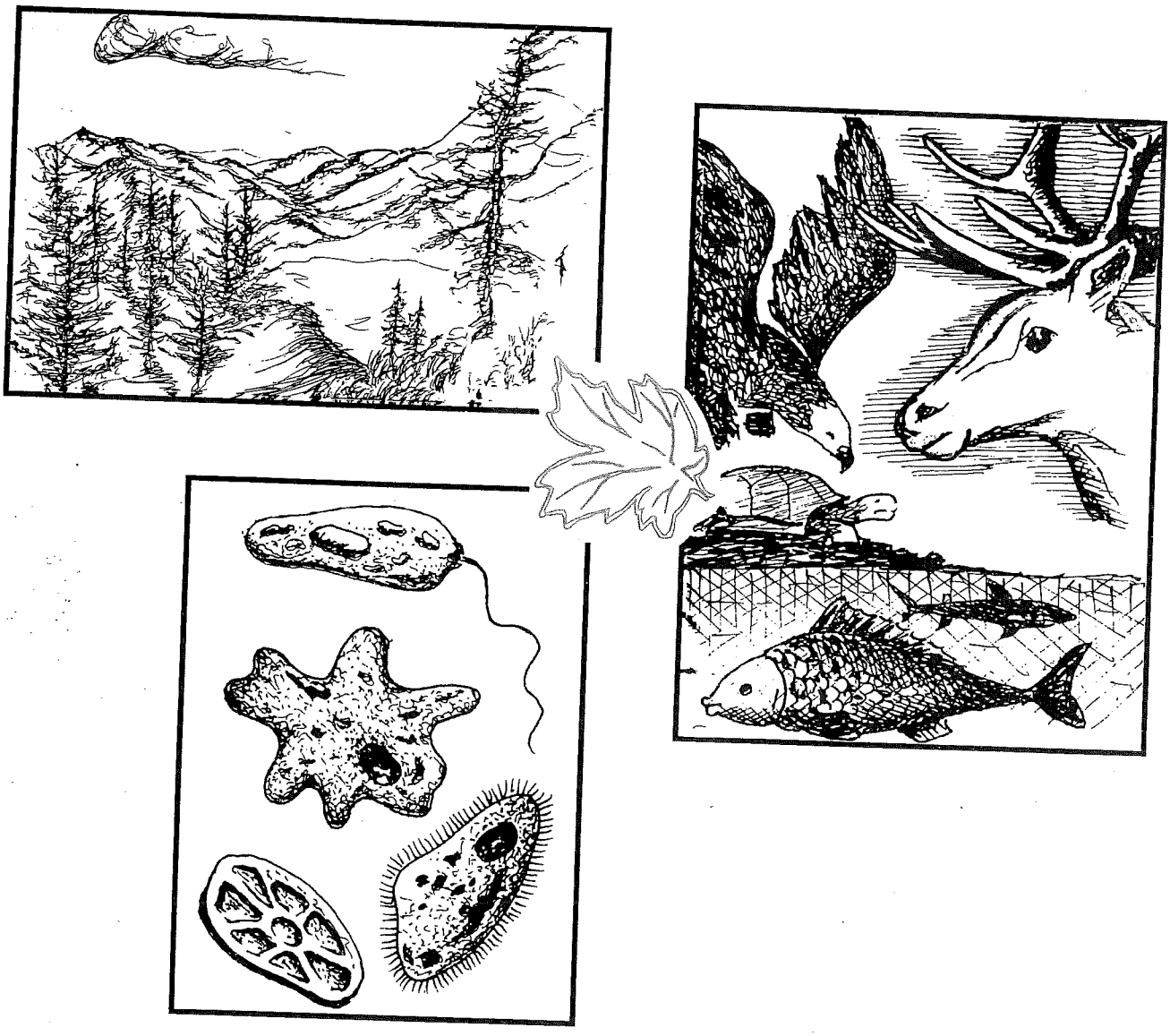
Biodiversity Law and Policy in Canada
Review and Recommendations



CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY

L'INSTITUT CANADIEN DU DROIT ET DE LA POLITIQUE DE L'ENVIRONNEMENT

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BIODIVERSITY LAW

AND POLICY IN CANADA:

REVIEW AND RECOMMENDATIONS

Edited by

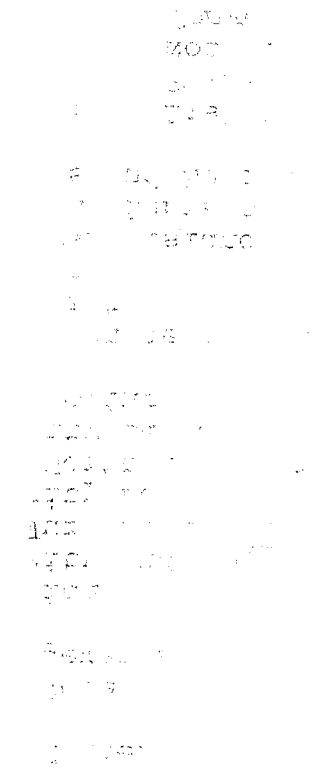
Ian Attridge

August 1996

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BIODIVERSITY LAW AND POLICY IN CANADA: REVIEW AND RECOMMENDATIONS

Edited by Ian Attridge

Canadian Institute for Environmental Law and Policy

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PREFACE

Founded in 1970, as the Canadian Environmental Law Research Foundation (CELRF), the Canadian Institute for Environmental Law and Policy (CIELAP) is an independent, not-for-profit professional research and educational institute committed to environmental law and policy analysis and reform. CIELAP provides leadership in the development of environmental law and policy which promotes the public interest and the principles of sustainability, including the protection of the health and well-being of present and future generations, and of the natural environment.

In recent years, the Canadian Institute for Environmental Law and Policy (CIELAP) and other environmental law centres across Canada have developed an increasing interest in "biodiversity" - the diversity of life on our planet in its genetic, species and ecosystem forms. During the summer of 1994, CIELAP spearheaded a joint response from environmental law centres across Canada to the draft Canadian Biodiversity Strategy. Two of the major points made were that the Strategy's recommendations were too general and that there is the need to develop a legal strategy to conserve Canada's biodiversity.

Now, with funding from the International Development Research Centre and Environment Canada, CIELAP is working with partners across Canada to fill these gaps through the writing, compilation and subsequent discussion of this Report. On behalf of CIELAP, thanks go to the funders of this project and to all who participated in it, particularly Ian Attridge, Research Associate with CIELAP. Partners principally involved in the project are:

- East Coast Environmental Law Centre (Halifax);
- Centre Québecois du Droit de l'Environnement (Montréal);
- Canadian Institute for Environmental Law and Policy (Toronto);
- Native Law Centre (Saskatoon);
- Environmental Law Centre (Edmonton);
- West Coast Environmental Law Association (Vancouver); and,
- Circumpolar Institute of Environmental Law (Whitehorse).

An intentional by-product of the project is the strengthening of partnerships concerning biodiversity law and policy among environmental and native law centres across the country, and indeed among all participants in this rapidly evolving field. I hope that this product will continue to foster these ties and discussion, and perhaps even be useful as a model elsewhere.

Anne Mitchell
Executive Director
Toronto, August 1996

EDITOR'S NOTE

The myriad life forms in Canada are struggling in the face of expanding human impacts. Yet, our institutions are just beginning to acknowledge and respond to this challenge, and unfortunately, biodiversity law and policy is poorly understood. While some legislation has been gathered as part of the *Canadian Biodiversity Strategy* process, it has not yet been comprehensively analyzed nor has it been fully assessed against the international commitments made in the *Convention on Biological Diversity*. Further, little work has been done to sketch this picture in each of Canada's jurisdictions, let alone on the wider national canvass.

Recognizing this situation, CIELAP has coordinated the writing, compilation and subsequent discussion of this Report in order to advance our understanding of the conservation and sustainable use of biodiversity, from a legal and policy perspective.

The partners in this project have included many of the organizations who participated with CIELAP to respond to the draft *Canadian Biodiversity Strategy*, but also has expanded to draw on the expertise of others. While one organization was identified to lead the research in their region or jurisdiction, other organizations and individuals subsequently have become involved as jurisdictional or topic reviewers and contributors. Such comments, perspectives and generosity have substantially enhanced the report beyond its earlier drafts, and I thank all those who participated for your assistance along this journey of discovery. Certainly, the topic is vast, and beyond the scope of any one person to assemble.

This project is not intended just for lawyers, professionals, academics, and bureaucrats. While the report will undoubtedly be useful in these circles, it is intended also for the public, students, concerned citizens, politicians, and people in the industrial, agricultural and resource sectors. Therefore I invite further contributions and suggestions through CIELAP to make subsequent editions and discussion of this document more comprehensive and more useful to a broader range of people.

My hope is that the process of description, analysis and recommendation can continue through the holding of workshops, and critical review and discussion by a wider range of participants, non-lawyers and legal professionals alike. Such a process could then contribute to a national biodiversity law and policy strategy, in conjunction with other *Canadian Biodiversity Strategy* efforts.

Ian Attridge
Toronto, August 1996

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We also extend our sincere appreciation to all those people across the country who generously provided us with information, leads, updates and advice, or made the effort to review and comment on earlier drafts, often for more than one chapter. Many did so beyond their professional capacities, taking a personal interest in helping with this project. While not every comment and perspective could be incorporated, most were, and this assistance has contributed immensely to the scope, accuracy, currency and value of these chapters. Accordingly, we acknowledge and thank the following individuals:

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Mark Winfield - Research Director, Canadian Institute for Environmental Law and Policy, ON

We also thank any others we may have missed in this list.

INTRODUCTION

Ian Attridge and Paul Wood *

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The *Convention on Biological Diversity* represents a milestone in international consensus and initiative to protect, sustainably use and equitably share the broad range of living organisms and ecosystems which sustain ourselves and our planet[1]. The "*Biodiversity Convention*" has been in force since December 29 1993, having been signed by over 160 nations at the Rio de Janiero "Earth Summit" in 1992. As a party to the Convention, Canada has produced the *Canadian Biodiversity Strategy* to begin implementation of its commitments under the Convention[2].

This report is part of a process to inventory, evaluate and advance law and policy related to biodiversity, and thereby contribute to the Strategy and these larger national and international initiatives. This chapter begins with a discussion of what is biodiversity, and why does it have value for humans and non-humans alike. A general discussion is then made of biodiversity law and policy, followed by the key responsibilities for and commitments to biodiversity in Canada. The Introduction chapter will thus set some context for the series of jurisdictional chapters which make up the majority of the document. An Aboriginal view on biodiversity law and policy begins the discussion, and then it proceeds to the federal and other jurisdictions. The two Territories and the three prairie provinces are combined into regional chapters.

In these jurisdictional chapters, laws and key policies and programs are identified, reviewed and in some cases critiqued, leading to recommendations. This discussion in each chapter is generally organized around the headings of wild animals and plants, protected areas and habitat, restoration, sustainable use of biodiversity, plus additional considerations. Conclusions and recommendations are presented in each chapter, and a final concluding chapter presents an overview of these perspectives and further musings. A number of appendices round out the document.

A. BIODIVERSITY: WHAT IS IT?

Biodiversity is becoming a commonplace word. It is mentioned frequently in the media and it comes up in conversations even among those who have no direct connection to the biological sciences. Yet all too often it gets misused because it's not

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[1] *Convention on Biological Diversity*, 5 June 1992, Can. T.S. 1993 No. 24.

[2] Federal-Provincial-Territorial Working Group, *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity* (Ottawa: Minister of Supply and Services Canada, 1995). For more information on this document, contact the Biodiversity Convention Office, Environment Canada, 351 St. Joseph Boulevard, Hull Québec, K1A 0H3.

the easiest concept to understand; it even has "a knack of eluding definition."[3] The fuzziness surrounding the concept conceals an emerging danger: some are worried that its misuse and overuse may relegate it to a "flavour-of-the-month" issue[4], when in fact biodiversity loss is one of the most serious issues facing humanity.

The United Nations has stated that "We are now gambling with the survival of civilization."[5] Scientists who deal with the issue confirm this opinion, suggesting that "current trends in the reduction of diversity implies a denouement for civilization within the next 100 years."[6] In a rare joint statement in 1992, the U.S. National Academy of Sciences and the Royal Society in London warned that the "loss of biodiversity...has serious consequences for the human prospect in the future."[7]

So what is all the fuss and why all the concern? To understand, it is first necessary to know what the term *biodiversity* means, and then it will become clearer why its conservation and sustainable use is so vitally important. The *Convention* defined it this way:

> "*biological diversity*" means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. [Article 2]

The term encompasses three principal levels of uniqueness and variety:

- Genetic diversity is the sum total of genetic information contained in the genes of individuals of plants, animals, and microorganisms that inhabit the earth.

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[3] A.E. Magurran, *Ecological Diversity and its Measurement* (Princeton, New Jersey: Princeton University Press, 1988), at 1.

[4] B.H. Walker, "Biodiversity and Ecological Redundancy", 6(1) *Conservation Biology* 18-23 (1992).

[5] D.A. Munro and R. Prescott-Allen, *Caring for the Earth: a Strategy for Sustainable Living*, (Gland: IUCN - World Conservation Union, UNEP - United Nations Environment Programme, and WWF - World Wide Fund for Nature, 1991), at 4.

[6] P.R. Ehrlich 1988. "The Loss of Diversity: Causes and Consequences", in: Wilson, E.O. and F.M. Peter (eds.), *Biodiversity* (Washington, D.C.: National Academy Press, 1988), at 22.

[7] J. Maddox, "National Academy/Royal Society: Warning on Population Growth", *Nature* 355: 759 (1992).

- Species diversity refers to the variety of living organisms on earth.
- Ecosystem (or landscape) diversity relates to the variety of habitats, biotic communities, and ecological processes in the biosphere, as well as the tremendous diversity within ecosystems in terms of habitat differences and the variety of ecological processes.[8]

Some scientists have elaborated this convenient notion of biodiversity into more categories (eg. genes, species, communities and landscapes, or adding functions and the abiotic matrix); regardless, each level not only has variety in its composition, but also in its structure and function[9]. Cultural diversity can also be seen as an additional level or part of diversity, representing "solutions" and helping people adapt to the problems of survival within particular environments[10].

Most of us are aware of some of nature's variety. We quickly notice the scenery, the variety of landscapes and wildlife that contribute to our Canadian identity. Canada encompasses vast stretches of the Pacific, Arctic, and Atlantic Ocean watersheds, as well as a corner of the Mississippi River drainage. These flowing waters are directed and affected by varied ecosystems in the great western mountains, tundra and taiga in the north, prairies and the Great Lakes basin in the centre, and old mountains with maritime forests to the east.

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[8] J.A. McNeely, K.R. Miller, W.V. Reid, R.A. Mittermeier, and T.B. Werner. 1990. *Conserving the World's Biological Diversity* (Gland, Switzerland and Washington, D.C.: International Union for Conservation of Nature and Natural Resources, World Resources Institute, Conservation International, World Wildlife Fund- US, and World Bank, 1990), at 17.

[9] Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment for Environment Canada* (Ottawa: Minister of Supply and Services Canada, 1994), at page 15; and Ted Mosquin, Peter G. Whiting and Don E. McAllister, *Canada's Biodiversity: The Variety of Life, Its Status, Economic Benefits, Conservation Costs and Unmet Needs* (Ottawa: Canadian Centre for Biodiversity, Canadian Museum of Nature, 1995).

[10] Cultural diversity is expressed through language, beliefs, land management practices, music, relationships, and social structures, etc. See the World Resources Institute, The World Conservation Union, and United Nations Environment Program, *Global Biodiversity Strategy* (1992), at page 3. Also Nina-Marie Lister, "A Systems Approach to Biodiversity Conservation Planning", in: R.E. Munn (ed.), *Atmospheric Change and Biodiversity: Developing a Canadian Science Agenda* (Netherlands: Kiuwer Academic Press) .

We also experience and see different kinds of mosses, flowers, trees, microbes, insects, birds and mammals around us. We are less aware of the variety within species, although some evidence is right before our eyes: we plant tomato varieties or different coloured tulips in the garden; and domestic dogs, despite all their variation, are all one species.

But the examples we see are just the 'tip of the iceberg'. About 1.4 million species of plants, animals, and microorganisms have been described by science, yet estimates of the earth's total number of species ranges from 20 to over 40 million. Despite centuries of discovery, scientists don't even know the number of species in the world *to the nearest order of magnitude*[11].

Yet world-wide, species are going extinct at a rate unprecedented since the demise of the dinosaurs, 65 million years ago.[12] Over the past several hundred million years, the average rate of species extinction (due to natural causes) has been estimated as two species per year, matched by the formation of new species at roughly the same rate.[13] This "background" rate of extinction was punctuated by a number of mass extinctions likely caused by cataclysmic events such as meteors striking the Earth.[14] Compared to the geological "background" rate, the current rate of extinction has been conservatively estimated to be approximately 27,000 species per year, or about 74 per day, or 3 per hour (or some fourteen times the "background" rate).[15] One quarter of the world's species may be extinct by the year 2050.[16] This loss is almost entirely due to human-made causes, with the most notable cause being the alteration, fragmentation,

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[11] E.O. Wilson, *The Diversity of Life* (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1992), at 132.

[12] W. Reid and K. Miller, *Keeping Options Alive: the Scientific Basis for Conserving Biological Diversity* (Washington, D.C.: World Resources Institute, 1989) at 33.

[13] D.M. Raup, "Diversity Crisis in the Geological Past, in: E.O. Wilson and F.M. Peter (eds.), *Biodiversity* (Washington, D.C.: National Academy Press, 1988), at 54.

[14] D.M. Raup and J.J. Sepkowski, Jr., "Periodicity of Extinctions in the Geological Past", in: *Proceedings of the National Academy of Science* 81: 801 - 805 (1984); and D.M. Raup, *Extinction: Bad Genes or Bad Luck?* (New York: W.W. Norton & Company, 1991).

[15] Supra, note 7, at 280.

[16] Supra, note 3, at 28.

or destruction of natural habitats for the purposes of economic development[17]. Humans are having impacts on species through overharvesting, on habitat through its removal or degradation, and indirectly on all biodiversity by changing the chemical makeup (eg. pollution), slope, drainage, climate and cycles of our ecosystem[18].

Similarly in Canada, wild biodiversity at all three levels is also in trouble. We can experience these changes, this simplification and degradation, happening in our daily lives: landscapes are being converted, either from woodlands to housing developments near urban centres, or elsewhere from prairie to field, and forest to tree farm. Wildlife numbers and variety are changing where we live and visit. Forests' and fields' genetic and species diversity is narrowed as seedlings of one species and variety are planted during forestry and farming operations.

Beyond our own individual observations, the Canadian statistics are also disturbing. Less than 1 percent of Canada's original tallgrass prairie exists, and wetland losses are high in many parts of the country: 80 percent in B.C.'s Fraser River delta,71 percent on the prairies, 70 percent in southern Ontario, and 65 percent of Atlantic coastal marshes[19]. Other habitats are threatened or are being degraded. After five years of a concerted campaign and government commitment, only about 5.5 percent of Canada's wildlands area is fully protected within parks and similar sites, and only five percent of its ecological regions have been adequately represented within a protected

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[17] Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment for Environment Canada*, supra note ?. On page 44, the Team notes that humans appropriates for itself 40 percent of the world's total primary production, human activities (primarily agriculture and fibre extraction) affect 95 percent of the terrestrial environment. See also D.S. Wilcove, C.H. McLellan, and A.P. Dobson, "Habitat Fragmentation in the Temperate Zone, in: M. Soulé, (ed.). *Conservation Biology: The Science of Scarcity and Diversity* (Sunderland, Massachusetts: Sinauer Associates, 1986), at pp. 237 - 256; P.R. Ehrlich 1988. "The Loss of Diversity: Causes and Consequences, in: E.O. Wilson and F.M. Peter (eds.). *Biodiversity* (Washington, D.C.: National Academy Press, 1988), at p. 22; and O.H. Frankel and M.E. Soulé, *Conservation and Evolution* (Cambridge, Massachusetts: Cambridge University Press, 1981), at 29.

[18] Robert D. Sopuck, *Canada's Agricultural and Trade Policies: Implications for Rural Renewal and Biodiversity*, Working Paper No.19 (Ottawa: National Round Table on the Environment and Economy, 1993), p.14.

[19] Environment Canada, *The State of Canada's Environment* (Ottawa: Minister of Supply and Services Canada, 1991), at pages 26-6 and 26-7.

area system[20]. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has identified 275 species at some risk of decline towards extinction, and this does not include the twenty species which have become extinct or are no longer found in Canada[21]. Cod and turbot stocks off the East coast have dwindled to such a level that they are at or near "commercial extinction", while many amphibian and songbird populations are in serious decline across the country and globally[22]. Commercially logged tree species are losing their genetic diversity[23].

This focus on the numbers of species going extinct obscures the so-called "secret extinctions," meaning the loss of genetic diversity[24] Many species are declining rapidly, even if they have not yet gone extinct. The numbers of individuals in these species is dropping, and this indicates less genetic diversity within these species, leading to increased vulnerability to extinction. Perhaps of more immediate importance is the loss of genetic diversity within domestic crop species[25]. The trend in modern agriculture,

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[20] World Wildlife Fund (Canada), *Endangered Spaces Progress Report - 94/95*, Number 5 (Toronto: World Wildlife Fund (Canada), 1995), p.1, and Report - 95/96, Number 6, p.59. Forty percent of Canada's natural regions are moderately or partially represented, and 55 percent have little or no representation.

[21] Pamphlet on endangered species legislation produced by the Canadian Endangered Species Coalition, Ottawa, 1995. Updated by Nathalie Chalifour, World Wildlife Fund (Canada), personal communication, May 10 1996.

[22] Chris Wood, "Northern Defiance", *Maclean's*, July 24 1995, pp. 12-14; Christine A. Bishop and Karen E. Pettit (eds.), *Declines in Canadian amphibian populations: designing a national monitoring strategy*, Occasional Paper No. 76 (Burlington: Canadian Wildlife Service, 1992); J.H. Rappole and M.V. McDonald, "Cause and Effect in Population Declines in Migratory Birds", 111(3) *The Auk* 652 (1994).

[23] F.T. Ledig, "Secret Extinctions: The Loss of Genetic Diversity in forest Ecosystems", in: M.A. Fenger, E.H. Miller, J.F. Johnson and E.J.R. Williams, *Our Living Legacy: Proceedings of a Symposium on Biological Diversity* (Victoria: Royal British Columbia Museum), at p.128.

[24] Ibid.

[25] The loss of vegetable varieties from North American seed catalogues over the period 1981 to 1991 is evident in a 66 percent decline for broccoli and 70 percent for sweet bell peppers and spinach. Where these are not preserved in clonal gene

largely driven by market forces, is toward genetic uniformity in commercial crops. This is also known as genetic erosion. The result is higher yield, but with an accompanying increase in vulnerability to pests and adverse climatic conditions.[26]

B. THE VALUES OF BIODIVERSITY

It is clear that the earth is rapidly losing its biodiversity. A cynic might argue that people use a very small number of the world's species as resources. Maybe all the other species, and the genetic diversity within them, are useless. Should we be concerned?

The short answer is that humans cannot live without at least some forms of biodiversity, and in the long run humans may be dependent on nearly all those largely-unknown species which only *appear* to be useless. The longer answer will take more explanation. The next two sections deal briefly with the values of biodiversity to humans, and then a more philosophical discussion of their intrinsic values. However, given the complexity of ecological systems, we can not predict with certainty the functional relationships between biodiversity and ecological services or their economic resource values. In the absence of such certainty, it is prudent to adopt the "precautionary principle", or as many ethicists and environmentalists would say, the "humility principle".

1. Human or Anthropocentric Values

It is obvious that humans are immediately dependent on biological resources for food, shelter, fuelwood, clothing, and medicines, and for many of the raw materials used to manufacture a wide array of other products. Humans value other species for aesthetic, spiritual, and cultural reasons. Yet it is also true that in total these make up relatively few of the world's estimated 20 to 40 million species. For example, only about 200 species have been domesticated for food production, and among these 15 to 20 represent the bulk of human food consumption[27].

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banks, this could represent a substantial threat to our food security. See Kent Whealy, *Garden Seed Inventory* (3d ed.), (Decorah, Iowa: Seed Savers Exchange, 1992), pp.5-12.

[26] M.L. Oldfield, 1984. *The Value of Conserving Genetic Resources* (Washington, D.C.: U.S. Department of Interior, National Park Service, 1984).

[27] B. Groombridge (ed.) *Global Biodiversity: Status of the Earth's Living Resources*, A Report Compiled by the World Conservation Monitoring Centre (London: Chapman and Hall, 1992), at p.331.

In its Preamble, the Biodiversity Convention begins by suggesting wider values in biodiversity:

> The Contracting Parties, Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components, Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere, Affirming that the conservation of biological diversity is a common concern of humankind, ...

The small number of species that humans *directly* use as resources is deceiving. In addition to material resources, humans are also indirectly dependent on nearly all species due to the "environmental services" provided by the ecosystems and their wild organism components. The services include the absorption of carbon dioxide, the release of oxygen, water cleansing, watershed protection, the regulation of hydrological cycles, the regulation of local climates (and perhaps even the world's climate), the production of soil, the prevention of soil erosion, the absorption and conversion of wastes, and biological pest control. Human technology and ingenuity cannot substitute for these vital products and services provided by wild nature.

Economists have attempted to estimate the economic worth of biodiversity, as if it were nothing more than the sum of current and potential biological resources[28]. A recent study has identified 21 ecological functions provided by biodiversity, and puts the value of Canada's raw, unprocessed biodiversity at some $70 billion[29]. Genes from a wild strain of barley have saved California's US$160 million per year barley crop from yellow dwarf virus. It has been suggested that the *annual* value of plant-based drugs in the United States is as much as US$300 *billion* (in 1984 dollars). Genetic resource discoveries are not confined to tropical forests. Taxol, a recently-discovered drub derived from the bark of Pacific Yew trees, is highly effective against certain types of cancer[30].

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[28] Two useful additions to this literature are: E. Barbier, C. Burgess and C. Folke, *Paradise Lost: The Ecological Economics of Biodiversity* (London: Earthscan, 1994); and C. Perrings et al. (eds.), *Biodiversity Loss: Economic and Ecological Issues* (New York: Cambridge University Press, 1995).

[29] Ted Mosquin, Peter G. Whiting and Don E. McAllister, *Canada's Biodiversity: The Variety of Life, Its Status, Economic Benefits, Conservation Costs and Unmet Needs* (Ottawa: Canadian Museum of Nature, 1995).

[30] V.H. Heywood (ed.) and R.T. Watson (chair), *Global Biodiversity Assessment*, United Nations Environment Programme (New York: Cambridge University Press, 1995).

From a cost-benefit perspective, protecting relatively natural areas is sometimes more valuable than harvesting the resources in these same areas. For example, Panayoutou used data from Latin America, Africa and Asia to evaluate an average tropical forest. In many cases, these forests were more valuable if left undeveloped because the non-timber values - especially carbon sequestration - out-competed timber values and values from converting them to other uses such as ranching[31]. More typically, however, cost-benefit analyses fail to conserve biodiversity partly because the benefits are unknown and therefore undervalued. Yet surprise benefits are continuing to be discovered worldwide.

There are three problems with the economic evaluation of biodiversity conservation. First, increments of biodiversity (a species here, and ecosystem there) are usually not traded on markets and consequently, economists must resort to a number of "shadow pricing" techniques which are notorious for inaccuracy. Second, the interests of future generations are systematically excluded because the economic criterion of value is willingness to pay. Future generations are unwilling to pay for anything because they do not exist yet. This does not mean, however, that their interests will not be affected in the future. Third, humans are absolutely dependent on biodiversity conservation in the long term, making it a moot point whether *any* economic analysis for or against biodiversity conservation is a valid criterion to be using in this situation. This last point is crucial, as will be explained.

The plot begins to thicken when we realize that we cannot maintain the current use of biological resources, especially agricultural crops, without the assistance of wild organisms. Wild genetic resources in particular are now indispensable to modern agriculture.[32] Crops are vulnerable to insect and disease pests and to changing climatic conditions. In order to develop hardy and resistant varieties, modern agriculture depends on fresh genetic material from wild sources.[33] Similarly, the development of new and valuable biological resources, including new medicines, and new raw materials such as organic chemicals, requires sources of wild species and their genetic variety. Put another way, wild biodiversity is required not only for new resources, but also to maintain our currently used biological resources.

Of course, we don't know precisely which species are potential resources, which is one more reason to maintain the current range of biodiversity - so that options are left

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[31] T. Panayoutou, *Protecting Tropical Forests*, Development Discussion Paper (Cambridge, Massachusetts: HUD, 1992).

[32] C. Prescott-Allen and R. Prescott-Allen, *The First Resource: Wild Species in the North American Economy* (New Haven, Yale University Press, 1986).

[33] Supra, note 16, at 3.

open in the future. But there is another reason: even if we did know precisely which species, or genes, would yield new resources, the only way to keep all of them alive is to preserve their natural habitats. And any one species' habitat consists primarily of all the other species with which it lives - in nature, species live in ecological communities of species, not in isolation. So in order to maintain our current status of well-being, we need the full range of biological resources that we currently use, along with a broad range of *potential* resources, especially genetic resources, and (as far as we know) nearly all of the species that each potential resource requires for it to maintain itself in its natural habitat. This is the beginning of a strong rationale for preserving all native species - i.e. conserving the world's biodiversity. But the story does not end here.

Nature is not, and never was, in balance[34]. Environmental conditions change, and species must adapt or die. As each species adapts, so too must its predators, prey, parasites, and competitors, as the case may be. All species must continually adapt because its living conditions (i.e. its habitat) continue to change. What makes adaptation possible? The answer is twofold: natural selection and sufficient genetic diversity among the individuals in a species. Genetic diversity is required so that natural selection can "choose" among those individuals who are most fit for the new conditions. This is how nature continues to evolve and adapt. The current crisis in world-wide biodiversity loss threatens to stop evolution within ecosystems. "Death is one thing - an end to birth is something else."[35]

Evolution is change at one scale of time and place, while genetic diversity exists at another. Change thus exists at multiple time and space scales, and is characterised by dynamic, rapid and often unpredictable episodes. Following ecosystem change, catastrophe or "creative destruction", ecosystems and their species facilitate the process of regeneration and self-organization[36]. The slow, cumulative loss of individual species beyond some undefinable or unknown threshold may have dramatic repercussions for ecosystems and their functional capacity to regenerate following disturbance or change. When this regeneration capacity is lost, a system may never recover. This may result in loss of vital functions, such as nutrient cycling, carbon storage and climate modification, and other ecological services. Humans are vitally reliant, therefore, on biodiversity as part of nature's ability to adapt, both to sudden and also long-term changes.

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[34] S.L. Pimm, "Biodiversity and the Balance of Nature", in: E.D. Schulze and H.A. Mooney (eds.), *Biodiversity and Ecosystem Function* (Berlin: Springer-Verlag, 1993).

[35] M.E. Soulé and B.A. Wilcox (eds.), *Conservation Biology: an Evolutionary-Ecological Perspective*. (Sunderland, Massachusetts: Sinauer, 1980), at 8.

[36] Nina-Marie Lister, supra note 10.

To place all this in perspective, biodiversity can appropriately be viewed not simply as a vast collection of bits and pieces of nature, but rather as a *necessary precondition* for the long term maintenance of ecological resources. Biodiversity can then be perceived as an essential environmental condition.[37] Consider other essential environmental conditions: the rate of solar influx, the earth's orbit around the sun, and gravitational pull. A significant change in any one of these conditions would be disastrous for humanity. We take these for granted and we need not concern ourselves with their conservation. Biodiversity is different precisely because humans now have the ability to change this environmental condition.

Valuing biodiversity as an essential environmental condition allows us to see its conservation with a whole new sense of priority and urgency. An essential environmental condition is not something to be traded off against more attractive, short-term opportunities. If an environmental condition really is essential, then it needs to be maintained. Land-use and land-management decisions should be made with this constraint in mind. Put simply, this means that each generation needs to live within its ecological limits. Each generation should be free to make whatever environmental trade-offs are appropriate for promoting the public interest provided that biodiversity is not depleted.

This is a straight-forward principle to grasp. But when added to intrinsic values and ethical questions, implementing biodiversity conservation in law becomes much more difficult.

2. Biocentric Values of Biodiversity

Biocentric values are independent values outside of those attributed to biodiversity by humans. There are two key types: intrinsic and inherent worth.

It is significant that the Convention's Preamble recognizes, as does the U.N.'s 1982 *World Charter for Nature*, that biodiversity has its own intrinsic worth, independent of its utility to humans. Many people can sense this in their hearts, but translating and applying this within our current, human-centred world view is often elusive. As Jerry DeMarco has noted:

> In efforts to defend nature through the legal system, it is virtually impossible to escape resourcism. Whether the argument is made according to the public interest, the right to a healthy environment, sustainability or even the rights of endangered species, legal success almost invariably involves demonstrating an

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[37] P.M. Wood, *Biodiversity as the Source of Biological Resources: a New Look at Biodiversity Values* (Forthcoming).

