistances by reaching across institutional lines and establishing a new basis for sustainable development initiatives. Similar Round Tables have been set up in all of the provinces and territories.

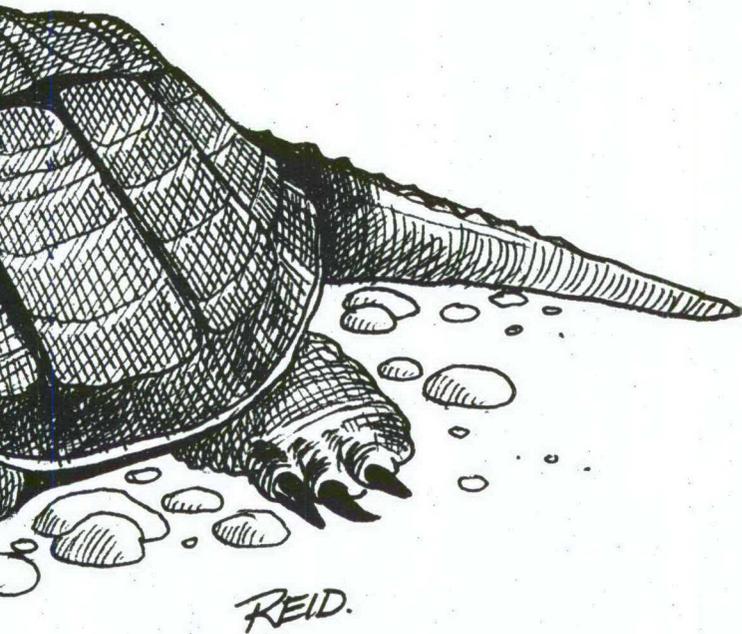
Sustaining Wetlands Forum

The *Sustaining Wetlands Forum*, held in Ottawa in April, 1990, was the first public event convened by NRTEE. The Forum was a milestone not only in terms of wetland conservation, but also towards sustainable development in Canada. The Forum focused on fostering intersectoral partnerships for practical and effective strategies and integrated approaches to managing wetlands as multi-use ecosystems and integral components of the landscape. The 73 recommendations for action emanating from the Forum were submitted to the NRTEE. The recommendations also called for the creation of a national task force to deal with a variety of wetland issues.

Canadian Wetlands Conservation Task Force (CWCTF)

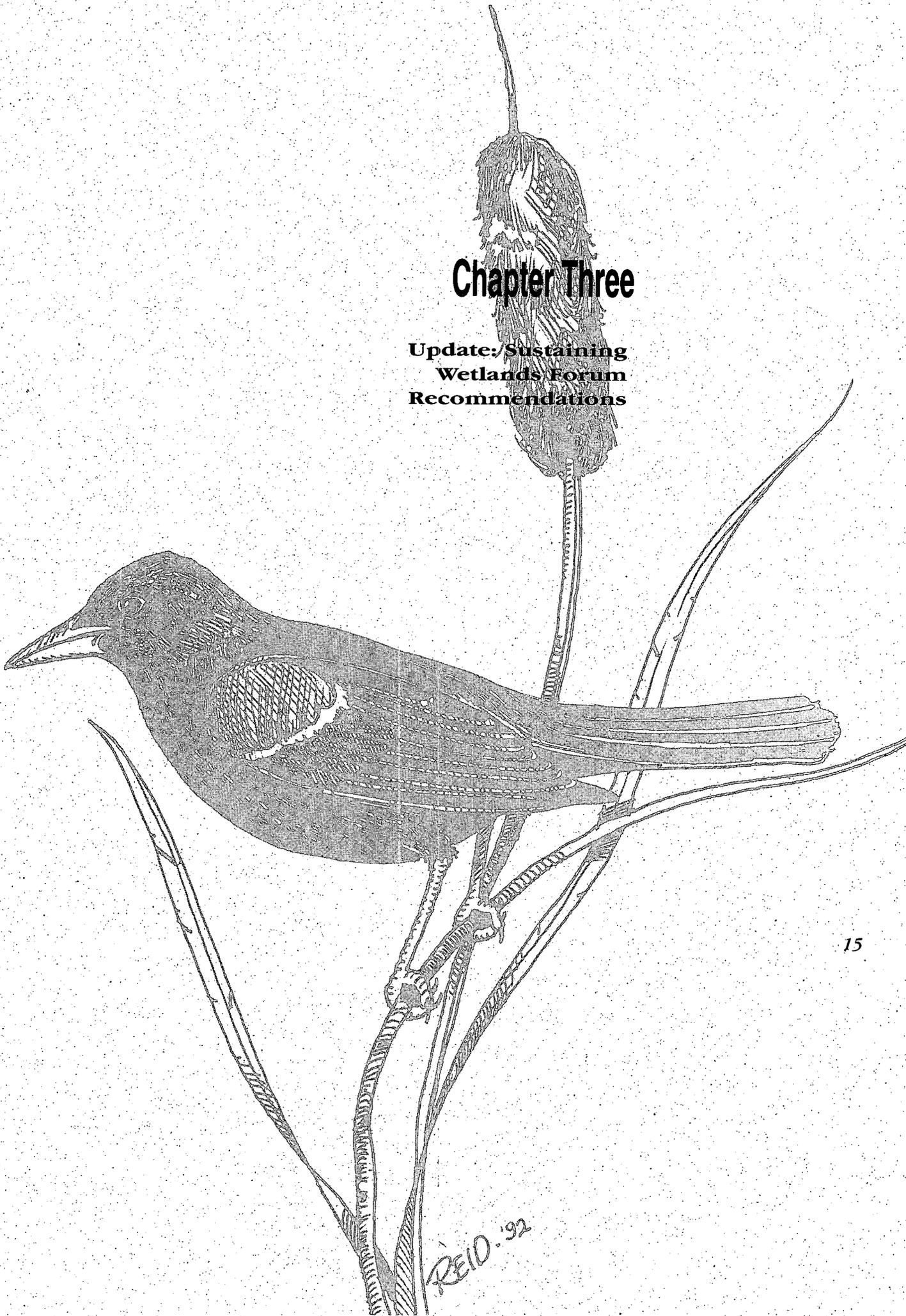
The *Canadian Wetlands Conservation Task Force (CWCTF)* was established under the NAWCC in 1991 by the federal Minister of the Environment, to evaluate and identify appropriate action strategies for the recommendations emanating from the Sustaining Wetlands Forum. Through its membership, the CWCTF has put into practice the partnerships demonstrated at the Forum, bringing together business, agriculture, forestry, planning and environmental conservation groups to devise strategies on the long-term sustainability of the wetland resource. Sectors not formally represented on the Task Force were offered active participation through information exchange and requests to comment on draft documents.

This final report of the Canadian Wetlands Conservation Task Force expands on the recommendations of the Sustaining Wetlands Forum; documents related activities to date, and identifies further opportunities for action.



Chapter Three

Update: Sustaining Wetlands Forum Recommendations



REID. '92

Update: Sustaining Wetlands Forum Recommendations

The Sustaining Wetlands Forum held in 1990, was a milestone towards sustainable development in Canada. The Forum was neither a beginning nor an end, but rather a catalytic step in a long-term process. The purpose of the Forum was twofold: first, to highlight the environmental and economic significance of wetlands and second, to break down intersectoral barriers and foster the partnerships by different interest groups that must be formed if practical and effective solutions to environmental problems are to be found.

The Sustaining Wetlands Forum served as a catalyst to bring even more diverse interests together. It demonstrated that new partnerships can work. The Forum exemplified Round Tables in action and underscored the need to continue this type of dialogue at national, provincial and local levels. The Forum recognized that resolving environmental issues is not just the responsibility of government, but must include all representative groups and interests.

The process used was a multi-sector national policy forum to develop recommendations for the consideration of the National and Provincial Round Tables on the Environment and the Economy and other appropriate groups. The Forum focused on the integration of soil, water and wetland conservation initiatives and how these coordinated approaches might generate benefits for all sectors. Particular emphasis was placed on agricultural, municipal, business and environmental conservation responses to the North American Waterfowl Management Plan, wetland conservation policies, and the sustainable use of wetlands in Canada.

The workshops undertaken at the Sustaining Wetlands Forum resulted in 73 recommendations for action developed by and targeted with respect to four national sectors: business, agriculture, planning and environmental conservation. These recommendations (see

Appendix A), have been grouped for ease of discussion into seven categories, which include:

1. Wetland Policy/Programs
2. Partnerships
3. Agricultural Policy/Programs
4. Land Tax/Assessment/Finance Issues
5. Environmental Codes/Ethics
6. Communications/Education
7. Research/Assessment/Audits.

The Sustaining Wetlands Forum was a positive step towards the establishment of a national vision for wetland conservation and management. Following the Forum, the National Round Table on the Environment and the Economy (NRTEE) requested that the Minister of the Environment for Canada through his North American Wetlands Conservation Council (NAWCC) establish the Canadian Wetlands Conservation Task Force (CWCTF). A listing of Task Force Members is in Appendix C. The CWCTF's main mandate was to evaluate and identi-

Canada's wetlands comprise an estimated 24% of all of the wetlands of the earth.

fy appropriate action strategies for the 73 recommendations emanating from the Sustaining Wetlands Forum. This chapter outlines the achievements over the last few years related to the recommendations from the Forum.

As we work through the decade of the 1990s, Canadians and their leaders will clearly see the benefits to be derived from initiatives such as the North American Waterfowl Management Plan and a vast array of wetland conservation

programs. We can implement effective interlocking and mutually supporting wetland conservation policies and initiatives, that recognize the diverse interests and needs of all sectors of the Canadian economy. Canada has the capacity to be seen as a world leader in sustaining a regionally, nationally, and internationally recognized resource. Wetlands must be viewed as an exciting, important part of Canadian life. This is a big challenge... one that every Canadian will have to work towards.

3.1 Wetland Policy/Programs

The greatest number of recommendations emanating from the Sustaining Wetlands Forum relate to wetland policies and programs. The delegates to the Forum were very concerned that existing programs be continued, and that new wetland programs, supported by strong policy statements and possibly even legislation receive serious consideration in Canada. Canada is the only nation state to date to have an approved federal policy on wetland conservation:

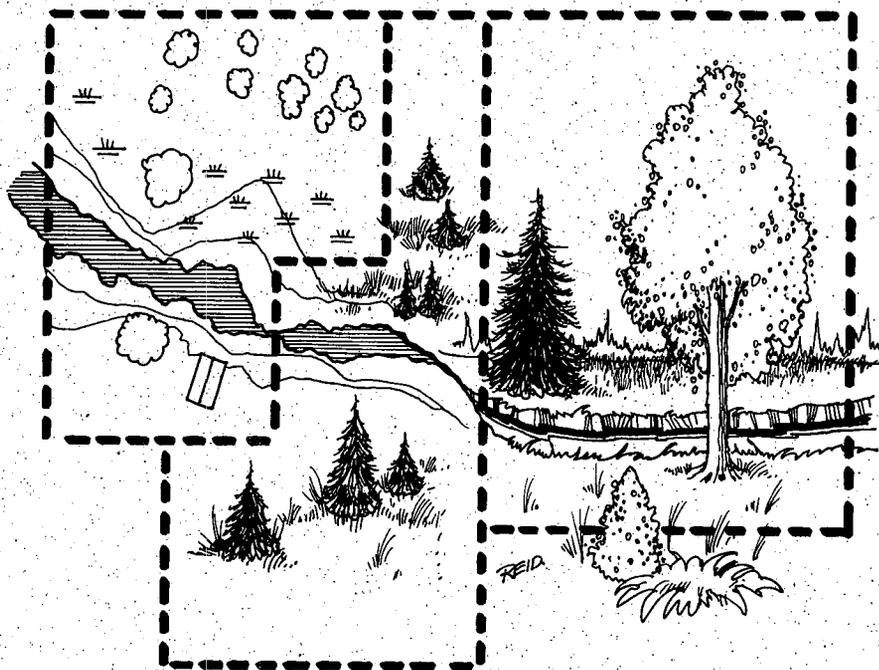
The *Federal Policy on Wetland Conservation* (Government of Canada 1991) released in March 1992, embraces the concept of no net loss of wetland functions". Specifically, the *Policy* will:

"Commit all federal departments to the goal of no net loss of wetland functions:

- on federal lands and waters;
- in areas affected by the implementation of federal programs where the continuing loss or degradation of wetlands has reached critical levels; and,
- where federal activities affect wetlands designated as ecological or socio-economically important to a region."

"Due to local circumstances where wetland losses have been severe, in some areas, no further loss of any remaining wetland area may be deemed essential."

The objective of the *Policy* is to promote the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and in the future. Seven goals are offered in support of this objective. These include:



1. maintenance of the functions and values derived from wetlands;
2. no net loss of wetland functions on all federal lands and waters;
3. enhancement and rehabilitation;
4. recognition of wetland functions;
5. securement of wetlands of significance in Canada;
6. recognition of sound sustainable management practices in such sectors as forestry and agriculture; and,
7. sustained utilization of wetlands.

Seven strategies are outlined to provide practical direction, support and tools to implement the *Policy*. These include:

1. developing public awareness;
2. managing wetlands on federal lands and waters and in other federal programs;
3. promoting wetland conservation in federal protected areas;
4. enhancing cooperation;
5. conserving wetlands of significance to Canadians;
6. ensuring a sound scientific basis for policy; and,
7. promoting international actions.

The Ontario Ministry of Natural Resources approved a wetland policy in May of 1992, under Section 3 of the *Planning Act* 1983. The policy statement discusses conservation and development on provincial wetlands and wetland complexes and sets out definitions and instructions on the implementation of the policy. The policy applies to all provincially significant wetlands. Municipal planning authorities cover all of southern Ontario and parts of northern Ontario. Unincorporated areas of northern Ontario are under the planning authority of planning boards that are subject to the wetland policy. On Crown lands, the Ministry of Natural Resources is responsible for planning and is subject to the wetland policy. However, wetlands that have been previously converted to other uses, including agriculture, are not considered to be wetlands under the policy and are not protected.

At the present time the Governments of Alberta and Saskatchewan are also developing wetland policies. Other provinces are working on wetland sections for either new or existing legislation regarding water and watershed management policies. The continuation, and expansion of this work to all provinces and territories, as well as many municipal-

ities across the country would be a strong step towards solidifying the importance of wetland conservation in the minds of Canadians, as well as to conserving this valuable ecological and economic resource.

Prince Edward Island passed the *Environmental Protection Act* (1987) which specifically includes freshwater and tidal wetlands. This is the only such legislation in Canada. However, Quebec is currently working on legislation which specifically refers to wetlands. The Government of Quebec, Ministère du Loisir, de la Chasse et de la Pêche, has drafted new regulations to supplement the province's existing conservation legislation, *Loi sur la conservation mis en*

Canada is, to date, the only nation in the world to have an approved federal wetland policy. At the present time, Ontario is the only province to have an approved wetland policy, although policy initiatives are underway in a number of provinces.

valeur de la faune (Chapter IV.1). The regulations specify 11 types of wildlife habitat for conservation, four of which (habitat for waterfowl, muskrat, fish and heron) encompass wetlands. The conservation legislation requires habitat mapping and makes illegal any activity which alters or modifies the biological, physical or chemical characteristics of the habitat. The new regulations are expected to be announced in 1993.

In addition, a number of recommendations from the Forum discuss the necessity for general sustainable development strategies that cover land use planning, economic development and conservation to be undertaken in every

jurisdiction across Canada. Comment was made that a comprehensive system of regional planning areas should be established, with boundaries that take natural characteristics such as watersheds into account. A number of recent initiatives support these themes. The Government of Canada released *Canada's Green Plan* (Government of Canada 1990), a 10-year agenda for a healthy environment. It includes a section entitled "Our Special Places and Species" and makes specific reference to wetlands. Throughout a number of other pages in the document, wetlands and their importance in land use decisions are referenced. To date, all provinces and territories are either in the process or have developed a conservation or a sustainable development strategy to provide a general conservation framework for their jurisdiction. Improved land resource management is universal to these documents; however, few of them concentrate on wetlands as a particular issue.

The issue of comprehensive land use planning, whether it be at a provincial, regional or municipal level is complicated. Jurisdictions deal with planning issues in a variety of ways and through a variety of mechanisms. For example, the use of watersheds as designated planning boundaries within jurisdictions is not widespread across Canada. Ontario and Manitoba have some resource management jurisdictions based on watersheds. As well, a number of provinces are considering watershed-based planning in the context of their water policy. For example, various provincial departments in Alberta cooperated with local governments in the Northern Alberta Development Council to develop a sub-basin water management planning process to address the unique erosion/flooding problems that occur in northern Alberta while at the same time attempting to minimize impacts on natural areas, including wetlands. For a com-

prehensive discussion of land use planning, see *Land Use Planning and Sustainable Development in Canada* (Richardson 1989).

The Forum made several recommendations citing the need for a Canadian wetlands system plan. The *Federal Policy on Wetland Conservation* (Government of Canada 1991) defines a process for conserving wetlands of significance to Canadians. The Canadian Council for Ecological Areas has also recently developed a national systems plan for protected areas. This document focuses on ecological reserves, parks and other specially acquired areas. It does not concen-



trate on wetlands, but does provide a framework within which a similar kind of system for wetlands could be created. Further discussion on this particular aspect is covered in Chapter 3.7.

In addition, the *Canadian Environmental Assessment Act* (CEAA), which is currently awaiting proclamation, provides a strengthened project assessment tool for identifying potential effects of development on wetlands. The Act will entrench in legislation the federal government's obligation to integrate environmental considerations into its project planning and implementation processes. To complement the legislation, an environmental assessment reform package was announced in June, 1990, which requires that all proposed policy and program initiatives by the federal government be reviewed for their environmental implications.

There are many different kinds of wetland programs and projects across Canada. These vary from local marsh enhancement projects to multi-agency, multi-nation programs such as the North American Waterfowl Plan which is outlined in Chapter 3.2 below. A discussion of some of the major wetland programs across Canada is outlined in Appendix B.

3.2 Partnerships

Partnerships take many forms, from local naturalists and school children working together to clean up a stream, to nations working together to improve the economic and social well-being of the global community. The last decade has seen a tremendous increase in partnerships, especially in the area of wildlife and wildlife habitat conservation, in Canada. Partnerships require a different perspective on achieving things from the traditional unilateral approach. They are a sign of the times: a model of the future way of accomplishing many initiatives, particularly land use management for conservation purposes.

The North American Waterfowl Management Plan (NAWMP) uses many partnerships to achieve its objectives. This visionary and timely undertaking involving thousands of participants and building upon decades of committed and effective work by the public and private sectors in all three nations focuses on the conservation and rejuvenation of wetlands on both private and public lands. This is accomplished through the implementation of habitat joint venture plans, programs, and projects, all of which are aimed at fulfilling the goals and objectives of the NAWMP.

Throughout North America there are many joint ventures that have been created to deliver the NAWMP. In Canada, there are three habitat joint ventures, including the Eastern, Prairie and Pacific

Coast Joint Ventures. There are also cooperative international species joint ventures on specific wildlife populations such as Arctic Goose and Black Duck that have been created through the NAWMP to fill knowledge gaps and to guide the activities of the habitat joint ventures.

Wetlands are critically linked to many of today's major global environmental issues (climate change, freshwater and groundwater quality and supply, the carbon cycle, water and air pollution, soil and water conservation, and wildlife habitat).

Joint ventures are managed in Canada by habitat joint venture boards receiving guidance from provincial steering committees in all Canadian provinces. These joint ventures bring together international teams of experts and natural resource managers from federal, provincial, territorial and state agencies as well as private organizations, corporations and individual landowners.

The joint ventures, through a number of different mechanisms, have categorized and identified important wetlands and have set out to acquire or secure by other means these wetlands for future waterfowl use. From 1988 to the present, under the NAWMP, approximately 1 200 000 acres (485 000 ha) of wetlands have been secured and/or positively affected. A number of the Forum recommendations discussed the support available to local bodies to intervene in wetland evaluation, planning and development disputes. NAWMP provides a model for local involvement in conservation. The Plan requires that local governments be involved in land use decisions and decision making.

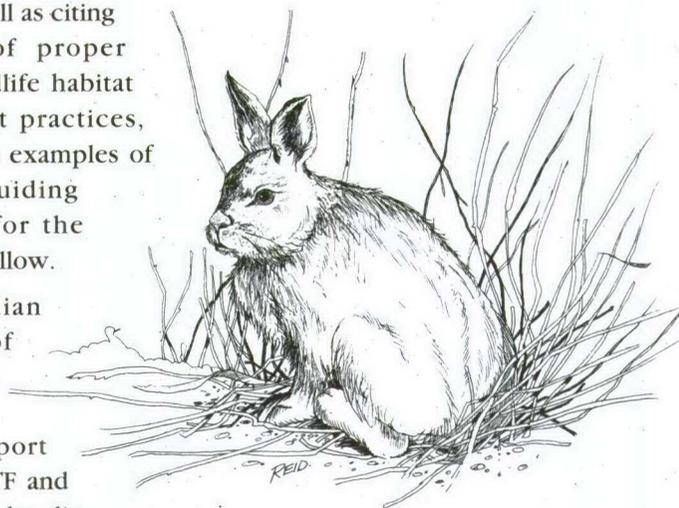
Having nongovernment organizations work with local governments, as they do in the NAWMP, is a good way for nongovernment organizations to learn the local implications of land use policies they often advocate from a distance. Throughout Canada, there are many partnerships between federal, provincial and territorial governments, which also include nongovernment conservation organizations and industry, that deal with the provision of funding from more central governments to the local level. These partnerships offer access to information, provide input and advice from local conservation groups and work with expertise on legal, financial and institutional intervention in wetland conservation and development issues. Examples of numerous partnerships in the area of wetland conservation are outlined in Appendix B.

One of the major objectives of the CWCTF was to foster partnerships and cooperation on a national basis. In this context, one of the tasks undertaken was the communication of information about the role of the Task Force and the formation of such partnerships. About 100 industry associations, nongovernment organizations, and government departments were asked to comment on the recommendations and input their respective organizations' wishes. Since the Forum, the CWCTF and the NAWCC have entered into a number of partnerships with corporations and/or industry associations. Partners involved in some of these projects include:

- Hoechst Canada Inc. has provided capital for general operating expenses to help the Task Force become a reality. As well, Hoechst Canada Inc. provided comments on the drafts of the Task Force report particularly those dealing with agricultural policy in the agro-business community across Canada.

- The Canadian Sphagnum Peat Moss Association provided capital to prepare a paper which focused on the status of peatland development and environmental impacts, sustainable use of peat resources and site restoration within a Canadian context.
- The NAWCC and the CWCTF worked with the Canadian Pulp and Paper Association in producing a position statement for wetland conservation for their industry. The Canadian Pulp and Paper Association also provided capital to help sponsor a paper on wetlands in the forested regions of Canada. This paper discusses the importance of wetlands within the forested regions of Canada as well as citing examples of proper forestry wildlife habitat management practices, and provides examples of general guiding principles for the industry to follow.

- The Canadian Institute of Planners has provided backup support to the CWCTF and the NAWCC by distributing and encouraging their members to use a number of the Sustaining Wetlands Issues Paper Series documents. Plans are underway to include a special wetland component in their annual meeting during 1993, and participate with the NAWCC in the running of a number of regional educational seminars on wetland evaluation techniques.
- The Canadian Federation of Agriculture has worked very closely with the CWCTF on a number of issues and has provided comment



and critique on many of the recommendations emanating from the Sustaining Wetlands Forum.

- Ducks Unlimited Canada has provided capital for general operating expenses, office space, and support staff for the CWCTF.
- Wildlife Habitat Canada has provided capital for general operating expenses and contributed to the publication of reports in the Sustaining Wetlands Issues Paper Series.
- The NRTEE has provided logistical support to the CWCTF through production of reports in the Sustaining Wetlands Issues Paper Series.

The CWCTF applauds the development and growing effectiveness of partnerships across the country. The members are particularly encouraged by the increase in cross-sectoral partnerships which demonstrate the workability and effectiveness of industry/ institutional/ government/environmental partnerships.

3.3 Agricultural Policy/Programs

Considerable interest and discussion about agricultural policies and programs were forthcoming at the Forum. One of the primary reasons a lot of emphasis was placed on agriculture is due to the fact that the greatest single threat to wetlands historically within Canada has been their modification for agricultural purposes. This has accounted for 85% of total known conversions. The loss of wetlands for all changes in function has been felt in every region of the country: two-thirds (65%) of the Atlantic coastal salt marshes are gone; 80-98% of wetlands immediately within or adjacent to many of Canada's urban centres have been lost; more than two-thirds (68%) of the wetlands once present in southern Ontario no longer exist; over half of the potholes in the central prairies have been lost; and, the majority (70%) of the Pacific estuary marshes are gone or degraded.

In Canada's race to become the breadbasket of the world during the three or four decades following the Second World War, marginal lands, many of them wetlands, were burned, drained, ploughed and turned into agricultural land in an effort to meet the ever increas-

Currently the major impact and concern over wetlands rests in Canada's populated southern regions, but potentially significant pressures are on the horizon for Canada's northern wetlands.

ing international market for grains and oilseeds. Agricultural policies during that time were often catalytic in the elimination of these marginal lands, because decision-makers were unaware of the impact that such policy and program initiatives had on the landscape.

While the management of North America's wetlands has exemplified unsustainable development in the past, wetland conservation provides one of the most tangible opportunities for putting sustainable development into action. One of the main objectives of the North American Waterfowl Management Plan is to address the loss in wetlands and subsequent reduction in waterfowl populations across Canada particularly on Canada's agricultural landscapes. Through working in cooperation with federal and provincial agricultural departments, and other agriculture and conservation organizations, it is hoped that a mutually acceptable method of modifying agricultural policies and programs to help conserve soil, water and wildlife, as well as to produce a sustainable income at the farmgate, can be accomplished.

Since the Forum, many positive steps have been taken by government, business, and conservation agencies to under-

stand agricultural policies and programs better, and to modify them to enable ecologically and economically sustainable agricultural landscapes in the long term. The discussion on the agricultural recommendations which follows provides an update on progress over the last two years regarding agricultural policies and programs.

Over the past couple of years, the Policy Adjustment Task Force of the Prairie Habitat Joint Venture (PHJV) initiated and completed a number of projects which dealt with the economic and sociological evaluation of land use options and agricultural programs that have an impact on the NAWMP. Objectives of these reports include assessing the potential for restructuring some farm income support mechanisms so that landowners in "marginal areas" would have an incentive to remove fragile land from annual cropping and invest in land uses that are broader based and more environmentally sustainable (e.g. forages, livestock, wildlife habitat, agro-forestry woodlots, recreation/tourism-based endeavours). This could broaden the income base for agriculture and help stabilize rural communities.

In 1990, Wildlife Habitat Canada, and the federal Departments of the Environment and Agriculture, released a report entitled *Common Ground* (Girt 1990), which provides recommendations for policy reform to integrate wildlife habitat, environmental and agricultural objectives on the farm. The Federal and Provincial Working Group on Environmental Sustainability reviewed the report, and recommended follow-up activities in the areas covered by the report. Since then the protection of wetlands has been incorporated into federal-provincial agreements on agricultural soil and water conservation, and environmental sustainability through objectives related to protecting soils, improving water quality and protecting wildlife habitat.

Discussion is taking place as to the need to remove inadvertent incentives in existing policies and programs for farming practices which lead to environmental degradation, including the conversion and pollution of wetlands.

In 1991, the *Farm Income Protection Act* was passed by the federal government. There will be yearly modifications to regulations under the Act. There are two distinct components to this Act:

- (i) The Net Income Stabilization Account (NISA) allows farmers to set aside a portion of their income in good years and draw on those resources in low income years. Because NISA is not tied directly to production levels it should have a negligible influence on land use.
- (ii) The other program, the Gross Revenue Insurance Plan (GRIP) compensates farmers for below average yields or prices, based on a pre-determined formula. It was originally thought that GRIP would have a substantial effect on land use and could be an incentive to bring new lands into production even though they may not be of high capability for annual cropping. This has not proven to be the case.

There is an expected evolution under the *Farm Income Protection Act* in which the GRIP program may be phased out in favour of a modified NISA program. Initially the GRIP program only included grains (e.g. wheat, oats) and oilseeds (e.g. canola, flax) as well as some horticultural and pulse crops under its auspices, but work is underway through the Prairie Habitat Joint Venture and other groups to have forage (e.g. alfalfa) crops included as an allowable crop under the program. This would permit income support and stability tied less to a specific commodity and allow for increased diversification on

the farm. The inclusion of forages would encourage soil and water conservation as well as provide additional wildlife habitat.

Agriculture Canada's Bureau for Environmental Sustainability is working with the provinces to undertake environmental assessment of all major agricultural policies and programs. Enabling legislation for the new safety net programs (GRIP and NISA) calls for mandatory environmental assessment within two years of their establishment.

During 1991, as part of a program on sustainable agriculture, two different processes were developed to help implement these programs:

- a) A Federal/Provincial Working Group on Program Review was established to review the environmental impacts of these new programs.
- b) The Federal/Provincial Agreements on GRIP requested the following:
 - i) within one year both governments to the agreement will develop a process to monitor and develop environmental impact statements.
 - ii) within two years they will evaluate, using an environmental assessment report, the need for amendments to the agreement and the program itself to mitigate environmental impacts and to allow for the introduction of cross-compliance requirements and environmental regulations.
 - iii) based on the environmental assessment report, partners are to agree on conditions and circumstances under which insurance may be withheld, restricted or enhanced, in order to protect the environment and to encourage sound management practices to ensure that environmental sustainability will be achieved.

Activities are currently underway to evaluate this work. The terms of reference will include a definition and assessment of the feasibility of cross-compliance. It is important to structure conservation land management programs and agricultural commodity programs so that the objectives of both are clear. The Canadian Federation of Agriculture is in favour of conservation land use programs, and is working towards their acceptance as long as it is clearly recognized that they are not simply income support programs in disguise.

At the provincial, federal and international levels, much time and effort is being put into trying to restructure agriculture support programs so they will achieve resource neutrality and reduce our vulnerability under international trade agreements, such as the General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA). Environmental concerns and issues are a major part of trade negotiations in dealing with both NAFTA and GATT.

Over one seventh of the original pre-settlement wetland area of Canada has been converted to other uses.

The creation of 15 different Sectoral Advisory Groups on International Trade (SAGITs) such as Agriculture, Food and Beverage, reporting to the federal government, provides an opportunity to monitor and influence issues dealing with the environment and international trade. This permanent advisory committee system has been established to allow an ongoing,

confidential, two-way flow of information and advice between the government and the private sector on international trade matters. It is the main channel for communicating to the government the views of the Canadian private sector.

In 1989, the federal Department of Agriculture released a policy statement called *Growing Together: A Vision for Canada's Agri-Food Industry* (Agriculture Canada 1989). One portion of that policy was entitled "Pillars of Reform", four statements on the direction the Department will be taking. The fourth pillar was entitled "Increased Environmental Sustainability". As part of this fourth pillar of reform, the Prairie Farm Rehabilitation Administration (PFRA) introduced the Permanent Cover Program. This program encourages the establishment of permanent cover on the prairies through the creation of shelterbelts, better soil management to cut down on wind and water erosion, and through the conversion of low capability croplands to forage crops and wildlife habitat.

Federal government funding under the Farm Support and Adjustment Measures Program (the third line of defence for agriculture) was available in April 1991 to extend and expand the Permanent Cover Program (PCP). Under PCPII, farmland/owners in Manitoba and the Peace region of B.C. are now eligible, along with Alberta and Saskatchewan landowners, to enroll Canada Land Inventory (CLI) class 4, 5 and 6 lands into the program, converting them from annual cultivation and cropping to permanent cover. The earlier program only accepted CLI class 5 or 6 lands. PCPII was to provide \$50 million up until March 1994. This program became very popular and was actually over-subscribed. The available money was fully utilized by mid-1992.