> unwise human *use* of the environment. ... [O]n simple anthropocentric grounds, the current state of environmental law fails to deliver. ... [Yet, never forgetting the duality of objectives,] legal environmentalism can be the short-term means to ensure that the long-term dream remains a possibility[38].

However, despite the Preamble's recognition of the "intrinsic value" of biodiversity, the Convention assumes that "sustainable use" (loosely defined) for human benefit is the purpose for conserving biodiversity; this is subject only to requirements for sustainability and benefitting future generations[39].

A related and contentious issue arises, namely that for ethical reasons, perhaps humans should not extinguish other species. Intensely debated, the whole academic subdiscipline of environmental ethics is trying to provide answers to this issue. Some have argued that the interests of only individual sentient animals (i.e. animals that can feel pain and pleasure) should be taken into account when we make environmental decisions that could affect their lives.[40] Others argue that only self-conscious animals should be considered, and that each of these animals should be granted rights much the same as basic human rights.[41] Most academic environmental ethicists tend to give more credence to rational arguments for individual, *non-sentient* nonhumans, including non-vertebrate animals, and in some cases, plants.

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[38] Jerry Valen DeMarco, "The Long and the Short of Environmental Defence", in Alex Wellington, Allan Greenbaum and Wesley Cragg (eds.), *Canadian Issues in Applied Environmental Ethics* (Toronto: Broadview Press, 1996, in press).

[39] Alan E. Boyle, "The Convention on Biological Diversity" (Chapter 8), in Luigi Campiglio, Laura Pineschi, Domenico Siniscalco, and Tullio Treves (eds.), *The Environment After Rio: International Law and Economics* (Boston: Graham and Trotman, 1994), at page 115. Thus conservation is imbedded in sustainable use, and is here more philosophically aligned with fisheries and migratory animals treaties than with more preservationist concepts elsewhere (eg. those found in the *Protocol to the Antarctic Treaty on Environmental Protection* or the *Whaling Moratorium* under the *International Convention for the Regulation of Whaling*).

[40] See especially: P. Singer, *Animal Liberation* (New York: The New York Review and Avon Books, 1975).

[41] See especially: T. Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 1983). But see also: J.B. Callicott, "Review of Tom Regan, "The case for animal rights."", *Environmental Ethics* 2: 311-328 (1985). Callicott points out that Regan's conception of self-conscious animals includes only "mammals of a year or more."

The central issue at stake is this: which biological entities have *moral standing*?[42] Moral standing refers simply to those biological entities which matter morally; they have *intrinsic value* (i.e. value for their own sakes independent of their utility to humans, or in lay terms, these organisms have interests regardless of whether or not they are consciously aware of their interests) and therefore are worthy of our moral consideration when we contemplate actions which might affect them. But as a group, environmental philosophers have not yet arrived at any consensus about this issue.

Some trends do seem to be emerging. So far, it appears that there are no rational grounds for making environmental decisions on the basis of human interests alone. If human interests are considered, then so too should nonhumans' interests. But which ones, and to what extent?

This last issue raises a dilemma not only for this book, but also for land-use and land-management decisions in general. On the one hand, to limit moral consideration to the interests of all humans and only humans is an entirely arbitrary decision. On the other hand, there are no clear rational grounds for making environmental decisions on the basis of nonhuman interests.[43] To put this dilemma more succinctly, there are no rational grounds for either excluding or including nonhuman-centered values in these decisions. For the purposes of this book, the focus will turn to examine human-centred values, arbitrary as this may be.

C. BIODIVERSITY LAW AND POLICY

This report focuses upon law and policy affecting biodiversity in Canada. The primary spotlight is on the law, especially relevant legislation, with policy incorporated wherever possible along with some program discussion. Law and policy are described

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[42] This is similar to the notion of legal standing, where the ability or right to appear and have an argument considered is in question.

[43] There have been some attempts. For example, Stone has argued for the legal standing of some nonhuman entities [C.D. Stone, "Should Trees have Standing? Toward Legal Rights for Natural Objects" *Southern California Law Review* 45: 450 - 501 (1972)]; Taylor has offered five priority principles for resolving conflicts between the interests of humans and nonhumans [P. Taylor, *Respect for Nature: A Theory of Environmental Ethics* (New Jersey: Princeton University Press, 1986), at 263 - 306 (1986)]; and VanDeVeer has suggested a rough guide for action based on the psychological capacities of competing organisms (human and nonhuman) and their respective levels of interest [D. VanDeVeer, "Interspecific Justice", *Inquiry* 22(1): 5 - 70 (1979)].

and analyzed, and then reforms are recommended by the authors to address shortcomings and gaps. Each of the chapters provides its own unique perspective, pulling together material with analysis across a wide field of inquiry.

Many government initiatives are discussed, simply because it is governments which have the apparent power to change and implement the legislation which guides much of the law concerning biodiversity in Canada. While this may be a focus, the document necessarily explores the activities of other organizations and individuals. In many ways and forums, people outside government research, argue, lobby, challenge, sue, and contract. Indeed, it is the sum of efforts by citizens in the broader public realm that drives governments to respond and generates the awareness and will to advance the development and application of biodiversity law and policy.

The *Biodiversity Convention* and the *Canadian Biodiversity Strategy* address three themes: the conservation, sustainable use and equitable sharing of biodiversity. This report emphasizes the first theme, conservation, more so than the others, by highlighting wildlife, protected areas, restoration and some sustainable use aspects. "Conservation" includes preservation, but may also involve some management or human use, and thus shades into the "sustainable use" concept. Unfortunately, limited space in the report precludes a more comprehensive treatment of all three themes. Further, compared to other subjects, the discussion of law and policy for conserving biodiversity in Canada has been especially underdeveloped and thus has been given more prominence here.

Relatively small proportions of the *Convention* and *Strategy* are directly oriented towards law and policy. That is certainly appropriate: it is what actually gets done, and how, that really matters in the long run. But law and policy are clearly important in reflecting and shaping our concepts and resulting actions. Law is usually seen as the familiar rules and regulations that tell us what we can or cannot do - or else. But it is so much more than that. Law can and should be harnessed in many other ways to the tasks of biodiversity conservation, sustainable use and fair sharing. For example, law can:

- establish organizations, their composition, mandate, and activities;
- recognize or authorize individuals and organizations;
- settle disputes and determining rights and responsibilities, or provide a means to do so;
- set out principles, goals and priorities to guide decision-making;
- declare or reflect publicly held social and ethical values;
- provide for funding and financial mechanisms;
- alter the market place and create financial incentives for action; and,
- educate people in what and where the law is, by making cross-references and clarifying relationships to other legislation.

Law can be derived from many sources. As noted above, it can arise from international agreements or widespread customary practices in the world community;

thus, the *Convention*. Our Constitution is made up of a number of separate documents, including the well-known *Charter of Rights and Freedoms*[44], and this provides the framework in which governments' authority to pass legislation and carry out activities must be exercised.

The laws with which we are most familiar are the statutes or Acts, and the regulations that provide more details to implement them. Together, these are "legislation" within the meaning of this report. Acts are passed by legislatures, with consideration in public by all elected representatives of whatever political stripe. They tend to be broad statements, take a lengthy period to develop and negotiate and thus are less easily amended. However, this reduces their flexibility to adapt to new science and technology, and may cause them to be caught up in political trade-offs with unrelated subjects.

Regulations provide more of the implementation details, and derive their authority from regulation powers within statutes. Regulations may be subject to initial public consultations but the final decisions are left solely to the government's Cabinet. They have more flexibility through easier amendment, and tend to be more scientifically and less politically based[45]. Guidelines and procedures may also assist in implementing legislation, but they are usually just advisory and not legally binding. These differences are important to consider when developing or using legislation, for the choice of legal form will affect who is making or changing decisions, and how.

Another form of law is the common law, meaning the caselaw created in decisions made over the years by judges. The common law may be altered by a new decision on different facts than had previously occurred, or by the passage of a statute. We have inherited much of this law from the United Kingdom, although over the last several decades Canadian common law has begun to chart its own course, often incorporating concepts developed in cases from the United States. The common law applies across Canada except in the province of Québec, where our Constitution has entrenched the French traditions of the civil law.

The civil law has evolved different concepts than the common law and is expressed through the *Civil Code of Québec*[46]. It is interpreted in a somewhat different manner than the common law, drawing more so on legal writings than in the British tradition. In both the common and the civil law traditions, few cases (except hunting and

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[44] *Canadian Charter of Rights and Freedoms*, Part I of the *Constitution Act, 1982*, being Schedule B of the *Canada Act 1982* (U.K.), 1982, c.11.

[45] Brad Fraleigh, Special Advisor on Biodiversity and Genetic Resources, Agriculture and Agri-Food Canada, personal communication, April 15 1996.

[46] *Civil Code of Québec*, S.Q. 1991, c.64, in force January 1, 1994.

fishing prosecutions) and limited legal consideration in the past have left this area relatively undeveloped for biodiversity purposes, yet open to new applications.

Fortunately, this situation is changing as environmental groups and citizens are asserting their concerns and rights within courts and regulatory tribunals. In recent landmark cases, the Supreme Court of Canada has upheld the rights of citizens to go to court as representatives of a public interest and ensure that governments followed legal procedures and gave full consideration to public, including environmental, concerns[47]. Court intervention to protect biodiversity raises many opportunities and challenges, yet the courts are increasingly willing to hear such arguments and hand down decisions that incorporate ecological considerations[48]. Groups such as the Sierra Legal Defence Fund, the Canadian Environmental Law Association, and the Canadian Parks and Wilderness Society are increasingly using the courts to develop an emerging environmental case law. Often, beyond the specific issues dealt with in a case, such actions foster changes in legislation, in policy, and wider awareness and new approaches to biodiversity concerns.

Policy is an approach and record of decision-making. It may guide the direction legislation will take, and then may be in turn shaped by it and the larger legal picture. Policy can be made at different levels, ranging in the public sector from Cabinet and Ministerial to administrative policies, with varying degrees of authority. Private sector policy is certainly important, such as determining approaches to harvesting or land acquisition and management criteria. It often will relate to and may have been developed along with governmental policies and laws.

This formal law and policy is underpinned and responds to the more profound level of moral law, of values, and the non-regulated choices and actions we take based upon them. While such values may vary among cultures, in some form we all feel a sense of wonder and care for the natural world around us, and our non-human

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[47] See *Finlay* v. *Canada (Minister of Finance)* (1986), [1986] 2 S.C.R. 607, 33 D.L.R. (4th) 321; *Canadian Wildlife Federation* v. *Canada (Minister of Environment)* (1989), 3 C.E.L.R. (N.S.) 287 (F.C.T.D.), aff'd (1989), 4 C.E.L.R. (N.S.) 1 (F.C.A.); *Friends of the Oldman River Society* v. *Canada (Minister of Transport)* (1992), 7 C.E.L.R. (N.S.) 1, 88 D.L.R. (4th) 1 (S.C.C.).

[48] See Harvey Locke and Stewart Elgie, "Using the Law to Protect Wild Places" (Chapter 6), in Monte Hummel (general ed.), *Protecting Canada's Endangered Spaces: An Owner's Manual* (Toronto: Key Porter, 1995); and John Swaigen, "Choosing Your Remedies" (Chapter 3), in David Estrin and John Swaigen (eds.), *Environment on Trial: A Guide to Ontario Environmental Law and Policy* (3d ed.) (Toronto: Emond Montgomery, and Canadian Institute for Environmental Law and Policy, 1993).

companions. Numerous expressions of this feeling are evident, and has been particularly sustained by indigenous peoples. What is encouraging is that in Western society there is a resurgence in environmental awareness, concern, and even spirituality, increasingly led by young people. At times such feelings are more subtle than in the past, eluding the poll headlines yet regularly appearing near the top of the list. Perhaps this reflects the less obvious embracing of these values deeper into our society's psyche and soul, which will carry more influence than any law. At least we can hope that this is indeed the case.

D. RESPONSIBILITIES FOR BIODIVERSITY IN CANADA

Responsibilities for the conservation and sustainable use of biodiversity are distributed across the full length and breadth of our society. This is not surprising, given how tightly biodiversity is woven throughout our day to day activities, and how our current and future prospects are equally woven together with the destiny of our surrounding biodiversity.

Despite this broad responsibility for biodiversity in Canada, legal authority follows particular patterns. On biodiversity concerns, Canada's Constitution is particularly complicated: it not only establishes a federal state, but often is also silent or unspecific on how it distributes capacities to act amongst primarily the federal and provincial governments. This is in large part due to the fact that, with a few exceptions, biodiversity conservation and sustainable use were not recognized concepts nor principal concerns of the men who drafted the Constitution or its subsequent amendments. Biodiversity was seen essentially as a resource to be managed, and thus fish (and aquatic ecosystems) and forests were seen and expressed as "fisheries" and "timber".

Our federal state now comprises one national, ten provincial, two territorial and a large number of Aboriginal and subordinate municipal governments. Along with private individuals and organizations, each of these governments has some measure of authority over biodiversity. The following paragraphs will outline the distribution of key powers on the subject based upon the *Constitution Act, 1867*, sections 91 and 92, but many additional opportunities to affect biodiversity may arise through the exercise of less direct powers.

The federal government has exclusive federal jurisdiction over treaty-making[49], international and interprovincial trade and facilities (or undertakings), navigation and shipping, sea coast and inland fisheries, "Indians and Lands reserved for the Indians", criminal law, and federally-declared public works, thus giving considerable opportunity to affect biodiversity[50]. Further, the federal government may impose taxation and spend resulting funds, as well as use its "peace, order and good government" clause to address issues ordinarily within provincial jurisdiction that now have achieved a "national dimension" or concern[51]. These are broad, sweeping powers, but they are in part constrained by provincial jurisdiction. Until the 1982 *Charter of Rights and Freedoms*, disputes over the fine lines separating federal from provincial authority provided the basis for the bulk of Canadian constitutional case law.

Provincial governments have exclusive control over natural resources[52], public lands belonging to the province and the timber and wood located on these lands, municipalities and any other merely local and private matters, and broad property and civil rights (including the right to carry on businesses and make contracts)[53]. Provinces share jurisdiction with the federal government over some areas, such as agriculture, and also may impose taxes of various sorts. In aggregate, this jurisdiction gives the provinces the primary lead in conserving wildlife and habitat, and in managing how biodiversity is used. This has translated into key legislation for provincial parks, wildlife management, public and private land use planning, and a host of land management agencies and

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[49] The federal government has exclusive authority to enter international treaties: see infra note 59, and section 132 of the *Constitution Act, 1867* (U.K.), 30 & 31 Vict., c.3 (formerly, the *British North America Act, 1867* (U.K.)). However, if the subject of the treaty is within provincial competence, then generally the province must pass legislation to give effect to the treaty.

[50] See the *Constitution Act, 1867*, sections 91(2), (10), (12), (24) and (27), and 92 (10)(c), respectively.

[51] The leading case of *R.* v. *Crown Zellerbach Ltd.* (1988), [1988] 1 S.C.R. 401 upheld the former federal *Ocean Dumping Control Act* and elaborated the national concern test. This analysis could be significant for other areas within the environmental and biodiversity fields, and environmental groups are advocating such an approach for new federal endangered species legislation.

[52] Except for uranium, which is under federal control. Provincial responsibility for non-renewable natural resources was further confirmed in article 92A of the *Constitution Act, 1867*, as amended by the *Constitution Act, 1982.*

[53] *Constitution Act, 1867*, sections 92(5), 92(13), 92A, and 109. The prairie provinces were not granted section 109 jurisdiction over public lands and resources until 1931, after they became provinces.

programs. Specific powers may also be found in the constitutional agreements which brought new provinces into Confederation[54].

Territorial governments are established on the basis of delegated powers from the federal government; they thus do not have their own independent constitutional mandate, as do the federal and provincial governments. In the Territories chapter, Laurie Henderson further explores this arrangement, and the extent to which the Yukon and Northwest Territorial governments have assumed authorities related to biodiversity. Municipal governments also have this derivative authority, conducting their affairs within the limits prescribed by the provinces. While both territorial and municipal governments are established and operate at the discretion of their parent governments, they nonetheless are well-entrenched institutions and exercise substantial powers and political influence.

Aboriginal authority emanates from a number of sources, and is more difficult to characterize than the federal, provincial, territorial and municipal authorities described above. Traditionally, this authority is seen to come from the Creator. Aboriginal and treaty rights are constitutionally entrenched through section 35 of the *Constitution Act, 1982*. There are specific provisions for hunting and fishing rights in most older treaties, and many modern land claims agreements (eg. Inuvialuit, Nunavut) include the establishment of protected areas and wildlife co-management boards. The *Sparrow* case was the first decision of the Supreme Court of Canada on the section 35 Aboriginal and treaty rights[55]. It upheld these rights, but also held that conservation may take precedence over these rights, but only where governments can justify the conservation measures.

Historically within the Canadian legal system, Band councils have been seen as similar to municipal governments and operate within the powers conferred by the federal *Indian Act*[56]. However, traditional Aboriginal systems of governance have been in existence for at least hundreds of years, and in many locations remain relatively intact with a considerable following and important responsibilities[57]; in some cases, the

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[54] For example, the limited application of western provinces' wildlife legislation affecting Aboriginal subsistence hunting, fishing and trapping rights, or affecting fisheries, national parks or migratory bird sanctuaries: eg. *Constitution Act, 1930* (U.K.), R.S., App. II, No. 26.

[55] *R.* v. *Sparrow* (1990), [1990] 1 S.C.R. 1075.

[56] *Indian Act*, R.S.C. 1985, c.I-5.

[57] For example, the Six Nation peoples' Longhouse religion and traditional leadership, and the Gitskan, We'tsuwe'ten, and Haida peoples' traditional clan chiefs.

leadership of this system may overlap or conflict with that of the Band councils. Constitutional discussions have considered an existing or elaborated Aboriginal right to self-government, and such arguments are to be made in the *Delgamuukw* case, now under appeal to the Supreme Court of Canada[58]. As a consequence, Aboriginal self-governance (and its expression of cultural diversity) will be an increasingly important issue affecting who participates in and decides land use, wildlife management and related issues. As well, this will be transmitted to the provincial, territorial and national stages through the larger Aboriginal organizations. These organizations significantly influence the legal, political and financial parameters in which Aboriginal governments can act. The manner in which this complex of authority is administered is the subject of the Aboriginal Chapter.

E. COMMITMENTS TO BIODIVERSITY

On a variety of levels, Canadians and their governments have made commitments to the conservation and sustainable use of biodiversity. The most significant has been the *Convention on Biological Diversity* (or *"Biodiversity Convention"*) and the *Canadian Biodiversity Strategy* (CBS, or "Strategy"). But these have been merely the most recent accomplishments in a long tradition of environmental law and policy development, and flow from individual efforts and support at a more local level.

Canada[59] has agreed to a number of international treaties, conventions and declarations over the years which support biodiversity conservation and sustainable use. These include the 1971 (Ramsar) *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*[60], the 1972 UNESCO *Convention for the Protection of the World Cultural and Natural Heritage*[61], the 1973 *Convention on the International*

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[58] *Delgamuukw* v. *British Columbia* (1993), [1993] 104 D.L.R. (4th) 470 (C.A.), varying 79 D.L.R. (4th) 185 (S.C.); leave to appeal to Supreme Court of Canada allowed, 109 D.L.R. (4th) vii (note). Self-government is also being implemented by land claim settlements: for example, see the *Sechelt Indian Band Self-Government Act*, S.C. 1985, c.20 (2d. Supp.), and *Yukon First Nations Self-Government Act*, S.C. 1994, c.35.

[59] The United Kingdom generally entered into treaties on behalf of Canada before the *Statute of Westminister, 1931* (U.K.), 22 Geo. V, c.4, section 4 gave Canada the "full power to make laws having extra-territorial operation".

[60] (Ramsar) *Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Can.T.S.* 1981 No. 9, in force in Canada on May 15 1981.

[61] *Convention for the Protection of the World Cultural and Natural Heritage*, *Can.T.S.* 1976 No.45, in force in Canada on October 23 1976.

Trade in Endangered Species of Wild Fauna and Flora (CITES)[62], the 1982 *World Charter for Nature*[63], the 1982 *United Nations Convention on the Law of the Sea*[64] (signed but not yet ratified), and the 1983 *International Tropical Timber Agreement*[65].

With particular nations, Canada has also entered into such regional and bi-lateral treaties as the 1909 *Boundary Waters Treaty*[66], 1916 *Migratory Birds Protection Convention*[67], 1973 *Agreement on the Conservation of Polar Bears*[68], 1978 *Great Lakes Water Quality Agreement* and Protocol[69], the 1980 *Convention on the Conservation of Antarctic Marine Living Resources*[70], and the 1991 and 1996 announcements for the Program for the Conservation of Arctic Flora and Fauna[71]. Canada has also ratified numerous fisheries and pollution conventions and agreements.

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[62] *Convention on the International Trade in Endangered Species of Wild Fauna and Flora* (CITES), *Can.T.S.* 1975 No.32, in force in Canada on July 9 1995.

[63] *World Charter for Nature*, 27 UN GAOR, UN Doc.A/Res/37/7, 12 I.L.M. 455.

[64] *United Nations Convention on the Law of the Sea*, UN Doc.A/CONF.62/122, 21 I.L.M. 1261.

[65] *International Tropical Timber Agreement*, entered into force provisionally for Canada on May 21 1986.

[66] *Boundary Waters Treaty*, 11 January 1909, United States-United Kingdom, C.U.S. 312, U.K.T.S. 1910 No. 23.

[67] *Migratory Birds Protection Convention*, 16 August 1916, Canada-United States, C.U.S. 465, in force in Canada on December 7 1916.

[68] *Agreement on the Conservation of Polar Bears*, CTS 1976 No. 24, in force in Canada on May 26 1976.

[69] *Canada-United States Great Lakes Water Quality Agreement*, 1978 CTS No.20, and detailed 1987 Protocol, CTS 1987 No. 32. This Agreement contains numerous provisions which recognize the Great Lakes basin as an ecosystem, and calls for action to address restoration and land use planning, among other concerns.

[70] CTS 1988 No.37, in force in Canada on July 30, 1988.

[71] This was established by declaration of Ministers of the Environment in 1991, and a Framework Document and the "Inuvik Declaration on Protection and Sustainable Development of the Arctic Environment" was approved by arctic nation Ministers in March 1996.

These and other international agreements are further discussed in the Chapter on Federal Jurisdiction, but demonstrate that environmental issues affecting certain components of biodiversity have been of longstanding concern.

Beyond the role played by governments, non-government organizations have been instrumental in advancing biodiversity conservation efforts, and contributing to related law and policy in Canada. While many organizations are involved or relate to biodiversity concerns (such as those involved with forestry, fisheries and agriculture), several national level organizations have biodiversity as a particular focus:

- the Canadian Nature Federation is concerned with wildlife and protected areas, with provincial affiliates;
- the Canadian Parks and Wilderness Society is active in advocating the creation and protection of protected areas, with provincial chapters;
- the Canadian Wildlife Federation addresses wildlife, hunting and fishing issues, with provincial affiliates;
- Ducks Unlimited (Canada) acquires and manages land to conserve wetland and waterfowl habitat, with offices across Canada;
- the Nature Conservancy of Canada acquires land for conservation purposes, with several offices across Canada;
- the North American Wetlands Conservation Council (Canada) promotes wetland research and conservation programs;
- the Sierra Club of Canada is concerned with protected areas and sustainable forestry;
- the World Wildlife Fund (Canada) operates and funds wildlife and protected areas programs, as part of an international network; and,
- Wildlife Habitat Canada is involved in researching and funding of habitat stewardship programs.

Coalitions of some of these groups have formed on certain issues, such as the Endangered Species Coalition and the Canadian Coalition for Biodiversity. Other organizations play key roles in education, advocacy, and biodiversity management at the national, provincial and local levels. A number of law centres and organizations also conduct environmental law research, education, presentations and advocacy, or bring, defend and support court actions. These include the: Canadian Environmental Defence Fund, Canadian Environmental Law Association, Canadian Institute for Environmental Law and Policy, Canadian Institute of Resources Law, Centre Québecois de Droit de l'Environnement, East Coast Environmental Law Association, Environmental Law Centre (Alberta), Sierra Legal Defence Fund, and West Coast Environmental Law Association.

At the other end of the spectrum, many individuals have made important commitments and contributions to biodiversity. Jack Miner provides an older and legally related example, for he dedicated his famous southwestern Ontario property as a sanctuary for migrating waterfowl, and became the first person to band and monitor

migratory birds[72]. As contemporary examples, Colleen McCrory won an international Right Livelihood Award for her work on protecting Canada's forests, while in 1994 Shell Oil gave the Nature Conservancy of Canada the whole of Mount Broadwood in British Columbia, making this the single largest donation of conservation land in Canada's history.

1. Convention on Biological Diversity

Given this history and tradition, it does not come as a surprise that Canada played a pivotal role in developing and advancing the Biodiversity Convention. Canada's ambassador to the negotiations, Arthur Campeau, was a lawyer who used his personal interest in the environment to persuade other nations' representatives to endorse the Convention. Another prominent Canadian was Maurice Strong, who was organizer of the 1972 United Nations Conference on the Environment, and reprised this key role in 1992 for the United Nations Conference on the Environment and Development (or "Earth Summit", as it came to be known) held in Rio de Janiero, where the Convention was first opened for signature on June 5 1992 (International Environment Day).

The Biodiversity Convention was negotiated over several years, beginning with the preparation of principles for the conservation of wild genetic resources in 1984 by the World Conservation Union (IUCN). In 1987, IUCN submitted draft legal articles primarily concerned with conservation and financing mechanisms, which was endorsed as a proposal for a convention on biological diversity by the IUCN's General Assembly in 1988. The United Nations Environment Program (UNEP) established a Working Group, renamed the Intergovernmental Negotiating Committee, which met several times in 1991 and 1992 to broaden the Convention's scope and then finalize the text[73]. When the Convention looked as though it might be derailed due to concerns raised by the United States' conservative Bush Administration and pharmaceutical companies[74], Canada stood firm and convinced other industrialized nations to bring the Convention forward at

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[72] See *Jack Miner Migratory Bird Foundation Act*, S.O. 1936, c.36; and the *National Wildlife Week Act*, R.S.C. 1985, c.W-10. The first National Wildlife Week was established by Order in Council in 1947, and is timed to include Mr. Miner's birthday.

[73] Phillipe Sands, *Principles of International Environmental Law I* (New York: Manchester University Press, 1995), at page 381.

[74] Ved P. Nanda, *International Environmental Law and Policy* (Irvington-on-Hudson, New York: Transnational Publishers, 1995), at pages 119, and 122 to 127. These concerns related primarily to intellectual property rights and biotechnology, but also provisions on environmental impact assessments, other international agreements, the marine environment, and financial provisions.

the 1992 UNCED.

Canada was the first industrialized nation to sign the document, doing so on June 11 1992. Canada then ratified the Convention on December 4 1992, meaning that Canada was prepared to bind itself to implement the Convention. In order to do so, the federal government had obtained the consent to ratify from all of the provinces, and apparently did so by assuring them that Canada's jurisdictions would not need to do much to meet the Convention's obligations. When Mongolia became the 30th nation to ratify the Convention on September 30 1993, the Convention then came into force ninety days later, on December 29[75].

The objectives of the Convention are spelled out in Article 1: "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources". Key elements of the Convention include:

- context, objectives, principle and general measures (preamble, Articles 1, 3 and 6);
- identification and monitoring of biodiversity (Article 7);
- *in-situ* or on-site conservation of ecosystems and protected areas (Article 8);
- *ex-situ* or off-site conservation (Article 9);
- sustainable use of biodiversity (Article 10);
- incentive measures and provision of financial resources (Articles 11, 20 and 21);
- research, training, public education and awareness (Articles 12 and 13);
- impact assessment and minimizing adverse impacts (Article 14);
- access to genetic resources, technology and the handling of biotechnology (Articles 15, 16 and 19);
- information exchange, and technical and scientific cooperation (Articles 5, 17 and 18);
- financial resources and a financial mechanism (Articles 20 and 21);
- Convention conferences of Parties, secretariat, advisory body, and reports (Articles 22 to 26); and,
- dispute resolution, Convention amendments and other procedures (Articles 27 to 42).

Certain measures are identified within these Articles in the Convention, and the actual text of the Convention is provided in an Appendix to this document. Annex 1 to the Convention lists criteria for the identification and monitoring of ecosystems and habitats, species and communities, and genomes and genes. Annex II provides for arbitration procedures among the Parties. While Article 22(1) makes the Convention's

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[75] "Biodiversity treaty takes effect Dec. 29", *Toronto Star*, October 16, 1993, p.C6.

relationship to other international agreements unclear[76], it does provide a notable standard that may override other previous international rights and obligations under extraordinary circumstances:

> The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.

The Convention is primarily a "framework for change", with directions, recommendations and mechanisms on how to approach biodiversity conservation and sustainable management. Its' moral imperative can be seen as "humanity's new contract with the biosphere"[77]. The importance of and challenges regarding biodiversity are recognized in the preamble, followed by an outline for human behavioural change that transcends traditional disciplinary lines.

The Convention reaffirms the sovereignty of states over their biodiversity, and requires them to facilitate (but does not create a right of) access to genetic resources. However, sovereignty is not absolute, for there are obligations not to cause damage to other nations or to areas beyond the limits of national jurisdiction (Article 3). The Convention through Articles 4 and 5 applies to the components of biodiversity within a state's land and coastal waters jurisdiction, and requires cooperation beyond these areas (eg. the high seas) and "on other matters of mutual interest" (eg. transboundary pollution and migratory species). Processes and activities under a state's jurisdiction or control are also bound by the Convention (Article 4), "regardless of where these efforts occur" (ie. within and beyond the physical limits of national jurisdiction). The Preamble's recognition of biodiversity as a "common concern of humankind" is significant because it reflects a philosophy of equitable sharing with the deep seabed mineral provisions of the *International Convention on the Law of the Sea*; it also, like concern for human rights, legitimizes international interest in conservation and sustainable use within the traditional territorial sovereignty of other states[78].

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[76] But see Humane Society of the United States and Humane Society International, *The Biodiversity Convention and Existing International Agreements: Opportunities for Synergy* (Washington: Humane Society of the United States).

[77] Robert T. McFetridge, Director, Biodiversity Programme, Canadian Museum of Nature, personal communication, April 17 1996.

[78] Alan E. Boyle, "The Convention on Biological Diversity", supra note 39, at page 117. The expression "common concern" avoids the concept of "common heritage of humankind". In addition to sharing benefits and concern, the latter involves sharing *ownership* and possibly management of particular features by the

The Convention was assembled from several working teams, and negotiations continued into UNCED itself. Consequently, certain weaknesses have surfaced[79]. For example, there is a notable absence of measures to address human population growth, despite these being essential to deal with human impacts and equitable distribution of resources and benefits[80]. Others have been noted: it is a poor reflection of customary law and treaty developments on transboundary effects, is weaker than many contemporary environmental treaties in its supervision of the Conference of Parties and its decision-making structure, is potentially contradictory between conservation and sustainable use objectives, contains much qualified language, and is driven as much by allocation of economic benefits to the developing world and reorienting the world economy as by concerns for conservation and sustainable use[81]. The final text also deleted three important articles where agreement could not be reached. These concerned the precautionary principle (now only in the Preamble and in the final Rio Declaration), responsibility for damage to biodiversity, and global lists of protected areas and species (now left to each party to determine)[82]. Nonetheless, based upon the Convention's framework, over time more detailed Protocols will be developed to elaborate particular matters, address such weaknesses, and resolve any ambiguities and inconsistencies resulting from the hasty finalization of the Convention's text.

The Convention consolidates and elaborates provisions and directions from other biodiversity-related international agreements, although other agreements may be more specific on some matters or have more "teeth" than the Convention. However, the Convention is different from most other international agreements[83]. First, rather than focusing on just specific issues, the Convention reflects an attempt at a more holistic approach, with some context and recognition of the interplay of many related factors and activities. In particular, there is clear recognition of the varying abilities and needs of developed and developing nations, and the necessity to integrate environment and

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international community.

[79] See the U.S. concerns identified, supra, in note 74. While regretted by the European Community and the United Kingdom, among others, these did not prevent them from signing the Convention.

[80] Ibid.

[81] Alan E. Boyle, "The Convention on Biological Diversity", supra note 39, at pages 126 to 127.

[82] Ibid, at pages 114 to 115. Compare the final text to the fifth draft, found at: Intergovernmental Negotiating Committee for a Convention on Biological Diversity, Fifth Session, Nairobi, May 1992, UNEP/Bio.Div/N7-ING.5/2 (1992).

[83] Ibid.

development issues (the premise behind UNCED itself). Second, the inclusion of "traditional knowledge" and the rights of indigenous peoples is important within this framework, although it has been considered to be relatively weak (see the chapter on Biodiversity and Aboriginal Peoples). Third, a regulatory approach does not predominate, and the Convention is full of qualifying and ambiguous language which allows room for negotiation and individual approaches. Nonetheless, Parties are expected to take and report on various actions, and to participate in the Conference of the Parties and associated discussions and negotiations. Fourth, among other subjects, the Convention provides new international rules on access to genetic resources and on access to and transfer of technology, as well as the first attempt at global rules for the handling of biotechnology and the sharing of its benefits[84].