Programs such as the Permanent Cover Program established in western Canada by agriculture agencies are being reviewed with the possibility of expansion, contraction or termination. Whatever the end result, the next generation of new or renewed agricultural programs should take care to ensure that the objectives are clear, i.e., what is conservation and what is income support?

The majority of wetlands at risk in Canada are in private ownership or on provincial Crown land.

A number of provincial governments have developed frameworks for environmentally sustainable agriculture programming. The frameworks are based on issue identification and action priorities established through a stakeholder consultation process. The intent is to deliver programs through a comprehensive, integrated approach toward managing the physical resources on which the provinces' agricultural industry depends. Of the five program areas identified, farm-based programming recognizes the need for extension and implementation of environmentally sustainable agricultural practices at the farm level. The farm-based program will emphasize soil and water conservation, protection of surface and groundwater quality, pollution and waste management at the farm level. Wildlife habitat, genetic resources, air, climate and energy will also be addressed where appropriate. Approximately sixty percent of funding is to be directed toward the farm-based program.

Extension programs and the level of service offered in assisting farmers varies greatly from province to province. These programs are now basically the responsibility of provincial governments. However, under *Canada's Green Plan* (Government of Canada 1990), some of the activities to be carried out through Agriculture Canada's program should make a contribution in this area.

Due to government cuts in manpower and expenditures many extension programs have been reduced to the point where they only supply the farmer with information as opposed to actual help on

An example of this would be exclusion of cattle from streambanks and wetlands.

- In Manitoba, wetlands conservation is part of the Farming for Tomorrow Soil Conservation Program.
- In Alberta, agrologists and biologists have been working with landowners to coordinate efforts of agriculture and wildlife habitat programs through delivery of the Canada-Alberta Soil Conservation Initiative (CASCI)/NAWMP Program.



the land. It is hoped that because of the changing nature of these programs, particularly with new added environmental components, governments will see fit to provide extended extension services at the farmgate.

A number of agricultural programs with extension components to them that currently exist across Canada include:

- In Prince Edward Island, the Environmental Partners Fund through the NAWMP and different agriculture groups, are implementing wetland conservation and riparian management practices on provincial farms.

In addition, a number of conservation initiatives involving agriculture both under the NAWMP as well as through other delivery mechanisms are underway. Atlantic coastal marshes and inland wetland complexes are under stress as well. Many of these marshes have a tradition of harvest associated with using the grasses and sedges that grow there for annual feed. In 1991, the Government of Canada established the Eastern Canada Soil and Water Conservation Centre, located in Grand Falls, New Brunswick. The Centre's mandate is to identify, document and promote sustainable soil and water management practices. Soil degradation

and its impacts on water quality and farm profitability were identified as the priorities for the Centre.

In September of 1992 Agriculture Canada and the Ontario Ministry of Agriculture and Food announced a new multi-million dollar program that provides incentives to farmers to manage their farms in an ecologically sensitive manner. Part of this program, which is a follow-up to the National Soil Conservation Program/Permanent Cover Component and Land Stewardship II, will help to protect ecologically sensitive lands. As well the government and nongovernment agencies are working to create the Ontario Land Care (OLC) Program, a program similar in intent to the Prairie Care program in western Canada.

Ontario agencies and organizations are also working to develop a "one window" approach to land stewardship. This will allow landowners easier access to become involved with a range of available private land stewardship programs. The agencies involved include the Ministry of Natural Resources, Ministry of Agriculture and Food, Wildlife Habitat Canada, Ducks Unlimited Canada, Canadian Cattlemen's Association, Ontario Soil and Crop Improvement Association, and some Conservation Authorities.

A number of existing agricultural programs have been strengthened and/or are in the process of significant modification. The *Crop Insurance Act* (1990) created by the federal government, included for the first time a legislative mandate for crop damage prevention and crop insurance programs to be negotiated by federal/provincial agreement. Such agreements under the Act would secure funds for prevention and compensation programs at mutually agreed upon levels.

During 1991 Alberta, Saskatchewan, and Manitoba negotiated crop insurance agreements with the federal government (Agriculture Canada). All of the crop insurance agreements for waterfowl have been signed and provide for waterfowl damage to be compensated for at a rate of 80% of damage. There is a maximum cash value in some provinces. This is in line with other insurance programs in the agricultural sector. The government considers that because there are no harvesting costs associated with damaged grains or oilseeds, 80% compensation is considered to be full compensation. During 1991 Alberta, Saskatchewan, and Manitoba also negotiated crop damage prevention agreements (lure crops, and bait stations) with the federal government (Environment Canada).



In 1987 the Canadian Wheat Board undertook a comprehensive review of its quota system. In its submission to the Quota Review Committee, the Prairie Farm Rehabilitation Administration (PFRA) noted that the exclusion of uncultivated acreage from the current quota base had encouraged some farmers to break new land in order to expand their quota base. Exclusion of forage crops and miscellaneous crops from the bonus acreage calculations was cited as having implications for soil conservation. PFRA's submission also noted that the current quota policy provided greater privileges to those farmers who seed half their land and summerfallow the balance.

The Quota Review Committee subsequently recommended a system of quotas based on willingness of farmers to contract delivery of grain on hand. The Canadian Wheat Board has been experimenting with contracting with positive results. The recent Agriculture Canada Regulatory Review recommended that contracting be pursued further. The Canadian Wheat Board has solicited proposals for changes to the quota system.

The *Western Grain Transportation Act* (WGTA) of 1983 provided federal government payments to the railways to compensate them for losses incurred in shipping grains and oilseeds. However, the WGTA is alleged to have encouraged producers to grow export grains rather than crops for domestic use and alleged to have distorted feedgrain pricing on the prairies. The net effect has been to increase the cost of using feedgrains domestically. The reduced opportunity for a forage/feed option is seen as a negative impact on the conservation of our land base.

In the past, two Royal Commissions have been struck to look into the WGTA benefits. Both of these Royal

Commissions have recommended that farmers be directly paid, but to date no change has occurred to modify the WGTA. However, interest groups continue to exert pressure on the government to pay the producer rather than the railways, in the belief that such a system would be in the interest of both the farmer and conservation.

The benefits from WGTA has steadily declined over time. It appears to be reducing at approximately five percent per year. Following a GATT agreement, the WGTA will most likely be modified to either continue the reduction at an increased rate or to replace it with some other system.

A great deal of progress is being made on integrating wildlife habitat, environmental and agricultural objectives on the farm. The integration of environmental and agricultural policy at a time when policy and program initiatives are undergoing constant change is not an easy process. However, the goodwill that has been established between the agricultural and environmental communities over the recent past speaks positively for the changes which will occur, changes which will hopefully ensure a sustainable agricultural sector and an ecologically diverse agricultural landscape.

This is not to say that we, in Canada, have turned the page on drainage of marginal and existing agricultural lands. In fact, there are constant reminders throughout the agricultural landscape that we may not be making the progress that we had originally thought. This, however, should not be taken as a sign of defeat but rather as a challenge to improve the system and press on with developing a wise and sustainable land use ethic, one which will create an agricultural landscape rich in produce and wildlife.

3.4 Land Tax/Assessment/Finance Issues

During the late 1980s as part of a broadening of vision in the land conservation movement, greater interest and concern began to be expressed over the effect of land assessment and land taxation policies, and their impact on wetland and other critical wildlife habitat conservation. For perhaps too long a time, conservationists did not pay enough attention to other disciplines or sectors of the economy that had significant impacts on wildlife or landscape objectives. But with the drawing together of resource sectors in an attempt to understand sustainable development and make it work, greater attention is being paid to issues not traditionally pursued by the conservation community.

Land assessment and taxation is one of those areas. Far too little attention has been paid to this area of research and/or policy development. Many different provincial and municipal structures exist with regard to wetland assessment, notification and collection. There is much confusion among landowners whether their wetlands are, or are not taxed; and if they are taxed, whether they pay a different mill rate on wetlands as opposed to agricultural or forested lands. At the same time federal tax regulations must be made more "conservation friendly". Capital gains regulations and income tax treatment of natural property (land) must be changed to reflect the same advantages given cultural property in Canada.

To both document this situation, as well as to raise the profile of the issue in the conservation community and the need to change tax regulations, the CWCTF undertook the production and publication of *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands* (Denhez 1992). This document produced the following recommendations:

Recommendation 1: The legal fiction which attributes deemed capital gains (and potential deemed capital gains tax) to donations of ecologically sensitive real estate should be abolished.

Recommendation 2: The ceiling on deductible charitable expenditures (20% of income) should be lifted. Business expenditures have no such ceiling; and there is no policy reason why altruistic donations should be treated less favourably than business expenditures. If the Government of Canada insists on retaining a ceiling, then the ceiling should be the same as in the case of donations to senior governments (100% of income).

Recommendation 3: The tax treatment of donations of Canada's natural heritage should be no worse than that now enjoyed by donations of Canada's cultural heritage.

Recommendation 4: Charitable donations of covenants or easements, for the protection of ecologically sensitive lands, should not be subject to deemed capital gains or a 20% income limitation, any more than donations of other interests in ecologically sensitive lands.

Recommendation 5: Purchases of protective covenants and easements by environmental charities may continue to be subject to GST but should not otherwise trigger tax liabilities such as on deemed capital gains.

Recommendation 6: All provinces and territories should be encouraged to amend their property tax assessment/ collection legislation, to make specific reference to conservation of ecologically sensitive lands.

Recommendation 7: Those references should put ecologically sensitive lands on a par with whatever other private or charitable lands enjoy most-favoured status. The exact mechanism in doing so should correspond to the jurisdiction's established practice for other most-favoured properties.

Recommendation 8: The legislation should provide for a tax clawback on conversion of the property.

Currently the North American Wetlands Conservation Council (Canada) as well as the members of the Canadian Wetlands Conservation Task Force and many other conservation minded groups are working towards having these recommendations adopted by the federal government.

Income tax regulations that promote the drainage or clearing of marginal agricultural lands, which in many cases are important wildlife habitat areas, must be reviewed as well. Although it is true that certain types of draw-down of water in beaver ponds or other semi-permanent water bodies can be advantageous to wildlife habitat restoration, elimination of such areas through permanent drainage must be seriously reviewed.

Some efforts to make property tax regulation more conservation friendly are already underway across Canada. A proposal by the Natural Heritage League in Ontario entitled "Untaxing Nature" (Ontario Heritage Foundation 1985) resulted in the creation of the *Conservation Land Act* in 1988. Tax rebates are offered as incentives on some wetland and other specially designated critical lands in compensation for their protection by landowners. Currently there is a 100% rebate on wetlands designated as provincially significant and on Areas of Natural and Scientific Interest (ANSIs). Currently the Ontario Heritage Foundation is reviewing its policies dealing with natural heritage protection. This

effort may lead to increased emphasis on and protection of natural heritage lands through tax incentives and conservation easements.

In Alberta, provincial legislation prescribes that farmland be valued at agricultural use value. This value implies that the property be valued on the basis of its current farming use as opposed to the market value of land. Agricultural use value is determined in accordance with a regulated assessment manual that further narrows the definition of value for assessment purposes. The Manual provides for four classes of agricultural lands: Dryland Arable, Dryland Non-Arable, Irrigated, and No Economic Agriculture Value. The majority of wetlands in Alberta would be classed as having

Private sector initiatives have resulted in protection of at least one million hectares of wetlands in Canada.

No Economic Agriculture Value. Small permanent sloughs located within cultivated areas and standing water would be classified in this manner and, therefore, would have no assessed value attributed to them. A smaller number of wetlands may be classed as non-arable land and rated according to their value as pasture. These lands would generally be assessed at very low values and would result in an insignificant amount of taxes.

Non-farmland in rural municipalities of Alberta are assessed on the basis of market value for the first three acres minimally. Greater areas in use for residential, commercial or industrial purposes are also valued on the basis of their market value. The remainder of the parcel is valued according to the same methods as farmland. Wetlands again would typically

receive nil to minimal assessed value under this system. The draining of wetlands would increase the lands' value for agricultural uses or non-farm uses and result in higher assessment and taxes. Furthermore, because the rate of taxation remains relatively low, it is thought to have little effect on landowners' decision making with regard to converting land to economically higher and better uses.

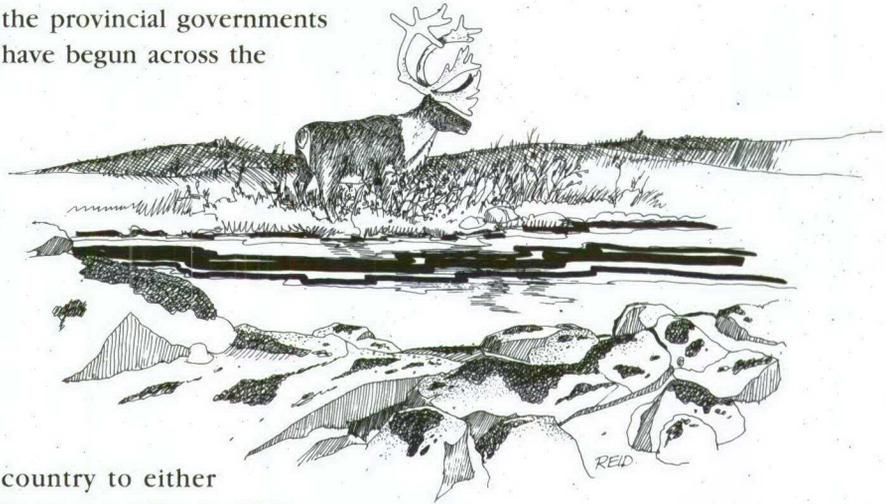
Two of the Forum recommendations made reference to the status regarding conservation easements and similar legal protection instruments. As the thrust of sustainable development moves into the different sectors of the economy and closer working relationships between government, industry and conservation groups are forged, efforts must be made to dovetail their respective policies and regulations. This is particularly true in the case of private land stewardship where the landowner must be afforded every incentive possible to enable retention of wildlife habitat on his own lands.

In 1990, Wildlife Habitat Canada published *Land, Law and Wildlife Conservation: The Role and Use of Conservation Easements and Restrictive Covenants in Canada* (Trombetti and Cox 1990). This document outlines the purpose and existing use of easements and covenants across Canada, and reviews the major legislation relevant to this topic in the provinces. It also calls for greater use of this land retention mechanism and for legislative reform to encourage private stewardship.

Across Canada, the use of conservation easements is beginning to increase although it is still a rather uncommon method of land retention. With the growth of local land trusts in Canada the use of these mechanisms will become more prevalent and widespread. To date, the federal government has permitted tax receipts to some donors of natural heritage conservation easements equalling the appraised decline in value of their

properties. Increased awareness and recognition of these tax consequences should have positive implications in conserving critical wildlife habitat and other scenic lands across this country. Such recognition in conjunction with proposed changes to the *Income Tax Act* as outlined earlier will go a long way in increasing stewardship efforts on private lands.

Many joint efforts between non-government associations and the provincial governments have begun across the



country to either improve existing legislation on conservation easements, and/or introduce new legislation. Some are outlined below:

- Currently in Prince Edward Island, both the *Natural Areas Protection Act*, and the *Fish and Game Protection Act* are being modified to include and/or strengthen the section(s) dealing with permanent restrictive covenants on natural heritage lands.
- The new *Yukon Environment Act* includes Sections 76-80 which enable owners of land in fee simple to transfer an interest in their property to a "holder". The interest is granted in the form of an easement and is designed to encourage private landowners to protect and conserve a wide range of environmental features and components on their property in perpetuity.

- On May 22, 1991 Bill 4 (*Property Purchase Tax Amendment Act*) amended the *Land Title Act* (Section 215) of British Columbia. This amendment establishes conservation easements and describes their status as well as tax implications regarding such covenants. With this amendment conservation covenants can now be held by the Crown, Crown corporations or Crown agencies, municipalities or regional districts.
- On June 30, 1992 Bill 211 *An Act Respecting Conservation Easements* was passed by the 55th General Assembly of Nova Scotia. This Act commonly called the Conservation Easements Act allows for "designated conservation organizations" to enter into easement or covenant agreements.

More and more frequently, wetland development disputes are becoming litigative in nature. When this occurs, a different kind of expertise is required, one which can become expensive and time consuming. At the present time there are no specific government offices established to undertake wetlands advocacy or legal help. There are, however, a number of not-for-profit legal organizations across Canada through which such help can be elicited. These include, for example, the Canadian Environmental Law Association, the Alberta Environmental Law Centre and the West Coast Environmental Law Association. In Ontario, the Canadian Environmental Law Association has provided legal services to help intervene in wetland development disputes on a minimum cost basis.

3.5 Environmental Codes/Ethics

One of the reasons the discussion and recommendations emanating from the Sustaining Wetlands Forum were fairly broad and encompassing was because of both the sponsorship and attendance of a

number of businesses and business organizations. Groups such as the Canadian Institute of Planners, Canadian Federation of Agriculture, Canadian Pulp and Paper Association, Royal Bank of Canada, and Nissan Canada Ltd., to name a few, provided not only a different perspective on wetland conservation issues, but also expressed interest in business organizations becoming actively involved in discussing and acting upon wetland issues and concerns. In addition, there was a definite interest on the part of the business community concerning environmental codes of conduct or practice for corporations and professional associations as an important initiative to be promoted during the 1990s.

In 1991, spurred on by the Recommendation emanating from the Sustaining Wetlands Forum, the National Council of the Canadian Institute of Planners suggested the implementation of a Statement of Ethical Conduct which all members of the Canadian Institute of Planners would be expected to follow in their professional practice. Part of that Statement of Ethical Conduct includes:

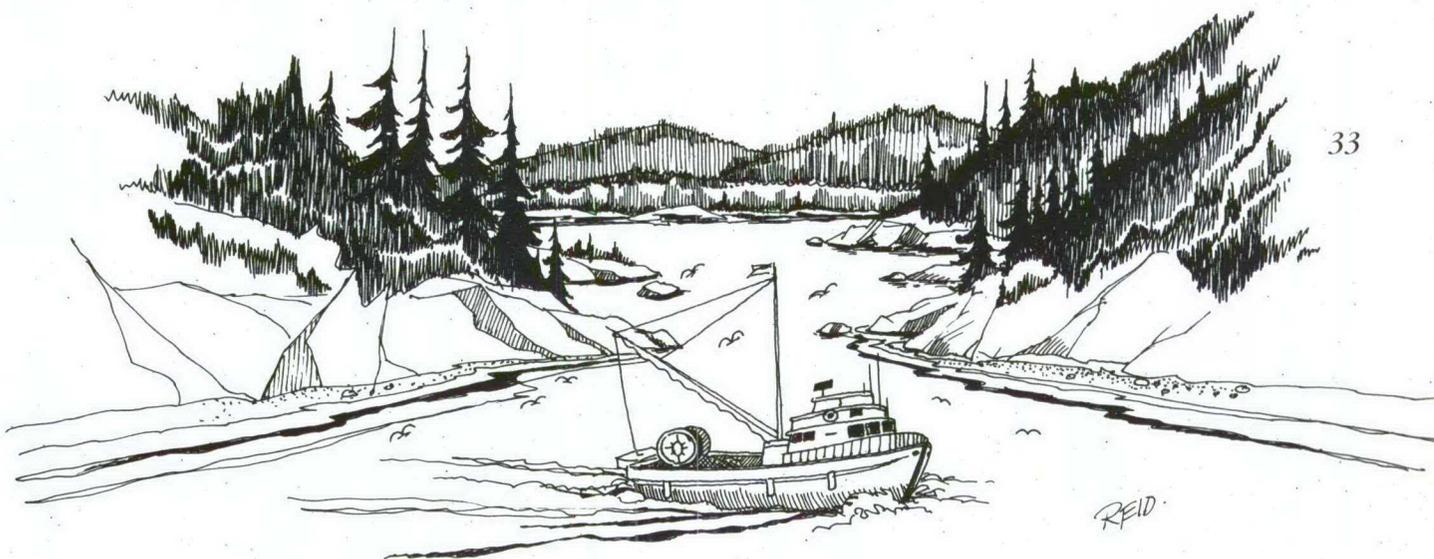
"... Professional planners have always understood that we must respect the land, because it is more than a mere commodity. Planners also understand that urban and rural communities have very important economic, environmental and social functions. As a consequence professional community planners have a special responsibility for growth management and the use of natural resources which respect the natural ecology and social equity. The needs of the future must be considered when making decisions about the needs of today."

Other examples of segments from corporate environmental policies include:

- Fletcher Challenge Canada Ltd. will meet or exceed all government requirements applicable to its operation and will regularly monitor its environmental performance.

- The Mining Association of Canada has developed *A Guide for Environmental Practice* (MAC 1990). The Guide sets out a forward-looking way of doing business and interacting with the natural environment - "the air we breathe, the water we drink, the land we inhabit and the biota with which we share the earth. ... In all our mining operations - existing, expanding or planned - one of our missions is to improve the level of environmental protection."
- Shell Canada Limited released a document entitled *Progress Toward Sustainable Development* (Shell Canada 1991). This document indicates Shell Canada's commitment to the integration of economic and environmental decision making to promote sustainable development. It includes either principles under which Shell will operate as well as a review of some of the program areas they are involved in. One of these includes protecting wild lands through proper habitat evaluation procedures.
- The Canadian Pulp and Paper Association released *Guiding Principles for Forest Land Management in Canada* (CPPA 1992). Sub-components of this document include a statement on biodiversity conservation, independent audits of forest-managed performance, forest wildlife habitat and forest ecosystems, and wetlands.
- Ocean Spray Cranberries Inc. has adopted a set of guidelines for their member growers and harvesters that will allow proper production as well as maintain the ecological integrity of wetlands upon which their continued livelihood depends.

The National Round Table on the Environment and the Economy initiated two separate round tables during 1992. The Forest Round Table and the Tourism Round Table are setting up a continuing dialogue on sustainable development in both these sectors of the economy. Results of these round tables include establishing a set of guidelines and codes of practice for sustainable development that can be adopted by stakeholders in their industry sectors.



These are just a few of the many positive initiatives being undertaken by various segments of our economy to try and effect environmental and wetland conservation while maintaining a stable economy. With encouragement from the conservation community, it is expected many more efforts such as these will be undertaken.

The Task Force believes that it is important that governments, corporations, academic institutions and industry associations respect and follow established environmental codes and practices. It also believes, however, that while adhering to minimum environmental regulations and maintaining environmental integrity through proper mitigative and compensative measures should be a rule of thumb, institutions, governments and corporations should be promoting sustainable development through continual review and improvement of their environmental standards.

3.6 Communications/Education

The attitude that wetlands are wastelands, held by many groups and economic sectors across North America, has to be changed. As mankind pushed back the wilderness frontier in North America to create a living through forestry and mining; through conversion of lands into agricultural production; and through urban and industrial development, the disappearance of the odd wetland or wetland system was not particularly relevant. However, over time the accumulated loss, especially in some regions of Canada, became devastating. Slowly, some segments of society began to appreciate the losses of wetlands and what they meant. More recently, we have begun to scientifically document the functions and value of wetlands.

In 1992, as part of the Sustaining Wetlands Issues Paper Series, the Canadian Wildlife Service and Wildlife

Habitat Canada in cooperation with the North American Wetlands Conservation Council (Canada) published a reference document entitled *Wetland Evaluation Guide* (Bond *et al.* 1992). This Guide is

Canada is a world leader in wetland conservation through designation of 30 wetlands of international importance under the Ramsar Convention and support of numerous international initiatives.

intended to be of use to anyone who is involved in a decision concerning the alteration, removal, preservation, reconstruction, or use of wetlands. The Guide can be used as a point of reference for planners, developers and environmental or conservation groups, administrators, educators, landowners, and politicians. It is hoped that this Guide will lead to greater understanding of the benefits of wetlands to society and to landowners, and will foster informed and rational decisions concerning the use and management of wetland environments.

Only through communication and education can policies and programs be developed and implemented to conserve wetland numbers and health. One of the reasons for the Forum was to increase Canadians' awareness of the value of this resource to all sectors and to begin to talk cooperatively about how the resource could be sustained.

The process of promoting a greater understanding of the long-term importance of wetlands must encompass a much broader group than just the conservation and wildlife community itself. A full range of interest groups and economic sectors are necessary so that relevant policies and practices can be developed

and implemented. Part of this process involves the communication of facts about Canadian wetlands, brought to the forefront through the Sustaining Wetlands Forum, the NAWMP and the many wetland initiatives underway across Canada.

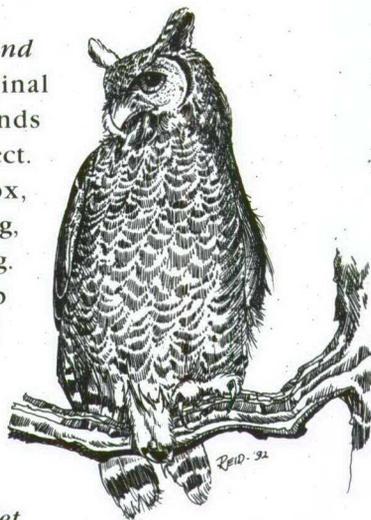
The facts about wetlands, as well as positive news and information regarding this valuable resource, must be proactively communicated. Too often it is only when something negative is about to affect a wetland, that we hear about it. There are many positive initiatives underway across Canada regarding wetlands that need to be highlighted. The development and approval of wetland classification systems, major wetland programs, and wetland regulations or policies to all those involved in the conservation, management and/or use of wetlands is critical. The knowledge that new information or data exist on the scientific, legal, economic or regulatory aspects of wetlands is important to those working to conserve wetland systems.

The Forum also stimulated much discussion about the general level of knowledge that high school and university graduates had regarding wetlands and wetland systems. There was strong feeling that either at these levels or subsequent to formal education, those working in the business sector should be provided with a better understanding of the importance and functions which wetlands, and other delicate ecosystems, provide in the short and long term. Some of these concerns are being addressed through such documents as the *Federal Policy on Wetland Conservation* (Government of Canada 1991), and background documents to the Policy. The North American Wetlands Conservation Council (Canada) is attempting to provide up-to-date information on the importance and functions of the wetland resource, as well as with specific working segments of the business community to provide information and guidelines to their associations and workers whose operations could affect the wetland resource.

There are a growing number of publications, conferences and events dealing with wetland conservation across Canada. For example, nongovernment and government groups alike have extended communications and education materials for their members and the general public.

During the last two years, the CWCTF and the NAWCC working together with other partners, have produced the Sustaining Wetlands Issues Paper Series. Papers to date with several more in production include:

- Paper No. 1992-1. *Wetland Evaluation Guide*. Final Report of the Wetlands Are Not Wastelands Project. By W.K. Bond, K.W. Cox, T. Heberlein, E.W. Manning, D.R. Witty, and D.A. Young. Published in partnership with Wildlife Habitat Canada and the Canadian Wildlife Service, Environment Canada. 121 p.
- Paper No. 1992-2. *No Net Loss: Implementing "No Net Loss" Goals to Conserve Wetlands in Canada*. By P. Lynch-Stewart. Published in partnership with the Canadian Wildlife Service, Environment Canada. 35 p.
- Paper No. 1992-3. *Canadian Peat Harvesting and the Environment*. By D. Keys. Published in partnership with the 1990-1995 Canada-New Brunswick Cooperation Agreement on Mineral Development and the Canadian Sphagnum Peat Moss Association. 29 p.
- Paper No. 1992-4. *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands*. By M. Denhez. Published in partnership with the National Round Table on the Environment and the Economy. 56 p.



In Canada, there are a number of wetlands newsletters that provide periodic up-to-date information on the wetlands situations. These include *Waterfowl 2000*, *Saskatchewan Wetlander*, the *Canadian Society for Peat and Peatlands Newsletter*, *Greenfields*, and the Ducks Unlimited Canada *Conservator* to name a few.

The Common Heritage Foundation has developed a document entitled *Ecoscope: Wetlands - A Student Guide to Assessing Wetlands* (Harrison 1990). Soon to be released, this well written and illustrated guide will be a great asset in educating both young and old in the purpose and values connected with wetlands. It is hoped, over time, to have teaching kits available that cover the main ecoregions of Canada.

Ducks Unlimited Canada has developed a Wetlands Curriculum for junior and high school students. This extensive package covering the many and varied aspects of wetlands is provided to those schools who request it.

In 1990, the Canadian Pulp and Paper Association (CPPA) created *Discovering the Treasure: Our Forests of Today and Tomorrow* (CPPA 1990). This comprehensive educational package is for use in the elementary school curriculum. As well, in 1992 through the help of the North American Wetlands Conservation Council, the CPPA is adding a wetlands conservation perspective to their forestry education project, *A Forest For All* (CPPA 1992). Aimed at high school students, this simulation game provides background information and suitable project activities for dealing with the forest environment.

During 1991, the NRTEE published a number of handbooks dealing with sustainable development and how to incorporate this concept into a corporation or organization's planning and delivery process. Two of these, *Sustainable Development: A Manager's Handbook*

(Conklin *et al.* 1991), and *Decision Making Practices for Sustainable Development* (NRTEE 1991), outline the kind of activities which have to occur in a stepwise fashion to carry out many of the subject areas discussed in these recommendations.

The Conference Board of Canada and Globe '90 produced a booklet entitled, *In Business for Tomorrow: A Transition to Sustainable Development* (Sadler and Hull 1990). In this document a new culture of corporate environmentalism is forecasted. The necessity for environmental education and training, self-regulation, new attitudes and ethics reflecting a balance between business opportunities and responsibilities are highlighted.

Another publication, *Toward Proactive Environmental Management* (Howatson 1990) released by the Conference Board of Canada outlines lessons learned from Canadian corporate experiences in business and the environment. Part of this document includes environmental policy statements from a number of large Canadian corporations which have already implemented such policies.

On the international front, considerable movement has occurred to raise the consciousness of the necessity to stop and even reverse much of the wetland destruction which is occurring across the globe. For example, the continental nature of the NAWMP encourages the sharing of examples of sustainable wetland development between Canada, the United States and Mexico. However, the NAWMP should also be used as an example of how an international environmental sustainable development undertaking not only improves the waterfowl/wetland resource, but also strengthens the local economy in project areas. This may have particular importance in helping to implement some of the objectives established under the Ramsar Convention.

To date, such sustainable wetland development projects have been outlined in some of the national and international newsletters, such as: The *National Wetlands Newsletter*, the *International Union for the Conservation of Nature (IUCN) Newsletter*, the *Ramsar Newsletter*, the *Great Lakes Wetlands Newsletter* and the *International Waterfowl and Wetlands Research Bureau (IWRB) Newsletter* and the *Wetlands for the Americas Newsletter*.

Hopefully the information and references contained in this report will go a long way in expanding the knowledge base on wetlands and emphasizing the critical need for their conservation.

3.7 Research/Assessments/Audits

While not the main thrust of the Forum, there was definite interest in the state and future of wetland research in Canada, as well as in the general area of environmental assessments and environmental audits. While most of the recommendations dealt with increasing the role and level of activity of various government departments on research and environmental assessment/audit issues, there was also a call for private corporations and business associations to become involved with their own, self-generated environmental/assessment audit processes.

One of the main issues facing wetland science and wetland conservation in Canada is the need for the different wetland science agencies to better coordinate their efforts. Such groups as the National Wetlands Working Group, the Canadian Society for Peat and Peatlands, and the Canadian Chapter of the Society of Wetland Scientists, to name a few, are to be congratulated on their efforts. It has been suggested that by working closer together, these groups could create a stronger national focus and improve research efforts on wetland science in Canada.

The most endangered wetlands and wetlands systems are on private and/or provincial Crown land in the southern portions of Canada. It is, therefore, no surprise that this is where the bulk of scientific research on wetlands has been

The federal government manages 29% of all of Canada's wetlands, those located on federal lands and waters, particularly in northern territories.

concentrated. It is important to remember that there persists a lack of understanding of the majority of our wetlands beyond the southern marshes, sloughs and freshwater swamps. Seventy percent of Canada's wetland resource is located in the peatlands of the boreal zone. The impacts of forest harvesting, hydro-electric developments and mining remain substantial potential threats to this wetland resource. Although the demand for alternative energy, particularly the possibility of using peatlands as a fuel source, has subsided in recent years, related research into the viability of such extraction should be pursued.