2. Agenda 21

Agenda 21 is an ambitious program associated with and adopted by 174 national governments attending UNCED in Rio de Janeiro in June 1992. It was further endorsed without a vote by the United Nations General Assembly[85]. Agenda 21 recommends over 2,500 actions in 150 program areas (without any explicit priorities) for an environmental work program for the period beyond 1992 and into the twenty-first century[86]. The Agenda 21 document is an international statement of policy, and while it carries some authority, it is not legally binding. Such status thus enables the document to include contentious and legally challenging issues which could not be put into the *Biodiversity Convention* itself, such as those concerning population growth[87].

This review's chapter on Biodiversity and Aboriginal Peoples discusses the status of Agenda 21, particularly as it relates to Aboriginal peoples. The authors note in particular that there is a sound basis for arguing that Agenda 21 has become, or is becoming, customary international law (see discussion below). This is founded upon the consistency and virtual unanimity of inter-governmental support for Agenda 21, and its ongoing role as the basic operating program of the new U.N. Commission on Sustainable Development, established as a framework to help implement the achievements at UNCED.

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[84] Sands, *Principles of International Environmental Law I*, supra note 73, at pages 384 and 386.

[85] U.N. General Assembly Resolution 47/190, adopted on December 22 1992 without a vote.

[86] Ved P. Nanda, *International Environmental Law and Policy*, supra note 74, at page 129.

[87] Robert T. McFetridge, supra note 77.

The Agenda 21 program was developed through the Preparatory Committee for UNCED, and involves a vast array of actions within several broad sections:

- social and economic dimensions;
- conservation and management of resources for development;
- strengthening the role of major groups; and,
- means of implementation.

While all of these actions contribute in some manner to the subject, of particular relevance to biodiversity are the following chapters in Section II: An Integrated Approach to Land-Resource Use; Conservation and Rational Use of Forests; Protecting Mountain Ecosystems; Meeting Agricultural Needs Without Destroying the Land; Sustaining Biological Diversity; Environmentally Sound Management of Biotechnology; Safeguarding the Ocean's Resources; Protecting and Managing Freshwater Resources; and various chapters on toxic chemicals and waste management. Some of these, as well as a separate chapter, deal with particular programs for and considerations of indigenous peoples, as is elaborated in this review's chapter on Biodiversity and Aboriginal Peoples.

Chapter 7 on Sustaining Biological Diversity presents four general strategies: providing information on biodiversity; making the best use of the benefits of biodiversity; improving conservation efforts; and building a capacity to manage biological resources and wildlife. These strategies are then further elaborated into particular actions, with major initiatives launched to address these actions during the period 1993 to 2000.

3. International Law As Applied in Canada

A few aspects of international law should be mentioned, as it applies to the Convention and other treaties, and their implementation and legal effect within Canada. As noted earlier, the federal government has the exclusive authority under both international law and our own Constitution to enter treaties (such as the Biodiversity Convention). This power is an executive act within the Royal Prerogative; it thus does not require Parliament's consent, although such consent may be sought. Treaty obligations can be incorporated into domestic legislation by either a statute's clause which introduces and then appends the actual text used in the treaty, or by incorporating more generally the substance of the international obligations into the legislation. A statute's preamble or section may also make a general reference to related treaties or other agreements as the rationale for the legislation.

Where such treaties deal with matters in relation to provincial constitutional competence, they thus must be implemented by provincial legislation[88]. However,

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[88] See *Attorney General (Canada) v. Attorney General (Ontario)* ("Labour Conventions case"), [1937] 1 D.L.R. 673, [1937] A.C. 326 (J.C.P.C.), despite

comments from two of Canada's former Chief Justices suggest that this principle may be too restrictive and outmoded for Canada's modern role in international affairs, and that the federal government may have the power to implement treaties, even if they related to provincial jurisdiction so long as federal legislation clearly states that it is exclusively to implement the treaty and does not go beyond the treaty's requirements[89]. No reservations are allowed under Article 37 of the *Biodiversity Convention*, and thus Canada could not limit the application of the Convention, nor ratify it subject to provincial implementation within Canada.

Australia has a somewhat similar external affairs clause in its Constitution[90], and courts have interpreted this as giving the federal government treaty-implementation as well as treaty-making powers. The constitutional dimensions of these powers were given close scrutiny by a split High Court of Australia which upheld federal heritage legislation when it was used to prevent a State-supported hydro-electric power development in southwestern Tasmania that would have affected a site listed under the *World Heritage Convention*[91].

Where uniform and consistent international practices become accepted as law by the international legal community and are not persistently objected to by a particular nation, international customary law may become established. Such customary law, where

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apparent federal authority in s.132 of the *Constitution Act, 1867*.

[89] See the *obiter dicta* (non-decision comments) of the former Chief Justice Dickson in *Schneider v. R.*, [1982] 2 S.C.R. 112, and former Chief Justice Laskin in *MacDonald and Railquip Enterprises Ltd. v. Vapor Canada Ltd.*, [1977] 2 S.C.R. 134 at 169, which consider the Labour Conventions case. See also Sharon Williams and A. deMestral, *Introduction to International Law* (2d ed.), 1987, at pp. 118-139; Peter Hogg, *Constitutional Law of Canada* (2d ed.), (Toronto: Carswell, 1985), at pp.249-256; and David VanderZwaag and Linda Duncan, "Canada and Environmental Protection: Confident Political Faces, Uncertain Legal Hands", in R. Boardman (ed.), *Canadian Environmental Policy: Ecosystems, Politics and Process* (Toronto: Oxford University Press, 1992), at pp. 5-6.

[90] The Australian external affairs power is nonetheless seen to be very different from that in Canada. Nigel Bankes, Associate Dean of the Faculty of Law, University of Calgary, personal communication, April 26, 1996.

[91] See s.51(xxix) of the *Constitution of Australia*. The High Court cases considering this issue were *Commonwealth v. Tasmania* (1983) 46 A.L.R. 625, where the legislation was upheld, and the preceding unsuccessful private case of *Tasmanian Wilderness Society Inc. v. Fraser* (1982) 42 A.L.R. 51. For a discussion, see D.E. Fisher, *Natural Resources Law in Australia* (Sydney: The Law Book Company Limited, 1987), pp.223-234.

proven, relied upon and not subject to persistent objection, can be enforced by one nation against another. Over time, certain practices and principles may develop as a by-product of the Biodiversity Convention, and thus non-party states may become bound through customary international law rather than by the Convention itself.

Where domestic legislation is in conflict with international customary law or agreements, the domestic law will prevail in Canadian courts. This may mean, however, that Canada has breached its international obligations and could be liable at international law. Nonetheless, it is presumed that domestic legislation is consistent with Canada's external obligations and international law[92]. Thus, the Convention may also be of value to enable courts to find an interpretation of law that fits with the Convention's provisions, despite a lack of direct implementation in legislation.

Every treaty is binding upon the parties and must be performed by them in good faith, and a constitutional impediment to implementing an international treaty is no excuse for the non-fulfilment of obligations[93]. Nonetheless, federal-provincial relations are a multi-faceted and delicate matter. While the law is open to some interpretation, the politics of such relations require close federal-provincial consultation and cooperation. Biodiversity conservation that transcends human-defined boundaries to be truly effective will demand even greater degrees of cooperation in the future.

Since the Convention came into force at the end of 1993, Canada has been taking the Convention's directions and beginning to translate them into action. The Parliamentary Standing Committee on the Environment held hearings on the Convention, and made a number of recommendations on what measures Canada needed to adopt to implement the Convention. These included development of endangered species legislation, taking account of biodiversity in environmental assessments, and that national parks policy and regulations recognize biodiversity conservation as an important selection and management criterion[94].

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[92] See *Re Arrow River and Tributaries Slide and Boom Co.* (1931), [1932] 2 D.L.R. 250 (S.C.C.), reversing 66 O.L.R. 577 (Ont.C.A.); and *R. v. Syliboy*, [1929] 1 D.L.R. 307 (N.S.Co.Ct.).

[93] [Vienna] *Convention on the Law of Treaties* (1970), Articles 26 and 27; and see Peter Hogg, *Constitutional Law of Canada*, supra note 89, at p.246.

[94] Standing Committee on Environment, *A Global Partnership: Canada and the Conventions of the United Nations Conference on Environment and Development (UNCED)* (Ottawa: House of Commons, 1993), at pp.29-31.

4. Canadian Biodiversity Strategy

Article 26 of the Convention calls upon all parties to report on progress towards implementation. Canada presented a report to the first Conference of the Parties, meeting in November 1994. A key component of this report was a draft of the 1995 *Canadian Biodiversity Strategy*, now signed by all senior governments in the country. This Strategy was prepared by a federal-provincial-territorial Biodiversity Working Group over the course of many months, and obtained input from the Biodiversity Convention Advisory Group. Workshops were held to solicit further input from various organizations. However, the process generally has been an internal affair, with extensive discussions between representatives of governments across the country regarding the content and wording of the document.

Given the diverse perspectives involved and its framework nature, the resulting Canadian Biodiversity Strategy is general in nature and avoids strong commitments in certain places[95]. Nonetheless, the document does lay out a context and range of measures by which all of Canada's jurisdictions might address biodiversity issues. This is certainly much further along the path towards implementing the Convention than most other nations have progressed, and apparently the Strategy may act as a model for other nations in this regard. However, the real challenges -- commitments to develop and implement action plans and timelines -- are not found in the Strategy, but are rather left to the individual jurisdictions to consider and adopt at their own discretion.

With the often piecemeal and languishing policy, programs and laws evident in the past, having the Strategy in place certainly is a significant step forward. Yet it does not guarantee future progress on implementation. Biodiversity is clearly a system-wide issue which cannot be effectively broken down into discrete pieces along traditional jurisdictional lines; the subject thus requires continuing, coordinated means which are inclusive of all jurisdictions, scales and diverse approaches[96].

Action plans, timelines and scheduled implementation will be the true measure of Canada's commitment to the Convention and the Strategy. The Strategy's Strategic Direction 4.7 states that:

> Jurisdictions will cooperatively examine their current legislative regime with respect to the goals of this Strategy and take the necessary and practical steps leading to an improved legislative framework that supports the conservation of

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[95] See the comments of Canada's environmental law centres provided on an earlier draft in: *A Legal and Policy Response to the Draft Canadian Biodiversity Strategy* (Toronto: Canadian Institute for Environmental Law and Policy, 1994).

[96] Nina-Marie Lister, supra note 10.

biodiversity and the sustainable use of biological resources.

Some commitments have already been made to deal with certain aspects of biodiversity. For example, on November 25 1992, the Canadian Council of Ministers of the Environment, the Canadian Parks Ministers Council, and the Wildlife Ministers Council of Canada declared their commitment to complete a representative system of protected areas within their jurisdictions by the year 2000[97]. This announcement essentially endorsed the 10-year "Endangered Spaces Campaign" launched by the World Wildlife Fund (Canada) and the Canadian Parks and Wilderness Society. As part of this Campaign, over 600,000 Canadians and a broad cross-section of organizations signed the "Wilderness Charter", demonstrating private and individual commitment to completing a protected areas system across Canada. Plans to implement these public and private commitments have been underway in many of the jurisdictions, although they have been necessarily concerned with identifying areas rather than addressing the legal, policy and other institutional needs to support such a system. These efforts need to be moved forward with appropriate resources to maintain momentum, despite changing political dynamics, and the increasing challenges of protecting sites in areas with more conflicting land uses after the easier locations have been identified.

Other examples of commitments to biodiversity can be found. One extensive set of environmental commitments is the former federal Conservative Government's *Green Plan*[98]. The *Green Plan* contained principles for partnerships and environmental action, and presented discussion and commitments on a wide range of topics. These concerned fighting pollution, sustaining renewable resources, protecting special spaces and species, stewarding the Arctic, addressing global environmental security and emergencies, promoting environmentally responsible decision-making, and enhancing federal environmental stewardship. The federal government has now changed, and its overall direction on biodiversity and other environmental concerns needs to be made clear and comprehensive. Some provincial implementation strategies for the *Biodiversity Convention* have also been under development, such as in Québec and Ontario.

Whether these reports will move beyond strategic documents to an implementation phase remains to be seen. It will depend very much on the involvement of all sectors, and the political will of governments to carry these commitments forward. The chapters which follow in this review proceed towards identifying what is in place and what needs to be done on the legislative and policy fronts. As a result, we hope that jurisdictions can more quickly assess and address the recommendations made here.

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[97] World Wildlife Fund (Canada), *Endangered Spaces Progress Report - 1993*, No. 4 (Toronto: World Wildlife Fund (Canada), 1993), inside cover.

[98] Government of Canada, *Canada's Green Plan* (Ottawa: Minister of Supply and Services Canada, 1990).

BIODIVERSITY AND ABORIGINAL PEOPLES

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Indigenous peoples ("Aboriginal peoples" in the language employed by Canada's *Constitution Act, 1982*) were an integral part of the world mobilization of grassroots movements leading up to the "Earth Summit" at Rio de Janeiro three years ago. They were heaped with great praise for their ecological wisdom, respect for natural processes, and sanity in the face of crass consumerism. Six months after Rio, the UN Secretary-General opened the International Year of the World's Indigenous People by calling on all governments to "listen to, and work with indigenous peoples"[1]. The chairperson of the UN Working Group on indigenous peoples, Erica-Irene Daes, told the General Assembly:

> Henceforth, indigenous peoples should not only have a decisive voice in decisions that affect them directly, but share in all of the decisions that will shape the future of our planet.

The theme proposed for the final year of the UN's International Decade of the World's Indigenous People (1995-2004), in fact, is "partnership in international action".

Canada has publicly supported the emergence of indigenous peoples as a priority concern of the international community, and has welcomed their growing role as direct participants in global affairs. Canadian diplomats introduced the General Assembly resolutions proclaiming both the International Year and International Decade[2]. This positive image of Canadian leadership in the empowerment of indigenous peoples is not reflected, however, in Canada's response to its own legal obligations under the *Convention on Biological Diversity*. On the contrary, Canada would not be in compliance with relevant provisions of the Convention, even if it fully implemented the *Canadian Biodiversity Strategy* (CBS). Indeed, the CBS fails to respect other applicable international norms, as well as Canada's own constitution.

A. KEY ISSUES

Historically, Aboriginal peoples not only utilized the naturally-occurring biodiversity of North America for food, medicine, materials, ceremonial and cultural life, but routinely took steps to increase the biodiversity of their territories. In the boreal forest, for example, controlled burning was used to create pastureland, berry patches, and greater forest-edge effects for wildlife[3]. The temperate forests bordering the Great Lakes were

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[1] Russel L. Barsh, "Indigenous Peoples in the 1990s: From Object to Subject of International Law?", Harvard Human Rights Journal 7:33-86 (1994), at p.67.

[2] UN Doc. A/49/444 (1994).

[3] Henry T. Lewis and Thomas A. Ferguson, "Yards, Corridors, and Mosaics: How to Burn a Boreal Forest", *Human Ecology* 16(1):57-77 (1988).

also carefully burned to increase forage and support shifting horticulture. Areas that were not immediately plowed by European settlers regenerated into "natural" oligarchic forest[4]. Compared with New Guinea or Amazonia[5], the full extent of indigenous peoples' role in shaping important "natural" ecosystems has barely been explored.

Aboriginal peoples' continuing reliance on biodiversity has been documented extensively, however, particularly in the North and Pacific Northwest. Four main clusters of issues can be identified.

1. Harvesting Fish and Wildlife

Aboriginal peoples continue to harvest a wide variety of wildlife and plants, not only for food, but for materials such as cedar and ash for basketry. The role of harvesting in maintaining adequate nutrition is a major concern[6]. Aboriginal peoples generally cannot afford an adequate store-bought diet, and are healthier in places where they continue to have access to traditional foods. The cultural appropriateness of foods, and the role of certain foods in community feasts, religious ceremonies and exchanges of gifts used to reinforce kinship ties are also concerns[7]. In the Pacific Northwest, business cannot be conducted without salmon and other traditional feast foods. In western Ontario and Manitoba, there is an essential link between Anishnabe identity and the annual harvest of mahnomen (wild rice). Among the Newfoundland Mi'kmaq, and the Innu of Labrador, seasonal moose and caribou hunts are as central to social relations and personal identity as they are to human health. The role of marine-mammal hunting in Inuit health and culture, and the profound adverse impacts of declining

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[4] Michael Williams, *Americans and Their Forests; A Historical Geography* (Cambridge: Cambridge University Press, 1989).

[5] Louise Morauta, John Pernetta, and William Heaney (eds.), *Traditional Conservation in Papua New Guinea: Implications for Today* (Boroko, Papua New Guinea: Institute of Applied Social and Economic Research, 1980); Leslie E. Sponsel, "Amazon Ecology and Adaptation", *Annual Review of Anthropology* 15:67-97 (1986).

[6] Russel L. Barsh, "Canada's Aboriginal Peoples: Social integration or Disintegration?", *Canadian Journal of Native Studies*, 14(1):1-46 (1994); Royal Commission on Seals and the Sealing Industry in Canada, *Seals and Sealing in Canada: Report of the Royal Commission*; Volume 2 (Ottawa: Minister of Supply & Services, 1986), at p.219ff.

[7] Robert E. Robertson, "The Right to Food--Canada's Broken Covenant", *1989-1990 Canadian Human Rights Year Book* 185-216 (1990).

harvests in the 1980s, have been reported in depth[8].

Harvesting obviously involves access to places where wildlife and plants can be collected efficiently, and at appropriate seasons of the year. Land ownership, fences, use-permits and roads can be major factors in the extent to which harvesting can be maintained. The quantity, or quota that can be taken within sustainable limits is also obviously an issue, especially in the case of scarce or threatened species that are valued by non-Aboriginal people for recreational uses (moose, Atlantic salmon) or aesthetic reasons (harp seals). Aboriginal peoples contend that they should take priority in harvesting any surplus, while others argue that Aboriginal harvesting should be "equal," or else limited in its purposes (e.g., food but not trade).

Another question is freedom to use particular methods of capture, such as dip-nets and spears for salmon in the falls of Northwest river systems; this can have great social and cultural significance. People must also be free to use more efficient, less wasteful technologies if they choose, of course: traditional weirs are the most efficient method of intercepting migrating salmon, for example[9], but there is little disagreement about the usefulness of high-power rifles for land mammal hunting. Freedom to trade harvested wildlife for other foods, or for cash to purchase and maintain hunting outfits, is another issue[10].

There is also an issue of harvested species' quality. Aboriginal peoples are concerned about avoiding health hazards from the chemical contamination of forage plants and water; for example, organochlorines bioaccumulating in marine mammal fats. Animals' diets also affect the palatability, acceptability and nutritional value of the flesh. After switching to different forage, otherwise healthy herbivores may taste different, a phenomenon surely understood by careful Canadian shoppers and chefs. Hence the integrity of the ecosystem as a whole determines the safety, nutritive content, and palatability of harvested foods.

Harvesting cannot be removed completely from the problem of human settlements. Aboriginal peoples must live reasonably close to routine harvesting places. Distance involves expense, i.e., dependence on the use of motor vehicles (automobiles,

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[8] George W. Wenzel, *Animal rights, Human Rights: Ecology, Economy and Ideology in the Canadian Arctic* (London: Pinter Publishers, 1991).

[9] Russel L. Barsh, "The Economics of a Traditional Coastal Indian Salmon Fishery", *Human Organization* 41(2):171-176 (1982).

[10] Milton M.R. Freeman, "The International Whaling Commission, Small-type Whaling, and Coming to Terms with Subsistence", *Human Organization* 52(3):243-251 (1993).

snowmobiles, power boats) and purchased fossil fuels. Even if the activity is maintained, it requires larger amounts of cash. Either people need wage employment to meet this cost --reducing the time they can devote to harvesting--or they must engage in additional harvesting for sale. This was the dilemma for Inuit in the 1980s, facing growing distances between jobs in centralized towns and hunting areas, as well as a declining world market for sealskins.

2. Medicinal Harvesting

Additional concerns are raised in connection with the collecting of medicines. Medicinal plants are frequently found in small, highly sensitive niches such as stream margins, marshes, and isolated stands of very ancient trees[11]. The potency of medicine can be affected by the nature of the growth substrate, associations with other plant species, and the time and season of harvesting. The issue is not simply one of continued access to those places where medicinal species flourish, but access to high-potency gathering sites, at the proper seasons--and the protection of these sites from chemical contamination or disturbances. Water quality, a cross-cutting issue for all of the concerns raised by Aboriginal peoples, is particularly relevant to medicine.

There have been few thorough studies of medicinal ecology on this continent. Experience elsewhere suggests that medicines are dispersed in patches throughout indigenous peoples' territories, so that injury to any associated ecosystem or domain is likely to destroy part of the pharmacopoeia and adversely affect peoples' health[12]. In the case of the Warao of Venezuela, for instance, 292 different drugs are prepared from 100 species[13]. The efficacy of traditional medicine is rapidly gaining credibility, furthermore. One recent study confirmed that 82 out of 96 medicines used by Aboriginal peoples in British Columbia are effective antibiotics[14].

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[11] Traditional medicines also include insects, vertebrate animals, and inorganic minerals as well as plants, which generally form the largest portion of the pharmacopoeia.

[12] Charles Anyinam, "Ecology and Ethnomedicine: Exploring Links Between Current Environmental Crisis and Indigenous Medical Practices", *Social Science and Medicine* 40(3):321-329 (1995).

[13] W. Wilbert and G. Haiek, "Phytochemical Screening of a Warao Pharmacopoeia Employed to Treat Gastrointestinal Disorders", *Journal of Ethnopharmacology* 34(1):7-11 (1991).

[14] A.R. McCutcheon, S.M. Ellis, R.E. Hancock, and G.H. Towers, "Antibiotic screening of medicinal plants of the British Columbian Native Peoples", *Journal of Ethnopharmacology* 37(3):213-223 (1992).

3. Sacred (Healing) Sites

It is commonplace today for Canadians to recognize the existence of Aboriginal "sacred sites" and other places of particular historical and cultural significance. The full complexity of sacred geography in Canada is still poorly understood, however. Although Bruce Chatwin's popular personal narrative, Songlines, drew attention to the linkages between songs, sites, larger landscapes, and peoples' periodic travels through the countryside in Australia, this conception of the ecosystem as a sacred whole has not been applied in a Canadian context. Indeed, Hugh Brody's Maps and Dreams described the Northern spiritscape almost as if it did not relate intelligibly to physical landscapes.

For Aboriginal peoples, the sanctity of landforms, ecosystems and species is a matter of degree [15]. All species are regarded as kinfolk, and, like human kin, stand in varying individual and historical relationships to one another. Those with an unusually close and important relationship are the most sacred, but no element of the environment lacks some form of potentially significant and useful power. Similarly, certain features of the landscape may be regarded as critical nodes in ecosystems, where relationships between species converge and can be understood, and where their power is felt. Sacred sites often do, in fact, contain important habitats that serve as life-cycle bottlenecks, such as nurseries, nesting areas, groves of trees that act as central points for the continued dispersal of seeds, and migration landmarks. Ancient stands of red cedars in the Pacific Northwest temperate rainforest are an example.

Sacred sites are not limited to ceremonial places, or places that are periodically used for purification or healing. Many are simply known, respected, and left relatively undisturbed. They may therefore function as refugia, and help maintain the populations of many species over a wider area.

For Aboriginal peoples, major issues include unrestricted access to sacred sites for ceremonial and healing purposes; protecting sites from any disturbance, contamination, or inappropriate human activity; privacy when visiting or using sites; and the continuing integrity of the larger ecosystems with which sites are connected. Sites tend not to be publicly identified until threatened by some project, because of fears that public knowledge, demarcation, and government supervision--for example, by Parks Canada--will lead to restrictions on Aboriginal peoples' activities, and an increase in non-Aboriginal traffic.

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[15] Charles Vecsey, "American Indian Environmental Religions", in: Charles Vecsey and Robert W. Venables (eds.), *American Indian Environments; Ecological Issues in American Indian History* (Syracuse, New York: Syracuse University Press, 1980), pp. 1-45; United Nations, *Study on the Protection of the Cultural and Intellectual Property of Indigenous Peoples* (Erica-Irene Daes, Special Rapporteur), UN Doc. E/CN.4/Sub.2/1993/28 (1993).

4. Traditional Knowledge

Indigenous peoples throughout the world regard their traditional ecological and medical knowledge (TEK) as proprietary and confidential[16]. The protection and wider application of TEK involves three related issues: (1) identification of the traditional owners under Aboriginal peoples' own systems of laws; (2) respect for customary procedures required for learning and borrowing the use of TEK; (3) compensation for the right to learn and use this knowledge. Traditions for the transmission and use of TEK are highly localized, and resist generalizations.

Two points can validly be made about these diverse legal systems, however. The traditional owners may be individuals, societies, family groups (clans or lineages), or whole nations, depending on the kind of knowledge involved and the culture of the peoples concerned. Assuming that "Bands" established under the Indian Act are the true owners, for example, is a gross oversimplification that would do injustice to the beliefs and feelings of most Aboriginal peoples.

The second point is that few indigenous legal systems accept the possibility of ever alienating TEK completely. Like the land itself, the people's knowledge of the land is connected with them forever. It can be shared under certain circumstances, but borrowers must observe the continuing supervisory authority of the original owners.

B. LEGAL STANDARDS

Insofar as it applies to indigenous (or Aboriginal) peoples, the Canadian Biodiversity Strategy must be compatible with a wider system of peremptory legal standards than the provisions of the *Biodiversity Convention*. This includes domestic constitutional law, as well as an evolving family of United Nations instruments confirming the rights of indigenous peoples globally. On many points, these constitutional and international standards are higher, and these higher standards should be reflected in Canadian administrative practice and policy.

For the sake of brevity and simplicity, this review will focus on the domestic and international recognition of three legal principles-- (1) indigenous peoples' right to exercise control of their traditional territories; (2) indigenous peoples' right to continue the harvest of living resources, within or outside of their traditional territories; and (3)

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[16] United Nations, *Study on the Protection of the Cultural and Intellectual Property of Indigenous Peoples* (Erica-Irene Daes, Special Rapporteur), UN Doc. E/CN.4/Sub.2/1993/28 (1993); United Nations Development Programme, *Conserving Indigenous Knowledge: Integrating Two Systems of Innovation; An Independent Study by the Rural Advancement Foundation International* (New York: UNDP, 1994).

indigenous peoples' right to control, and benefit from the use of their traditional knowledge. Territorial control, resource use and the right to benefit from traditional knowledge have all been affirmed to a greater or lesser extent by recent international instruments.

These rights form a subset of the right to self-determination, an over-arching right of "all peoples" under the United Nations' Charter. Some states, including Canada, continue to oppose any formal UN action recognizing the application of this important principle to indigenous peoples[17]. It is not inconceivable, however, that this deadlock will be broken before the end of the United Nations Decade of the World's Indigenous People (1995-2004).

1. Canadian Constitutional Law

Exclusive jurisdiction over "Indians, and Lands reserved for the Indians," is allocated to Canada's Parliament by section 91(24) of the Constitution Act, 1867. This has long been interpreted as applying to Inuit as well as "Indians"[18]. Provincial governments may only exercise authority over these peoples under a lawful delegation of the Federal power, e.g., in accordance with section 88 of the Indian Act, or under Federal fisheries legislation.

The supremacy of Parliament has been restricted by section 35(1) of the Constitution Act, 1982, which declares that:

> The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.

Respect for these rights is a condition of Canadian independence from London. In *Indian Association of Alberta*, Lord Denning concluded that the United Kingdom's responsibilities to its one-time Aboriginal allies and treaty-partners have been delegated to Canada[19]. However, he found that section 35 "does all that can be done to protect the rights and freedoms of the aboriginal peoples of Canada," by making them part of the constitution "so that they cannot be diminished or reduced".

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[17] Russel L. Barsh, "Indigenous Peoples in the 1990s: From Object to Subject of International Law?", *Harvard Human Rights Journal* 7:33-86 (1994).

[18] *Re Eskimos*, [1939] S.C.R. 104.

[19] *R.* v. *Secretary of State for Foreign and Commonwealth Affairs ex parte Indian Association of Alberta*, (1982) 2 W.L.R. 641.

No Parliament should do anything to lessen the worth of these guarantees. They should be honoured by the Crown in respect of Canada "so long as the sun rises and the river flows." That promise must never be broken.

The nature and content of the rights thus secured, and the extent to which Parliament may continue to regulate their exercise, has been the subject of considerable controversy between Aboriginal peoples and the Federal and Provincial governments. The Supreme Court of Canada has spoken on some, but not all, of the main points of dispute.

Section 35 refers to two distinct categories of rights, rights of "aboriginal" origin, and rights derived from specific treaties. These rights became entrenched, constitutionally, if they still "existed" on the date the Constitution Act, 1982 came into force (April 17, 1982).

With respect to "aboriginal" rights, the Supreme Court in *Sparrow* concluded that "the test of extinguishment ... is that the Sovereign's intention must be clear and plain if it is to extinguish an aboriginal right"[20]. In the case of traditional fisheries in British Columbia, no Federal or Provincial action prior to 1982 evinced "a clear and plain intention" to reduce Aboriginal peoples to an equal legal footing with non-Aboriginal Canadians. Aboriginal fisheries had been regulated, to some extent, but the underlying historical right was never explicitly abolished, and therefore still "existed" in the sense of section 35.

The nature of s. 35(1) itself suggests that it be construed in a purposive way. When the purposes of the affirmation of aboriginal rights are considered, it is clear that a generous, liberal interpretation of the words in the constitutional provision is demanded:

> The relationship between the Government and aboriginals is trust-like, rather than adversarial, and contemporary recognition and affirmation of aboriginal rights must be defined in light of this historic relationship.

The Supreme Court further reasoned that, notwithstanding section 35, an "aboriginal right" continues to be subject to regulation of its exercise, albeit to a strictly limited extent:

> We find that the words "recognition and affirmation" incorporate the fiduciary relationship referred to earlier and so import some restraint on the exercise of sovereign power. Rights that are recognized and affirmed are not absolute.

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[20] *R. v. Sparrow*, [1990] 1 S.C.R. 1075.

> ... [F]ederal power must be reconciled with federal duty and the best way to achieve that reconciliation is to demand the justification of any government regulation that infringes upon or denies aboriginal rights.

The Supreme Court elaborated a three-step test for justification, once the existence of an "aboriginal right" and interference by government have been demonstrated by the Aboriginal party. Government must prove that the regulation is "reasonable," that it does not impose an "undue hardship" on Aboriginal people, and that it does not prevent them from exercising their rights "by their preferred means". The Justices were not exhaustive in their discussion of justification, but mentioned two possible kinds of "reasonable" regulation: conservation of resources, and public safety.

Even if a reasonable ground for regulation exists, however, there must be an analysis of alternatives, e.g., whether the same objectives could be achieved by means that are less restrictive of the aboriginal right. The Supreme Court emphasized that "the honour of the Crown is at stake in dealings with aboriginal peoples." In conflicts involving Aboriginal and non-Aboriginal people, the "special trust relationship and the responsibility of the government vis-a-vis aboriginals must be the first consideration."[21]

Sparrow did not offer much guidance for determining the contents of the box of "aboriginal rights," although the Justices did note that section 35 "must be interpreted flexibly," so as to permit "evolution" of its coverage--for example, fishing with new kinds of fishing gear.

The Supreme Court has not yet ruled on the extent of Parliament's power to continue to regulate the exercise of "treaty" rights. In the *Simon* case, however, the Court ruled that "Indian treaties should be given a fair, large and liberal construction in favour of the Indians" and that they would "demand strict proof of the fact of extinguishment in each case where the issue arises"[22]. In *Sioui*, moreover, the Court characterized Indian treaties as "sacred" in law[23]. It is "impossible to avoid the conclusion that a treaty cannot be extinguished without the consent of the Indians concerned."

Aboriginal peoples throughout Canada maintain that they continue to enjoy "aboriginal" or treaty rights to harvest all of the resources they traditionally utilized, by the most efficient available methods, throughout their traditional territories, and under

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[21] For the source of the fiduciary principle, see *Guerin* v. *The Queen*, [1985] 2 S.C.R. 335.

[22] *Simon v. The Queen*, [1985] 2 S.C.R. 387.

[23] *R. v. Sioui*, [1990] 1 S.C.R. 1025.

their own systems of management. They also assert the right to continue to enjoy access and privacy in relation to sacred sites, and the right to retain total control of their traditional knowledge, to dispose of as they choose. Parliament has never expressly extinguished any of these rights, hence any exercise of Federal regulatory power must, at a minimum, meet the justification test in *Sparrow*. That is, the regulation must address a legitimate objective (such as conservation), by the least restrictive means. If the objective can be met by imposing additional burdens on non-Aboriginal people, the Crown is bound to do so.