Many wetlands research scientists believe that wetland restoration is becoming a key issue in Canada. Our level of research and investment in this area is far below that of many other nations. This and other research topics previously mentioned, plus the need for centres of wetland excellence, cooperative wetland research centres (such as the one recently established at the University of Waterloo, Ontario), and/or research chairs, are but a few of the items discussed at the Forum and in the past two years by wetland researchers and conservationists.

Outlined below are some of the initiatives that have occurred and are being undertaken in connection with wetland research and wetland assessment within a Canadian context. Certainly there are gaps in both our research base as well as current research efforts.

The National Wetlands Working Group (NWWG), currently the only national body working on wetland science issues, is revising *The Canadian Wetlands Classification System* (NWWG 1987). The NWWG is working to improve the current classification system with particular emphasis on standards, definitions and terminology. At the present time in Canada there is no national biophysical data base for wetlands. While there are some regional wetland data base systems, they pre-date *The Canadian Wetlands Classification System* and do not use standardized terminology.

Currently, there is interest at Environment Canada and in other jurisdictions to create national and regional biodiversity risk and ecological integrity assessments documenting the state of biological resources in the country as well as guides to enable monitoring of future changes. To date, biodiversity assessment risk maps have been created using information on threatened and endangered birds and mammals in Canada. Current initiatives involving biodiversity/risk assessment should have wetland components incorporated into them.

Some of the recommendations at the Forum requested that more research be focused on agricultural programs and their environmental impacts across Canada. Many of the projects under the NAWMP have strong agricultural input and the positive and negative effects of these projects is being assessed by the various joint ventures across Canada. In June 1990 a report to Ministers of Agriculture from the Federal-Provincial Agriculture Committee echoed the recommendations of the Forum in calling for

“holistic ecosystems-based management practices” and, “much more on-farm research and on-site demonstrations”. This report calls for increasing the research on the environmental impacts of agricultural production. Another publication entitled *Progress in Research* (Agriculture Canada 1991) outlines in some detail the current research the federal government is undertaking with regard to biological controls; soil, water and climate; animal and crop production; and, food processing and products.

It's Everybody's Business (Science Council of Canada 1991) summarizes the submissions to the Science Council's Committee on Sustainable Agriculture. It calls for a restructuring of agricultural research to encompass sustainable agriculture: “The nature of the questions demands long-term research drawing on

On average, about \$80 million a year will be spent in Canada on wetland conservation by the public and private sectors during the years 1990 to 2005.

the expertise of multidisciplinary teams and broadly grounded generalists”; and “a new research perspective must prevail, in which farming is viewed as a total system.” The Science Council also published *Sustainable Agriculture: The Research Challenge* (Science Council of Canada 1992), a document that discusses the many changes needed to make the Canadian agriculture sector sustainable.

The Ontario Round Table on Environment and Economy's report entitled *Agriculture and Food Sectoral Task Force Report* (ORTEE 1992) is both a challenge and a descriptive document on where agriculture has to move in the 1990s. The document states how

research modifications in the academic, professional association and industry groups in Ontario are beginning to work towards the goal of a sustainable, more environmentally sensitive industry.

A major wetland initiative, a workshop on Wetland Hydrogeochemistry and Habitat issues was undertaken in March of 1991 at the Canada Centre for Inland Waters, Burlington, Ontario. Wetland scientists and managers were brought together to: (1) review recent advances in wetland sciences; and, (2) identify research and information needs that Canadians must respond to in coming years. The resulting report entitled *Wetland Science Research Needs in Canada* (Wedeles *et al.* 1992), identifies the 62 research and information needs for wetland science under three categories: natural hydrogeochemical processes; effects of human activity; and, wetlands as habitat. The eight recommendations were:

- (1) developing effective national policies for protecting and conserving wetlands;
- (2) establishing a national network to coordinate wetland research;
- (3) developing wetland centres of excellence;
- (4) establishing a subvention grant program for wetland research;
- (5) integrating existing data into comprehensive data bases and inventories;
- (6) developing a well designed monitoring program;
- (7) developing ecological and jurisdictional integration of wetland classification systems; and,
- (8) developing a comprehensive national wetland inventory.

In addition, there are a number of provincial government and business initiatives that have been undertaken in an effort to both provide guidelines for and help establish operational practices for sustainable development of resources. For example, it is the intention of the Canadian Sphagnum Peat Moss Association (CSPMA) that through involvement with the academic, non-government and government sectors, guidelines be produced to guide their membership in wetland conservation and mitigation during harvesting of peat for horticultural purposes. The CSPMA has already developed an industry-wide policy for site reclamation and held a national peatland restoration workshop in 1992.

The peat industry in the province of New Brunswick is also currently working with the provincial government to develop provincial guidelines on how the agriculture industry should operate. Because the industry wanted to set its own pace, they have recommended a process for conservation and mitigation of peatland areas within the province. This initial document is now being discussed with the government and once agreement has been reached on its format, the industry will publish guidelines for their members to follow when working in peatland areas.

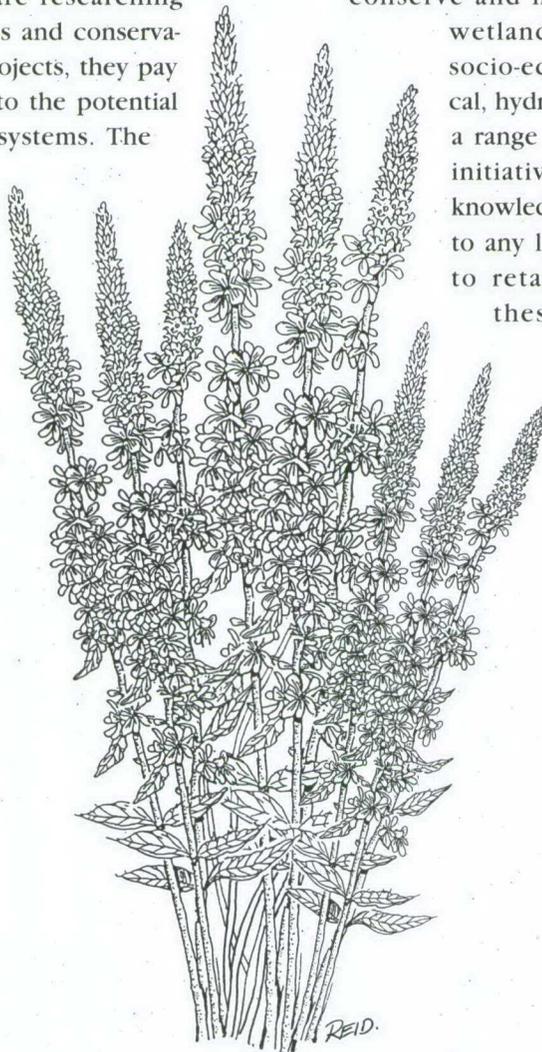
Currently in Canada there is limited research or promotion for wetland conservation or creation for water quality management purposes. Projects are rarely designed for purposes other than waterfowl/wildlife purposes. In many areas of the world, man-made and/or natural wetlands are used for the treatment of sewage and wastewater. Further consideration of such technologies should be undertaken in Canada.

Some industries use natural wetlands for treatment of various discharges. For example, at the Lambton Thermal Generating Station, Ontario Hydro is currently studying the "polishing effect" of a natural wetland on effluent flowing from an ash disposal lagoon. Preliminary data show some improvement for some of the water quality parameters. As part of this study, an extensive literature review of the wetland wastewater treatment systems was conducted.

Both the Canadian International Development Agency and the International Development Research Centre in Canada are researching global wetland issues and conservation. In designing projects, they pay particular attention to the potential effects on wetland systems. The National Wetlands Working Group is currently planning a national workshop for August 1994 to focus on cumulative environmental impacts on forested and agricultural wetlands.

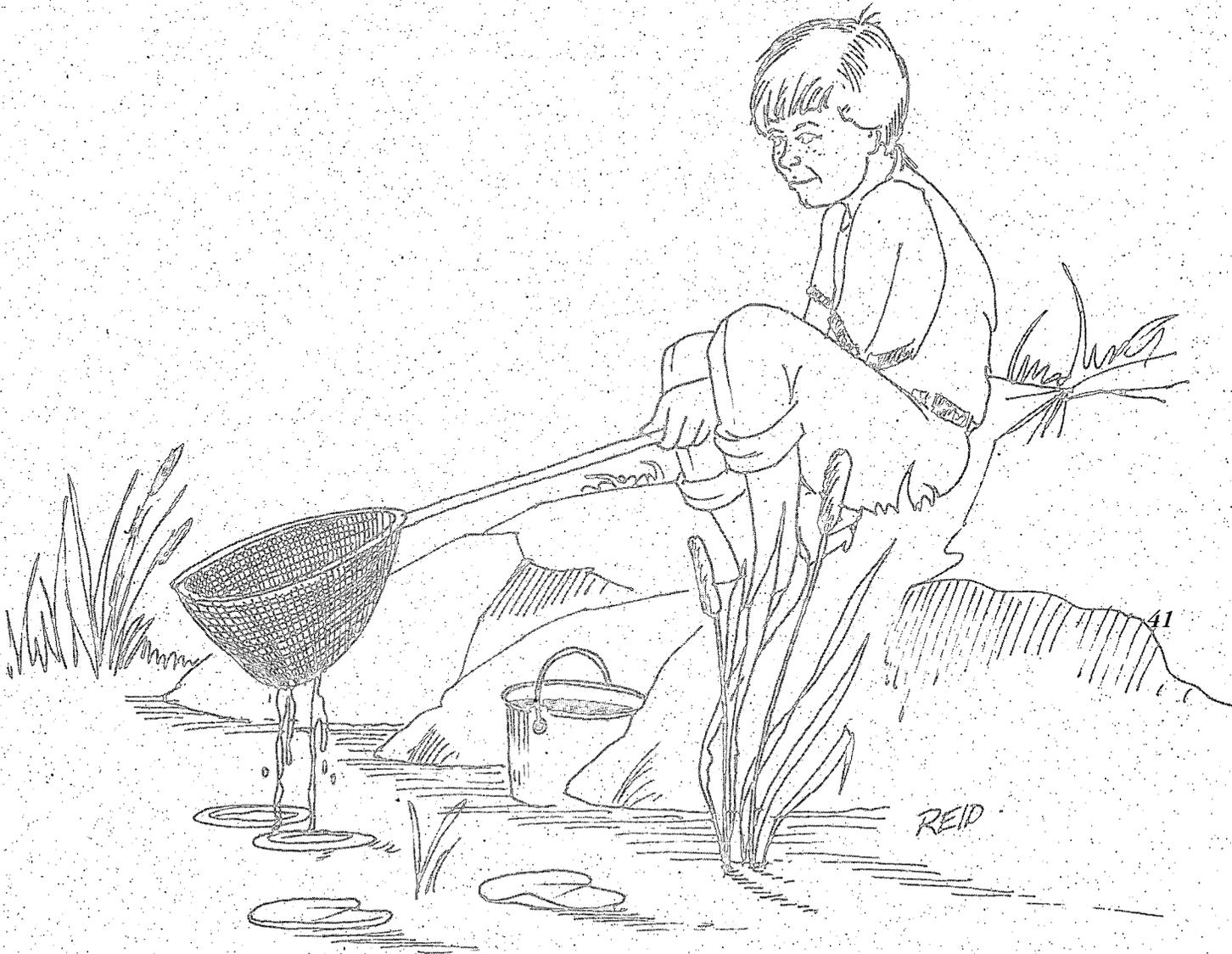
Two other documents which deal peripherally with wetland research and assessment are: *The Status of Wildlife Habitat in Canada: Realities and Visions* (Wildlife Habitat Canada 1991) which provides a national vision for the future of our landscapes across Canada outlining the issues and realities on wetland conservation; and, *A Protected Areas Vision for Canada* (Canadian Environmental Advisory Council 1991).

It is important to remember that a wide range of interdisciplinary research is required to document the facts and trends required to properly conserve and manage Canada's wetland resource. Be it socio-economic, biological, hydrological, or one of a range of other research initiatives, the wetlands knowledge base is critical to any long-term program to retain and enhance these valuable economic and ecological resources.



Chapter Four

Our Challenge for the Future



This report has focused on the events which are taking place across Canada with regard to wetland conservation and management over the past few years, in particular since the Sustaining Wetlands Forum was held in 1990. The report has given a brief insight into the functions and values that our wetland resources provide, as well as demonstrated some of the risks that they are under, and some of the activities required to conserve them. It is clear that progress is taking place across this country in many areas of wetland management. There are, however, areas where our efforts can be increased, strengthened and expanded to ensure that this valuable Canadian resource is maintained as an integral, and not a remnant, component of our Canadian landscapes.

The Federal Policy on Wetland Conservation (Government of Canada 1991) is a key event in the history of wetland conservation in Canada; as is the Ontario Policy entitled *Wetlands* (Government of Ontario 1992). With the announcement of these two policies and the development of draft policies in Saskatchewan and Alberta, we have begun to turn the corner in recognizing and appreciating the value and functions of wetlands and wetland complexes to both the ecological and economic health of our country. It is critical that other political jurisdictions, provincial and municipal, recognize the necessity for wetland policies as separate entities or as statements within a broader land and water policy statement.

Many new partnerships are being formed between environmental groups and other sectors of the economy. These

partnerships will pay even greater dividends in the future for wetland conservation. Already, a number of industry associations and corporations have taken a leadership role by producing guidelines for integrating their industry sector or corporation's economic activities with proper wetland management. Expansion of such corporate activity and the formation of new cross-sectoral partnerships will be one of the keys to retaining a healthy and varied wetland resource across Canada's landscapes.

There are wetland programs in all of the major political jurisdictions across Canada. The continuation, refinement and expansion of such wetland programs, ones which bind together as many private, corporate and government interests as possible, will be the true measure of success in retaining and integrating wetland complexes onto our landscapes. Expansion of programming should also include exploring alternate uses (i.e. wastewater treatment) for sustainable wetland use.

Many wetland programs are being developed to extend beyond the borders of Canada. Because both wildlife and water resources do not respect political jurisdictions, it is important to encourage and enter into international wetland initiatives. This should include consultation and advice as well as joint programming. Canadian wetland experts and some agencies are already involved in international wetland initiatives in the Americas, the Mediterranean and elsewhere around the globe. Canada has been a leader in the development of such international initiatives. The many relationships already

Our Challenge for the Future

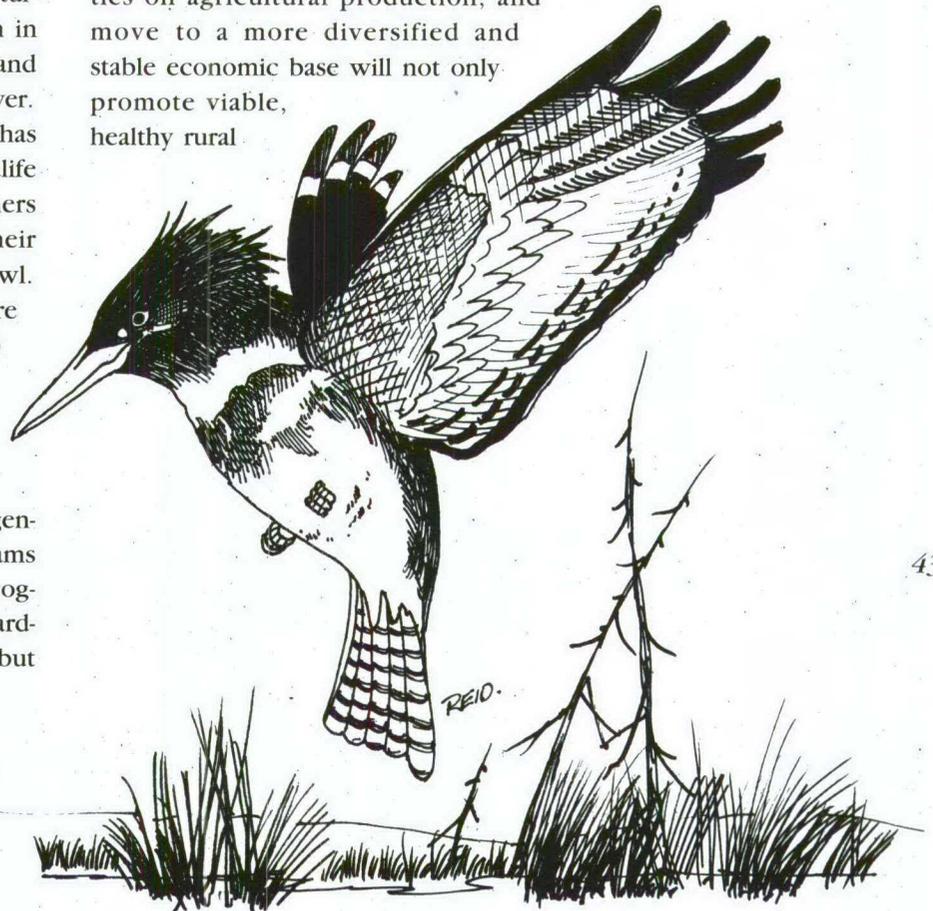
forged in this arena will help to enhance not only the recognition of wetland functions and values but also help to show the way in developing international relationships for wetland conservation purposes.