2. The Biodiversity Convention

Indigenous peoples participated actively in negotiating the texts of the Rio Declaration and Agenda 21, as well as the ILO *Convention on Indigenous and Tribal Peoples, 1989* (No. 169). Their participation in the drafting of the *Biodiversity Convention* was weaker, and this helps explain why the relevant provisions of the *Biodiversity Convention* are comparatively weak.

The Convention contains several express references to "indigenous and local communities," as well as "local populations," and "customary uses" of biological resources "in accordance with traditional cultural practices". All of these references will be taken to apply to what we define domestically as "the Aboriginal peoples of Canada".

In its preamble, the Convention recognizes:

> ... the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components[.]

This identifies two of the rights of indigenous peoples: resource use and traditional knowledge. They are addressed separately in operative paragraphs 10(c) and 8(j) of the Convention, respectively. A right to environmental rehabilitation is mentioned in operative paragraph 10(d) of the Convention, which relates logically to the issue of use.

3. Access to Resources

Article 8(a) requires each state party to:

> Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity[.]

Indigenous peoples have expressed concern that their territories will be targeted for "protected" status, because they are relatively undisturbed and--often due to traditional management practices--enjoy unusually high levels of biodiversity. They do not oppose protection, but restrictive management regimes which are imposed upon them without their consent, and interfere with their ability to maintain their own settlements. National parks and refuges have been superimposed on the traditional territories of indigenous peoples in Latin America, mainly in response to pressure from Northern environmental groups.

This concern is addressed, albeit obliquely, by Article 10(c) of the Convention, which directs state parties to:

Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements[.]

If customary uses of living resources are sustainable, they should not only be respected, but strengthened. This evokes the principle in the *Sparrow* case, that the Crown must justify any limitation of Aboriginal peoples' use of resources, and do so on sound scientific grounds which admit of no alternatives for the conservation of species. The *Sparrow* decision places the burden of proof squarely on the Crown. In Canada, then, Article 10(c) of the Convention should be interpreted as placing a burden on the Crown to justify any interference with customary uses, and to give customary uses priority over other sustainable uses.

In the light of *Sparrow*, Article 10(c) of the Convention may also dictate a progressive Canadian reading of the requirement, in Article 14.1(a), for "public participation" in environmental impact assessment procedures. If indigenous peoples have a right to continue customary uses of living resources, and in Canada the Crown bears the burden of justifying any infringement of this right, it would seem particularly important to involve Aboriginal peoples directly in impact assessment in Canada. Aboriginal people should participate in their own right as the holders of use rights, moreover, not as members of the "public".

Article 10(d) of the Convention directs state parties to "support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced." This implies that indigenous peoples and other local communities have the right to some level of financial, as well as administrative support from the state, when they take initiatives to redress environmental degradation. This is the only provision of the Convention that clearly assigns some kind of decision-making or priority-setting authority to local communities.

4. Respect for Traditional Knowledge

With respect to traditional knowledge, Article 8(j) requires that each state party:

> Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices[.]

This provision must be read into Article 15, which recognizes the sovereignty of each state party over the genetic resources within its territory, while requiring them to "facilitate" access to these resources by other state parties. Two kinds of questions might arise. A state might try to broker commercial rights to traditional cultigens, or to the knowledge of plants used in traditional medicine, over objections from the indigenous people concerned. Or, a state might try to limit the right of indigenous peoples to license the commercial use of their own medicinal and agricultural knowledge, on their own terms, arguing that they must recognize the state as their sole agent.

The "approval and involvement" clause of Article 8(j) means that a state should only "facilitate" access to indigenous peoples' genetic resources after it has obtained the informed consent of the indigenous people concerned[24]. It is also clear that states should not approve the study or use of indigenous peoples' genetic resources without making a provision for the "equitable sharing of the benefits" with the people concerned. It is less clear whether the state can insist on being the sole agent for indigenous peoples, or demand its own share of benefits in the form of super-royalties or taxes on contracts involving TEK, or genetic information discovered through TEK. Indigenous peoples could presumably exercise their power of approval under Article 8(j) to bar access to their genetic resources until the state agreed to allow them to act as their own brokers.

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[24] It might similarly be argued that Aboriginal peoples have a strong interest, if not a right, to be included among the Canadian members of the "subsidiary body" of experts established under Article 25. If the state parties are to rely upon these experts for advice on all aspects of the implementation of the Convention, at least some of the experts should be specially qualified to address Articles 8(j) and 10(c). The most qualified experts would be indigenous people themselves.

5. Summary

Taken together, the relevant provisions of the Convention require that the Federal and Provincial governments of Canada:

1. take steps to ensure that Aboriginal peoples can continue to utilize the living resources on which they customarily relied for their livelihood;

2. take steps to ensure that traditional knowledge is taught to succeeding generations of Aboriginal people, and shared with non-Aboriginal people only in ways that are approved by, and benefit, the traditional holders of this knowledge;

3. include Aboriginal peoples directly in impact assessment, and bear the burden of justifying the conservational necessity of any infringement of Aboriginal peoples' use of resources; and,

4. approve, and help finance Aboriginal communities' initiatives in the field of environmental rehabilitation.

C. OTHER RELEVANT INTERNATIONAL STANDARDS

Under Article 3 of the *Biodiversity Convention*, state parties are free to exploit their own resources, subject always to "the Charter of the United Nations and the principles of international law." Likewise, Article 22 subjects the Convention to state parties' prior obligations under international agreements, except where these threaten biological diversity. International law and prior agreements include a number of legal standards that are more favourable to indigenous peoples' rights than the Convention itself, and suggest a "reading up" of its relevant provisions.

1. Agenda 21 (UNCED)

The most important source of standards and agreements applicable to the *Biodiversity Convention* is Agenda 21, adopted without a vote by 174 states attending the United Nations Conference on Environment and Development at Rio de Janeiro (3-14 June 1992), and endorsed by the UN General Assembly without a vote in its resolution 47/190 (22 December 1992). Agenda 21 is not a legally binding convention, but a statement of policy by the international community. The consistency and virtual unanimity of inter-governmental support for Agenda 21 provide a sound basis for arguing that it has achieved, or is very close to achieving, the status of customary international

law[25]. Its customary-law status is continually being reinforced, furthermore, by its role as the basic operating program for the UN Commission on Sustainable Development.

Agenda 21 includes a separate chapter on programs for indigenous peoples, as well as references to indigenous people in its chapters on biodiversity and biotechnology, deforestation, living marine resources and freshwater resources. With respect to the issue of resource use, the most relevant provisions of Agenda 21 are found in paragraph 26.3, which calls on governments to take measures, "in full partnership with indigenous people and their communities," that include:

> Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate;
>
> Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of indigenous people and their communities[.]

In the same spirit, paragraphs 17.80-17.83 call on governments to take account of the "special needs and interests" of indigenous people in the management of fisheries, including their "nutritional and other development needs," as well as protecting "their right to subsistence" in international fishing treaties. Likewise, paragraph 11.12(e) calls for the adoption of national forest-management policies that "support the identity, culture and the rights of indigenous people," including their right to "adequate levels of livelihood and well-being."[26]

Agenda 21 foresees the need for direct participation in decision-making and management, to ensure that the rights of indigenous peoples are truly respected. Paragraph 26.6(a) directs governments to:

> Develop or strengthen national arrangements to consult with indigenous people and their communities with a view to reflecting their needs and incorporating their values and traditional and other knowledge and practices in national policies and programmes[.]

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[25] The Universal Declaration of Human Rights, which was adopted by the General Assembly in 1948, is one example of an important UN resolution that has become recognized as customary international law.

[26] The quotation is from section 5 of the "non-binding authoritative statement of principles" on forestry, annexed to the conference report and incorporated by reference into section 11.12(e) of Agenda 21.

With respect to traditional knowledge, moreover, paragraph 15.4(g) of Agenda 21 urges governments to:

> Recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources, and ensure the opportunity for the participation of those groups in the economic and commercial benefit derived from the use of such traditional methods and knowledge[.]

This directive is repeated, in nearly the same terms, in the chapters of Agenda 21 on biotechnology (paragraph 16.39(a)), and marine living resources (paragraph 17.82(c)).

In summary, then, Agenda 21 recognizes indigenous peoples' rights (1) to be "protected" from environmental degradation, or interferences with their "sustainable harvesting" of living resources; (2) to share in the benefits of any traditional knowledge they choose to share with others; and (3) to have their values, needs, and management practices incorporated into national policies and programs, through processes of direct consultations and "partnership".

These principles were reaffirmed at the International Conference on Population and Development (Cairo, 5-13 September 1994). Paragraph 6.27 of the program of action adopted by the conference also refers to the rights of land ownership, and environmental restoration:

> Governments should respect the cultures of indigenous people and enable them to have tenure and manage their lands, protect and restore the natural resources and ecosystems on which indigenous communities depend for their survival and well-being and, in consultation with indigenous people, take this into account in the formulation of national population and development policies.

Canada should also take particular account of the recommendations made by the Intergovernmental Working Group on Forests. An initiative of the Malaysian and Canadian governments, the Working Group met twice in 1994, at Kuala Lumpur and Ottawa, with representatives of 31 states as well as inter-governmental and non-governmental organizations. The final report[27] concluded that sustainable forestry includes:

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[27] Canadian Forest Service, *International Dialogue on Forests; Approaches, Opportunities and Options for Action* (Ottawa: Minister of Supply & Services, 1995).

> giving an appropriate return to local communities, including indigenous people, for the use of their knowledge of the special properties of plants and animals, for example, by recognising intellectual property rights[.] The participants also concluded that traditional use and management of forests contributes to biodiversity, and recommended the establishment of "national and global networks of forests managed for multiple uses by communities and indigenous people for community survival."

2. ILO Convention No. 169

Even stronger statements can be found in the International Labour Organisation's Convention on Indigenous and Tribal Peoples, 1989 (No. 169). No government voted against the adoption of Convention No. 169, when it was presented to the 76th International Labour Conference, but the process of ratification has just begun. Neither the United States nor Canada has yet ratified this instrument, but Mexico has, making it a potential NAFTA concern. Other state parties are Bolivia, Colombia, Costa Rica, Paraguay, Peru, and Norway. Agenda 21 appealed for wider ratification of the convention (see paragraphs 26.2 and 26.4(a)).

The heart of Convention No. 169 can be found in Article 4:

> 1. Special measures shall be adopted as appropriate for safeguarding the persons, institutions, property, labour, cultures and environment of the peoples concerned.
>
> 2. Such special measures shall not be contrary to the freely-expressed wishes of the peoples concerned.

State parties are also bound to respect "the integrity of the values, practices and institutions of these peoples" (Article 5); to provide them with "means for the full development of [their] own institutions and initiatives" (Article 6); to consult with them "in good faith and ... with the objective of achieving agreement or consent" whenever any action is considered which may affect them directly (Article 6); and, to allow them "to exercise control, to the extent possible, over their own economic, social and cultural development" (Article 7).

With particular respect to resource use, state parties recognize "the rights of ownership and possession of the peoples concerned over the lands which they traditionally occupy," as well as their right to continue to use the resources on lands which they may not occupy, but "to which they have traditionally had access for their subsistence and traditional activities" (Article 14). Natural-resource rights include "management and conservation," and the maintenance of traditional land tenure systems (Articles 15 and 17). Moreover, "Traditional activities of the peoples concerned, such as hunting, fishing, trapping and gathering, shall be recognized as important factors in the

maintenance of their cultures and in their economic self-reliance and development" (Article 23).

Hence while the *Biodiversity Convention* refers generally to state parties' duty to "protect and encourage" sustainable traditional uses of resources, Convention No. 169 refers to the protection of the whole institutional system of indigenous land-tenure law and management, and requires indigenous peoples' consent to the protective regime.

3. New Draft Instruments

The resource use provisions of Convention No. 169 are reiterated, in somewhat stronger terms, in the draft UN Declaration on the Rights of Indigenous Peoples, which is currently being reviewed by an ad hoc working group of the UN Commission on Human Rights[28]. If adopted, the Declaration would establish policy for the UN system, and might evolve into customary international law. Another relevant draft is likely to be considered by the Commission in 1996: Principles and Guidelines for the Protection of the Heritage of Indigenous Peoples. "Heritage" is defined as including traditional knowledge. Among other things:

> 5. Indigenous peoples' ownership and custody of their heritage must continue to be collective, permanent and inalienable, as prescribed by the customs, rules and practices of each people.
>
> 6. The discovery, use and teaching of indigenous peoples' knowledge, arts and cultures is inextricably connected with the traditional lands and territories of each people. Control over traditional territories and resources is essential to the continued transmission of indigenous peoples' heritage to future generations, and its full protection. ...
>
> 9. The free and informed consent of the traditional owners should be an essential precondition of any agreements which may be made for the recording, study, use or display of indigenous peoples' heritage.
>
> 10. Any agreements which may be made for the recording, study, use or display of indigenous peoples' heritage must be revocable, and ensure that the peoples concerned continue to be the primary beneficiaries of commercial application.

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[28] Commission on Human Rights resolution 1995/32 of 3 March 1995; the draft text can be found in UN Doc. E/CN.4/Sub.2/1994/2/Add.1.

4. Human Rights Conventions

Canada has also ratified four human-rights conventions which have been interpreted as having special implications for the land rights of indigenous peoples.

The International Convention on the Elimination of All Forms of Racial Discrimination forbids any discrimination in the "right to own property alone as well as in association with others" (Article 5(d))[29]. The Committee on the Elimination of Racial Discrimination, which has a mandate to supervise the convention, has used this clause to challenge state parties' failure to secure collective land rights for indigenous and tribal peoples[30]. At its 34th session, CERD requested an explanation of Ottawa's decision to dismiss Mikmaq land claims, for example.

The International Covenant of Civil and Political Rights, Article 27, ensures the cultural, religious and linguistic freedom of "ethnic, religious or linguistic minorities." Indigenous peoples do not regard themselves as mere "minorities," but the Human Rights Committee, which supervises this convention, has ruled that Alberta's leasing of forest lands notwithstanding Lubicon Lake Cree land claims was a violation of Article 27 (*Ominayak v. Canada*). The Committee has even hinted that this provision obliges Canada to devolve some degree of internal self-determination or self-government to Aboriginal peoples. A paraphrase of Article 27 appears in Article 30 of the Convention on the Rights of the Child.

Subsistence harvesting and environmental protection arguably find support in the International Covenant of Economic, Social and Cultural Rights, which recognize every person's rights to an "adequate standard of living," including "adequate food," and to the "highest attainable standard of physical and mental health" (Articles 11-12). Articles 23 and 24 of the Convention on the Rights of the Child recapitulate these principles in the context of child survival and well-being.

5. Summary

International recognition of the rights of indigenous peoples to enjoy the continued use of traditional resources, and obtain benefits from the wider application of their traditional knowledge, can best be understood along a gradient, from relatively "hard" law to "soft" law. The *Biodiversity Convention* itself falls into the "hard" category; it has been widely ratified, and is in force in Canada. Agenda 21, while universally endorsed, is best characterized as customary international law. ILO Convention No. 169 is just

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[29] UN Doc. CERD/C/SR.778 (1987).

[30] Russel L. Barsh, "The Ethnic Factor in Security and Development: Perceptions of United Nations Human-Rights Bodies", *Acta Sociologica* 31(4):333-341 (1988).

emerging as a recognized standard and arguably applies solely to state parties, excluding Canada. Human rights conventions that are in force in Canada do not speak explicitly to the principles at issue here, but their interpretation by UN bodies charged with their implementation must, at a minimum, enjoy the status of customary law. Current international standards can accordingly be summarized as follows, insofar as they apply in Canada:

(1) Hard, or conventional law. Canada must protect and encourage sustainable customary uses of living resources; preserve TEK, promote its wider application with the approval of the Aboriginal holders, and encourage the equitable sharing of the benefits from any use of TEK.

(2) Soft, or customary law. Canada should protect the resources used by Aboriginal peoples from degradation; manage resources jointly in direct partnership with Aboriginal communities; respect collective ownership; help finance rehabilitation initiatives; and ensure that Aboriginal peoples share in the benefits from any use of TEK.

(3) Emerging standards. Canada will be expected to recognize the right of Aboriginal peoples to exercise full ownership and management of their remaining lands, and joint management of resources they have traditionally used elsewhere; to protect these lands and resources by means approved by Aboriginal peoples; and protect Aboriginal peoples' exclusive rights to the use and benefit of TEK.

It should be noted that the interpretation given to section 35 of the Constitution Act, 1982, by the Supreme Court of Canada in *Sparrow* is more or less consistent with contemporary international "soft" law. Aboriginal peoples interpret section 35 more in keeping with emerging international standards.

D. THE CANADIAN BIODIVERSITY STRATEGY

The ethnocentrism of the CBS is reflected in a box at page 7. It lists five recent medical advances we owe to "scientists' ... study of biodiversity." Four of them were, in fact, based on the study of TEK. None of them involved recognition or compensation for the traditional holders of this knowledge.

Paradoxically, then, the CBS refers repeatedly to the extraction of indigenous peoples' knowledge, but completely disregards the issue of their continued right to resource use.

Most references to Aboriginal peoples in the CBS are contained in the chapter, "Indigenous Community Implementation". It describes what Aboriginal peoples can do to implement the *Biodiversity Convention* but makes no commitments for Federal financial support, legal recognition, or legislative protection for these initiatives. The rest of the CBS speaks as if Aboriginal peoples have no distinct rights in relation to the implementation of the Convention by Canada.

An Aboriginal critique of the CBS must focus on three key issues: traditional knowledge, resource use, and participation in management.

1. Traditional Knowledge

The CBS defines traditional knowledge as including the harvesting of resources, medicinal plants and other materials, cultigens, and the identification of local biological features and their history (p. 35). Obstacles to the better utilization of TEK are purportedly scientists' lack of interest, and Aboriginal peoples' own reluctance to share what they know. The fact that TEK has been exploited commercially without Aboriginal peoples' informed consent or compensation is not mentioned as a valid reason for this "reluctance".

As a general principle, the CBS acknowledges (p. 10) that:

> The knowledge, innovations and practices of indigenous and local communities should be respected, preserved and maintained and used with the support and involvement of those who possess it.

Concretely, however, the CBS merely suggests (Strategic Direction 2.3) that Ottawa "identify mechanisms" to utilize TEK "with the involvement of the holders," and "encourage the equitable sharing of benefits". A reference to "information sharing" with traditional knowledge holders also appears in the chapter on aquatic resources (Strategic Direction 1.60). This is not compatible with the *Biodiversity Convention*, which requires Canada to "preserve" TEK, with the "approval" of traditional holders (Article 8(j)). It is significantly weaker than the customary law principles reflected in Agenda 21, which call upon governments to "ensure" the sharing of benefits from TEK.

Ottawa is certain to respond by pointing to the separate chapter of the CBS on "Indigenous Community Implementation". It speaks of the "maintenance of traditions" and their application to conservation and management, but only to the extent of what Aboriginal peoples can do on their own. Aboriginal peoples cannot strengthen Canada's intellectual property laws, however, much less guide Canada's position on TRIPs in the NAFTA or WTO. Aboriginal peoples also need substantial additional support for the development of their own local institutional capacity. As the United Nations (1993:40) study of indigenous peoples' heritage concluded:

It is essential to focus on increasing the capacity of indigenous peoples to supervise research conducted in their territories, and to develop their own institutions for medical and ecological research. Canada is obliged, by Article 8(j) of the *Biodiversity Convention*, to contribute to community initatives of this nature.

2. Resource Use

Although the CBS contains a boxed quote from Article 10(c) of the Convention (p. 35), nowhere does it actually address the obligation to "protect and encourage" traditional uses of living resources. Indeed, the only reference in the CBS to the fact that Aboriginal peoples have a constitutional right to harvesting is in the separate chapter on "Indigenous Community Implementation". It is not within the authority or the means of Aboriginal communities to protect this right, however, which continues to be challenged by Provincial governments. Defending this right is the responsibility of the Federal Crown--under treaties, under section 91(24) of the Constitution Act, 1867, in accordance with the express terms of the *Biodiversity Convention*, and the standards of contemporary customary international law.

The CBS makes no mention of Aboriginal peoples' subsistence needs or harvesting rights in the chapters on aquatic resources and forests[31]. The chapter on aquatic resources fails to acknowledge that Aboriginal communities are among the most dependent on marine life, especially in the Arctic, and account for an estimated one-third of Canada's entire inland fishery[32]. This is an apparent effort to imply that Aboriginal peoples are economically and legally "equal" to the average Canadian with respect to the provisions of the *Biodiversity Convention*--rather than conceding that section 35 of the Constitution Act, 1982, and Article 10(c) of the Convention are mutually reinforcing.

3. Participation

In very broad terms, the CBS commits the government of Canada to "enhance the participation of members of the public," and "provide for meaningful public and stakeholder participation" in policy formulation and planning (Strategic Directions 1.35 and 1.85). The modalities for this participatory process are not addressed; the

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[31] Curiously, moreover, the chapter on agricultural areas ignores the fact that some of the Aboriginal peoples of Canada were traditionally farmers (most notably the Haudenosaunee or Six Nations), and continue to maintain unique varieties of maize, cucurbits and legumes.

[32] Fikret Berkes, "Native Subsistence Fisheries: A Synthesis of Harvest Studies in Canada", *Arctic* 43(1):35-42 (1990); Royal Commission on Seals and the Sealing Industry in Canada, *Seals and Sealing in Canada: Report of the Royal Commission*, supra note 6, at p.219ff.

commitment is vague enough to be satisfied by the existing practice of public hearings and consultation, without any actual sharing of decision-making authority.

From an Aboriginal perspective, this not only fails to attain the "partnership" standard already established in customary international law, but does not even take account of the jurisdictions of Aboriginal authorities under Canadian legislation. Although they fall short of Aboriginal peoples' conception of genuine self-determination, existing First Nations governments are a political reality in Canada. They are the primary land and resources managers within Indian Reserves, and in Northern areas to which Aboriginal interests attach under land claims settlements. Yet the CBS does not refer to them as a component of the Canadian inter-governmental system.

Strategic Directions 1.18-1.22 refer to collaboration between the Federal, Provincial and Territorial governments in connection with the identification of threatened species, for example. Aboriginal peoples have important subsistence and ceremonial interests in many endangered and protected species, and lands managed by Aboriginal authorities may include significant habitats. It makes little legal or conservational sense to neglect Aboriginal authorities in building inter-governmental cooperation.

Aboriginal peoples are more than simply "stakeholders," in the manner in which that term has come to be used in Canada. A "stakeholder" can be any institution, individual, or group that expresses an interest in the disposition of resources. With regard to an eagle-nesting site on the banks of the Skeena River, for instance, "stakeholders" may range from the Aboriginal people who fish salmon among the eagles and treat them as sacred, to an environmental research institute in Toronto that believes it has something to say about eagle reproduction. The notion of "stakeholders" in current Canadian practice admits of no levels, or degrees of rights or interests. It is merely a euphemism for "general public," and enables bureaucrats to collapse all the groups competing for their attention into a single, undifferentiated mass.

The Constitution Act, 1982, recognizes that Aboriginal peoples do have specially-protected legal interests in living resources. So does the *Biodiversity Convention*, and most other contemporary international instruments in the fields of environment and human rights. Collapsing Aboriginal peoples into the "stakeholder" category is incompatible, in principle, with Canada's domestic law and international obligations.

The CBS treatment of protected areas merits particular attention. Strategic Direction 1.12 commits to a process of identifying protected areas through (emphasis supplied):

> open and meaningful public and stakeholder participation processes and sound scientific information and traditional knowledge to ensure that social, economic, cultural and ecological factors are considered[.]

This implies that the acquisition of traditional knowledge will occur through the stakeholder consultation process. Aboriginal peoples are simply another public-interest group, casting their views at the feet of Federal and Provincial technocrats--even if the land in question is secured to them by treaties, or their continued use of it is protected by the Constitution Act, 1982.

A thread of elitism and ethnocentricity can be detected here: TEK must be extracted for the use of environmental technocrats so that they can make better decisions. In the same vein, the CBS suggests (p. 41) including TEK in the training of "professionals" in impact assessment, but makes no reference to Aboriginal peoples' direct role as decision-makers on projects that will affect them, or to support for developing their own institutional capacity to conduct research and contribute to policy formulation.

The only hint in these chapters that Aboriginal peoples have land rights different from those of Canadians as a whole, is a reference to "the development of agreements" (Strategic Direction 1.17) to acquire more land from them. The CBS does not treat Aboriginal communities as resource-owners and management partners, but merely as a reservoir of relatively unspoiled lands for acquisition by non-Aboriginal people--a classic colonial viewpoint.

E. CONCLUSIONS

With regard to Aboriginal peoples, then, the CBS contemplates the establishment of new modalities to extract TEK for wider Canadian use, while merely "encouraging" the sharing of the benefits with Aboriginal owners; the development of agreements to acquire more Aboriginal land for protected status; and according Aboriginal communities no greater rights of participation in management than the general public. To the extent that the CBS refers to the "maintenance" and enrichment of TEK, in the addendum on "Indigenous Community Implementation," it fails to offer Aboriginal peoples any legal protection or financial support.

The CBS does not comply fully with the *Biodiversity Convention* in three main aspects. It does not provide for the "maintenance" of TEK, as required by Article 8(j). It completely disregards the obligation of Canada to "protect" traditional uses of living resources, required by Article 10(c). It also makes no provision for supporting community initiatives in ecosystem restoration in accordance with Article 10(d). Furthermore, the CBS is incompatible with the principles of customary international law that relate specifically to indigenous peoples, most significantly the principle that indigenous communities have rights to manage their own lands and resources and control their own development process, in partnership or cooperation with national governments.

Recommendations

To achieve compliance with the relevant terms of the *Biodiversity Convention*, Canada should, at a minimum:

1. **recognize TEK in national intellectual property legislation;**

2. **establish a program of financial aid, technical support, and legal recognition to scientific and educational institutions launched by Aboriginal peoples and communities;**

3. **make a commitment to protect Aboriginal peoples' traditional harvesting of resources through Federal and Provincial legislation, as well as recognition of the jurisdiction of Aboriginal authorities;**

4. **legislatively recognize the right of Aboriginal peoples to be directly represented in impact assessment procedures, to have adequate resources to conduct their own research on proposed projects affecting their traditional territories, and to exercise informed consent before the commencement of any project that will affect them directly; and**

5. **establish a program of financial aid and technical support to initiatives aimed at restoring the productivity of the ecosystems on which Aboriginal communities depend for subsistence and medicine.**

FEDERAL JURISDICTION AND BIODIVERSITY

Ian Attridge*

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A. INTRODUCTION AND HISTORY

The federal government has numerous responsibilities that do, or potentially could, contribute to biodiversity conservation and sustainable use. This is despite considerable authority over natural resources, land and property held by Canadian provinces and territories, as discussed in the Introduction chapter. The federal government has a fiduciary responsibility towards Aboriginal people, which will be particularly important as land claims are settled and new co-management regimes are put in place. The federal government also has a leadership and unifying role to play, both within Canada's boundaries and beyond. This role derives from federal involvements and obligations within the international arena, its unique position in relation to the provinces, plus its extensive resources, experience and influence available to be applied as opportunities arise across the country.

It is critical, therefore, to examine the range of federal laws and policies as they relate to biodiversity within this context. This chapter considers the subjects of wild animals and plants, protected areas, restoration, sustainable use, environmental assessment, and trade, pollution, genetic diversity and biotechnology, and economic incentives[1]. These categories are artificially distinct, and indeed there is considerable overlap among them in the treatment given here. While an ecosystem and integrated approach is ultimately required to comprehensively and effectively address biodiversity issues, such categories remain conceptually useful. They also roughly correspond to some of the headings in the *Canadian Biodiversity Strategy*.

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[1] The author acknowledges the substantial contribution to this chapter of the materials in David Estrin and John Swaigen (eds.), *Environment on Trial: A Guide to Ontario Environmental Law and Policy* (3d. ed.) (Toronto: Canadian Institute for Environmental Law and Policy and Emond Montgomery Publications, 1993).

But first, a brief, selective history of some key laws affecting biodiversity can be set out[2]. The *Fisheries Act* was first enacted in 1868 under the clear federal powers of the new Dominion's constitution, and it still provides the core mechanisms for protecting aquatic species and habitat within federal jurisdiction[3]. Shortly thereafter, Canada's first national park was established at Banff by Order in Council in 1885, and in 1887 under the *Rocky Mountains Park Act*[4]. The administration of Banff National Park was consolidated with other areas into the first parks system statute in Canada, the 1911 *Dominion Forest Reserves and Parks Act*, and later the *National Parks Act*[5]. Certain areas in the territories were established as reserves to protect birds and mammals for native hunters as early as 1894, and grew to include 1.35 million square kilometres by 1938 before gradually being reduced in size after 1948 to only a few today[6].

The early 1900s produced a number of treaties with the United States concerning environmental matters. Of note, the *International Boundary Waters Treaty* of 1909 dealt with waters along the border with the U.S., and laid the groundwork for later agreements on water management and for the restoration of the Great Lakes[7]. The *Migratory Birds Convention* was signed by the two countries in 1916, and has since formed a key

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[2] See also Paul Muldoon, "An Overview to the Development of Environmental Law in Canada", in: *Proceedings, First North American Conference on Environmental Law* (Tepotzotlan, Mexico: Fundacion Mexicana para la Educacion Ambiental A.C., 1993), pp. 29-43 (available through CIELAP).

[3] The *Fisheries Act* was re-enacted in 1895 with a prohibition against discharge of deleterious substances into waters that would affect fish: S.C. 1895, c.27, now R.S.C. 1985, c.F-14.

[4] *Rocky Mountains Park Act*, 50-51 Vic. (1887), c.32.

[5] *Dominion Forest Reserves and Parks Act*, 1-2 Geo. V (1911), c.10; *National Parks Act*, 20-21 Geo. V (1930), c.33, now R.S.C. 1985, c.N-14.

[6] *Unorganized Territories Game Preservation Act*, 57-58 Vic. (1894), c.31, now accomplished through such statutes as the *Territorial Lands Act*, R.S.C. 1985, c.T-7. See also the Yukon and Northwest Territories chapter; François Bregha, "Conservation in the Yukon and the Northwest Territories", in Monte Hummel (ed.), *Endangered Spaces: The Future for Canada's Wilderness* (Toronto: Key Porter Books, 1989), at pp.212-215; and Department of Environment, *The State of Canada's Environment* (Ottawa: Minister of Supply and Services Canada, 1991), at p.7-5.

[7] *Boundary Waters Treaty*, 11 January 1909, United States-United Kingdom, C.U.S. 312, U.K.T.S. 1910 No.23; see the *International Boundary Waters Treaty Act*, 1-2 Geo. V (1911), c.28, now R.S.C. 1985, c.I-17.

component of federal responsibility for avian biodiversity[8].

Much later, the administration of environmental matters received higher profile and consolidation in 1971 through the establishment of the Department of Environment[9]. The growing global awareness of environmental issues and the Department's efforts led to a number of international agreements concerning biodiversity (see the discussion of commitments in the Introduction chapter), and the enactment of media-specific statutes primarily concerned with pollution control[10]. Also during this period, the *Canada Wildlife Act* was first enacted in 1973, providing a legislative base for wildlife programs and areas[11]. This same year produced the first Cabinet directive requiring federal Departments to review environmental impacts, leading to the Environmental Assessment Review Process and the *Canadian Environmental Assessment Act*[12].

The role of the federal government continues to be shaped by a broad range of non-government organizations active on biodiversity issues, with many of the national-level groups noted in the Introduction chapter. These organizations have proposed and commented upon legislation and policy[13], and have brought significant court cases that

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[8] *Migratory Birds Convention*, 16 August 1916, Canada-United States, C.U.S. 465; see the *Migratory Birds Convention Act*, 7-8 Geo. V (1917), c.18, now S.C. 1994, c.22.

[9] *Government Organization Act, 1970*, S.C. 1970-71-72, c.42, ss.2-7, 30(1) and Sched. A. Part II of the Act may be called the "*Department of Environment Act*" (s.2).

[10] See the *Canada Water Act*, R.S.C. 1970, c.5 (1st Supp.), now R.S.C. 1985, c.C-11; *Arctic Waters Pollution Prevention Act*, S.C. 1969-70, c.47, now R.S.C. 1985, c.A12; *Clean Air Act*, S.C. 1970-71-72, c.47; *Environmental Contaminants Act*, S.C. 1974-75-76, c.72; and *Ocean Dumping Control Act*, S.C. 1974-75-76, c.55. Part of the first and the latter three statutes are now subsumed within the *Canadian Environmental Protection Act*, S.C. 1988, c.22.

[11] *Canada Wildlife Act*, S.C. 1973-74, c.21, now R.S.C. 1985, c.W-9.

[12] SOR/84-467, and the *Canadian Environmental Assessment Act*, S.C. 1992, c.37.