The greatest challenge to wetland conservation in Canada is found on our agricultural landscapes. And because the vast majority of these wetlands are on privately owned land, it is mandatory that integration of not only policy and programs affecting land use, but integration of effort in directing such initiatives, is undertaken in such areas if we are to create a healthy and long-lasting agricultural sector. While many of the benefits of wetlands accrue to society in general, it is the private landowner that often has to bear the costs of maintaining such wetlands. Over time wildlife agencies encouraging wetland conservation on private agricultural land would like to see a reduction in cereal crop production on marginal land and a general increase in permanent cover.

Since the Forum, much progress has been made in modifying crop and wildlife damage programs to enable landowners to be compensated for damage to their agricultural production from waterfowl. In that light, it is critical that agriculture and wildlife agencies continue to explore means of alleviating costs to landowners of wildlife damage to agricultural production. It is only through a partnership of wildlife, agriculture, and municipal agencies that federal and provincial programs and policies can be structured to recognize the contribution of private stewardship, not only to habitat conservation, but

also to the health of the soil and groundwater. It is also critical that federal and provincial agriculture agencies incorporate a range of environmental and habitat incentives in the form of non-commodity based payments to farm income support programs into their agricultural policies. Canada must find a made-at-home solution for integrating agriculture and environmental policies across the Canadian landscape. In this regard whatever the end result of the GATT and NAFTA negotiations and agreement bring, Canada must maintain its ability to provide domestic environmental programming on its agricultural landscapes.

But this is only one of the solutions required in a much broader sense to enhance the health of some of our agricultural communities. United effort to lower the dependency of rural communities on agricultural production, and move to a more diversified and stable economic base will not only promote viable, healthy rural



communities, but will also be an asset in achieving wetland conservation.

There are many objectives outlined in *Canada's Green Plan* (Government of Canada 1990); one is that the government would enter into more broadly based partnerships to obtain environmental and land conservation objectives. One critical change which would significantly benefit this objective, would be to change the *Income Tax Act* so that the donation of such lands in Canada are not a financial burden on people who are conservation-minded and gracious enough to donate their lands for environmental purposes. In that light, the legal fiction which attributes deemed capital gains (and also potential deemed capital gains tax) to donation of ecologically sensitive real estate in Canada should be abolished.

As well, all provincial and territorial jurisdictions should amend their property tax assessment and collection legislation to make specific reference to conservation of ecologically sensitive lands. The municipalities in Canada who are promoting market value assessment should be careful that such market reassessments of ecologically sensitive lands do not put taxes to a point where continuation of that land use for conservation becomes an impossibility for the landowner. Mechanisms, like a tax clawback, which could be enforced in the future if such ecologically sensitive lands change use, would allow both conservation land management to occur and give municipalities their fair share of tax revenues. Such evaluations, assessments, and modifications to tax structures in Canada will go a long way to help private stewardship programs and land trust programs in Canada fulfill an important role in retaining such ecologically sensitive lands.

The CWCTF was a partnership and a cooperative effort between a number of sectors in the Canadian economy. This cooperation is just one example of the rise of a new ethic of corporate responsibility toward the natural environment. This shift in corporate thinking should not only be encouraged but should be challenged by environmental groups, challenged in the sense that every effort should be made to help those corporate partners who wish to engage in cooperative environmental and/or wetland conservation programs. A growing number of industry associations and corporations see the integration of environmental policy and economic policy as the path to future prosperity and not as an impediment to progress. Such initiatives should be publicly recognized. One further challenge is involving our major financial institutions in a more creative and proactive manner in developing and implementing environmental conservation objectives.

Educational programs must be structured so that they not only appeal to the urban and/or agricultural population, but also must be geared to the rural population, particularly those workers who are employed in extraction industries such as forestry or mining. It is important that such communication and education initiatives outline the significance of wetlands and their importance to the quantity and quality of domestic, agricultural and industrial water uses, flood control, and maintenance of low streamflows, as well as to highlight their wildlife habitat functions. In the long run, the success and sustainability of wetlands will come about because wetland conservation will have become a societal goal. Resource policy and programs, tax changes and incentives, proper research, and budgetary allotments that allow the retention and

enhancement of wetland complexes will only come about if society reflects this interest as a priority to their decision-makers. In this light, each and every communication and education opportunity and initiative, that explains the value of wetlands to society, will pay positive dividends towards a sustainable wetland resource.

Perhaps the greatest overall challenge in the area of research and assessment in the short term will deal with the standardization and integration of existing information on wetlands. A national wetland inventory, which concentrates on areas of both high risk and/or program conservation and development priorities, as well as a national approach to both assessing and evaluating wetlands would substantially contribute to sustaining our wetland resources.

The CWCTF had the honour of being part of the President's Commission on Environmental Quality during 1992. The PCEQ was unique among Presidential Commissions as it was created not to provide advice or propose policy, but to demonstrate innovative ideas through action. Many of its objectives are comparable to those of the NRTEE. Part of the final report of the PCEQ calls for "a change in mindset". Those participating in the Commission decided that much had changed over the last twenty years, and that this change required a subsequent change in approach and terminology. It was felt that words such as agitate, investigate, legislate, regulate, and litigate, which had been key words over the last twenty years, should be changed to action-oriented words for



the 1990s such as anticipate, collaborate, innovate, demonstrate, communicate, and educate. It was felt by all those concerned that a new fresh, cooperative, results-oriented vocabulary was required to reflect the changing nature of environment-economy relations and build on the partnership principle.

Much of the work on wetlands conservation since the Forum has paralleled this thought process. As well, the CWCTF has worked to promote this kind of an approach through its activities over the past two years. It is hoped that such an approach will be reflected in future wetland conservation initiatives in Canada.

Our challenge is to make this exciting "environment and the economy" approach work. Our challenge is to make each and every Canadian aware of the function and value of our wetland systems. Our challenge is to unite our will, knowledge and enthusiasm to maintain a national wetland resource which is the pride of every Canadian. Our challenge is to celebrate wetlands!

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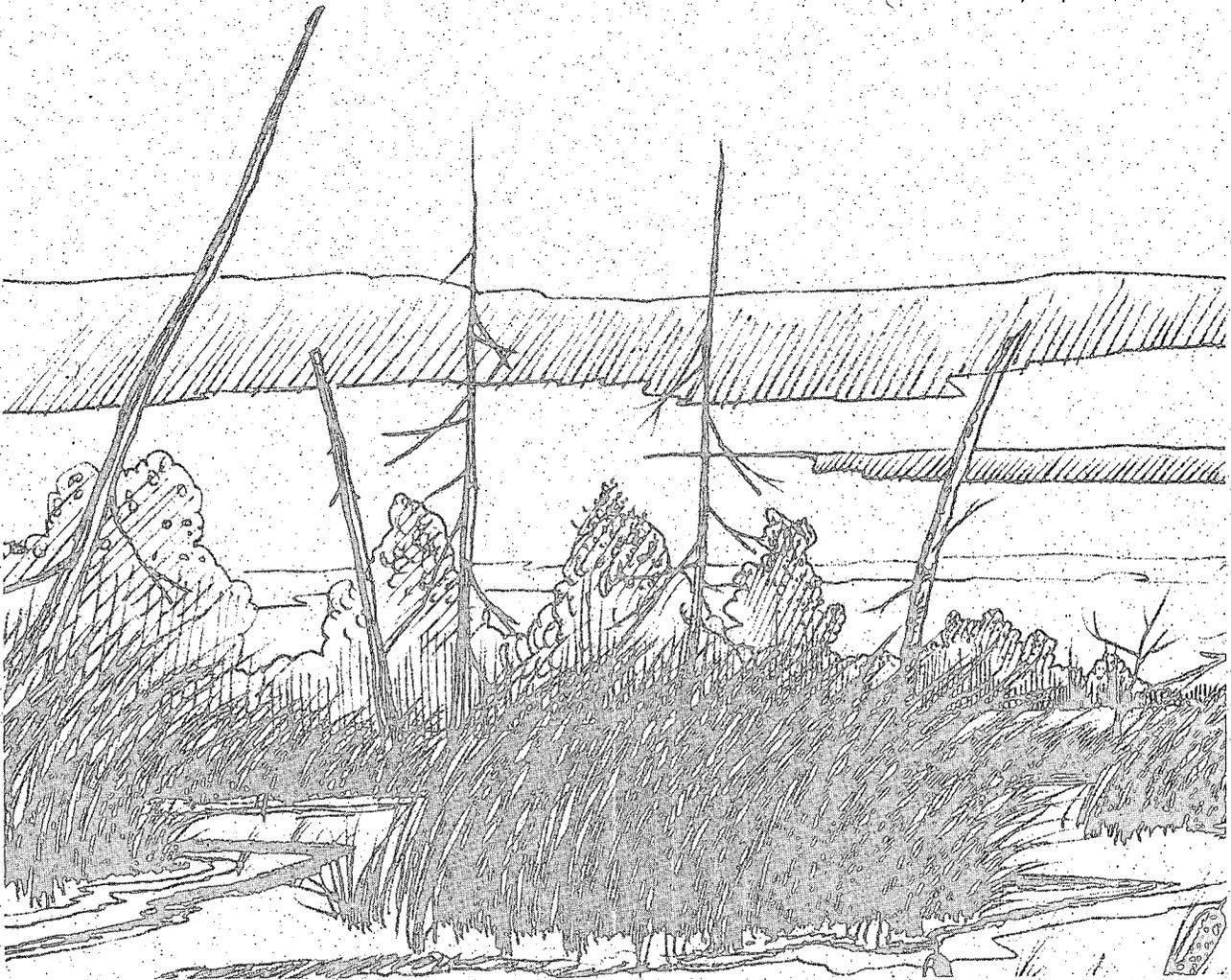
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Appendices

- A: Background to Canadian Wetlands Conservation Task Force and List of Sustaining Wetlands Forum Recommendations**
- B: Wetland Programs in Canada**
- C: Task Force Membership**
- D: Selected Bibliography**



Background to Canadian Wetlands Conservation Task Force and List of Sustaining Wetlands Forum Recommendations

North America is blessed with an abundance and diversity of wetland ecosystems. Wetland complexes and associated uplands are an integral part of the landscape and provide important ecological, social and economic benefits. In the face of major alterations to the landscape by man, the continued maintenance and restoration of wetlands will be necessary to provide a plethora of functions including suitable habitat for waterfowl and many other wildlife species.

Migratory birds in North America have benefitted from protection and other conservation measures afforded under the *Migratory Birds Convention Act* (1916) and subsequent treaties with Mexico (1936) and other countries. Tremendous efforts have been made since this time toward the conservation of ducks, geese and swans by individuals, private conservation organizations and state, provincial, territorial and federal governments. However, over time, large-scale landscape alterations have adversely affected many species.

North American Waterfowl Management Plan (NAWMP)

In an effort to reverse the loss in waterfowl populations, particularly ducks, the NAWMP was signed between Canada and the United States of America (1986). It was later endorsed by Mexico (1989). This cooperative agreement to restore waterfowl populations to the levels of the 1970s by means of securing over 2.5 million ha of wetland habitat across Canada, will invest \$1.5 billion over 15 years, \$1 billion of which will be spent in Canada.

The NAWMP initiative has, because of its strong commitment to cooperative partnerships, created a number of coordinating bodies, regional and provincial steering committees, and habitat joint venture management boards to name a few. At the outset of the NAWMP, the North American Waterfowl Management Plan Committee was established. Accountable to the Director General, Canadian Wildlife Service and the Director, U.S. Fish and Wildlife Service, the Committee serves as the international board of directors for the Plan. It provides a great many other functions as well including: policy recommendations; monitoring and updating the Plan; and, coordinating current work and reviewing new proposals and joint ventures. The other major forum to be initiated partly as a result of the Plan's creation is the North American Wetlands Conservation Council (Canada) (1990). While connected with the NAWMP, the Council has a broader mandate dealing with wetland conservation.

North American Wetlands Conservation Council (NAWCC) (Canada)

The North American Wetlands Conservation Council is the senior Canadian body that advises the Minister of the Environment on the development, coordination and implementation of wetland conservation initiatives of national and international scope. It is also the principal point of contact with the North American Wetlands Conservation Council (U.S.) for all aspects of U.S. approval and funding of Canadian joint venture proposals under the NAWMP.

Appendix A

Specifically the roles of the NAWCC include:

1. To provide national leadership on all matters related to funding and managing the implementation and evaluation of North American Waterfowl Management Plan habitat joint ventures in Canada.
2. To serve as the national coordinating committee for the development and implementation of wetland conservation policies and programs in Canada.
3. To serve as the national coordinating committee for Canadian involvement in international wetland conservation. In this context, the Council will provide a forum for national coordination of Canada's activities under the Ramsar Convention, the Western Hemisphere Shorebird Reserve Network, the International Waterfowl and Wetlands Research Bureau cooperative wetland initiatives, and recommend Canada's future involvement in new international wetland programs.

National Round Table on the Environment and the Economy (NRTEE)

In 1988, as a response to the challenge outlined by the United Nations World Commission on Environment and Development, Canada created the National Round Table on the Environment and the Economy (NRTEE) with the goal of overcoming traditional resistances and establishing a new basis for sustainable development initiatives. The mandate of the NRTEE is to advise the Canadian government and act as a catalyst for sustainable development action. Similar forums have been set up throughout the provinces. The Round Tables do not have legislative or regulatory powers, and do not set up programs. They are expected to overcome traditional opposition between and amongst sectors of the economy and establish a basis for joint action.

Sustaining Wetlands Forum: International Challenge for the 1990s

The purpose of this Forum was to stimulate discussion on opportunities to sustain wetlands by providing the broadest possible environmental and economic benefits to Canada. The process used was a multi-sector national policy forum to develop recommendations for the consideration of the National and Provincial Round Tables on the Environment and the Economy and other appropriate groups. The Forum focused on the integration of soil, water and wetland conservation initiatives and how these coordinated approaches might generate benefits for all sectors. Particular emphasis was placed on agricultural, municipal, business, and environmental conservation responses to the North American Waterfowl Management Plan, wetland conservation policies, and the sustainable use of wetlands in Canada.

The workshops undertaken at the Sustaining Wetlands Forum have resulted in 73 recommendations for action developed by and targeted with respect to four national sectors: business, agriculture, planning and environmental conservation. These recommendations deal with a range of critical issues including development or modification of policies and legislation, review of codes of practice, public and political awareness and education, direction to planning and management, research, monetary incentives and program tools and delivery. While these recommendations cover a broad range of concerns and influence, the key element is that they do not require significant amounts of new funding or programs to be implemented.

The 73 Recommendations emanating from the Sustaining Wetlands Forum are listed below. The group number corresponds to the section in the report within Chapter 3 where this recommendation is discussed.