[13] See such recent examples as *The Canadian Environmental Protection Act: An Agenda For Reform*, A Submission to the Standing Committee on Environment and Sustainable Development on behalf of the [53] non-governmental groups listed inside the front cover (November 1994), and Canadian Endangered Species Coalition, *Comments on "The Canadian Endangered Species Protection Act: A Legislative Proposal"* (December 1995).

have substantially altered the course of Canada's environmental and biodiversity law[14]. Practical conservation accomplishments have also been made through land acquisition, wildlife and education programs, research, restoration and funding efforts, and extensive contributions of volunteer time and labour. Many of the smaller groups are members of the Canadian Environmental Network, and issue-oriented coalitions and cooperative arrangements have been formed on occasion. A few of these organizations participated in development of the *Canadian Biodiversity Strategy* and advised the federal government on negotiation of the *Convention on Biological Diversity.*

B. WILD ANIMALS AND PLANTS

The law and policy governing wild animals and plants at the federal level consists of a few core statutes, together with a substantial number of others with some relation to the subject. This area continues to experience rapid change, with key new statutes, re-enactments, and major amendments taking place in the mid-1990s. The role of the federal government is also in flux, especially in relation to the provinces, management of national unity issues and budgetary pressures; this is reflected in such legislative and policy changes. While looking forward during this time of transition, it is also useful to reflect on past approaches and compare proposals to those implemented in other jurisdictions[15].

1. Canada Wildlife Act

The *Canada Wildlife Act* enables the Minister of the Environment to coordinate, encourage, develop and implement wildlife education, research and conservation programs and policies[16]. Wildlife is defined as wild animals, plants or other organisms, or, interestingly, also species "not easily distinguishable from such species"; the provisions may also apply to habitat and marine areas[17]. The Minister may enter into

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[14] See, for example, *Friends of the Oldman River Society* v. *Canada* (1992), 88 D.L.R. (4th) 1, 7 C.E.L.R. (N.S.) 1 (S.C.C.) concerning federal environmental assessment responsibilities, and *Canadian Parks and Wilderness Society* v. *Canada (Minister of Environment)* (1992), 55 F.T.R. 286 (F.C.T.D.) regarding logging in national parks.

[15] For such discussions, see Valerius Geist and Ian McTaggart-Cowan, *Wildlife Conservation Policy* (Calgary: Detselig Enterprises Ltd., 1995).

[16] *Canada Wildlife Act*, R.S.C. 1985, c.W-9, as extensively amended by S.C. 1994, c.23.

[17] Ibid, adding a new definition of "public lands" in subsection 2(1), and extending the Act's application in the new subsection 2(4).

agreements with provinces, municipalities, organizations or individuals to carry out wildlife programs. The *Canada Wildlife Act* mirrors Article 13 of the *Biodiversity Convention* by promoting public education and awareness of biodiversity. These efforts are focused each year across Canada through a series of special weeks, including Earth Day, World Environment Day, and National Wildlife Week[18]. Extensive compliance measures were added in the 1994 amendments.

The federal government has adopted several key wildlife policies and programs that help implement its wildlife legislation. These policies also set a context in which legislative developments can take place. *A Wildlife Policy for Canada* was developed with federal involvement after considerable input from a broad range of government and wildlife interests, and was adopted by the Wildlife Ministers' Council of Canada in 1990. The Policy defines wildlife broadly to include:

> all wild organisms and their habitats -- including wild plants, invertebrates, and microorganisms, as well as fishes, amphibians, reptiles, and the birds and mammals traditionally regarded as wildlife[19].

The Policy is a statement of intent to guide actions and the development of policies, programs and legislation; it is not intended to be an enforceable document. It is based upon a broad ecosystem approach, with the goal of maintaining or enhancing wildlife for its intrinsic value as well as its value to humans. Thus, the Policy highlights the maintenance and restoration of ecological processes and biodiversity, and the sustainable use of wildlife as key goals. This then adopts the directions provided in the World Conservation Strategy and puts in place a policy that fits well with the objectives of the *Convention on Biological Diversity*. This policy helped inform the amendments to the *Canada Wildlife Act* in 1994.

2. Migratory Birds Convention Act

A number of federal statutes provide for the conservation and use of wildlife, particularly those of a migratory, trans-boundary nature or of national importance. Among the most important of these federal wildlife statutes is the *Migratory Birds Convention Act*[20]. This Act was first enacted in 1917 to implement the international Treaty signed

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[18] For example, see the *National Wildlife Week Act*, R.S.C. 1985, c.N-18, s.2, which designates the week of the birthday of Jack Miner, April 10, for organizations to particularly "disseminate information pertinent to wildlife conservation".

[19] Wildlife Ministers' Council, *A Wildlife Policy for Canada* (Ottawa: Canadian Wildlife Service, 1990), p.6.

[20] *Migratory Birds Convention Act, 1994*, S.C. 1994, c.22

by the United States and the United Kingdom (on behalf of Canada), and a new Protocol was signed on December 14, 1995 (see the Act's amendment requirements, discussed on page 91).

The Act regulates the hunting seasons, methods and bag limits for migratory game birds, and prohibits the hunting of migratory insectivorous birds and other migratory non-game birds[21]. The eggs and nests of all birds covered by the Act are protected, although they may be collected for scientific or propagation purposes[22]. Subject to the regulations, the Act prohibits the possession, transfer and sale of migratory birds[23]. Whooping cranes receive some protection through the authorization of provincial wildlife Directors to close areas to hunting the similar sandhill cranes when whoopers are in the area[24] Migratory bird sanctuaries may be established under the Act, and these are further described in the Protected Areas section, below.

Some exceptions to the hunting prohibitions concerning non-game birds are made for Aboriginal hunting and scientific research. Traditional subsistence hunting of non-game migratory murres in Newfoundland is permitted under the Regulations, but has created concern for the sustainability of the harvest, the incidental take of non-target species, and the black market in (prohibited) commercial sales that has developed[25]. Permits varying the game bird regulations are also allowed in extreme situations such as agricultural depredation. Under the new 1995 Protocol, migratory birds may be harvested throughout the year by Aboriginal peoples of Canada having Aboriginal or Treaty rights, subject to existing Aboriginal and Treaty rights under the *Constitution Act*, and the regulatory and conservation regimes defined in the relevant Treaties, land claim agreements, self-government agreements and co-management agreements[26].

Penalties under the former MBCA did not act as a deterrent, being in the extremely low range of $10 to $300 fine or six months in prison. However, the

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[21] See also the *Migratory Bird Regulations*, C.R.C. 1978, Vol. XI, c.1035.

[22] Ibid, ss. 19 and 20.

[23] Ibid, s.5.

[24] *Migratory Bird Regulations*, s.18.

[25] *Migratory Bird Regulations*, s.5(2). See L. J. Gregorich, *Poaching and the Illegal Trade in Wildlife and Wildlife Parts in Canada* (Ottawa: Canadian Wildlife Federation, 1992), at pages 29 to 30. Also W. John Pratt, White Ottenheimer and Baker, Barristers and Solicitors, personal communication, April 3 1996.

[26] Gary Goodwin, Corporate Counsel, Ducks Unlimited Canada, personal communication, April 4, 1996.

range of complementary penalties, such as stripping of monetary benefits, forfeiture of equipment, cumulative fines, and a range of remedial and compliance orders, were also added[27].

The focus of the statute is upon birds "either useful to man or harmless". Consequently, the Act does not encompass a large range of other migratory birds, including raptors (falcons, hawks and owls), upland game birds, jays, crows, blackbirds, kingfishers, pelicans, cormorants and introduced species[28]. Concerns have also been expressed about the enforcement, penalty and habitat provisions under the former Act, although many of these have been remedied in the 1994 reenactment[29]. Small fines in the past did not deter even repeat offenders, and the availability of personnel for, and the Canadian Wildlife Service's commitment to, enforcement remains a concern[30]. Long-standing concerns about the toxic effects of the ingestion by waterfowl of lead shot have now led to an announcement of a 1997 ban on this type of ammunition used within some areas, including some Migratory Bird Sanctuaries[31].

3. Fisheries Act

The federal government has clear constitutional jurisdiction over the conservation of fisheries. However, the provinces have responsibility for issues involving property rights and much land-based activities which directly effect fish, fish habitat, and the sustainable use of the fishery. In the *Fowler* case, the court held that upland management was not within federal fisheries authority, despite the apparent ecological

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[27] Ibid, sections 13-17.

[28] Patricia Mohr, "Wildlife", in David Estrin and John Swaigen, *Environment on Trial*, supra note 1, at p.349.

[29] L.J. Gregorich, *Poaching and the Illegal Trade in Wildlife and Wildlife Parts in Canada*, supra note 25, at pp.26-32, 73-74; Andrew Thompson and Nancy Morgan, "Migratory Birds", in: Canadian Bar Association, *Sustainable Development in Canada: Options for Law Reform* (Ottawa: CBA, 1990).

[30] Liz White, *Gutting Enforcement*: Undermining Wildlife Protection Laws. Materials presented at the Animals and the Law Conference, October 15, 1994, organized by Zoocheck Canada. Also see L.J. Gregorich, *Poaching*, supra note 25.

[31] Phinjo Gombu, "Ottawa bans use of lead shot, aims to reduce benzene in gas", *Toronto Star*, July 25 1995, p.A10. The deposit of oil or any other substance harmful to migratory birds in any waters or in any area frequented by migratory birds is prohibited in the Regulations, s.35, without the Minister's authorization.

connection between logging activities uphill and devastation of fish downstream[32]. Such cases highlight the constitutional, and resulting legislative and administrative, overlaps and arrangements required in Canada to address biodiversity.

The *Fisheries Act* was first enacted in 1868, and gives the Minister of Fisheries and Oceans the authority to manage fisheries in all of Canada's fishing zones, territorial sea and inland waters[33]. Fish under the Act's section 2 include "shellfish, crustaceans, marine animals and [their] eggs, spawn, spat and juvenile stages". It is important to note that this includes marine mammals such as whales and seals, both within Canadian waters and for Canadian vessels in the Antarctic[34]. Extensive regulations have been adopted which allow for open seasons and licences for angling and commercial fishing[35].

In contrast to some other federal legislation (and initial proposals for an endangered species Act), the *Fisheries Act* recognizes the important link between fish and the habitat upon which they depend, despite constitutional limitations in extending too far into terrestrial areas, as noted earlier[36]. Strong prohibitions are in place against

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[32] *Fowler* v. *R.* (1980), [1980] 2 S.C.R. 213. See also Alastair R. Lucas, "Constitutional Law - Federal Fisheries Power - Provincial Resource Management and Property and Civil Rights Powers - *Fowler v. R.* and *Northwest Falling Contractors Ltd. v. R.*", 16 U.B.C. Law Review 145 (1982).

[33] *Fisheries Act*, R.S.C. 1985, c.F-14. See the *Territorial Sea and Fishing Zones Act*, R.S.C. 1985, c.T-8, for definitions of the extent of the fishing zones, territorial sea and internal waters of Canada.

[34] *Marine Mammal Regulations*, SOR/93-56, s.3. These Regulations require licences to fish for marine mammals (s.4), enable Aboriginal peoples to hunt without a licence for food, social or ceremonial purposes (s.6), limit disturbance (s.7, although only guidelines govern whale watching and ship traffic), control sale and transportation (ss. 11, 13-16), and catch limits, seasons, specified areas or persons (or prohibitions) for fishing for various species (ss. 18-22, Part IV, and Sched. IV, among others).

[35] For comprehensive treatments of the protection of Canada's marine biodiversity and environment, see: David VanderZwaag, *Canada and Marine Environmental Protection: Charting a Legal Course Towards Sustainable Development* (London: Kluwer Law International, 1995); and David VanderZwaag (ed.), *Canadian Ocean Law and Policy* (Markham, Ontario: Butterworths, 1992).

[36] The definition of "fish habitat" in s.34 is:

> "fish habitat" means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or

the "harmful alteration, disruption or destruction of fish habitat" or the discharge of any substance into water which may be "deleterious to fish or fish habitat or to human use of fish"[37]. These measures are consistent with Article 8(d) of the *Biodiversity Convention*, which calls for protection of ecosystems, habitats and viable populations.

Nonetheless, such prohibitions may be overridden by the Minister's authorization of plans that will prevent or mitigate effects on fish habitat, or by regulations that authorize deleterious discharges[38]. The Minister's authorizations are guided by the 1986 Policy for the Management of Fish Habitat[39]. The Policy's objective is net gain of fish habitat productive capacity, and therefore sustainability of fish populations and associated fisheries[40]. The Department applies the Policy's principle of no net loss of fish habitat productive capacity by first mitigating and then compensating for any habitat losses through creation of new habitat or enhancement of existing fish habitat on-site or off-site from the impact. The Policy is to be implemented through the Department's responsibilities, and through agreements and protocols with provincial agencies where these organizations have been delegated the lead management role.

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indirectly in order to carry out their life processes.
To fall within the Act's scope, fish habitat need only contain one of these elements: *R.* v. *Maritime Electric Co.* (1990), 4 C.E.L.R. (N.S.) 289 (P.E.I. Prov. Ct.).

[37] Ibid, sections 35(1) and 36(3). Environment Canada administers the latter section concerning the control of pollutants affecting fish through a Memorandum of Understanding with Fisheries and Oceans Canada. It is the nature of the substance that is deposited which must be determined to be deleterious, not the quality of the water before or after the deposit. See: *R.* v. *MacMillan Bloedel (Alberni) Limited* (1979), 47 C.C.C. (2d) 118 (B.C.C.A.).

[38] Ibid, section 35(2). A number of these regulations have been passed to date: *Pulp and Paper Effluent Regulations*, *Petroleum Refinery Effluent Regulations*, *Metal Mining Liquid Effluent Regulations*, *Meat and Poultry Products Plant Liquid Effluent Regulations*, *Potato Processing Plant Liquid Effluent Regulations*, *Chlor-Alkali Mercury Liquid Effluent Regulations*, *Alice Arm Tailings Deposit Regulations*, *Petroleum Refinery Liquid Effluent Regulations*, and *Port Alberni Pulp and Paper Effluent Regulations*.

[39] Canada, Department of Fisheries and Oceans, *Policy for the Management of Fish Habitat* (Ottawa: Department of Fisheries and Oceans, 1986). The 1990 Wildlife Policy for Canada also includes fish within its scope, and is described in the section on the *Canada Wildlife Act*.

[40] W. G. Doubleday, Director General, Fisheries and Oceans Science, Department of Fisheries and Oceans, personal communication, May 15 1996.

The *Fisheries Act* contains many strong provisions, backed by penalties of up to $1 million, three years imprisonment for the most egregious, repeat offenders, and a variety of court order powers[41]. Citizens may prosecute offences under the Act and are entitled to one half of any fine imposed[42], thus assisting enforcement where often it has been lacking. This makes the Act a powerful tool for the conservation of aquatic biodiversity. However, it is limited because it only applies after damage is done (despite a deterrent effect), and the scope of its habitat protection provisions is considerably constrained by the surrounding provincial jurisdiction over land and property[43].

For non-coastal provinces, enforcement of fisheries concerns is delegated to the provinces. However, no additional funding has been announced to support the provincial role. Enforcement of fish habitat-related matters has remained with the Department of Fisheries and Oceans, although the 1995 federal budget and the 1996 Throne Speech referenced delegation of habitat protection provisions to and partnerships with those inland provinces with existing responsibility for management of provincial fisheries[44].

Given constitutional and administrative division of responsibility, it is not surprising that the fisheries enforcement track record (especially for habitat) has been mixed and often caught up in wider politics[45]. For example, few prosecutions for logging damage of stream habitat have occurred in British Columbia, and some have been stifled and

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[41] See sections 40 to 42, and 63 to 83 (especially 78.1 and 79.2), among others. The highest penalty was a $1 million fine and $3 million paid under a discretionary court order into a fund to be used to rehabilitate the St. Lawrence River: Paul Gavrel (legal counsel, Environment Canada Legal Services), 1996, "Prosecutions under CEPA and the fish habitat protection and pollution prevention provisions of the *Fisheries Act*", presented at the Toronto Environmental Conference and Tradeshow, "Environmental Compliance - '96", p.13.

[42] *Penalties and Forfeitures Proceeds Regulations.*

[43] Ben van Drimmelen, Barrister and Solicitor, personal communication, March 26, 1996.

[44] Recent funding cutbacks have been severe for the Freshwater Institute, and the experimental lakes area in northwestern Ontario.

[45] The *Fisheries Act* enforcement track record between July 1 1988 and December 31 1995 included: 4,626 inspections, 320 investigations (278 of which were for the general prohibitions rather than for regulation violations), 130 warnings, 30 directions, 53 prosecutions (all but 2 for general prohibitions), and 43 convictions (all for general prohibitions). See Gavrel, "Prosecutions under CEPA and the fish habitat protection and pollution prevention provisions of the *Fisheries Act*"", note 41, National Enforcement Activities chart.

withdrawn, purportedly for political reasons[46]. Further, Aboriginal rights are frequently litigated through the *Fisheries Act*, including the landmark *Sparrow* case[47], and a series of other B.C. and Québec fishing cases are now set to decide key rights questions in appeals before the Supreme Court of Canada[48].

In contrast, enforcement activity became frequent headline news during the spring of 1995. The May 1994 amendments to the *Coastal Fisheries Protection Act*[49] allowed Canada to proceed with the arrest of the Spanish trawler ESTAI in March 1995. This vessel was fishing in contravention of international conservation measures as regards turbot on the Grand Bank. The dispute with the European Union was resolved in April 1995, resulting in an improved enforcement scheme adopted in September 1995 by the Northwest Atlantic Fisheries Organization[50]. These events led the former Minister (now Newfoundland premier) to push for effective high seas controls and international protection measures for northern cod and turbot, which migrate within Canadian jurisdiction and beyond into international waters.

The United Nations convened a Conference on these issues which resulted in the

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[46] Greg McDade, editorial, 10 *Sierra Legal Defence Fund Newsletter* 2 (July 1995), discussing a number of private prosecutions; and Ian Attridge, *Forest Protection Politics in Sarawak and British Columbia*, Master in Environmental Studies Major Paper, York University, Toronto, Canada (1990), p.10. For a discussion of successful private prosecutions under the Act, and the private recovery under the *Penalties and Forfeitures Proceeds Regulations* of half of the fine levied, see: Kernaghan Webb, *Pollution Control in Canada: The Regulatory Approach in the 1980s*, Administrative Law Series study paper, Ottawa: Law Reform Commission of Canada, pp. 56-58.

[47] *R. v. Sparrow* (1990), [1990] 1 S.C.R. 1075, 3 C.N.L.R. 16.

[48] *R. v. Nikal* (1994), 170 N.R. 382 (S.C.C.), appeal from 33 B.C.A.C. 18; *R. v. Van der Peet* (1994), 170 N.R. 382 (S.C.C.), appeal from 29 B.C.A.C. 209; and *R. v. Adams* (1993), 3 C.N.L.R. 98 (Qué. C.A.), among others.

[49] *Coastal Fisheries Protection Act*, R.S.C. 1985, c.C-33, amended by S.C. 1994, c.14. This Act is proposed to be repealed under a new *Fisheries Act*, Bill C-26, s.206, and its concepts incorporated into this Act's International Conservation and Management Measures sections (ss.30-36). See also *R.* v. *Scheffer* (1990), 96 N.S.R. (2d) 310 (C.A.), where the court held that there is a presumption that Parliament did not intend the CFPA to operate extra-territorially or contrary to international law.

[50] W. G. Doubleday, supra note 40.

Agreement on Straddling and Highly Migratory Fish Stocks[51]. The Agreement requires that conservation measures established outside 200 miles be compatible with those inside, introduces the precautionary approach, provides for binding dispute settlement, and establishes an effective high seas enforcement scheme allowing a State to take control of a fishing vessel flying the flag of another State when the flag State is unwilling or unable to control it[52]. Further enforcement capability could be strengthened by enabling officers to stop and check vehicles, simplifying the regulations to reduce misunderstanding or ignorance of the law, and providing for licence suspensions[53].

The federal and international legal and administrative regime for fisheries is in a state of flux. A new *Fisheries Act* was proposed in Bill C-26 (formerly C-115), with associated implementation changes, and Bill C-98 introduced a related *Canada Oceans Act*[54]. While dealing with their own subject matter, Bills C-26 and C-98 also contained measures to implement the new United Nations *Agreement on Straddling and Highly Migratory Fish Stocks*. In particular, the Bills extend conservation authority to 200 miles, and include provisions for fish stocks which straddle jurisdictions (eg. cod, tuna, but not salmon). Canada had a key role in developing this Convention, following upon its dramatic actions in the spring of 1995 (noted above) and its contributions to the United Nations 1992 Conference on Environment and Development[55]. Canada was also the first State to become party to the *FAO Compliance Agreement*, which prescribes that all high seas fishing should be authorized by the flag State. Accordingly, Canada requires

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[51] *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, 3 August 1995, U.N. Doc. A/CONF 164/33. Canada signed the Agreement on December 4 1995, and intends to ratify it. The Agreement will come into force upon ratification by thirty countries, and will depend upon full implementation by distant water fishing nations and flag of convenience States in order to curb overfishing of straddling and migratory fish stocks.

[52] W. G. Doubleday, supra note 40.

[53] L.J. Gregorich, *Poaching*, supra note 29, at p.74. See Bill C-26, ss.127-128 and 159, regarding proposals for warrant and warrantless searches and licence revocations.

[54] The proroguing of Parliament in early 1996 technically ended the path of all Bills. However, these Bills and others may be substantially reintroduced in the fall of 1996, with new Bill numbers, and then passed into law.

[55] The Conference endorsed such a Convention in chapter 17 of its *Agenda 21* document.

its vessels to be licensed for fishing outside Canadian waters[56].

The proposed new *Fisheries Act* in Bill C-26 reorganizes and makes more clear the existing provisions, and includes separate divisions for habitat conservation (Part II) and enforcement (Parts III and IV). It also authorizes east and west coast fisheries management bodies and simplifies delegated provincial responsibilities by replacing their powers to make variation orders to alter regulations' provisions with direct order powers.

As noted above, the federal government has announced intentions to delegate Department of Fisheries and Oceans involvement in non-coastal fisheries, perhaps transferring this responsibility to the provinces or the federal Department of Environment. While this development appears to be less likely now, it raises issues relevant to the federal role, as discussed in the conclusion to this chapter. With reference to fisheries, British Columbia has growing wealth and a single provincial jurisdiction, in contrast to the much smaller resources and inter-provincial jurisdictional issues on the Atlantic coast. A federal Act does set national standards and allows provincial implementation, but should there be decision-making delegation, this would remove a federal trigger for review under the *Canadian Environmental Assessment Act.* The legal and policy ramifications of such delegation are extensive; the Canadian Environmental Network has recommended that delegation not occur, but that a thorough and public process be undertaken to develop regulations that guide the preventative and planning promise of these provisions[57]. However, it has also been suggested that provincial authority could enable more focused and effective pressure to improve fisheries management, especially since the enforcement record of the Department of Fisheries and Oceans has generally been poor[58].

While it is too early to fully predict the exact nature and interplay of such legal and administrative developments, they are bound to influence both the conservation and sustainable use aspects of aquatic species.

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[56] W. G. Doubleday, supra note 40.

[57] Yves Coriveau and Franklin S. Gertler (Québec Environmental Law Centre), "ENGO Concerns and Policy Options Regarding the Administration and Delegation of Subsection 35(2) of the Fisheries Act, Proposed Subsection 35(3) and Consequences for Federal Environmental Assessment". Discussion Paper for the Department of Fisheries and Oceans, prepared for the Fisheries Act Working Group, Canadian Environmental Network, January 1996.

[58] Patrick McGuiness, Fisheries Council of Canada, personal communication, April 17, 1996.

4. Wildlife Trade Legislation

The key international impetus for wildlife trade legislation comes from the *Convention on the International Trade in Endangered Species of Wild Fauna and Flora* (CITES)[59], which monitors and regulates the international trade in tens of thousands of plant and animal species and their parts and products. This Convention attempts to deal with the international trade in endangered, threatened and "look alike" wildlife species, as designated on one of its three Appendices[60]. CITES requires countries to only import or export such wildlife where they carry with them appropriate permits and a finding that an export will not be detrimental to the survival of the species in the wild.

Ratified by Canada in 1975 and administered in this country by the Canadian Wildlife Service, CITES is implemented through a number of federal statutes related to the transport of wildlife across Canada's international, and to a much lesser degree interprovincial, boundaries. Beyond the Convention's international conservation goals, Canada has its own interests in regulating the import of wildlife, including disease control, monitoring and taxing this traffic, preserving natural biodiversity, and ensuring compliance with other Canadian wildlife laws.

The *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA)[61] is a statute consolidating federal authority over the import, export, transport and related possession of wild animals, plants and their parts and products. The Act, in part, defines plants and animals to be those listed in CITES Appendices. However, these may be modified by regulation to include other species within federal jurisdiction or at the request of a provincial minister responsible for the protection of plants and animals[62].

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[59] (1973), CTS 1975 No. 24, 12 I.L.M. 1085.

[60] Appendix 1: for species potentially endangered by trade, where no commercial trade is allowed, an import and export permit plus a finding of no harm caused to the species are required. Appendix II: for species potentially threatened by trade, where commercial trade is allowed if there is an export permit and a finding of no harm caused to the species. Appendix III: species identified by any country which requires restrictions on use and cooperation from other countries, thereby assisting enforcement of domestic laws. Export permits are required for Appendix III species.

[61] *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*, S.C. 1992, c.52

[62] Sections 2 and 21(1)(c).

Under section 6, such plants, animals, their parts and derivatives may not be imported into Canada where they were taken, possessed, distributed or transported in contravention of any law of a foreign state. They also may not be imported or transported interprovincially without a federal permit or other authorization in the regulations. The application of this section to include support for the laws of other nations helps to bolster the enforcement of these external laws, assists other countries to protect species under CITES' Appendix III, and ensures that Canada does not become a haven for illegally traded wildlife. Where this approach is reciprocated by other countries, Canada's domestic wildlife laws will similarly be supported. Transport out of a province, either without a provincial permit (where required) or in contravention of provincial law, is similarly prohibited by this federal Act[63]. Additional provisions deal with the issuing of permits, the keeping of documents and other records, and provide a considerable range of inspection and enforcement authority as well as appropriate fines and penalties.

Although enacted in 1992, WAPPRIITA has only been proclaimed in force in 1996 because of delayed development and passage of the implementing *Wild Animal and Plant Trade Regulation*[64]. The Regulation essentially rolls over the CITES-related lists of species found under the *Export and Import Permits Act* and Game Export Act[65]. This first Act provided general controls on the import and export of goods, including species listed under CITES and their parts and products[66]. The current Regulation's limited number of listed species enables proclamation and implementation of the Act to proceed after considerable delay, and defers additional implementation costs related to the non-CITES species aspects of the new Act.

A second WAPPRIITA regulation is expected within a year's time, which may expand the list of species beyond CITES. This regulation could also designate ports of entry to focus the monitoring of traffic in wildlife species (as suggested within CITES and present in the *Plant Protection Regulations*), and create a reverse onus provision whereby all products (eg. medicines) labelled as containing Appendix I or other listed

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[63] Section 7.

[64] Proclamation by SI/96-41, and *Wild Animal and Plant Trade Regulation*, SOR/96-263.

[65] *Export and Import Permits Act*, R.S.C. 1985, c.E.-19, and *Game Export Act*, R.S.C. 1985, c.G-1. As Mohr reports, supra note 28, the $25,000 maximum fine under the first Act may be too low to deter the poaching of high value species, such as falcons and bear parts, and thus courts may impose jail terms to compensate for this deficiency. See *R. v. Krey* (1982), 12 C.E.L.R. 105, sentence modified [1983] N.W.T.R. 379, 14 C.E.L.R. 20 (NWTSC).

[66] *Canada Gazette, Part II*, vol. 123, no.9, (April 26, 1989), p.2260.

species would be presumed to contain such ingredients and require appropriate permits[67]. CITES allows a personal effects exemption (although never implemented in Canada), and should a new regulation contain such an exemption, it should do so in a clear and limited fashion.

L.J. Gregorich has identified a number of legal and other measures to ensure effective new legislation[68]. While the new Act addresses the recommended actions concerning wildlife unlawfully taken in another jurisdiction and enhanced penalties, comprehensive regulations and effectively administration are also necessary. The first administrative step will require the Canadian Wildlife Service ((CWS) to be designated as the enforcement authority under WAPPRIITA. As with permitting for game export[69], the federal CITES export permitting role is usually delegated to the provinces. The administrative system has experienced inadequacies, including the linking of agencies, establishing and maintaining consistency in procedures, controls on wildlife shipments, customs officer training and support, inter-agency communication and public awareness[70]. A coordinated, systemic approach to these challenges is thus necessary. The problems may be addressed in part by WAPPRIITA, its implementing regulations, and CWS' enforcement. However, additional personnel, a good intelligence system and covert operations will also be important to effective administration of the new provisions[71].

In addition to these noted statutes, the *Health of Animals Act* and *Plant Protection Act* can play important roles in preventing the importation of pests and diseases through

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[67] Nathalie Chalifour, World Wildlife Fund (Canada), personal communication, May 10, 1996. A reverse onus provision would also support consumer protection principles.

[68] L.J. Gregorich, *Poaching*, supra note 29, at pp.75-76.

[69] Until it was repealed by WAPPRITTA, the *Game Export Act*, R.S.C. 1985, c.G-1, provided for export permits, and a means for provinces to levy game export fees.

[70] See D.J. Hykle, 1988, *An Evaluation of Canada's Implementation and Enforcement of CITES: the Convention on International Trade in Endangered Species of Wild Fauna and Flora.* Unpublished M.E.S. thesis, Dalhousie University, Halifax, Nova Scotia, cited in L.J. Gregorich, *Poaching*, supra note 25, at pp.39-40.

[71] L.J. Gregorich, *Poaching*, supra note 29, at p.42, summarizing government agency comments on a questionnaire.

trade[72]. However, both maintain a narrow focus on agricultural and human health concerns, rather than also relating to the protection of wild plants and animals. The *Customs Tariff Act*[73] also has a long history and prohibits the import into Canada of "live specimens of the mongoose family", "any non-game bird" and the parts and skins of "wild birds, either raw or manufactured". Numerous exceptions to these provisions include dead members of the starling family, domestic birds used for food, feathers of certain species, and birds used for entertainment, in zoos or museums, or for scientific or educational purposes in accordance with the regulations[74].

5. Endangered Species Legislation

Under the *Canada Wildlife Act* (s.8), in cooperation with the province(s) concerned, the Minister may take measures deemed "necessary for the protection of any species in danger of extinction". Besides a reference to "threatened" and "protected" species in the *National Parks Act*[75], this is currently the only federal provision for species at risk in Canada. With a dearth of targeted protection mechanisms in Canada, comprehensive legislation is certainly needed to meet the *Biodiversity Convention*'s clear direction in Article 8(k) to "develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations".

Numerous reports have recommended more specific federal endangered species legislation, and in 1994, the Minister announced a consultation process to develop a "national approach to endangered species", and in 1995 "The Canadian Endangered Species Protection Act: A Legislative Proposal". A new federal statute is intended to be the centrepiece of this approach, and will encompass at least a national committee to list species at risk, development of recovery plans, and protection for identified species on federal lands or which fall clearly within the federal mandate for migratory birds, other transboundary species, fish, and marine mammals.

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[72] *Health of Animals Act*, R.S.C. 1985, c.H-3.3, and *Plant Protection Act*, R.S.C. 1985, c.P-14.8.

[73] R.S.C. 1985, c.C-54.

[74] Section 114, Appendix VII.

[75] *National Parks Act*, R.S.C. 1985, c.N-14. The Act's Schedule II lists certain "threatened" and "protected" species (mostly large mammals), while subsections 8(1.1) and (1.2) provide for enhanced penalties for hunting, disturbing, confining or possessing these species.

Led by six of Canada's largest and most influential conservation organizations, the Endangered Species Coalition is promoting federal and provincial endangered species legislation[76]. The Coalition argues that the federal legislation should extend beyond traditional federal jurisdictions to include a broad mandate for species at risk because these species meet the "national concern" test for invoking the federal government's constitutional "peace, order and good government" powers. With this authority, federal legislation could protect species and habitat on all Canadian lands and waters. The role of the provinces with respect to wildlife management, property, and resource management would still be prominent under this interpretation, but would have to meet a minimum federal standard regarding species at risk. Ducks Unlimited Canada believes the primary focus of efforts to safeguard Canada's wildlife species must be on conserving, restoring and improving their habitat. The federal government can make the most contribution by coordinating, funding and otherwise encouraging habitat programs so that they are integrated, efficient and focused on conservation of ecosystems[77].

Especially given national unity questions, the federal government appears reluctant to press an extended habitat jurisdiction, although there may be movement on this point. Many provinces balk at the suggestion. Consequently, all Canadian jurisdictions may be left to their own discretion as to what methods, if any, they may wish to put in place to protect species at risk[78]. The Coalition has argued that such a discretionary approach, which lacks a minimum national standard, independent and scientific assessment of status, habitat protection, and recovery plans, would be ineffective. The government's "Legislative Proposal" for a Canadian Endangered Species Protection Act has resulted in support for the part of Act dealing with designation and how this will be done, but criticism by academics and the Coalition on the implementation of federal response actions and regulations. In the middle of this government-brokered process, a strong Private Member's Bill (C-238, formerly C-275), the *Endangered and Threatened Species Act*, was deemed to receive Second Reading on March 18, 1996, and may interact with a Government Bill to result in new legislation.

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[76] Canadian Endangered Species Coalition, Comments on "The Canadian Endangered Species Protection Act: A Legislative Proposal", Ottawa, December 1995. The Coalition includes the Canadian Nature Federation, Canadian Parks and Wilderness Society, Sierra Club of Canada, Sierra Legal Defence Fund, Union Québecoise pour la Conservation de la Nature, and the World Wildlife Fund (Canada).

[77] Gary Goodwin, supra note 26.

[78] Environment Canada, 1995, "A National Approach to Endangered Species Conservation in Canada: Discussion Document". Ottawa: Environment Canada. p.20.

Endangered species legislation could also draw resources to, incorporate or modify the operation of two national committees: the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and Recovery of Nationally Endangered Wildlife (RENEW). COSEWIC is composed of federal, provincial and a few non-government representatives who commission an expert to prepare a status report on species of concern, and then make a determination of its risk of endangerment. There are no powers to regulate or make recommendations, and individual jurisdictions can accept or reject the status determination and have the freedom to determine whether species will be given any legal protection. RENEW is similarly a federal-provincial partnership which, in conjunction with others, develops recovery plans for high-risk species, as called for in Article 8(f) of the Biodiversity Convention.

Both committees have had to operate with limited funds and mandates that do not include the full range of biodiversity, and invertebrates, aquatic species and non-vascular plants in particular have suffered. To help address the key financial limitation, the World Wildlife Fund (Canada) administers a substantial Endangered Species Recovery Fund, including government funds. Among other corporations, Canada Life has funded programs to assist the American White Pelican (which appears on its logo), resulting in the bird becoming the only species to have been delisted.

Yet recovery plans have been few and slow to develop, and have tended to focus on individual species rather than on a suite or community of species and their ecosystems[79]. There needs to be an emphasis on total habitat and ecosystem recovery, especially for species groupings needing similar conditions, because the species-by-species approach is costly in time and money and ultimately less effective. While this has been proposed for RENEW activities, it has yet to be adopted[80]. Enhanced interagency cooperation, new partnerships and broader inclusion and recognition of non-government organizations and various institutions through conservation networks could also assist recovery efforts and ultimately prevent species becoming at risk[81].

6. Other Wildlife Legislation, Policies and Agreements

There are numerous other statutes, policies and international agreements relating to wildlife in Canada. Not all of them can be covered here, but the following will attempt

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[79] Jacques Prescott and B. Theresa Aniskowicz, "Helping Endangered Species: COSEWIC and RENEW. Is This the Best We Can Do?", 2(1) *Canadian Biodiversity* 23 (1992).

[80] G.G.E. Scudder, Professor of Zoology, University of British Columbia, personal communication, April 3 1996.

[81] Jacques Prescott and B. Theresa Aniskowicz, supra note 79, at page 28.

to highlight some of these additional measures.

Under the *Indian Act*, the Governor in Council may make regulations and Band Councils may make by-laws for the "preservation, protection and management of furbearing animals, fish and other game on reserves" or the "destruction of noxious weeds"[82]. Numerous land claims, particularly in the north, are creating extensive wildlife management arrangements, as described in the Territories chapter[83].

As part of the federal Green Plan, in 1991 a new *Federal Policy on Wetland Conservation* was announced, with important implications for wildlife and biodiversity values[84]. The objective of this Policy is to "promote the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and in the future". To implement the Policy, the federal government committed to several goals, including: no net loss of wetland functions on all federal lands and waters; wetland enhancement and rehabilitation where there have been critical losses or degradation; securing significant wetlands; and wetland uses which enhance the prospects for sustained and productive use by future generations.

On a more general level, the Policy promotes seven strategies to protect and conserve Canada's wetlands: public awareness and participation; the development and implementation of exemplary management practices and sustainable uses of federal wetlands; the promotion of wetland protection in federally protected areas; partnerships with other agencies and non-governmental organizations; a systematic network of secured wetlands of significance; support for wetlands research and monitor trends; and the promotion of wetlands conservation through international initiatives. The Policy has led to discussions of a 1994 report entitled *Implementing Wetlands Policy: A Guide for Federal Land Managers*, and the private Canadian Sphagnum Peat Moss Association's *Peatland Restoration Policy* and the 1992 *Wetlands Policy Statement* by the Canadian Pulp and Paper Association[85]. The federal government is also responsible for

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[82] *Indian Act*, R.S.C. 1985, c.I-5, ss.73(1) and 81(1).

[83] See also: *Western Arctic (Inuvialuit) Claims Settlement Act*, S.C. 1984, c.24; *Gwich'in Land Claim Settlement Act*, S.C. 1992, c.53; *Nunavut Act*, S.C. 1993, c.28; *Sahtu Dene and Métis Land Claim Settlement Act*, S.C. 1994, c.27; and *Yukon First Nations Land Claims Settlement Act*, S.C. 1994, c.34, among others.

[84] Environment Canada, *The Federal Policy on Wetland Conservation* (Ottawa: Supply and Services, 1991).

[85] Clayton Rubec, "The Evolution of Wetland Policy in Canada", in Clayton Rubec (ed.), *Wetland Policy Implementation in Canada*, Proceedings of a National Workshop (Ottawa: North American Wetlands Conservation Council (Canada), 1994).

implementing the Ramsar *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*, discussed at the end of the Protected Areas section of this chapter.

Other federal policies which may relate to wildlife and especially their habitat include the 1987 *Federal Water Policy*, the *Environmental Quality Policy Framework*, the *Arctic Marine Conservation Strategy*, and the *Federal Policy on Land Use*[86]. The legal and policy role of the Department of Indian Affairs and Northern Development in the Yukon and Northwest Territories should also be noted; discussion of this role is elaborated in Laurie Henderson's chapter concerning the Territories. The *Yukon Act* also gives the Yukon Commissioner in Council, subject to the Act, the power to make ordinances for "the preservation of game in the Territory"[87].

On a somewhat different note, cruelty to animals is seen as offensive to Canadian morality, and thus the *Criminal Code* contains provisions to prohibit extreme acts. Wilful killing, maiming, wounding, poisoning, or injuring of cattle or, without lawful excuse, of "dogs, birds or animals that are not cattle and are kept for a lawful purpose", are offences under the *Code*[88]. Conduct resulting in unnecessary pain, suffering, injury, neglect, fighting or baiting, poisoning or drugging of animals or birds, as well as the release of birds to be shot on liberation and the keeping of a cockpit for fighting birds, are also prohibited[89]. While the language of these sections focuses upon domestic animals, the terms "birds" and "animals" are sufficiently broad to encompass the keeping of wildlife in captivity or their treatment in the wild. Such provisions then provide outer limits for the operation of zoos, ranches and other forms of *ex situ* biodiversity management[90].

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[86] Richard D. Lindgren, "Wetlands", in David Estrin and John Swaigen, *Environment on Trial*, supra note 1, at p.330.

[87] *Yukon Act*, R.S.C. 1985, c.Y-2, s.17(m).

[88] *Criminal Code*, R.S.C. 1985, c.C-46, sections 444 and 445. Interestingly, the wilful killing of cattle is prohibited; while moral vegetarians may applaud, I suspect slaughterhouses are unconcerned. Lawful excuse is available as a defence for pest control officers and others not dealing with cattle.

[89] Ibid, sections 446 and 447.

[90] In another biodiversity-related application, the killing, for humane reasons, of an accidentally wounded dog after attempting to frighten it away from the accused's wildlife refuge was justified, but the court did not determine whether intentional killings of dogs to protect wildlife constituted a lawful justification or excuse. See *R. v. Comber* (1975), 28 C.C.C. (2d) 444 (Ont.Co.Ct.), as discussed by Edward L. Greenspan, *Martin's Annual Criminal Code* (Aurora: Canada Law Book, 1993).

Besides the *Migratory Birds Convention* and Act, certain other international treaty obligations protect migratory and other species of animals. These include the *Agreement on the Conservation of Polar Bears* among arctic nations[91], the *Canada-U.S. Agreement on the Conservation of the Porcupine Caribou Herd*[92], a Minister's Declaration on Monarch Butterflies[93], and various fisheries agreements (see the Sustainable Use section of this chapter). Various agreements concerning Brant Geese (with Ireland), Snow Geese (with Russia), neo-tropical birds (the "Partners In Flight" framework with U.S. agencies), and a technical committee on Grizzly Bears (with U.S. agencies) have also been put in place. Despite these efforts dealing with trans-boundary species, Canada is not among the 41 Parties to the *Convention on the Conservation of Migratory Species of Wild Animals*[94], nor the *Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere*[95]. Ratification of these Conventions could add further support to other nations and provide additional means to advance Canada's biodiversity goals.

Canada has taken particular interest and leadership in advancing cooperation and programs for the polar regions. Established by Ministerial declaration in 1991, the "Arctic Environmental Protection Strategy" (AEPS) has led to the adoption by the eight arctic nations of a 1992 Workplan, and in March 1996, the ministerial "Inuvik Declaration on

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[91] (1976), CTS 1976 No.24, 13 I.L.M. 13.

[92] (1987), CTS 1987 No.31. See N.D. Bankes, "Migratory Caribou Convention", 18 Can Y.I.L. 285 (1980). This herd could be devastated by oil development in significant calving grounds on Alaska's north slope, but to date U.S. President Clinton has vetoed U.S. Congress attempts to allow such development.

[93] This Declaration was made at Oaxaca, Mexico, on October 12 1995 by the Environment Ministers of Canada and Mexico, with designation of three sites in Ontario within National Wildlife Areas or National Parks, five areas in Mexico (and the U.S. examining potential sites as well). Nickolas Coghlan and Jane Austin, Foreign Affairs and International Trade, personal communication, May 23 1996, and Environment Canada, "Minister Announces the Designation of Three Monarch Butterfly Reserves", Press Release (Ottawa, November 3 1995).

[94] (1979), 19 I.L.M. 11. This Convention would raise constitutional questions in Canada.

[95] (1940), 161 UNTS 193. Currently, there are 19 Parties to this Convention, including the United States. This Convention is only open to Organization of American States (OAS) members, and Canada more recently became a member by adopting the OAS Charter in 1990 (CTS 1990 No. 23).

Environmental Protection and Sustainable Development in the Arctic"[96]. The Inuvik Declaration endorsed the Programme on Conservation of Arctic Flora and Fauna (CAFF)'s work towards a Circumpolar Protected Area Network, circumpolar Murre Conservation Strategy and Action Plan, and Co-operative Strategy for the Conservation of Biodiversity in the Arctic Region. In addition to these efforts, CAFF's report to the Ministers at Inuvik also documented progress on habitat, species and biodiversity conservation, the integration of indigenous peoples and knowledge, and program management, with potential for evolution into an Arctic Council and an Arctic Convention involving biodiversity. Relating to the other end of the globe, Canada has acceded to the *Antarctic Treaty*[97], and has ratified the *Convention on the Conservation of Antarctic Marine Living Resources*[98] and the *Convention for the Conservation of Antarctic Seals*[99].

7. Nonindigenous, Exotic Species Introductions

The introduction of animal, plant and microbial species that are not indigenous to Canada's ecosystems is becoming an increasing problem for biodiversity in this country. Where these introductions have occurred due to deliberate or inadvertent human action, they are termed "alien" species. Some species have made important contributions to Canada's industry and economy, such as many agricultural crops originally from other parts of the world. Nonetheless, some introductions have had devastating impacts upon indigenous wildlife (or raised such fears, such as from game ranching or fish farming), alter ecological functionings, and severely affect economic activities[100]. Introduction examples include sea lamprey, zebra mussels, ruffe, Eurasian milfoil, purple loosestrife, and the now ubiquitous starlings and house sparrows.

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96 Jeanne Pagnan, Canadian Wildlife Service, personal communication, May 23, 1996.

97 (1959), CTS 1988 No.34.

98 (1980), CTS 1988 No. 37, with an Annex.

99 (1972), CTS 1990 No.40.

100 Environment Canada, *The State of Canada's Environment*, (Ottawa: Minister of Supply and Services Canada, 1991), pages 6-10 to 6-11. Also see chapter 8 on "Exotic and Expanding Species" in: Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment for Environment Canada* (Ottawa: Ministry of Supply and Services Canada, 1994).

Article 8 h) of the Biodiversity Convention calls on Parties to prevent the introduction of, control or eradicate alien species which threaten ecosystems, habitats or species. The Convention's obligations to regulate, manage and take measures to avoid adverse processes, activities and impacts from the use of biological resources also supports this approach[101]. The *Canadian Biodiversity Strategy* addresses this through Strategic Direction 1.81 e), which calls for taking:

> all necessary steps to prevent the introduction of harmful alien organisms and eliminate or reduce their adverse effects to acceptable levels by: ... e) ensuring that there is adequate legislation and enforcement to control introductions or escapes of harmful alien organisms, and improving preventative mechanisms such as screening standards and risk assessment procedures

Similar directions are mentioned for harmful living modified organisms (see the Biotechnology section, below), for cooperative treatment of trans-boundary species and pest control strategies to avoid non-target species at risk[102].

A coordinated national mechanism to scrutinize any proposed introductions was identified as a priority by the Biodiversity Science Assessment Team[103]. Environment Canada recently began a process involving other departments, the provinces, interested organizations and industries to develop a national position or strategy to address these concerns. The Department of Fisheries and Oceans has several regional Science groups concerned with alien introductions through the dumping of ballast waters from cargo ships, and the Canadian Coast Guard's guidelines for foreign and domestic ships entering the Great Lakes may soon be harmonized with similar U.S. Coast Guard regulations[104].

Although intended to primarily deal with animal and human diseases, and less the presence of the animals themselves, a few statutes provide means to scrutinize the introduction of animals to new locations in Canada. The *Health of Animals Act* provides for the control of animal diseases and related toxic substances by notification, prohibitions and regulation of the import, export, possession and movement within

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101 Articles 8(l) and 10(b).

102 Strategic Directions 1.83 (a), and 1.12 and 1.42.

103 Biodiversity Science Assessment Team, supra note 100, at page 149.

104 W. G. Doubleday, Director General of Fisheries and Oceans Science, Department of Fisheries and Oceans, personal communication, May 15 1996.

Canada of animals and animal food[105]. The Act further deals with infected places and control areas, inspections, disposal and treatment, as well as animal markets, zoos, game farms, humane treatment, and birds in captivity. Under *Fisheries Act* authority, the *Fish Health Protection Regulations* enables fish health officers to inspect and issue certificates for the importation or transfer of wild or cultured fish, with a view to preventing the spread of listed fish diseases[106]. Under the *Department of National Health and Welfare Act* and associated regulations, human pathogens may be imported for scientific research, and the safe storage and use of such microbes is closely regulated[107]. The *Migratory Bird Regulations* are more specific to addressing exotic species because of their ecological impacts, and prohibit the introduction into Canada for purposes of sport, acclimatization or release from captivity any bird "not indigenous to Canada", except with consent of the Director in writing[108].

Concerning plant pests and diseases, and long before the Biodiversity Convention, the *International Plant Protection Convention* was approved by the Food and Agriculture Organization (FAO) conference in 1951 and ratified by Canada[109] in 1953. A new revised text was approved in 1979, but has yet to come into force[110]. The Convention makes the FAO the focus for coordinating a world-wide system to prevent the spread of plant pests and diseases through international commercial trade and otherwise. The Convention, Article IV, calls on parties to disseminate information and conduct research into plant pests and diseases and their control, and to establish an official plant protection organization to inspect, disinfest or disinfect, and to issue "International Phytosanitary Certificates" for, plants and plant products.

In a 1985 FAO Legislative Study, Canada was considered to have substantially implemented key legislative aspects through the *Plant Protection Act*[111], other general quarantine measures associated with international trade, as well as making

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105 *Health of Animals Act*, S.C. 1990, c.21 (R.S., c.H-3.3).

106 *Fish Health Protection Regulations*, C.R.C. 1978, Vol.VII, c.812.

107 *Department of National Health and Welfare Act*, R.S.C. 1985, c.N-10.

108 C.R.C. 1978, Vol. XI, c.1035, s.33.

109 *International Plant Protection Convention*, CTS 1953 No.16.

110 Canadian Environmental Law Association, *The Environmental Implications of Trade Agreements*, prepared for the Ontario Ministry of Environment and Energy (Toronto: Canadian Environmental Law Association, 1993), p.330.

111 *Plant Protection Act*, R.S.C. 1985, c.P-14.8 (S.C. 1990, c.22).

administrative and reporting arrangements on plant pests and diseases to the FAO[112]. The *Plant Protection Act* provides that a person shall not move, grow, raise, capture or produce pests, or a thing infested with pests, subject to the Regulations[113], and includes other plants within the definition of "pest". The Act and its procedures will supersede the impending regulations to control the introduction of biotechnology under the *Canadian Environmental Protection Act* (see the discussion under Genetic Diversity and Biotechnology).

8. Wild Plant Protection

Besides controlling plant pests and diseases and establishing protected areas (as discussed above and in the subsequent section), there are few direct federal measures affecting wild plants. To match its constitutional responsibilities for trans-boundary species[114], most federal legislation has focused upon migratory species or other international responsibilities. The stationary nature of plants have generally precluded them from federal coverage, except as they are transported by human activity (and thus governed by statutes such as WAPPRIITA). However, plants are included in the *Fisheries Act*[115], in the amended, extended application of the *Canada Wildlife Act*[116], and in proposals for new federal endangered species legislation. This may indicate a new willingness to apply federal efforts to this aspect of biodiversity, especially since habitat -- primarily plants -- is key to the survival of animals within federal jurisdiction.

9. Ex Situ Animal and Plant Collections

A few statutes concern the *ex situ*, or "out of place", holding of animals and plants. Most of these Acts strive to reduce unintended impacts of non-conservation activities, although a few provide for direct conservation efforts, as also required under Article 9 of the *Biodiversity Convention*. As noted above, the *Health of Animals Act* and *Plant Protection Act* provide for disease and pest control while species are in possession, and accordingly regulate facilities where these species are held. Under the *Fisheries Act*, the

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112 Canadian Environmental Law Association, *The Environmental Implications of Trade Agreements*, supra note 110, at pp. 324-325 and 331-332.

113 *Plant Protection Regulations*, SOR/95-212.

114 Plants growing in the soil are considered part of the real estate at common law, and thus also fall within the ambit of provincial jurisdiction over property.

115 Section 44.

116 Section 2(4).

Marine Mammals Regulations are concerned with the regulation of the capture and exhibition of live marine mammals, while the *Fish Health Protection Regulations* govern cultured fish, the movement of fish and fish diseases.

The *Museums Act* establishes a number of national museums, including the Museum of Nature with a mandate to "collect natural history objects", "maintain its collection by preservation, conservation and restoration", and dispose, exchange or display its collections[117]. Research, education and provision of expertise are also prominent in this museum's legal mandate. This is the clearest and most detailed expression of an *ex situ* mandate as it relates to the Convention, but departmental statutes may also provide broad authority for retaining *ex situ* collections (eg. for agriculture or forestry). Nonetheless, these mandates are largely based upon use of the species for other purposes but can be adapted to assist in conservation efforts, especially to support reintroductions.

Federal Wildlife and Wild Plant Recommendations

1. **Enact a new *Oceans Act* and *Fisheries Act*, while maintaining strong federal habitat conservation measures and developing associated regulations under the latter.**

2. **Better coordinate, staff and more rigorously conduct wildlife enforcement, especially given the extensive new authority granted in recent wildlife statutes.**

3. **Adopt further regulations under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) to include non-CITES species, designate wildlife traffic ports of entry, and create a reverse onus for products labelled as containing listed species.**

4. **Designate the Canadian Wildlife Service as the enforcement authority under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*.**

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117 *Museums Act*, S.C. 1990, c.3 (R.S., c.M-13.4), s.12.

5. **Enact federal endangered species legislation, which includes protection for habitat and comprehensive implementation.**

6. **Pursue ratification of the 1979 *Convention on the Conservation of Migratory Species of Wild Animals*, and the 1940 *Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere*, and continue Canadian involvement and leadership in international biodiversity initiatives.**

7. **Utilize, adapt and coordinate the *Health of Animals Act*, *Plant Protection Act*, WAPPRIITA and other legislation to better control exotic species introductions.**

C. PROTECTED AREAS

While the above section dealt with wildlife, and indirectly its habitat, protected areas emphasize the conservation of habitat. The focus within these areas is often on a larger scale, where boundaries may encompass wider ecological processes and a number of ecological units and habitats. Federal involvement in protected areas stems from several responsibilities, including areas of national significance, agreements with the provinces for federal management, and the implementation of international commitments for migratory wildlife that require joint federal and provincial action. The scope of this federal authority for protected areas is outlined as follows[118].

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[118] See generally Kevin McNamee, "Preserving Ontario's Natural Legacy", pp.271-321, in David Estrin and John Swaigen (eds.), *Environment on Trial*, supra note 1.

It is well recognized that protected areas, in and of themselves, will not succeed ecologically to sustain biodiversity over the long term[119]. Nonetheless, they provide substantial cores for a natural heritage system and are complemented by other approaches to conserve and sustainably use the surrounding landscape matrix. Consequently, while this section will focus on particular designations, other specific federal efforts should be acknowledged. Elsewhere, this chapter references additional approaches, including federal land acquisitions, income tax incentives, and agreements and policies. These methods further support the conservation and sustainable use of habitat within and beyond these designations.

1. National Wildlife Areas and Migratory Bird Sanctuaries

National wildlife areas are established under the authority of the *Canada Wildlife Act* to promote wildlife research, interpretation and the conservation of wildlife habitat. For these purposes, the Minister may administer public lands or otherwise acquire lands or interests, may enter into agreements with provincial or municipal governments, private landowners or organizations, and may alter the boundaries of national wildlife areas[120]. However, such areas may only be established where there is provincial agreement, the measures must not be inconsistent with provincial law, and provincial governments must approve any agreements or the acquisition of lands for the purposes of wildlife other than migratory birds[121]. Extractive activities are not precluded, although the Minister may only dispose of lands when, or permit activities which are, compatible with wildlife research, conservation and interpretation[122]. The *Wildlife Area Regulations* implement these broad objectives by controlling or preventing access, and by directing research, management and visitor activities[123].

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119 For example, Reed F. Noss, "The Wildlands Project Land Conservation Strategy", *Wild Earth (Special Issue) 10-25 (1992); S. Woodley, J. Kay and G. Francis (eds.),* Ecological Integrity and the Management of Ecosystems, Proceedings of a Workshop sponsored by the Heritage Resources Centre, University of Waterloo, and Canadian Parks Service, Ottawa, Ontario (St. Lucie Press, 1993); and Reed Noss, *Maintaining Ecological Integrity in Representative Reserve Networks* (Toronto: World Wildlife Fund Canada, World Wildlife Fund - United States, 1995).

120 Supra note 16, sections 4 to 9.

121 Sections 4(2)(c), 7(2) and 9(1).

122 Section 9.

123 C.R.C., Vol. 18, c.1609, p.14355, as amended.

In a similar vein, migratory bird sanctuaries are established under the *Migratory Birds Convention Act*[124]. These sanctuaries may be established only where the public or private landowner consents, and only where the site remains essential to the protection of migratory birds. As noted earlier, regulations under the Act prohibit hunting, the disturbing or the taking of eggs or nests, possession of birds or nests, or the pollution of habitat without Ministerial authorization[125]. Permits on federal land are issued by the Minister of the Environment, and on provincial land by the provincial "Chief Game Officer". Nonetheless, permits for mineral exploration and development technically may still be granted. Consequently, these areas fall outside of the minimum protection standard of no industrial activities (eg. mining, logging, hydroelectric and oil and gas development) established by the World Wildlife Fund (Canada)'s Endangered Spaces Campaign[126].

The legal basis of national wildlife areas and migratory bird sanctuaries provides flexible, public and also private methods to establish some protection for wildlife falling within federal jurisdiction. This is a positive contribution to the suite of federal protected areas, and avoids some of the delays and missed opportunities of the more strictly protected and publicly-owned system of national parks. Both designations could be more widely used, given their potential to act as buffer areas around or links between more strictly protected areas such as national or provincial parks[127].

Despite some flexible powers, both Acts bind the provincial and federal Crown to follow the Acts and their regulations. Further, the Minister of the Environment is explicitly directed by the *Migratory Birds Convention Act* to amend by order the Act's schedule to incorporate any amendment to the Convention "as soon as is practicable" after such amendment takes effect, and to table within 15 days and put on for debate within 20 days such an amendment[128]. This stands in stark contrast to the wide governmental discretion, and frequent delays in development, common to Canadian biodiversity legislation.

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124 Supra note 20, section 4(2)(f), and set out in the Schedule to the *Migratory Bird Sanctuary Regulations*, C.R.C. 1978, Vol. XI, c.1036.

125 *Migratory Bird Sanctuary Regulations*, ss.3(2) and 4.

126 See World Wildlife Fund (Canada), *Endangered Spaces Progress Report, 94-95* (Number 5) (Toronto: World Wildlife Fund (Canada)), pp.14 and 46.

127 Kevin McNamee, *Preserving Ontario's Natural Legacy*, note 118, at pp. 278-279. See also note 152.

128 Subsections 12(2) and (3).

2. National Parks Act

National parks are one of the oldest forms of, and most prominent, federal protected areas across the country. Indeed, in a 1995 Environics poll, national parks finished a close third behind the flag and the national anthem as the most important symbols of Canada's national identity[129]. They are thus most capable of raising public awareness and exposure to issues concerning the need for and benefits of protected areas.

The *National Parks Act*, its regulations and policy provide a comprehensive framework for designating and managing such areas[130]. National parks are legally established through a process of identifying candidate sites, public notice and consultation as required under the Act, agreement with the province or territory concerned, and then addition to the list of national parks either through legislative amendment to the Act's Schedule, or through another federal statute[131].

Both the national park and national marine park systems are established within the context of Parks Canada's National Parks System Plan[132]. The goal of the Plan is to establish a representative park in each one of the 39 terrestrial and 27 marine regions. Given the small size and threats to the ecological integrity of some national parks, particularly in Ontario, existing parks may not be of a sufficient size to truly represent these regions[133]. There are also significant limitations and challenges in the process to acquire new parkland[134].

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129 James Deacon, "The Crown Jewels", *Macleans*, 1 July 1995, p.16.

130 R.S.C. 1985, c.N-14, as amended by S.C. 1988, c.48.

131 Ibid, and see the *Western Arctic (Inuvialuit) Claims Settlement Act*, S.C. 1984, c.24, s.7, and the *Mingan Archipelago National Park Act*, S.C. 1984, c.34.

132 Environment Canada, Parks, *National Parks System Plan* (Ottawa: Minister of Supply and Services Canada, 1990).

133 Kevin McNamee, *Preserving Ontario's Natural Legacy*, supra note 118m at p.276.

134 Rosemary E. Nation, "The Acquisition of National Parkland: A Challenge for the Future", 7 *Dalhousie L. J.* 261 (1983). See also the long-running legal battle to evict former residents from their expropriated lands in Kouchibouguac National Park: *Canada (A. G.)* v. *Vautour* (1980), 28 N.B.R. (2d) 434, 63 A.P.R. 434 (C.A.); *Vautour* v. *New Brunswick* (1985), 62 N.B.R. (2d) 142, 161 A.P.R. 142 (C.A.); and also (1985), 62 N.B.R. (2d)

National park reserves may be established under the Act, especially for areas in the Territories pending the resolution of land claims[135]. Land withdrawals may enable further study and resolution of issues with local communities. Provincial wildlife, trespass and other statutes may be used as interim measures in the land acquisition and negotiation process[136]. Local communities' participation in "traditional renewable resource harvesting activities" within national parks may be authorized by the Minister. This provides a mechanism for respecting Aboriginal treaty rights to hunt and fish within these areas, and accommodates local practices and thereby facilitates park establishment[137].

Section 4 of the Act states that national parks are "dedicated to the people of Canada for their benefit, education and enjoyment" and "shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations"[138]. Adding more specific direction to the "unimpaired" requirement, wilderness areas may be designated by Cabinet, and the Minister may not authorize any activity within these areas which "is likely to impair the wilderness character", except basic user, safety and

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162, 161 A.P.R. 162 (C.A.). Expropriation has also led to other legal challenges in P.E.I.: *Shaw* v. *Canada* (1980), [1980] 2 F.C. 608 (T.D.).

135 National Park Reserves are also designated in Pacific Rim and Gwaii Haanas in British Columbia, and in the Mingan Islands, Québec.

136 See Kevin McNamee, "Preserving Ontario's Natural Legacy", supra note 118, at p.274.

137 Ibid, sections 5(7) and 7(1)(ee). Section 5(7) currently authorizes such arrangements to accommodate the Robinson-Huron Treaty rights in Pukaskwa National Park, near Thunder Bay in Ontario, and for the non-Aboriginal community in Newfoundland's St. Barbe and Humber West districts.

138 This statement has been considered to be among the best examples of the "public trust doctrine" in Canada, which holds that lands are held in trust by governments on behalf of their citizens, and thus are not subject to absolute discretion. Canadian common law has examined the notion of public trust primarily in terms of navigation, and on more limited terms than that evolving in the United States. Nonetheless, note the success of the Wood Buffalo case (if not the entire argument), infra note 146, and its unsuccessful precursor *Green* v. *Ontario* (1984), [1973] 2 O.R. 396, 34 D.L.R. (3d) 20 (H.C.J.) in relation to a similar statement in the Ontario *Provincial Parks Act.*

administration facilities[139]. A significant addition in the 1988 amendments to the Act, section 5(1.2) further prescribes that:

> Maintenance of ecological integrity through the protection of natural resources shall be the first priority when considering park zoning and visitor use in a management plan.

Industrial development is not specifically prohibited in the Act, but the regulations generally prohibit logging, mining and hunting within national parks. No new ski developments are allowed within national parks except through an amendment to the Act (an elaborate procedure), and existing ski facilities are circumscribed by a boundary[140]. This provision is particularly significant in Banff National Park, where development and ski facility expansion proposals have been controversial and subject to litigation. Penalties are gradated to correspond to the severity of the offence, particularly the maximum of a $150,000 fine or six months imprisonment for hunting or disturbance of protected species identified on a Schedule to the Act[141]. The defences of self defence and necessity may succeed in cases of bear or similar attacks[142]. However, the Act does not make the capture of invertebrates illegal: a recent trio of butterfly poaching cases in the U.S. revealed that thousands of the insects were taken within Canada's national and provincial parks, and confiscation of captured butterflies and prosecution

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139 Ibid, subsections 5(8), (9) and (10).

140 Ibid, s.8.1 for townsite boundaries, and s.8.3(2) for downhill ski facilities.

141 Ibid, s.8. See elaboration, supra note 75. Much higher and gradated fines were put in place in the 1988 amendments, up from the maximum fine of $500 in existence since 1919. In *R.* v. *Mota* (1991), 117 A.R. 42, 2 W.A.C. 42 (concerning a repeat market and trophy poacher fined $10,000 or six months imprisonment), the Alberta Court of Appeal commented that the Act's new penalties are "moderate", Mr. Mota's sentence was "fit and appropriate" (and suggested civil actions to enjoin him from future use or possession of firearms), and "wildlife must be accorded the priority of a treasured national heritage - which it is". The Court at page 44 also urged Parliament to consider "increasing the penalties, both maximum and minimum, for repeat offences of this kind that occur in our National Parks".

142 *R.* v. *Slovack* (1980), [1980] 1 W.W.R. 368 (Prov. Ct.). Here, Mr. Slovack shot a bear about to enter his house, after ravaging his car the day before. The court held that these were strict liability offences, and the self defence and necessity defences were available and proven.

were prevented due to these limitations in the Act[143]. Stronger enforcement actions and powers have been recommended, including broader arrest and search powers and anticipatory compliance measures, to ensure effective protection of Canada's national parks[144].

In the past, national park policy and administration has led to considerable erosion of biodiversity values when they have come in conflict with tourism and extraction activities[145]. Together, the "unimpaired" dedication and "ecological integrity" management plan clauses provide strong legislative direction for protection of biodiversity within national parks. A recent court case has also helped reinforce this priority, and found existing logging agreements within a national park to be "invalid and unauthorized" by the Act or Regulations[146]. A case involving the expansion of the

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143 Alanna Mitchell, "Butterflies aren't free", *The Globe and Mail*, June 3 1995, citing U.S. prosecutions of Richard Skalski, Thomas Kral, and Marc Grinell. On a non-park issue, the article also mentions a Canadian conviction and $10,000 fine against Kenneth Thorne for the illegal import and export of Asian butterflies.