***Sustaining Wetlands Forum
Recommendations***

1 All public and private sector organizations with an interest in wetlands should work to develop effective mechanisms and appropriate compensation levels for the transfer of funds from the beneficiaries of wetland protection to those who incur the associated costs (primarily landowners) (Chapter 3.4).

2 Provinces and municipalities should review and, where necessary, revise land assessment and taxation systems to ensure that they do not discourage wetland conservation. For example, tax assessments should be based on existing rather than potential uses (Chapter 3.4).

3 Municipalities should be compensated by the province or private sector organizations for losses in their tax base resulting from revisions in assessment procedures related to wetland conservation (Chapter 3.4).

4 Income received by landowners from habitat easement agreements should not be taxable. (Chapter 3.4).

5 *The Income Tax Act* should be revised to reduce incentives to land clearing and drainage (Chapter 3.4).

6 The public and private sectors should compensate landowners for wetland habitat enhancement and conservation farming practices (Chapter 3.4).

7 Agriculture Canada should examine both the feasibility and the acceptability of implementing procedures for cross-compliance which would make receipt of income support payments conditional upon farmers adopting acceptable management practices for agricultural soil and water (Chapter 3.3).

8 Federal and provincial governments should implement an enhanced program of crop damage prevention and compensation (Chapter 3.3).

9 Governments should restructure the framework of agricultural support programs so as to simultaneously enhance natural resource conservation efforts and reduce vulnerability under international trade agreements (Chapter 3.3).

10 Environment Canada should assume a lead role in sponsoring research into the development and use of suitable methods, including, if necessary, a modified Canadian wetland classification system, to assist in targeting resources and actions to priority areas for wetland conservation (Chapter 3.7).

11 The Federal-Provincial Committee on Land Use should be charged with actively promoting coordinated wetland research and annually reporting on the status of wetland research efforts across Canada (Chapter 3.7).

12 Federal and provincial agricultural programs should give greater emphasis to research on the environmental impacts of agricultural production (Chapter 3.7).

13 Public and private sector organizations should develop more effective means to inform the general public as well as policy makers about the net benefits of providing public support for wetland conservation (Chapter 3.6).

14 Wildlife, habitat, hunting and related special interest groups should educate their membership on responsible resource use, which must include respect for landowners' concerns (Chapter 3.6).

15 Provincial and territorial education authorities, other relevant agencies, and nongovernment organizations should collaborate in the development of information and awareness packages which will improve understanding of the importance of wetlands and sensitize students to the special needs and concerns of farmers and other landowners (Chapter 3.6).

16 Governments should develop more effective extension services to assist farmers in making land management decisions that integrate wildlife and habitat interests with agricultural production (Chapter 3.3).

17 Federal, territorial, and provincial departments and agencies concerned with agriculture should complete assessments of all programs and policies affecting agricultural land use, and present the results to the National and Provincial Round Tables on the Environment and the Economy (Chapter 3.3).

18 The National and Provincial Round Tables on the Environment and the Economy should jointly sponsor a national workshop involving all stakeholders for the purpose of developing specific recommendations for agricultural policy and program adjustment to ensure that all programs and policies are neutral or positive for conservation of wetlands (Chapter 3.3).

19 Agriculture Canada should consider, in the course of its Agriculture Policy Review, the recommendations in the report *Common Ground* produced by Wildlife Habitat Canada (Chapter 3.3).

20 Federal, territorial, and provincial agriculture departments should jointly design and implement a farm income support program that is not linked to production of commodities (Chapter 3.3).

21 The Canadian Wheat Board should revise the basis for the quota allocation formula to grain volume rather than current acreage (Chapter 3.3).

22 Annual *Western Grain Transportation Act* benefits should be paid directly to farmers in order to promote diversification of livestock and other kinds of food production in the Prairie provinces (Chapter 3.3).

23 Agriculture Canada Permanent Cover Programs in Western Canada should be expanded and extended so that more marginal land, including wetlands, may be removed from annual cultivation (Chapter 3.3).

24 An Environmental Code of Conduct which is industry-specific should be developed (Chapter 3.5).

25 Canadian businesses should take proactive positions on environmental issues and the use of natural resources, including wetlands, and effectively communicate these positions to other businesses, governments, and the public (Chapter 3.6).

26 Business practices and their effects on wetlands should be assessed by developing environmental self-assessment procedures such as environmental audits (Chapter 3.7).

27 Partnerships should be created to develop business opportunities that help to achieve a healthy environment and protect wetlands (Chapter 3.2).

28 Canadian businesses should educate their employees on how to deal with environmental issues; on how to comply with environmental laws; and on how to understand the benefits of implementing environmentally sound practices (Chapter 3.6).

29 Businesses should establish, together with governments, a list of information sources to help businesses understand wetland issues and regulations and find solutions to related environmental problems (Chapter 3.6).

30 Accumulated environmental expertise developed by businesses concerning wetlands protection and management should be shared (Chapter 3.6).

31 Research on and the promotion of the creation of wetlands for water quality management purposes should be undertaken by Canadian businesses (Chapter 3.7).

32 Businesses should incorporate in their plans comprehensive mitigation, rehabilitation and enhancement measures for affected wetland areas (Chapter 3.7).

33 In order to help maximize local benefits from wetland conservation and use, local and regional business organizations should be formed and supported (Chapter 3.2).

34 The formation and coordination of committees in existing business organizations to focus interest on wetland conservation and related environmental issues should be encouraged (Chapter 3.2).

35 Recognizing the accepted global values of wetlands, "no net loss of wetland functions" in Canada should be established as a national goal (Chapter 3.1).

36 Each level of government in Canada should have a clear statement of goals and policies with respect to wetland conservation and protection (Chapter 3.1).

37 Each jurisdiction should have comprehensive wetland policy and legislation requiring local authorities to respect wetland values in their decision-making processes (Chapter 3.1).

38 Conservation should be an explicit goal and responsibility of all government departments and agencies having programs affecting wetlands, and of all environmental impact assessment processes in Canada (Chapter 3.1).

39 All levels of government should develop practical and measurable targets for protection and preservation of wetlands and should cooperate in the development and implementation of means for their achievement including acquisition of specific strategic sites (Chapter 3.1).

40 The values of wetlands should be made known to the public and to decision-makers through the cooperation of governments, nongovernment organizations, educational institutions, and the media (Chapter 3.6).

41 Ministries of Education should develop teaching modules on environmental ethics and sustainable development, including specific units on wetlands (Chapter 3.6).

42 All professional planners should have an understanding of the basic principles of ecology. This should be a component of university planning programs and a requirement for membership in Canadian professional associations of planners. Such training should also be included in professional skills upgrading programs (Chapter 3.5).

43 All Canadian professional associations of planners should incorporate a commitment to conservation and environmental protection in their codes of professional ethics (Chapter 3.5).

44 Federal, provincial and territorial governments should provide funding for local governments, nongovernment organizations, conservation bodies, and others to ensure access to information, advice, expertise and legal assistance to intervene in wetland development issues (Chapter 3.2).

45 National nongovernment organizations with wetland expertise should provide support to local bodies to intervene in wetland development disputes of local or regional significance (Chapter 3.2).

46 The actions of conservation organizations should be acknowledged as being beneficial to the community such that, through charitable status, such organizations can present their case to decision-makers on the same tax footing (i.e. on a level playing field) as now available to the corporate sector (Chapter 3.4).

47 The public should be involved early and effectively in decisions affecting local wetlands. This requires public consultation by governments and proponents of wetland development (Chapter 3.6).

48 Federal, provincial and territorial governments should prepare sustainable development strategies to provide a general framework for land use planning, economic development, and conservation in each jurisdiction (Chapter 3.1).

49 In each province and territory, a comprehensive system of regional planning areas should be established, with boundaries that take natural characteristics such as watersheds into account, to provide suitable geographical units for ecosystem-based land use planning and the coordination of municipal, conservation, and resource use planning (Chapter 3.1).

50 The governments of each province and territory should establish a general framework for land use and conservation policies, with legal force to govern both the plans and programs of government departments and agencies, and regional and local land use planning (Chapter 3.1).

51 Governments and their agencies should be subject to the same rules as private land and property owners (Chapter 3.1).

52 Governments should use legislation or regulation in preference to weaker instruments such as policies or guidelines to control wetland use. Examples could include: (i) Agricultural land preservation legislation; (ii) United States Title 404 Legislation; and, (iii) Environmental Bill of Rights (Chapter 3.1).

53 The onus of proof on wetland land use decisions should be reversed by establishing a process that causes proponents to have to prove there is no significant loss relative to an overall objective of "no net loss of wetland functions" (Chapter 3.1).

54 Governments should eliminate policies and funding for programs which directly encourage wetland destruction and should redirect funds to wetland preservation and restoration (i.e. use of quota systems and subdivision regulations, and revision of freight rates, land clearing, and drainage subsidies) (Chapter 3.1).

55 All government policies and programs should be reviewed to determine whether they promote wetland degradation and be modified or eliminated if found to be detrimental (Chapter 3.1).

56 Governments should provide a comprehensive base of information on the occurrence, characteristics, and trends of use of wetlands in support of better integration of wetland values and functions into the decision-making process at all levels (Chapter 3.6).

57 The federal government, in collaboration with other governments and nongovernment organizations should develop more effective evaluation procedures for wetlands, to replace traditional cost-benefit analyses, and to better demonstrate the full range of wetland values (Chapter 3.7).

58 Cumulative effects of many small wetland losses are important and too little is known of the consequences and how to deal with these losses. Governments should recognize cumulative effects in their planning. Furthermore, federal, provincial, and territorial governments should fund research into the evaluation of better planning methods to deal with cumulative effects (Chapter 3.7).

59 Alternatives to the adversarial approach should be explored and encouraged (e.g. mediation, cooperative management strategies); incentives should be used to encourage wetland conservation; and disincentives should be removed (Chapter 3.1).

60 Greater use of caveats, conservation easements, and similar instruments should be made in promoting wetland conservation (Chapter 3.4).

61 Use of the tax system to compensate for conservation and protection of wetlands should be explored (Chapter 3.4).

62 In cooperation with private enterprise and nongovernment organizations, governments should continue to utilize acquisition as a selective tool for conservation of higher priority wetlands especially those under immediate threat (Chapter 3.1).

63 The National Round Table on the Environment and the Economy, in conjunction with federal, provincial, territorial, municipal and private sectors partners, should establish an interjurisdictional Wetlands Task Force comprised of representatives from university, government and nongovernment organizations to facilitate the development of comprehensive, mutually supporting Canadian wetland policies in all jurisdictions by April 1991 (Chapter 3.2).

64 Due to the multi-disciplinary nature of Round Tables, the recommendations they develop should be directed to the highest levels of government in the absence of procedures for resolving land use conflicts (Chapter 3.6).

65 Existing wetland regulations should be enforced and strengthened with adequate budgetary support (Chapter 3.1).

66 The National Round Table on the Environment and the Economy should further direct a Wetlands Task Force to develop a Canadian Wetland Conservation Program and a Canadian Wetland System Plan (Chapter 3.1).

67 Federal, provincial and territorial jurisdictions should work within the context of this Canadian Wetland System Plan (Chapter 3.1).

68 All jurisdictions in Canada should recognize the value of the holistic approach to wetland conservation and the value of wetlands in relation to other land uses (Chapter 3.1).

69 The development of community conservation strategies should be encouraged by all levels of government (Chapter 3.1).

70 Wetland conservation programs should maintain and enhance biodiversity and wetland functions to secure benefits to society and wildlife (Chapter 3.1).

71 Successful examples of sustainable wetland development, especially those examples dealing with areas of shared resources such as migratory birds and fish, should be provided to other countries (Chapter 3.6).

72 Education and information programs should be developed and delivered to target groups, such as landowners, legislators, and professionals, who have an impact on wetland conservation and development (Chapter 3.6).

73 The National Round Table on the Environment and the Economy should also direct a Wetlands Task Force to develop a Report on National Wetlands Research Needs and Priorities to guide future research activities in all jurisdictions (Chapter 3.7).

Canadian Wetlands Conservation Task Force (CWCTF)

Formation

On November 23, 1990, the National Round Table dealt with the request and recommendations from the Sustaining Wetlands Forum Steering Committee. The following excerpts from a letter from the Chair, NRTEE, to the Minister of the Environment on December 10, 1990, outlines the NRTEE recommendations:

"As you may know, the Executive Committee referred the Forum Report to the Socio-Economic Impact Committee and the Communications and Education Committee for examination and a careful assessment of what further NRTEE action, if any, might be required.... In essence, the NRTEE felt that the technical and jurisdictional aspects of the Forum Report could not be addressed as effectively in-house as through the mechanism of the NAWCC. Given the responsibility of NAWCC for ensuring a smooth fit between NAWMP expenditures and wetlands policies across Canada, and internationally, we believe that it is the most appropriate existing group to evaluate the Forum recommendations for the NRTEE. We are requesting, there-

fore, that you ask the NAWCC to conduct such an evaluation, to identify appropriate implementation strategies, and to report as soon as possible on its conclusions to the NRTEE through you, the natural link between the two organizations. It is our understanding, as a result of information discussions with some members of the Council, that they would be prepared to assist the NRTEE in this way, if you so directed."

The two Recommendations passed by the NRTEE and subsequently sent to the Minister of Environment for consideration were:

1. That the Minister of the Environment be requested to task the North American Wetlands Conservation Council (Canada) with evaluating the recommendations from the Forum, identifying appropriate implementation strategies, and reporting on their conclusions and recommendations to the NRTEE, through the Minister.
2. That any subgroup of the North American Wetlands Conservation Council (NAWCC) designated to do this work be expanded to represent those major groupings (business, agriculture, planning, ENGOs, and government) which participated in the Forum.

The Minister, through concurrence with the NAWCC, would establish the Canadian Wetlands Conservation Task Force as a response to the NRTEE recommendations, in order that the Forum recommendations as well as other initiatives emanating from the Forum be properly reviewed and where necessary acted upon. On January 2, 1991, Kenneth W. Cox was appointed for a period of two years to the NAWCC and on March 24, 1991 was appointed Chairman, CWCTF.

Structure and Mandate

The partnership format which has been built into all aspects of the NAWMP and the NAWCC is also reflected in the CWCTF. The design of the Sustaining Wetlands Forum, the tone of the recommendations stemming from the Forum and the wishes expressed in the recommendations of the NRTEE, all indicate that broad sectoral representation should be reflected by the CWCTF.

In that vein, representation to, but not necessarily representation on the CWCTF, was obtained from the business/industry sector, the planning community, agriculture and forestry sectors, as well as other environmentally interested organizations. Such a Task Force reflects the broad representation expressed in both the make-up of the Forum and the establishment of Round Tables. The CWCTF met ten times over a two-year period. The CWCTF's main mandate was to evaluate and identify appropriate action strategies for the 73 recommendations emanating from the Sustaining Wetlands Forum. The members of the Task Force included the main partners involved in organizing and deliv-

ering the Sustaining Wetlands Forum. Sectors not represented directly on the Task Force were offered active participation through requests to comment on the recommendations and by personal contact with the Chairman of the CWCTF.

In order to facilitate ease of assembly and contact, the bulk of representatives to the Task Force was from Ottawa. A great many national organizations have Ottawa-based offices. Utilization of these groups ensured both ease of contact and frugality with expenditures. These organizations then used their regional counterparts to obtain important regional sectoral opinion and guidance.

The following organizations are members of the Task Force:

- Environment Canada
- National Round Table on the Environment and the Economy
- Canadian Federation of Agriculture
- Canadian Institute of Planners
- Canadian Pulp and Paper Association
- Ducks Unlimited Canada
- Wildlife Habitat Canada

Wetland Programs in Canada

60

The following exemplifies major wetland conservation programs currently being implemented across Canada. The *North American Waterfowl Management Plan* is currently the largest wetland conservation program. Many local projects, focused on specific wetlands, are making important contributions to conservation of the resource and to our knowledge of wetland ecosystems and conservation approaches, but could not be detailed here. Further information on projects related to the programs below may be obtained from any of the participating partners.