144 L.J.Gregorich, *Poaching*, supra note 25, at pp.25 and 73. But see *R.* v. *Matson* (1987), 82 A.R. 86 (Prov. Ct., Crim. Div.), where random stop checks were not authorized under the Act, and even so, for offences lesser than drunk driving, they would violate the *Charter of Rights and Freedoms*, sections 8, 9 and 10(b). For judicial comment on procedural fairness in the use of order powers (to remove from and destroy dogs in a national park), see: *Skinner* v. *Canada (Minister of Environment)* (1986), 10 F.T.R. 67 (F.C.T.D.); and *Perry* v. *Canada (Minister of Environment)* (1982), CCH DRS 1984 P90-468 (F.C.T.D.).

145 Samuel Silverstone, "Canadian Park Systems As Open Space: How Much Protection?", 22 *Chitty's L. J.* 324 (1974). Ian Rounthwaite, "The National Parks of Canada: An Endangered Species?", 46 *Saskatchewan L. Rev.* 43 (1981). Under emphasis on maintaining biodiversity in national parks remains a problem: W. D. Newark, "A Land-Bridge Island Perspective on Mammalian Extinctions in Western North American Parks", 325 *Nature* 430 (1987).

146 See *Canadian Parks and Wilderness Society v. Canada (Minister of Environment)* (1992), 55 F.T.R. 286 (FCTD), regarding the invalidation of a 1983 permit to log in Wood Buffalo National Park. This was a consent judgement, whereby the government did not defend against the action. Concerning the scope of administrative action, an older case determined that perpetual renewal clauses in Jasper National Park leases were authorized under early Regulations and were thus enforceable: *The Queen*

Sunshine ski resort held that cumulative assessment of impacts must be undertaken, rather than a series of studies examining individual projects when they are indeed part of a larger scheme[147]. At the leading edge of scientific research, ecological integrity assumes and requires biodiversity conservation within protected areas, as well as surrounding and between them. The identification and protection of indicator species is needed to accomplish this goal of ecosystem health[148].

The February 27 1996 Throne Speech announced that the administrative agency for national parks, Parks Canada, will become a separate agency. This will allow more creative revenue generation and other activities, within the parameters of its policies and legislation. Parks Canada is also guided by its March 1994 document, *Parks Canada - Guiding Principles and Operational Policies*[149].

3. National Marine Conservation Areas

National Marine Conservation Areas (NMCAs) may be established under the *National Parks Act*[150], although only a few have been established to date. One of the important differences between national parks and NMCAs is that the commercial use of resources is permitted within the latter, including fishing and ship travel. A number of federal statutes may be brought to bear on the regulation of activities within NMCAs, and the use of a broad range of provisions for marine protected areas has been recommended[151]. Some national parks may extend their terrestrial boundaries to

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v. *Walker* (1970), 11 D.L.R. (3d) 172 (S.C.C.). A park Superintendent was also held incapable of varying the Regulations through making an order restricting aircraft landings: *R.* v. *Tilroe* (1990), 115 A.R. 216 (Prov. Ct.).

147 Harvey Locke and Stewart Elgie, "Using the Law to Protect Wild Places", in: Monte Hummel (Gen. Ed.), *Protecting Canada's Endangered Spaces: An Owner's Manual*, (Toronto: Key Porter Books, 1995), pp.42-51.

148 Monique Ross, Research Associate, Canadian Institute of Resources Law, personal communication, April 2, 1996.

149 Parks Canada, *Parks Canada - Guiding Principles and Operational Policies* (Ottawa: Minister of Supply and Services Canada, 1994).

150 See S.C. 1988, c.48, s.1(1) "park"; and s.17, which adds a new section 10 to S.C. 1974, c.11.

151 For example, the *Fisheries Act*, R.S.C. 1985, c.F-14, and *Canada Shipping Act*, R.S.C. 1985, c.S-9; see the recommendations in Robert Graham et al., "The Protection of Special Marine and Coastal Areas", In: David VanderZwaag (ed.), *Canadian Ocean Law and Policy*, supra note 35.

include a marine component, thereby accomplishing a coordinated land and water management structure[152].

Marine protected areas may be established under the newly amended *Canada Wildlife Act*[153] within the internal waters, territorial sea, or any fishing zone prescribed under the *Territorial Sea and Fishing Zones Act*[154]. The Minister may provide advice on research, conservation and interpretation, and carry out conservation measures in such marine protected areas. However, unlike the *National Parks Act*'s provisions for terrestrial parks, no further conservation priorities or program directions are given in the Act. A more comprehensive *Canada Oceans Act* has been introduced as Bill C-98, which includes broad provisions for the designation and establishment of marine protected areas[155]. Section 35 of the Bill enables the establishment of such areas for the purposes of conserving and protecting: commercial and non-commercial fishery resources, including marine mammals, and their habitats; endangered or threatened marine species and their habitats; unique habitats; marine areas of high biodiversity or biological productivity; and other marine resources or habitat for which the Minister of Fisheries and Oceans is responsible. Along similar lines, fish sanctuaries may be designated under the *Fisheries Act*, and through variation orders, fishing prohibited in sites such as spawning and nursery grounds[156].

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152 See Table 7.4, footnote d, in Environment Canada, *The State of Canada's Environment*, note 100, p.7-11. The *Migratory Bird Convention Act*'s provisions for Sanctuaries have also been used to accomplish this arrangement: Clayton Rubec, Canadian Wildlife Service, personal communication, February 19, 1996.

153 S.C. 1994, c.23, sections 4(1) and 8 [sections 2(1) and 4.1 of the consolidated Act].

154 *Territorial Sea and Fishing Zones Act*, R.S.C. 1985, c.T-8, s.4.

155 However, the Bill does not apply within lakes and rivers, including the Great Lakes, and thus does not facilitate protected areas in these freshwater ecosystems.

156 Supra note 33, section 43, in particular paragraphs (b) and (i). Also see the regulations, eg. *Ontario Fisheries Regulations, 1989*, SOR 89-93, p.1232, 15/2/89, section 5, as amended.

The *National Marine Parks Policy* was released in 1986 by the Department of Environment[157], and was revised in 1994 by the *National Marine Conservation Areas Policy*[158]. Parks Canada has also developed a system plan for National Marine Conservation Areas (NMCAs). These are to be managed as models for sustainable use (eg. sustainable, traditional fishing, but not mining, oil and gas exploration and extraction, or ocean dumping), and contain smaller zones of high protection for biodiversity and associated ecological processes[159]. Establishment of National Marine Conservation Areas involves identification of representative areas, selecting potential areas, assessing feasibility, negotiating an agreement with the appropriate territories and provinces, and final establishment under legislation; National Marine Conservation Area Reserves may also be established in locations subject to Aboriginal land claims[160]. In the absence of detailed legislation, these Policies and Plans have provided the core direction for National Marine Conservation Areas to date.

The establishment of national marine parks is not an easy task. It should not be limited to the *Green Plan* targets, since this process will be slow and take too long to implement[161]. Because provinces have jurisdiction over many associated land-based activities and inland provinces have been delegated fisheries responsibilities, most marine and freshwater protected areas will require memoranda of understanding with provincial agencies to fully and effectively implement them[162]. Integrated coastal zone

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157 Environment Canada, Parks, *National Marine Parks Policy* (Ottawa: Supply and Services, 1986). It establishes policies for: the system, identification and selection of sites, park establishment, resource conservation and management, fishing, marine transportation, environmental assessment, visitor activities and information, visitor services and facilities, management planning, and research.

158 See Parks Canada, supra note 149.

159 Parks Canada, *Sea to Sea to Sea: Canada's National Marine Conservation Areas System Plan* (Ottawa: Minister of Supply and Services Canada, 1995).

160 Ibid, pages 12 to 13.

161 Kevin McNamee, *Preserving Ontario's Natural Legacy*, supra note 118, at p.277.

162 Ibid. Nonetheless, the federal government will have clear authority to establish marine protected areas under the new Canada Oceans Act, once it is passed into law. See *R.* v. *Crown Zellerbach Canada Ltd.* (1988), 3 C.E.L.R. (N.S.) 1 as the leading case on federal-provincial jurisdiction concerning marine waters and matters of "national concern".

management measures and enhanced restrictions on ocean dumping will also be necessary to effectively control on- and off-shore developments and pollution sources affecting these sites, potentially through an amended *Canadian Environmental Protection Act* or new Oceans Act[163]. Consequently, close cooperation and formalized legal arrangements are required between federal departments and provincial and territorial governments to make marine protected areas effective for conservation purposes.

4. Canals and Canadian Heritage Rivers

The *Department of Transport Act* gives the Minister of Transport the "management, charge and direction of all Government railroads and canals"[164]. The general use and operation of canals is governed by the *Canal Regulations*, but the *Historic Canal Regulations* transfer administration of eight historic canals (with only 7 open to navigation) to Parks Canada[165]. Under the latter Regulations, an Historic Canals superintendent may restrict public use to protect cultural or natural resources, wildlife, their eggs and habitat, and permits are required to remove, alter or destroy cultural or natural resources[166]. Parks Canada's Operational Policies and its 1994 *Policy on Historic Canals* also provide a framework for conserving their resources, including their biodiversity. Given the extent of the watersheds feeding canals, this authority has been used cooperatively with other agencies and interests to develop management plans which incorporate ecological planning and biodiversity measures (eg. on the Rideau and Trent-Severn waterways). The proposed new *Fisheries Act* also makes mention of fishways and canals[167].

A Canadian Heritage Rivers designation gives national recognition to important Canadian rivers, and helps ensure they are managed to conserve and interpret the natural and cultural heritage they represent. This is a cooperative designation which is

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163 See *The Canadian Environmental Protection Act: An Agenda For Reform*, A Submission to the Standing Committee on Environment and Sustainable Development on behalf of the non-governmental groups listed inside the front cover (November 1994), pp.15-18.

164 *Department of Transport Act*, R.S.C. 1985, c.T-18, s.7(1).

165 *Canal Regulations*, C.R.C. 1978, Vol. XVIII, c.1564, and the *Historic Canal Regulations*, SOR/94-580. All of these canals are also designated as Historic Sites under the *Historic Sites and Monuments Act*, R.S.C. 1985, c.H-4. Rosemary Bray, Parks Canada, personal communication, June 14 1996.

166 Ibid, ss. 4(2) and 11(2).

167 Bill C-26, s.26.

derived from provincial or territorial nominations to a national Canadian Heritage Rivers Board, followed by formal designation within three years if a management plan has been prepared. Recognition of a Canadian Heritage River carries with it no legal status. It leaves the choice of rivers, ownership, and management to the nominating agencies. Nonetheless, the profile of the designation carries with it the message that the river is significant, and provides an opportunity to draw together enhanced resources and access to the country's river management expertise.

Since a management plan is required within three years, agencies will put priority on and resources towards developing and completing such plans. In addition, Canadian Heritage Rivers policy requires the designated boundaries to encompass "ecosystem components required for the continuity of species, features and objects protected by the river"[168]. The boundaries must be of sufficient size to protect the river, and the maintenance of water quality is critical. Where heritage values are significantly affected, the chair of the Board can express concerns to the Minister responsible. These issues may be identified during the term of the management plan, or during the prescribed ten-year review. Should such heritage values be affected to the point where they disappear, the Board may revoke the Canadian Heritage Rivers designation, drawing public attention to inadequate management and lost prestige.

One commentator notes that the Canadian Heritage Rivers program needs to be made more accountable to and have access to the perspectives of the broader public through including non-government organization representatives on its national Board[169]. In addition, where commitments are made, these should be enshrined into existing or new legal mechanisms[170]. These issues may be addressed in part through the usual management plan consultations for legally protected areas. However, then the Canadian Heritage Rivers program will only add a new designation onto an already existing protected area rather than enlarging the system itself.

5. Other Domestic Protected and Managed Areas

A number of other protected area designations exist at the federal level which contribute substantially, or in more modest ways, towards biodiversity conservation. The *Territorial Lands Act* provides substantial flexibility for the Governor in Council to, where

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168 From Kevin McNamee, "Preserving Ontario's Natural Legacy", supra note 118, at p.280.

169 However, currently the B.C. Board is chaired by an NGO representative, and other provincial Boards may also contain public and NGO representatives.

170 McNamee, *Preserving Ontario's Natural Legacy*, 118, p.280.

deemed

> necessary for the protection of the ecological balance or physical characteristics of any area in the Yukon Territory or the Northwest Territories, set apart and appropriate any territorial lands in that area as a land management zone"[171].

Regulations for the "protection, control and use of the surface of the land", a Crown reservation of one hundred feet from all waterbodies and boundaries, and setting apart territorial lands for use as "game preserves, game sanctuaries, bird sanctuaries" and "public parks or gardens" are also authorized under the Act[172]. Recent applications of these powers have occurred for Polar Bear Pass, Fishing Branch Ecological Reserve, Tombstone Territorial Park Reservation, Horseshoe Slough Habitat Protection Area, Aulavik (Banks Island) National Park, and Bluenose/Tuktut Nogait National Park, among others[173]. Other unusual arrangements have been made in the Territories, including the Thelon Game Sanctuary established in 1927 to protect muskoxen, then on the brink of extinction. A federal Order-in-Council in 1972 prohibited all commercial activities in the Sanctuary, as well as hunting, trapping, and habitat alteration, and it is administered by both the federal and territorial governments[174].

The *National Capital Act* provides the National Capital Commission with objects to "prepare plans for and assist in the development, conservation and improvement of the National Capital Region", and enables it to "construct, maintain and operate parks"[175]. The Commission's powers to acquire, manage and regulate property have resulted in an extensive greenbelt in the Ottawa area, and a management plan based upon ecological principles is near completion.

Other agencies also have authority to acquire and manage lands, and could do so in a manner that conserves or allows restoration of biodiversity. This is applied in part for National Historic Parks under the *National Historic Parks Wildlife and Domestic Animal Regulations*[176], and a few National Defence facilities. Lands and partial

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171 *Territorial Lands Act*, R.S.C. 1985, c.T-7, s.4.

172 Sections 5, 13, and 23 (a), (b) and (j).

173 SOR/84-409, SI/92-101, SI/94-22, SI/94-45, SI/94-95, and SI/95-51, respectively.

174 Environment Canada, *State of Canada's Environment*, supra note 100, p.7-12.

175 *National Capital Act*, R.S.C. 1985, c.N-4, s.10.

176 SOR/81-613.

interests in lands can be acquired under the *Federal Real Property Act*[177]. The *Special Areas Act* might also be used for biodiversity purposes[178].

6. Other International Protected Area Designations

A number of other, international protected area designations should be noted[179]. Most of these carry little or no legal authority. Nonetheless, they inform management policies for areas concurrently designated under other legislation and play important roles concerning profile, resourcing and expertise, as discussed above for Canadian Heritage Rivers.

First, world heritage sites are recognized under the *World Heritage Convention*[180]. By adhering to the Convention, Canada agreed to be bound by the "duty ... of ensuring the identification, protection, conservation, presentation, and transmission to future generations of the cultural and natural heritage", including taking the "appropriate legal ... measures"[181]. Several outstanding natural sites have been identified in Canada and listed with the associated international committee, including the Kluane-Tatshenshini-Wrangell, St. Elias (Yukon, B.C., Alaska) and Wood Buffalo National Park (Alberta, Northwest Territories). This brings with it prestige, profile and public scrutiny, and eligibility for international financial aid[182]. This designation is not legally binding, although it was influential in hotly contested Australian wilderness cases[183].

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177 *Federal Real Property Act*, R.S.C. 1985, c.F-8.4.

178 *Special Areas Act*, R.S.C. 1985, c.S-14.

179 For a more detailed discussion, see: E. Neville Ward, with Beth Killam, *Heritage Conservation: The Natural Environment* (Waterloo, Ontario: Heritage Resources Centre, University of Waterloo, 1987), pp. 3-11.

180 UNESCO *Convention for the Protection of the World Cultural and Natural Heritage* (1972), 11 I.L.M. 1358.

181 Ibid, Articles 4 and 5(b).

182 Marc Denhez, "Conserving and Upgrading the Built Environment", in David Estrin and John Swaigen, *Environment on Trial*, supra note 1, at pp. 372 and 397.

183 See *Commonwealth v. Tasmania* (1983) 46 A.L.R. 625, and a discussion in D.E. Fisher, *Natural Resources Law in Australia* (Sydney: The Law Book Company Limited, 1987), at pp.223-234.

Second, the *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*, otherwise known as the Ramsar Convention[184], recognizes the importance of a network of significant wetlands. Any agency or individual owning a wetland site may nominate it for inclusion on the List of Convention wetlands. Once it meets certain criteria and has the approval of the province or territory in which it is located, the Canadian Wildlife Service will coordinate and facilitate review of the nomination with appropriate organizations and then forward it for acceptance to the Ramsar Convention Bureau[185].

The Ramsar Convention directs that "permitted activities should not alter or destroy the ecological character of the wetland", and thus the Canadian Wildlife Service only supports nominations where there is a management planning and conservation commitment (although not necessarily through a legal designation), and where the maintenance of ecological and cultural characteristics and functions of the site can be assured. If the ecological character of listed sites changes due to human interference, Canada must notify the other Parties to the Convention and arrange for these matters to be discussed at the next Conference of the Parties. The legal effectiveness of the Convention is modest at best, but it nonetheless provides international recognition of significant wetlands (and thus pressure to conserve them), as well as encouraging protective measures and a closer review of any plans with negative impacts. Sites in Canada include Last Mountain Lake (Saskatchewan), Delta and Oak Hammock Marshes (Manitoba), Long Point (Ontario), Cap Tourmente (Québec), and Mary's Point (New Brunswick)[186].

Third, UNESCO designates international biosphere reserves where there is an integration of human and conservation land use and planning, and where research is being conducted to learn how to manage such a range of uses. Again, this is an honourary designation with opportunities for educational exchanges. Canadian examples include Riding Mountain National Park (Manitoba), the Niagara Escarpment (Ontario), and Mont St. Hilaire (Québec). Fourth, other such recognized sites include those

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184 (1971), 11 I.L.M. 963. Canada acceded to the Convention in 1981: Ward and Killham, *Heritage Conservation: The Natural Environment*,179, p.8.

185 Canadian Wildlife Service, *Nomination and Listing of Wetlands of International Importance in Canada: Procedures Manual* (Ottawa: Canadian Wildlife Service, 1994), pages 4-5. The criteria relate to representation, uniqueness, plants or animals, and waterfowl importance, as approved by the Fourth Conference of the Contracting Parties in July 1990.

186 As of February 1994, there were 32 Ramsar sites covering over 13 million hectares in Canada. Ibid, page 16.

inventoried and recommended for statutory protection by the International Biological Program (IBP) in the 1970s, international shorebird reserves, and recently designated monarch butterfly reserves.

Protected Areas Recommendations

1. **Creatively use the suite of designations to help complete Canada's protected areas system.**

2. **Enact new and more program-oriented National Marine Conservation Areas legislation within the proposed *Oceans Act*.**

D. RESTORATION AND REHABILITATION

Restoration and rehabilitation of damaged ecosystems is often needed to reestablish or enhance biodiversity in an area[187]. These objectives can be accomplished in a myriad of ways. Federal law and policy can assist this process by setting out principles, enabling research, authorizing demonstration projects, governing areas within its jurisdiction, and authorizing courts to order restoration measures where biodiversity has been damaged. The *Biodiversity Convention* recognizes the importance of such measures for biodiversity in Articles 8f, 9b and 10d.

The *Canadian Environmental Protection Act*, section 2(a), contains the objective to "take both preventative and remedial measures in protecting the environment", while restoration is an implied goal of the conservation measures under the *Canada Wildlife Act*. The concept of "mitigation" (defined to include "replacement, restoration, compensation or any other means") is more particularly woven into the provisions of the *Canadian Environmental Assessment Act*[188]. Mitigation is a significant factor to be considered at various steps in the assessment process[189], and the responsible authority must implement mitigation measures that it considers "appropriate"[190] (see the discussion of environmental assessment on page 120).

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187 For example, habitat renewal may be necessary: A.R.E. Sinclair, D.S. Hik, O.J. Schmitz, G.G.E. Scudder, D.H. Turpin and N.C. Larter, "Biodiversity and the Need for Habitat Renewal", 5 *Ecological Applications* 579 (1995).

188 *Canadian Environmental Assessment Act*, S.C. 1992, c.37; definitions in subsection 3(1).

189 See sections 16(1)(d), 16(2), 20(1), 23(a), 25(a) and 37(1).

190 Sections 20(2) and 37(2).

In addition to such principles and procedures, a court may order restoration as a remedial action in addition to a penalty imposed for committing an offence. This type of order is available for such activities as restoring fish habitat[191], repairing damage to a national park[192], or contamination of water or land[193]. The *Federal Policy on Wetland Conservation* and the *Policy for the Management of Fish Habitat* both contemplate restoration and habitat creation to achieve their objectives. In particular, the no net loss directive in the *Policy for the Management of Fish Habitat* specifically provides for various options towards mitigation or restoration, and helps determine fish habitat prosecutions under the *Fisheries Act* (see the discussion on page 70).

Besides these few passing references to restoration, the treatment is not well elaborated in federal law. Much of the direction comes from more regional or local programs and their implementing documents, a few examples of which are described below. Wildlife rehabilitation is made operational through such regional public-private partnerships such as the North American Waterfowl Management Plan (NAWMP) and RENEW's recovery plans for species at risk. NAWMP is a 15-year, $1.5 billion public-private partnership that funnels U.S. and Canadian funds into Canada to help maintain and increase Canada's waterfowl habitat and populations through land securement, habitat enhancement and related activities[194]. It was established in 1985, and Mexico joined in the effort in 1994. The program involves all Canadian jurisdictions and the country's major conservation organizations (eg. Ducks Unlimited Canada, Wildlife Habitat Canada, and Nature Conservancy of Canada). In particular, Ducks Unlimited Inc. in the U.S. has been able to facilitate matched funding with the U.S. government under its *North American Wetlands Conservation Act* and bring over $75 million into Canada to preserve, maintain and rehabilitate wetlands[195].

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191 Supra note 33, section 79.2(b); also see the provision for civil liability for the Department's costs of restoration (section 42).

192 Supra note 75.

193 *Canadian Environmental Protection Act*, S.C. 1988, c.22 [now S.C., c.C-15.3], section 130(1)(b).

194 A report on the Plan documents the protection of about two million hectares of wetlands and other waterfowl habitat. The Plan, and wet weather after previous years of drought, has contributed to a forty per cent increase in migrating waterfowl over the last decade. There were some 77 million migrating waterfowl in the fall of 1995, but this number is still below the levels found in the 1970s. Globe and Mail, May 16, 1996, p.A5.

195 Gary Goodwin, supra note 26.

The Prairie Farm Rehabilitation Administration's Permanent Cover Program, authorized under the *Prairie Farm Rehabilitation Act*[196], is a federal program which enables marginal crop land to be voluntarily kept in or restored to permanent (although not necessarily native) cover through ten or twenty-one year agreements. The program has creatively used an option to purchase as a means to put a caveat on title and thus bind any subsequent landowners to the full term of the agreements, unlike most ordinary agreements between two parties[197]. This program then reduces uneconomic agricultural uses of the prairie, when program costs are offset by savings that would otherwise go to farmers for use of that land. As farm subsidies are now becoming much reduced, it will be difficult to justify the program on economic grounds alone since it will just cost too much[198] (although it will enhance biodiversity in the heavily altered prairie ecosystem).

Environment Canada and numerous public and private partners are developing plans which include remediation and restoration objectives and actions. These plans include the Fraser River Action Plan, the Northern River Basins Study, Great Lakes 2000, St. Lawrence Vision 2000, and the Atlantic Coastal Action Program[199]. These plans fall within the mandates of many statutes and legal authorities. One particular set of examples are the "remedial action plans" (RAPs) being developed for 43 environmental hot-spots along the Great Lakes. As part of Great Lakes 2000, this program has evolved from the 1972 and 1978 *Great Lakes Water Quality Agreements* and its 1987 Protocol between Canada and the United States[200], and includes efforts to improve water quality, remediate or remove contaminated harbour sediments, and restore wildlife habitat. The number of toxins in this basin has continued to increase despite the efforts of the bi-national International Joint Commission, thus pointing to the need for political will and leadership to make any plans effective[201]. Habitat restoration

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196 *Prairie Farm Rehabilitation Act*, R.S.C. 1985, c.P-17.

197 Thea M. Silver, Ian C. Attridge, Maria MacRae and Kenneth W. Cox, *Canadian Legislation for Conservation Covenants, Easements and Servitudes: The Current Situation*, Report No. 95-1 (Ottawa: North American Wetlands Conservation Council (Canada), 1995), at page 4.

198 John Girt, John Girt and Associates, personal communication, April 9 1996.

199 Environment Canada, *1996-97 Estimates, Part III: Expenditure Plan.* (Ottawa: Environment Canada, 1996), pp.54-68.

200 CTS 1972 No.12, CTS 1978 No.20, and CTS 1987 No.32, respectively.

201 Ann Dale, Senior Associate at both the Sustainable Development Research Institute, University of British Columbia, and the Canadian Biodiversity Institute, personal communication, May 10, 1996.

and biodiversity concerns have only been of recent interest, taking a back seat to water quality, but the Canadian Wildlife Service is now promoting these concepts as plans and implementation evolve. This has now been formalized in the *Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem*, particularly Goal 1 (restore degraded areas) and Goal 2 (conserve and protect human and ecosystem health). RAPs and these other efforts typify the measures for support of local remedial action called for in the *Biodiversity Convention*, Article 10d.

On the more site-specific scale, rehabilitation through creation of new ponds or planting vegetation occurs in some national wildlife areas established under the Canada Wildlife Act, and some organizations such as Ducks Unlimited (Canada) contribute to these efforts[202]. Another recent example is a controversial program to capture and remove feral horses from the Canadian Armed Forces base in Suffield, Alberta, in order to reduce feeding and trampling impacts from this introduced species and thus restore the native prairie ecosystem[203]. Reduction of another pest species, purple loosestrife, which is invading and overwhelming wetlands, is being promoted by release of several European beetle species, following European and North American testing and quarantine[204].

Restoration and Rehabilitation Recommendations

1. **Make restoration and rehabilitation among the explicit goals and purposes of all wildlife legislation**.

E. SUSTAINABLE USE OF BIODIVERSITY

The *Biodiversity Convention* calls for the sustainable use of biodiversity, and in Canada, this primarily involves the forestry, fishery and agricultural industries. These activities have substantial effects upon Canadian biodiversity[205]. Federal jurisdiction

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202 Neville Ward and Beth Killam, *Heritage Conservation: The Natural Environment*, supra note 184, at p.17.

203 "Wild life over for horses", *Globe and Mail*, June 28, 1993, page A4.

204 John Laing, University of Guelph, CBC Radio Noon (Toronto), June 12 1995. Clayton Rubec, Canadian Wildlife Service, personal communication, February 19, 1996.

205 Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment for Environment Canada*, supra note 100. This report contains an extensive literature review and discussion of biodiversity, and factors affecting it. Chapters include effects of forestry, agriculture, urbanization,

is shared with the provinces for each of these three sectors, particularly the latter two as discussed below. The federal government also has an important mandate to support scientific research in these areas, and there remains a large need for ecosystem-based, trans-disciplinary, and applied research to support policy and legal decision making[206].

1. Forestry

Forestry is an industry with great national importance, employing more than 800,000 people and contributing in 1993 some $22.4 billion from forest product exports[207]. It is not surprising, then, that the federal government plays some role in this field, even though the provinces have primary responsibility under the *Constitution Act, 1867*[208]. Nonetheless, the Territories are largely within federal administration, resulting in measures such as the *Yukon Forest Protection Regulations*[209]. The federal government has played an important role promoting national-level policies and strategic directions advanced over the last few years. These have included the 1-page "Canada Forest Accord", signed by all senior Canadian governments and some non-government organizations in 1992, which calls for "strengthening the foundation for conserving the natural diversity of our forests and putting in place the fundamental reporting systems

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and fishing, as well as the environmental stressors - exotic and expanding species, genetically modified organisms, pollutants, and atmospheric change.

206 Nina-Marie Lister, Ph.D. candidate, University of Waterloo (Ontario), personal communication, May 8 1996.

207 Federal-Provincial-Territorial Biodiversity Working Group, *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity* (Ottawa: Minister of Supply and Services Canada, 1995), p.37.

208 Provincial powers are found in sections 92(5) (management and sale of provincial public lands and "the timber and wood thereon"), 92(13) (property and civil rights), 92A(1)(b) (natural resources, indirect taxation, and interprovincial resource trade), and 109 (proprietary rights in all lands and royalties). The federal government has powers over trade and commerce in s.91(2), as well as spending powers and an international role. For a discussion of this division of powers related to forestry, see Monique Ross and Owen Saunders, *Environmental Protection: Its Implications for the Canadian Forest Sector* (Calgary: Canadian Institute of Resources Law, 1993), pp.3-10.

209 *Yukon Forest Protection Regulations*, SOR/87-531 and SOR/95-531.

to say where we stand"[210]. The Canadian Council of Forest Ministers coordinates the implementation of the Accord's companion document, *Sustainable Forests - A Canadian Commitment* (the "National Forest Strategy"), which, along with sustainable use directions, contains a number of recommendations related to the conservation of biodiversity[211].

Through the Department of Natural Resources and the *Forestry Act*[212], the federal government had entered into a series of federal-provincial Forest Resource Development Agreements guiding research and management, pilot projects, funding, incentives and related activities; however, these have all expired and not been renewed[213]. The 1995 federal budget confirmed that the agreements will not be renewed, but a 1995 Framework for Federal-Provincial/Territorial Cooperation in Forestry structures any agreements among both levels of government for coordination of their activities[214].

The *Department of Natural Resources Act* requires that the Minister "shall have regard to the sustainable development of Canada's natural resources"[215]. The Act enables the "development and application of codes and standards ... for the management and use of natural resources", and could use (but has shied from) this

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210 Ole Hendrickson, Department of Natural Resources, personal communication, April 10, 1996.

211 The Goal Statement reads: To maintain and enhance the long-term health of our forest ecosystems for the benefit of all living things, both nationally and globally, while providing environmental, economic, social and cultural opportunities for the benefit of present and future generations. Strategic Direction 1 (Forest Stewardship) states that "forest management activities maintain the diversity of our forests", implemented in sections 1.6 to 1.11.

212 *Forestry Act*, R.S.C. 1985, c.F-30. The scope of this Act includes the "protection, management and utilization of forest resources" (s.3(1)), establishment of forest Experimental Areas (s.4), and regulations for their "protection, care and management" (s.6).

213 Monique Ross, supra note 148.

214 Monique Ross, at page 217. The Framework deals with science and technology, international and trade issues, regional development, Aboriginal forestry, and national coordination.

215 *Department of Natural Resources Act*, S.C. 1994, c.41, s.6(a). "Natural resources" are defined to be mines, minerals, other non renewable resources, energy and forest resources.

authority to develop its own codes and standards for conserving biodiversity on the federal government's extensive land holdings[216]. The Department has an administrative function that may relate to forestry through its review of scientific data submitted to register a pesticide under the *Pest Control Products Act*[217], although this is not recognized within the Act itself[218].

The Department has an increasingly important international role concerning the promotion and defence of Canadian forestry products, and providing technical advice to other countries. It supports negotiations of such international agreements as the Statement of Forest Principles signed at the United Nations Conference on Environment and Development in Rio de Janiero in 1992, and such institutions as the International Tropical Timber Organization[219].

One of the means to promote sustainable forestry is to establish a certification program. At the Helsinki conference on forest protection in 1993, Canada helped lay the foundations for sustainable forestry through environmental criteria and indicators: conservation of biological diversity, of production capacity, of regeneration capacity and of wildlife habitats (including soil and water); and reducing pollutants, preventing irreversible forest degradation, and preserving the role of forests in global ecological cycles[220]. The Canadian Council of Forest Ministers and the Canadian Standards Association have applied these criteria to Canada, and during the spring of 1996 were

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216 Ibid, s.6(d), and Ole Hendrickson, supra note 210. Given the documented decline of neotropical songbirds, such a Code might include the cessation of all woods operations during the nesting season and thus enhance breeding success across Canada: Ted Mosquin, Ecospherics International Inc., personal communication, March 31, 1996.

217 *Pest Control Products Act*, R.S.C. 1985, c.P-9.

218 J.F. Castrilli and Toby Vigod, "Pesticides", in David Estrin and John Swaigen, *Environment on Trial*, supra note 1, at p.623.

219 For a discussion of these and other aspects of forests in international law, see: Canadian Council on International Law, *Global Forests and International Environmental Law* (London: Kluwer Law International, 1996).

220 Jacques Prescott and Jean-Pierre Drapeau, "Measuring the Environmental Impact of Natural Resource Consumption", 16 *Ecodecision* 76 (Spring 1995), at page 78.

circulating proposed standards for comment[221].

Federal authority indirectly influences forestry through legislation such as the *Fisheries Act* provisions protecting fish habitat (used to prevent forestry operations' slash and erosion from entering forest streams), the *Fisheries Act* and *Canadian Environmental Protection Act* controls on mill effluents[222], and the like. Through litigation, the Canadian Parks and Wilderness Society forced the federal Ministry of the Environment to end logging in Wood Buffalo National Park since this was incompatible with the "leave unimpaired" dedication clause in the *National Parks Act*[223]. Nonetheless, the *Timber Regulations* under this Act still enable careful cutting of dead or diseased timber by permit or by park staff within National Parks.