Pacific Estuary Conservation Program

In British Columbia, the *Pacific Estuary Conservation Program* is a multi-agency program aimed at the acquisition and stewardship of private properties, the protective designation of Crown lands and the promotion of sustainable development in areas designated as critical coastal wetland habitat. In addition, the program is developing a ranking scheme; securement and management strategies for British Columbia's central and north coast wetlands; implementing habitat restoration and enhancement plans, (in

Appendix B

some cases with other land use activities, for southern coastal sites); and working on a proposal to amend existing legislation to permit the use of conservation covenants by nongovernment agencies. The Program advances the Pacific Coast Joint Venture of the North American Waterfowl Management Plan (NAWMP). Partners are: The Nature Trust of British Columbia, Wildlife Habitat Canada, Ducks Unlimited Canada, the Government of British Columbia, and the Government of Canada.

Prairie CARE Program

The *Prairie CARE* (Conservation of Agriculture, Resources and the Environment) *Program*, operating in Alberta, Saskatchewan and Manitoba, and one of the major initiatives of the NAWMP, focuses on securing and developing wildlife habitat while providing the landowner with economically viable land use alternatives. The program is designed to encourage farmers to set aside parcels of land, primarily wetland habitat, as natural habitat or change management practices so that wildlife and agriculture can co-exist. *Prairie CARE* includes soil and water conservation demonstrations, grazing systems development, marginal land conversion and modification, leasing of hay land and pasture, inter-pothole habitat restoration, and delaying of hay cutting on existing hay fields or converted croplands. Purchased and leased lands are being converted to dense nesting cover for exclusive upland nesting habitat. Partners in *Prairie CARE* include Ducks Unlimited Canada, the Government of Canada, and the Governments of Manitoba, Alberta and Saskatchewan.

Alberta Prairie CARE, Wetlands for Tomorrow Program

In addition to the major influence of NAWMP on Alberta wetlands, delivered through *Prairie CARE, Wetlands for Tomorrow* is a conservation program between Alberta Fish and Wildlife and Ducks Unlimited Canada aimed at securing and enhancing the large wetlands important to staging, moulting and migrating waterfowl and other wildlife. All wetlands identified under this program are also on the NAWMP list. The *Buck for Wildlife Program* is directed to habitat improvement for the greatest diversity of species including game, non-game and wetland species. Under the *Buck for Wildlife Program*, the *Landowner Habitat Program* provides financial incentives to landowners to retain critical wetland and upland habitat.

Saskatchewan Heritage Marsh Program

The *Saskatchewan Heritage Marsh Program* is acquiring and maintaining wetlands with appropriate enhancement and management techniques. To date, 12 wetland complexes have been declared Heritage Marshes. The Program will also implement a crop depredation and prevention system. The Program has recently been integrated into the *Prairie Habitat Joint Venture (PHJV)* of the NAWMP. Partners include Wildlife Habitat Canada, the Government of Saskatchewan, Ducks Unlimited Canada, the Saskatchewan Wildlife Federation, and the Saskatchewan Natural History Society.

Manitoba Heritage Marsh Program

Under the *Manitoba Heritage Marsh Program*, wetlands considered to be of key public importance for their environmental, economic, recreational and educational values are secured and managed. Seven marshes have been designated as Heritage Marshes to date and a further 19 candidate sites have been identified for future consideration. To date, comprehensive plans have been developed by task forces, in cooperation with local groups, to secure, protect and restore a number of major marsh areas. Heritage Marsh partners include the Province of Manitoba, Ducks Unlimited Canada, Manitoba Naturalists Society, Manitoba Wildlife Federation and Wildlife Habitat Canada. The *Habitat Enhancement Land Use Program (HELP)* was a pilot habitat retention program, designed to demonstrate means of maximizing soil, wildlife, and agricultural benefits on private farmlands through land use incentive measures. The program has recently been incorporated into the Prairie Habitat Joint Venture of the NAWMP. HELP partners include the Province of Manitoba, Ducks Unlimited Canada, Wildlife Habitat Canada and the Government of Canada.

Ontario Wetlands Policy

In Ontario, Cabinet approved a *Wetlands Policy* under the provincial *Planning Act* in June, 1992. The policy requires all municipalities, planning boards and the Crown to have regard to protection of provincially significant wetlands in land use planning. Provincially significant wetlands are identified through an evaluation process. About 45% of the 2 400 evaluated wetlands in southern Ontario (and 80% of evaluated wetland area) are provincially significant. Evaluation of wetlands in northern Ontario began in 1992. In 1988, Ontario passed the *Conservation Lands Act* providing tax

rebates up to 100% for provincially significant wetlands. The *Ontario Wetlands Habitat Agreement* facilitates the securing of wetlands and other critical wildlife habitat in southern Ontario through private stewardship activities and limited land acquisition. Priority sites include provincially significant wetlands under imminent or potential threat, waterfowl habitat and endangered species habitat. Partners are Wildlife Habitat Canada, Ducks Unlimited Canada, the Ontario Ministry of Natural Resources, and the Ontario Natural Heritage League. The *Great Lakes Conservation Action Plan* is a federal-provincial initiative aimed at preventing further losses of wetlands in the Great Lakes basin, with emphasis in the first five years on coastal wetlands of the lower Great Lakes.

Quebec Wetlands Habitat Agreement

The *Quebec Wetlands Habitat Agreement* aims to conserve, restore and enhance wetland habitat in Quebec, through land acquisition, habitat development and implementation of a communications program and related research projects. This Agreement serves as the delivery mechanism for the Eastern Habitat Joint Venture. Partners in this program include Wildlife Habitat Canada, Fondation Quebecoise pour la Faune, the Government of Quebec, Ducks Unlimited Canada, and the Government of Canada. The *St. Lawrence Action Plan* contributes to the conservation and restoration of major wetlands, focusing on the habitat of rare and endangered species. Partners include various private corporations, nongovernment organizations, and the Governments of Quebec and Canada.

Newfoundland and Labrador Wetlands Stewardship Program

The *Newfoundland and Labrador Wetlands Stewardship Program* was created to advance the objectives of the Eastern Habitat Joint Venture and the Newfoundland and Labrador Waterfowl Management Plan. The emphasis is on the securement and enhancement of known significant freshwater and coastal wetlands through stewardship agreements with forest industry companies and municipalities. Some land acquisitions are necessary for threatened habitats. There are very few privately owned wetland habitats in the province. Nevertheless, private landowners are/will be involved on a limited basis through individual stewardship agreements of various types. Canadian partners in the program include Wildlife Habitat Canada, the Government of Newfoundland and Labrador, Ducks Unlimited Canada and the Government of Canada.

New Brunswick Wetlands and Coastal Habitat Management Program

The *New Brunswick Wetlands and Coastal Habitat Management Program* is implementing Corporate Stewardship Agreements to conserve and enhance wetlands and coastal habitat in that province. The basis of such agreements is that corporate landowners maintain title to significant wetlands and coastal habitat but cooperatively manage the lands (with the Department of Natural Resources and Energy) for public education, outdoor recreation and wildlife habitat. The Program, which advances the objectives of the Eastern Habitat Joint Venture, also continues to work with various communities, service clubs and other nongovernment organizations interested in conserving wetlands and coastal habitat, primarily through the development of public education materials and programs.

Partners in the Program include Wildlife Habitat Canada, the Government of New Brunswick, the Government of Canada, and Ducks Unlimited Canada. The *Private Stewardship Program* in the province uses a community-based approach to wetland conservation. Local steering committees in key wetland areas develop management plans with the help of a project biologist. These plans provide the basis for directed agreements with landowners to put the conservation measures (such as buffers for critical features) in place. Partners in private stewardship projects to date include Wildlife Habitat Canada, the Government of New Brunswick, the Quebec Labrador Foundation and the Government of Canada.

Nova Scotia Wetlands Habitat Agreement

The *Nova Scotia Wetlands Habitat Agreement* will assist in delivering the Eastern Habitat Joint Venture in Nova Scotia. The Program includes the securement and enhancement, where required, of floodplain wetlands, salt marsh, fresh marsh and dykeland soils throughout the province. The Program comprises a private and corporate stewardship component, an evaluation component, and a research component focusing on the enhancement of biological productivity in acidified wetlands. Partners include Wildlife Habitat Canada, the Province of Nova Scotia, Ducks Unlimited Canada, the Nature Conservancy of Canada, and the Government of Canada.

Prince Edward Island Stewardship Program

Wetland habitat conservation on Prince Edward Island includes acquisition of coastal and inland habitats, development of new wetlands, enhancement of existing habitats, and a stewardship program

to involve landowners in habitat conservation. Development and enhancement of wetlands is conducted primarily by Ducks Unlimited Canada, under permit from the Prince Edward Island Watercourse Alteration Committee. The *Stewardship Program* augments these traditional programs in aiming to prevent further deterioration and loss of privately-owned wetlands by instilling a sense of responsibility for protection of wetland habitat. Activities under the program include: the restoration of small freshwater marshes, establishing greenbelts between wetlands and agricultural land, evaluation of land retirement to prevent soil erosion, demonstration projects to fence livestock from wetlands and alternative watering system, landowner contact to discuss soil abatement and wetland conservation, development of community stewardship programs, work on amending legislation on restrictive covenants for conservation purposes and developing watershed management techniques to sustaining wetlands and other natural resources. Partners include: Wildlife Habitat Canada, Ducks Unlimited Canada, the Province of Prince Edward Island, the Government of Canada, Prince Edward Island Soil and Crop Improvement Association, Charlottetown Rural Environment Club, Communities of Charlottetown and West Royalty, Tryon River Watershed Cooperative and private landowners.

Northwest Territories Remote Sensing Centre

Because pressures on northern wetlands have been low, the Northwest Territories does not have a specific wetland conservation program. Nevertheless, in recognition of gradually increasing resource development and global impacts on the environment, Northwest Territories resource managers are increasing their

capabilities in this area. Efforts have focused on developing the *Northwest Territories Remote Sensing Centre*, and on monitoring environmental contaminants in wetland and other animal species. Indirectly, wetlands are conserved through federal processes such as the development of National Wildlife Areas, for example Polar Bear Pass on Bathurst Island. Finally, the *Northwest Territories Waterfowl Program* recommends Key Migratory Bird Habitat Sites, in cooperation with Ducks Unlimited Canada, to federal and native land managers.

Yukon Waterfowl Management Plan

Wetland conservation in the Yukon Territory is in its formative stages, but considerable progress has been made in terms of inventories and the development of processes for protecting areas. Over 40 key wetlands have been given status as notations on federal land maps. The *Yukon Waterfowl Management Plan* identifies and gives priority to protection of these key sites through a process which calls for initial research, conceptual planning and final securement. An agreement signed with Ducks Unlimited Canada further recognizes key Yukon wetlands and focuses Yukon activity on 10 areas considered a high priority for protection. The *Yukon Umbrella Final Agreement* for aboriginal land claims has provided a vehicle for the protection of conservation areas, including wetlands. To date, two major wetlands have been given status through this process. Non-consumptive values and wildlife viewing are important factors in the protection of wetlands.

Task Force Membership

Mr. David Brackett

Director General
Canadian Wildlife Service
Environment Canada

Represented by:

Mr. Jim McCuaig, Director
Habitat Conservation
Canadian Wildlife Service
Environment Canada

As part of Environment Canada, the Canadian Wildlife Service shares the goal of securing for current and future generations a safe and healthy environment and a sound and prosperous economy; a Canada where people make responsible decisions about the environment, and where the environment is thereby sustained.

Mr. D. Stewart Morrison

Executive Vice-President
Ducks Unlimited Canada

Represented by:

Dr. J.H. Patterson, Director
International and Government
Relations
Ducks Unlimited Canada

Ducks Unlimited Canada is an international, private, non-profit conservation organization dedicated to the perpetuation and increase of North America's waterfowl resources through restoration, preservation and creation of prime breeding habitat in Canada. Development of this habitat on a multi-use concept benefits wildlife and the general environment and provides water for agriculture, domestic and recreational use.

Mr. David J. Neave
Executive Director
Wildlife Habitat Canada

Wildlife Habitat Canada is a national non-profit foundation dedicated to working with private citizens, governments and industry to protect, enhance and restore the great variety of wildlife habitats in agricultural, coastal, forested, northern and urban landscapes across Canada.

Ms. Sally Rutherford

Executive Director
Canadian Federation of Agriculture

The Canadian Federation of Agriculture (CFA) is a national federation of provincial farm organizations and inter-provincial or national commodity organizations united to speak with an authoritative voice for the farm people of Canada. The points of view of farmers, their needs and their problems are presented through the CFA to federal and provincial governments and to national associations and agencies representing industry, commerce, labour, the professions and consumers.

Mr. Mike Kelly

Senior Policy Advisor
National Round Table on the
Environment and the Economy

The National Round Table on the Environment and the Economy is just one round table. There are also round tables for each province and territory and at the municipal level there are more than one hundred with additional round tables being formed each year. The round table movement is unique to Canada. It tries to reach across all institutional lines, be they governmental, business, occupational, social, political, environmental, or regional, in order to encourage the flexibility of

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response necessary for the transition to a more sustainable society. In particular, it seeks to identify more clearly the economic pathways to sustainable development to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.

Mr. Jean-Pierre Martel

Director

Forest Environment

Canadian Pulp and Paper Association

The Canadian Pulp and Paper Association (CPPA) provides leadership in advancing the interests of pulp and paper companies in Canada. Through the active involvement of its membership, the Association will pursue common objectives in the areas of public policy, communications, environment, industry services and research. The Mission Statement of the CPPA's Woodlands Section, "to help make our forest operations more in harmony with nature, public expectations and based on scientific knowledge of forest ecosystems" relates to their interest in wetlands conservation.

Mr. David H. Sherwood

Executive Director

Canadian Institute of Planners

The Canadian Institute of Planners (CIP) is dedicated to the advancement of good community planning throughout Canada. Besides standards for professional membership and conduct, and monitoring the quality of planning education, CIP promotes excellence in community planning through publications, conferences, public statements, and national awards.

Mr. Kenneth W. Cox

Chairman

Canadian Wetlands Conservation

Task Force

The Minister of Environment in January 1991 through concurrence with the North American Wetlands Conservation Council (Canada), appointed Mr. Kenneth W. Cox as Chairman of the Canadian Wetlands Conservation Task Force in response to the recommendations of the National Round Table on the Environment and the Economy and the Sustaining Wetlands Forum of April 1990.

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The Federal Policy on Wetland Conservation. 1991. Government of Canada. Ottawa, Ontario. An examination of goals and strategies for conserving Canada's wetlands and the federal role in this national initiative. 14 p.

Wetland Evaluation Guide: Final Report of the Wetlands Are Not Wastelands Project. 1992. Sustaining Wetlands Issues Paper, No. 1992-1. North American Wetlands Conservation Council (Canada). Ottawa, Ontario. Authored by W.K. Bond, K.W. Cox, T. Heberlein, E.W. Manning, D.R. Witty and D.A. Young. 121 p.

Appendix D

Sustaining Wetlands Issues Paper Series

Paper No. 1992-1. *Wetland Evaluation Guide*. Final Report of the Wetlands Are Not Wastelands Project. By W.K. Bond, K.W. Cox, T. Heberlein, E.W. Manning, D.R. Witty, and D.A. Young. Published in partnership with Wildlife Habitat Canada and the Canadian Wildlife Service, Environment Canada. 121 p.

Paper No. 1992-2. *No Net Loss: Implementing "No Net Loss" Goals to Conserve Wetlands in Canada*. By P. Lynch-Stewart. Published in partnership with the Canadian Wildlife Service, Environment Canada. 35 p.

Paper No. 1992-3. *Canadian Peat Harvesting and the Environment*. By D. Keys. Published in partnership with the 1990-1995 Canada-New Brunswick Cooperation Agreement on Mineral Development and the Canadian Sphagnum Peat Moss Association. 29 p.

Paper No. 1992-4. *You Can't Give It Away: Tax Aspects of Ecologically Sensitive Lands*. By M. Denhez. Published in partnership with the National Round Table on the Environment and the Economy. 56 p.