2. Fisheries

Both Canada's east and west coast fisheries are in serious trouble, with recent reports of "commercial extinction" of some eastern groundfish stocks, fish enforcement conflicts on the high seas with European fishing vessels, intense fishing and escalating disagreements with our U.S. neighbours, and missing stocks and near over-fishing of salmon runs[224]. The science, legal jurisdiction, rules, enforcement and political will have not been sufficient to protect one of Canada's oldest industries. While everyone seems to be able to point their fingers at a culprit, the reality is likely the whole complex of these and other factors.

While international and biological factors play important roles, Canada and its institutions must take considerable responsibility for, and action to address, the current plight of our country's fisheries. A virtual moratorium on fishing for cod and turbot is now the only remaining means to save these eastern stocks, and in the long run, the industry that has long depended upon these fish. Federal proposals to buy back half of all commercial fishing licences in British Columbia have provoked considerable discussion,

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221 See also Chris Elliott and Arlin Hackman, *Current Issues in Forest Certification in Canada*, A WWF Canada Discussion Paper (Toronto: World Wildlife Fund Canada, 1996).

222 For example, see: *Pulp and Paper Effluent Regulations*, SOR/92-269, with an accompanying environmental monitoring system to test the adequacy of the regulations; *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations*, SOR 92/267; and the *Pulp and Paper Mill Defoamer and Wood Chip Regulations*, SOR 92/268.

223 See *Canadian Parks and Wilderness Society v. Wood Buffalo National Park*, supra note 146.

224 See Chris Wood, "Northern Defiance", *Maclean's*, July 24 1995, pp.12-14.

controversy and angry responses by those affected, and a failed application for an injunction by the province based upon due process and the claim that the federal government had exceeded its jurisdiction. Social and economic upheavals will inevitably take place in communities dependent upon this industry as they await the slow replenishment of the stocks[225].

The *Fisheries Act* is the key statute governing the various fisheries in Canada. Based upon management plans for each species and extensive consultation and monitoring, the Act's provisions are used to regulate quotas (the total allowable catch) and the location, manner, times in which fish may be sought and caught, and sets these details out in lengthy, comprehensive regulations for the diverse regions of the country. The Act and regulations give extensive treatment to the regulation of the commercial and recreational fishery, at a national and provincial scale. In addition, they seek to sustain stocks through prohibitions on work causing "harmful alteration, disruption or destruction of fish habitat", and the deposit of any "deleterious substance" into waters frequented by fish[226].

While there is broad authority under the *Fisheries Act*, this authority has not been exercised in a sufficiently precautionary manner, and there is no direction in the Act that stocks will only be used sustainably. The Act could thus benefit from entrenchment of such principles to inform decision making[227]. Further, there is the need to more clearly define conservation in the Act, for this will affect decisions on catch limits as well as the exercise and implementation of Aboriginal rights based upon the principles articulated in the *Sparrow* case[228].

Finally, the methods (particularly trawling, and the use of small mesh gear and liners inside nets) and equipment licensed to fish in Canadian waters have contributed to the degradation of spawning and feeding grounds, particularly when applied improperly. These need to be adequately addressed. Decreasing the size of fishing fleets is an important remedial option, now being proposed by the current Minister for the B.C. fishery. Such actions will inevitably create substantial economic and social upheaval. Overdependence and over-investment in part is due to public policy decisions, and equity among sectors and communities along with forthright discussion and debate are

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225 There is scientific debate as to whether or not the stocks will replenish, and estimates vary from twenty to fifty years. Ann Dale, supra note 201.

226 Supra note 33, sections 35(1) and 36(3), respectively.

227 The Bills proposing new Oceans and Fisheries Acts include references to the precautionary principle in their preambles, although these carry no substantive legal authority.

228 *R. v. Sparrow* (1990), supra note 47.

needed in order to achieve effective solutions. In the long run, such efforts are needed to ensure the environmental and economic sustainability of the fishery -- for local communities, the wider population and the ecological systems built upon these fish stocks.

A conservation ethic and promotion of responsible use of gear can be fostered through legislation, but real, effective and enforceable codes of conduct in relation to certification and monitoring programs can also contribute. The Fisheries Council of Canada is exploring the development of such codes of conduct, while recognizing the need to address competitiveness issues among all fishers and fleet sectors[229].

As noted earlier in this chapter, much of the recent high drama of fisheries in Canada takes place within the context of international agreements. The 1985 *Pacific Salmon Treaty* between Canada and the United States specifies in Article III that both countries must manage their fisheries in order "to provide for each Party to receive benefits equivalent to the production of salmon originating in its waters". Regardless, last year's one-year extension of the Treaty has escalated into serious differences between Canada and the State of Alaska over population and take estimates, and particularly how much each jurisdiction should reduce its quotas[230]. Other fisheries Conventions are also entrenched within federal statutes[231].

A similar dispute erupted with the European Union when the Spanish vessel ESTAI was arrested in 1995 by Canadian fisheries officers for fishing turbot contrary to international conservation measures and Canada's exercise of "custodial management" beyond its 200 nautical mile fisheries jurisdiction on the Grand Bank. The Spanish vessel was arrested on the high seas amid great media attention, and subsequently released, but Canada's strong stance galvanized the international community to address the problem of high seas overfishing, thus leading to the successful development of the United Nations *Agreement on Straddling and Highly Migratory Fish Stocks*[232].

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229 Patrick McGuiness, Fisheries Council of Canada, personal communication, April 17, 1996.

230 Chris Wood, "Northern Defiance", note 224, at pp.12-14.

231 *Great Lakes Fisheries Convention Act*, R.S.C. 1985, c.F-17, proposed to be repealed by Bill C-26; *North Pacific Fisheries Convention Act*, R.S.C. 1985, c.F-18; and *Northern Pacific Halibut Fisheries Convention Act*, R.S.C. 1985, c.F-19.

232 See "Spanish trawler sailing into court", *Toronto Star*, July 24, 1995, p.A9. Canada has signed the Agreement, and its ratification and early entry into force is a Canadian government priority.

Bordering three oceans, Canada's lead role in expanding the notion of coastal state jurisdiction in international law has been principally oriented to fisheries management, although access to continental shelf riches have undoubtedly played a factor. Canada signed the *United Nations Convention on the Law of the Sea* in 1982, which contains extensive provisions regarding fisheries, marine pollution, and shipping and navigation, among other subjects[233]. UNCLOS came into force on November 16, 1994, but Canada has yet to ratify it due to problems with the Convention's common property regime and management structure for equitable mineral extraction from the deepsea bed[234]. These problems were resolved by an Agreement signed by Canada on July 29, 1994. A review of current laws' consistency with UNCLOS is now underway, paving the way for eventual Canadian ratification, as promised in the Throne Speech of February 27 1996. All relevant aspects of UNCLOS that pertain to fisheries are already considered customary international law[235].

While Canada's former Fisheries and Oceans Minister was praised for his tough and high profile role on the international front, the Department has announced intentions to delegate federal responsibilities over inland fisheries habitat management to the provinces[236]. Inland fisheries management is principally delegated to the provinces anyway. Yet the legislation is still administered by the federal government and serves to establish some national standards, coordination among provinces and allocation to Aboriginal people (another federal responsibility), and as a trigger for other federal responsibilities such as environmental assessment. New provincial order powers in Bill C-26 may well lead to increased variation among provinces in the management approaches taken, even for the same species. Abandonment of the federal role may streamline administration, but could be detrimental to fish stocks in the long run, particularly where provincial resources and commitment are weak.

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233 *United Nations Convention on the Law of the Sea* (1982), U.N. Doc. A/CONF.62/122; 21 I.L.M. 1261. See Part XII (Environment), Articles 192-237, and for fisheries, Part V, Articles 55-75 and Part VII, Articles 116-120.

234 The United States has also objected to these provisions of UNCLOS because they are seen to conflict with free enterprise. Related to these issues and notions of common heritage and equitable sharing, Articles 15 to 18 of the *Convention on Biological Diversity* call upon Parties to provide access to, research, transfer, development and training concerning genetic resources and biodiversity technology, especially with developing countries.

235 W. G. Doubleday, supra note 40.

236 This would be based on national standards and subject to reporting and auditing requirements. W. G. Doubleday, supra note 40.

3. Agriculture

Of all human activities, agriculture has likely had the single greatest direct and indirect impact upon biodiversity in Canada[237]. While meeting the important need for food production over the centuries, agriculture has also resulted in the simplification of ecosystems and the loss of genetic variability, particularly where this industry has been practised intensively. This derives from three main aspects: its extent over a large proportion of the landscape, particularly in biodiversity- rich southern regions; second, the on-site simplification and homogenization of ecological complexity and diversity resulting from intense management; and third, the fragmentation of and impact of management practices on off-site systems[238]. There is also a fundamentally poor reconciliation of private ownership rights and efficient food production, on the one hand, with farm production externalities and the environmental services farms provide on the other[239]. The 1991 *Federal Policy on Wetland Conservation* associates agriculture with 85 percent of known wetland conversions in the country; woodlands on farms have decreased by 70 percent since the end of the Second World War; and numerous native plant and animal species are endangered or threatened from habitat loss due to agriculture[240].

> The reasons for the decline in biodiversity in agricultural regions lie in a complex mix of related factors. Agricultural policies, regional development programs, institutional cultures, world trade, and characteristics peculiar to the rural economy and the rural world view all affect biodiversity conservation. ... Briefly, the landscapes, people, and economies of these regions are all at risk because of global trade wars, declining commodity prices, and the perverse effects of well-

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237 Department of Environment, *The State of Canada's Environment*, supra note 100, at page 6-6; Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment for Environment Canada*, supra note 100, at page 65.

238 Biodiversity Science Assessment Team, *Biodiversity in Canada: A Science Assessment*, supra note 100. Also, agriculture can maintain or convert land use which, in urbanizing regions, leads to other non-reversible and more highly impacting uses of land: Nina-Marie Lister, supra note 206.

239 Brad Fraleigh, supra note 245.

240 Department of Environment, *The State of Canada's Environment*, (Ottawa: Minister of Supply and Services, 1991), pp.9-5 and 9-9.

intentioned agricultural subsidies.[241]

The federal role in agriculture is similar, but possibly more complex, to that articulated above for forestry: research, pilot projects, transport and export policy, and funding (primarily income support), among others[242]. This is distinguished from the provinces' principal roles in agricultural technology transfer, extension and land policy[243]. Many income support programs are cost shared, some provinces (eg. Ontario) support research, and both conduct inspection and grading. Agriculture and Agri-Food Canada has this significant and very public role, being the approval and grading of foods, seeds, and crops, with implications for influencing the patterns and practices of agricultural operations. The Prairie Farm Rehabilitation Administration has some of the most biologically significant land left on the prairies, and sustainable management and the protection of these lands from cultivation could make a tremendous contribution towards biodiversity conservation[244].

As is a recurring theme in this report, there are no objectives within general agricultural legislation or that governing the Department of Agriculture for the conservation of biodiversity, particularly at the genetic level, nor for the sustainable use of biodiversity over the long term. Despite this, over the years the Department has used plant breeding as genetic (rather than chemical) responses to stresses and pests, researched and developed integrated pest management techniques, and established the Plant Gene Resources of Canada to preserve crop and economically-important plant genetic material; these are among other examples where biodiversity and production objectives have converged[245]. However, programs have also been oriented towards the selection of marketable, but not necessarily sustainably produced, commodities, and

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241 Robert D. Sopuck, *Canada's Agricultural and Trade Polices: Implications for Rural Renewal and Biodiversity*, Working Paper No. 19 (Ottawa: National Round Table on the Environment and the Economy, 1993), pp.16 and 39.

242 Agriculture and Agri-Food Canada has recently refocused its emphasis on industry concerns, rather than wider science needs: G.G.E. Scudder, supra note 80.

243 Ibid, p.38.

244 Paul James, Biodiversity Specialist, Saskatchewan Environment and Resource Management, personal communication, April 7 1996.

245 Brad Fraleigh, Special Advisory, Biodiversity and Genetic Resources, Agriculture and Agri-Food Canada, personal communication, April 15, 1996.

the support of subsidy programs which act as incentives to convert marginal lands away from other less environmentally harmful uses (see the discussion below under the Economic Incentives section).

In 1989 a new approach to federal agriculture policy was developed[246], and followed by the *Report to Ministers of Agriculture, Federal-Provincial Committee on Environmental Sustainability*[247]. Agriculture and Agri-Food Canada has also produced a 1995 *National Environmental Strategy for Agriculture and Agri-Food*[248]. These documents have provided new impetus for some integration of environmental and social concerns into agriculture, providing leadership to provincial Ministries of Agriculture across the country. As one example, the University of Guelph in Ontario is undertaking a $2.5 million research program on agro-ecosystems, which include examination of biodiversity and sustainability[249].

The diversification of the landscape and the rural agricultural economy have been recommended as key elements to the survival of agriculture, and the enhancement of biodiversity[250]. However, agriculture is a large industry, with increasing consolidation and integration. While this may be desirable in the face of international competition, the consolidation of the industry and reliance upon fertilizer, pesticide and seed inputs puts the sector further into an industrial approach. This approach concentrates intensive and maximum production on the most fertile land, with an assumed corollary of better

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246 Agriculture Canada, *Growing Together: A Vision for Canada's Agri-Food Industry* (Ottawa: Agriculture Canada, 1989).

247 Ottawa: Agriculture Canada, 1990.

248 The Strategy was prepared at the same time as the *Canadian Biodiversity Strategy*, and declares on page 27: "The agriculture and agri-food sector will not adopt new environmentally friendly practices if they damage the economic or social viability of the sector. Producers and the agri-food industry will only protect the environment if they can afford to do so." While this recognizes the need to integrate economic, social and environmental concerns, it does not recognize that these concerns are interdependent, nor does it say anything about the need for legislation to guide the industry through transition or reorientation of subsidies.

249 Nina-Marie Lister, supra note 206.

250 Robert Sopuck, *Canada's Agriculture and Trade Policies*, supra note 241, at p.3.

protection of biodiversity on a larger extent of non-agricultural lands[251]. Yet, more often, diversity and care for the land can become secondary rather than integrated into a more broadly-defined bottom line. For some, the decision between publicly good practices and personal survival leaves no choice.

Nonetheless, there has been much proactive work recently, such as increased no-till practices, decreased summer fallowing, decreased pesticide use, environmental farm plans, and development of an organic certification program[252]. Ducks Unlimited programs also provide financing and materials for farmers wishing to engage in rotation grazing plans or the use of conservation tillage equipment. This increases yield and simultaneously allows wildlife a place on the land.

Sustainable agriculture goes further as an alternative vision which challenges industrial agriculture, takes into account farmers' innovation, reduces intensification, and supports efforts such as organic farming and permaculture. Critical needs in developing sustainable agriculture include market access and development, communications and educational/resource infrastructure within the organic sector, removal of technical problems and economic barriers to transitions, and analysis of long-term policy issues[253].

Key questions remain: how to get farmers and public organizations (such as Agriculture and Agri-Food Canada) to feel a need for proactively conserving and enhancing biodiversity in the future; and defining clearly an economic framework and accompanying technology for achieving it. Some advances and suggestions have been identified above, and law can contribute towards this evolution by creating positive incentives, removing disincentives, and enabling partnerships and appropriate

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251 Brad Fraleigh, supra note 245. This approach is perhaps best represented by the International Food Policy Research Institute (IFPRI).

252 Sheila Forsythe, National Agriculture Environment Committee, personal communication, May 8 1996, and Joyce Greenfield, "Agricultural Biodiversity Initiatives" (draft) (Environment Bureau, Agriculture and Agri-Food Canada, 1995).

253 Mark Winfield and Jan Rabantek, *Environmentally Sustainable Agriculture in Canada: An Overview and Assessment of Critical Needs* (Toronto: Canadian Institute for Environmental Law and Policy, 1995), at page 34. Ted Mosquin, supra note 216, notes that officially, there is no Department support for research or direct or hidden subsidies for people making the change to sustainable agriculture. Of Agriculture and Agri-food Canada's roughly 180 publications available for free, there are none made available to farmers concerning sustainable or organic agriculture.

institutional arrangements. This must occur within a sector that is almost exclusively privately-owned, and thus plays a relatively independent (and unregulated) role in stewarding the lands that house much of Canada's biodiversity wealth -- and concern.

Sustainable Use Recommendations

1. **Maintain cooperative federal and provincial forest agreements.**

2. **Develop codes and standards for conserving biodiversity on the federal government's extensive land holdings.**

3. **Complete a review of and pass relevant legislation, and then ratify and implement the United Nations *Convention on the Law of the Sea* and the *Agreement on Straddling and Highly Migratory Fish Stocks*, as promised in the February 27 1996 Throne Speech.**

4. **Legislate sustainable use and precautionary principles into the *Fisheries Act*.**

5. **Maintain a strong federal presence and national standards concerning inland fisheries.**

6. **Enhance market access and development for sustainable agriculture and infrastructure within the organic sector, remove technical problems and economic barriers to transitions, and analyze long-term policy issues.**

F. ENVIRONMENTAL ASSESSMENT, INTERNATIONAL TRADE AND POLLUTION

In addition to the three sustainable use sectors described above, three other key legal structures also need to be considered. First, environmental assessment reviews potential impacts for many of the projects both within and beyond these traditional industries. Second, international trade can structure the patterns of use of biodiversity. And third, pollution affects the ability of wildlife to survive, and derives from human use and alteration of the natural environment. In a similar way, other public processes such as access to information, the use of Round Tables, and intervenor funding may have important implications for processes affecting (and public involvement supporting) biodiversity[254], but are only noted here.

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254 See the *Access to Information Act*, R.S.C. 1985, c.A-1, the *National Round Table on the Environment and the Economy Act*, S.C. 1993, c.31, and the proposed *Intervenor Funding Act* (Bill C-229).

1. Environmental Assessment

Article 14 of the Biodiversity Convention calls on Parties to introduce appropriate procedures and arrangements for impact assessment and minimizing adverse impacts. Canada has also ratified the *Convention on Environmental Impact Assessment in a Transboundary Context* and the *Convention on the Transboundary Effects of Industrial Accidents*.

The *Canadian Environmental Assessment Act* (CEAA) is Canada's key statute in this area whereby projects, either by federal departments or agencies, involving federal lands, requiring federal funding or seeking designated federal approvals, are assessed for their environmental impacts[255]. The Act replaces the Federal Environmental Assessment and Review Process[256], and is in addition to any sector-specific legislation or procedures. Transboundary and international environmental effects, and those affecting lands of federal interest, may also be examined[257].

CEEA came into force on January 19, 1995, and the implementing regulations contain a long exclusion list of projects[258]. All projects not exempted will go through a screening process, potentially based on just existing information[259]. Every step in the process (screening, comprehensive study, mediation or assessment) must consider the project's environmental impacts (including accidents and cumulative effects), their significance, public comments, mitigation measures, and other relevant matters[260].

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255 *Canadian Environmental Assessment Act*, S.C. 1992, c.37, as amended by S.C. 1994, c.46. See sections 5 to 10 for the scope of projects to be assessed. For additional discussion, see Rodney Northey, *Annotated 1995 Canadian Environmental Protection Act and EARP Guidelines Order* (Scarborough: Carswell, 1994).

256 EARP was first established in 1973 as a Cabinet directive to establish a process, and formally issued as an order (SOR/84-467) under the *Department of Environment Act*, R.S.C. 1985, c.E-10, s.6.

257 Sections 46-48. This will help meet the international requirements of the Convention in Article 14, section 1, paragraphs (c) and (d).

258 *Exclusion List Regulations*, SOR/94-639, p.3410, 7/10/1994.

259 See the *Inclusion List Regulations*, SOR/94-637, p.3391, 7/10/94. Certain national parks, fisheries, wildlife and forest activities are included on this list.

260 Section 16(1).

More detailed comprehensive studies will be required for designated projects, such as major plans for national parks, other protected areas, and water management[261]. This will be particularly important for contentious development plans within such parks as Banff National Park. In addition to the factors above applying to all non-exempted projects, every comprehensive study, mediation or assessment must also consider the project's purpose, alternative means of carrying it out, follow-up programs, and the capacity of affected renewable resources to meet the needs of the present and the future[262]. This last factor brings the *Convention*'s sustainable use concept and notions of "sustainable development" (defined in section 2(1)) into the federal environmental assessment process, but only for these designated projects.

An opportunity for public comments must be provided during the process, and this may be expanded to include a mediation or a panel review process[263]. A participant funding program may be established by the Minister of the Environment under the Act, although it is not available for early stages in the review, nor for legal advice at public hearings[264].

Where CEAA appears to be at its weakest is in the resulting decision at the end of the process. The decision is left to the federal authority proposing, approving or funding the project, defined in sections 11 and 12. This will usually create a clear conflict of interest. There are some safeguards in having the decision consider the report of the mediator, review panel or comprehensive study, but these are watered down to allow impacts "justified in the circumstances", and implementing mitigation measures and follow-up programs the authority deems "appropriate"[265]. Until the assessment process has been completed and such a decision made, section 13 provides that no federal power, duty or function under any other Act may be exercised that would allow a project to be carried out in whole or in part.

Having a wide ranging Act governing federal environmental assessments makes an important contribution to the processes guiding sustainable use of biodiversity in

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261 *Comprehensive Study List Regulations*, SOR/94-638, p.3401, 7/10/94.

262 Section 16(2).

263 See sections 18(3), 19(2), 22, 23, 31, 34, 36-38, 55 and 58(3) and (4), among others.

264 Section 58(1)(i).

265 Sections 37 and 38, as well as discretionary language within the Regulations. While the use of the term "appropriate" mirrors the language in the Convention, its use in the Act relates to particular decisions rather than the broader structure of the procedures.

Canada. Nonetheless, the Act suffers from a number of important weaknesses that need to be addressed to fully inform federal decision making. CEAA creates broad decision-making discretion, with enough nebulous language to allow a federal authority to elude environmental accountability, and avoid most citizen enforcement of the Act. It provides for decisions made by the authority often involved in the project, not independent determinations, as well as informal, unclear and possible unfunded public participation. Other deficiencies include:

- lack of clear criteria for determining whether a project should be assessed, acceptability of projects, and appropriate mitigation measures;
- no application to plans and programs that lead to projects, or to related activities creating significant cumulative effects;
- lack of adequate assessment of project need, alternatives and socioeconomic and cultural effects;
- the right to approve projects with significant adverse environmental effects if the authority feels they are justifiable; and,
- lack of clear, effective and equitable means of specifying and enforcing approval conditions or follow-up programs[266].

These procedures contribute to meeting the environmental assessment obligations under Article 14, section 1 of the *Biodiversity Convention*, including those for public participation and international arrangements. However, this section's paragraph (b) calls for "appropriate arrangements" to duly take into account programmes and policies with potential adverse impacts on biodiversity; this wider scope is missing within CEAA. There is also no effective commitment to achieving, or making decisions consistent with, sustainability, contrary to other directions found in the *Convention*. Consequently, while Canada has new national environmental assessment legislation, it still does not accomplish comprehensive, independent review and decision making to avoid or mitigate impacts upon biodiversity, and therefore falls short of the Convention's requirements and intent. Given Canada's notable achievements on this front in the past, these procedures and arrangements are not fully appropriate and are a disappointment. Further reforms are thus necessary to address these noted weaknesses.

2. International Trade

Over the last few years, Canada has entered a number of significant, and controversial, international trade agreements. These include the *Free Trade Agreement* (FTA) with the United States, the *North American Free Trade Agreement* (NAFTA) with

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266 Rodney Northey and John Swaigen, "Environmental Assessment", in David Estrin and John Swaigen, *Environment on Trial*, supra note 1, at pp.222-3, with analysis building upon Robert B. Gibson, "The New Canadian Environmental Assessment Act: Possible Responses to Its Main Deficiencies" (1992), 2 J.E.L.P. 223.

the United States and Mexico, and the *General Agreement on Tariffs and Trade* (GATT) with the majority of nations. While these detailed and complex agreements have focused almost entirely upon trade matters, they nonetheless have major implications for biodiversity. They serve to entrench certain patterns of international relations with an exclusive economic focus. This is in contrast to the model of incorporating environmental considerations from the outset as part of a concerted move towards "sustainable development" (or as the *Biodiversity Convention* has termed one aspect, "sustainable use"). This chapter can only provide an overview of these agreements, and their potential implications for biodiversity[267].

The *World Trade Organization Agreement* was signed in 1994, and on 1 January 1995 came into force[268]. Embodying the results of the Uruguay Round of GATT negotiations, it has broadened the scope of trade negotiations to include measures related to investment, services and intellectual property rights ("TRIPS", including patents and technology licences). GATT constrains trade policy by not allowing subsidies of exports (except agricultural products) or the imposition of unilateral quotas for imports (except to prevent sudden surges that might put a domestic industry out of business), and countries must offset any new or increased import tariffs by reducing existing tariffs to compensate trading partners.

The GATT, and arrangements such as the original FTA and now NAFTA, elaborate several principles, here analyzed together. First, "national treatment" requires no party to treat the goods, services or investments of another party any differently from the way it treats its own. With effective monitoring systems, theoretically a country could ban all of a product that was produced by an environmentally hostile practice, so long as it applied to all producers, domestic and foreign[269]. Second, "most-favoured nation treatment" ensures that any trade advantage given to one trading partner must be provided to all others.

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267 This discussion is taken primarily from: Bruce Lourie, Paul Muldoon, Carrie Fleming and Mark Ritchie, *NAFTA and the Great Lakes: A Preliminary Survey of Environmental Implications* (Toronto: Great Lakes United, Canadian Environmental Law Association, and Institute for Agriculture and Trade Policy, 1993); and Michelle Swenarchuk, "The Environment and International Trade Agreements: An Overview", In: Canadian Environmental Law Association, *The Environmental Implications of Trade Agreements*, supra note 110.

268 See the *World Trade Organization Agreement Implementation Act*, S.C. 1994, c.47, in force 1 January 1995.

269 John Girt, supra note 198.

Generally then, all direct and indirect barriers to trade across borders are to be eliminated, and thus product bans, taxes, tariffs, subsidies, quotas and import licences, and the like are at risk. Areas with the greatest comparative advantage do so with the least use of pesticides etc., and the removal of these trade barriers may put otherwise marginal producers with higher impacts at a further disadvantage[270]. Yet this reduces the range of measures available to Canada to encourage or protect environmentally sound practices, and may create a competitive disadvantage for operations located in jurisdictions with higher environmental standards.

NAFTA extended earlier GATT concepts from goods to include services. It also provides that where an export restriction is put in place, it must not reduce the proportion of the domestic production available to another country below the proportion exported in the previous three years. This provides perpetual access by one country to another's natural resources (eg. energy, forest products), and does not distinguish between domestic consumption that may be sustainable and unsustainable consumption in and transport to export markets.

GATT allows import and export restrictions where "necessary to protect human, animal or plant life or health" or "relating to the conservation of exhaustible natural resources if ... in conjunction with restrictions on domestic production or consumption"[271]. But these are narrow and vague criteria, and provide limited relief from overriding FTA and NAFTA principles. NAFTA calls upon the parties to "pursue equivalence" and base these on "international standards" using criteria for standard-setting, and encourages doing so "without reducing the level of protection of human, animal, or plant life or health"[272], although reduced protection is not prohibited. The FTA permits standards to achieve a legitimate domestic objective, including protection of the environment[273]. Despite these general provisions, there are fears that this will lead to lower common standards, overextend provincial government resources, and remove opportunities for innovative and regional measures and local public input into what these standards should be.

A number of environmental conventions, including CITES, require parties to ban imports from non-participating nations under some circumstances, and thus discriminate with regard to trade; NAFTA provides a limited protection for trade actions taken in accordance with these Conventions. Apparently, no challenges to these Conventions have yet been made before trade panels.

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270 Ibid.

271 Article XX(b) and (g).

272 Articles 756-757 SPS; 906 TBT.

273 Articles 603 and 609.

Nonetheless, there are a number of cases which demonstrate how trade measures may undo positive environmental measures. In 1989, a NAFTA trade panel decided that Canadian *Fisheries Act* regulations requiring Pacific Ocean salmon and herring to be landed in Canada for monitoring purposes could be implemented by sampling only ten to twenty percent, rather than the full catch, and thus the program was not "primarily aimed at conservation"[274]. Similarly, a GATT panel ruled that U.S. bans on the import of tuna taken with nets that killed dolphins and other species were illegal, thus undermining any countries' ability to put global conservation measures in place[275]. Legal technical arguments decided a FTA case concerning lobster, with only a passing reference to the incorporated GATT environmental exemptions[276].

Two NAFTA agricultural side agreements were signed, with a number of implications[277]. This may well reduce farmers' flexibility to sustain organic farming or adopt better conservation measures, shift dairy and beef production to the continent's southern deserts, and allow for imports of foods from areas with lower environmental standards. For forestry, and for pollution concerns affecting biodiversity, lower standards and interference in provincial policy are also concerns, as amply demonstrated in the softwood lumber trade disputes[278].

There are often various alternative means of promoting conservation, and while some may be more effective or efficient under one set of criteria, they may not always meet the required "least trade restrictive" test or other criteria established in the agreements. This is of particular concern since there will not necessarily be any environmental expertise before the panel nor opportunities for public participation in dispute settlements, no conservation measures have been nor are likely to be upheld

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274 Canada-U.S. Trade Commission Panel, *In the Matter of Canada's Landing Requirement for Pacific Coast Salmon and Herring*, 1989.

275 Paul Muldoon and Burkhard Mausberg, *NAFTA and the Great Lakes*, supra note 267, at p.21.

276 *Matter of Lobsters from Canada-U.S.*, 2 Trade and Tariff Reports 72, at paragraphs 7.20-7.20.4.

277 For example, it could lead to lower family farm incomes, an increased pool of migrant farm workers, lower food safety and environmental protection standards, and a reduction in off-farm job opportunities and wages. Ibid, at pp.25-27.

278 Ibid, at pp.31-33; and Scott Sinclair, "The Use of US Trade Remedy Laws: Case Study of the Softwood Lumber Disputes", in Canadian Environmental Law Association, *The Environmental Implications of Trade Agreements*, supra note 110, at pp.195-221.

under the GATT exceptions, creating a chilling effect on new initiatives[279]. How these new trade agreements will affect allocations and dispute resolution between Canada and the U.S. for inland fisheries remains unclear, but a bias towards trade in recent fishery cases adds additional cause for concern[280].

At the United Nations Conference on Environment and Development, the "Rio Declaration" statement of 27 principles recognized the "precautionary principle" and reducing "unsustainable patterns of production and consumption". Yet the "necessity" test in trade disputes places a high burden of proof upon environmental regulators and standards, rather than on those challenging them. Trade agreements also need to be broadened beyond product quality to recognize standards based upon the processes by which products are produced, and whether these contribute to the goal of sustainable use of biodiversity as articulated in the *Biodiversity Convention*.

The growth in international trade and its consequent distortion of local economies has contributed to the over-exploitation and degradation of land and biodiversity around the world. This ranges from wildlife endangerment, monoculture agriculture, deforestation, desertification, and pollution to the displacement and destruction of local and indigenous cultures. Developing countries are especially stressed, having to intensify resource exploitation in order to export commodities for foreign exchange, often in the face of low commodity prices. The *Biodiversity Convention* calls for fair and equitable trade in genetic resources and technology, and trade can certainly assist the achievement of conservation and sustainable use of biodiversity. However, the rapid patent protections for modified life forms as promoted under the recent trade agreements may yield limited benefits to the local and indigenous people, and such commodification of life may be in conflict with their beliefs. Wildlife impacts and illegal trade may increase due to increased transport and tourism resulting from NAFTA. As noted earlier, concerns also arise due to lack of appropriate panel expertise or awareness, no general public participation opportunities, reduction in and chilling effects on the availability of conservation measures, perpetual access to resources, and downward pressure on environmental standards.

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279 M. Swenarchuk, "Canada-U.S. Free Trade Agreement: The Canadian Experience", in *Review of European Community and International Environmental Law*, Vol. 1 ,#1, 1992, p.44, cited in *NAFTA and the Great Lakes*, note 267, at pp.21-22. See also Michelle Swenarchuk, note 110, at p.76, commenting that NAFTA trade dispute panels may consult environmental experts, but their processes will be secret and without provincial government or public access.

280 *NAFTA and the Great Lakes*, note 267, at pp.34-35.

However, despite these actual and potential impacts from international trade, several positive impacts can be expected or opportunities realized. The North American Commission on Environmental Cooperation (NACEC) was formed under the 1993 *North American Agreement on Environmental Cooperation*, a NAFTA environmental side agreement. The Commission could become a North American roundtable on biodiversity and sustainable development, and help direct research and cooperative initiatives, such as the *North American Waterfowl Management Plan*[281]. The requirements to substantially reduce commodity subsidies can liberate massive funding, which could then be directed through environmental, non-commodity programs back to rural landowners, thereby improving prospects for biodiversity[282]. As the environmental and trade issues are drawn together, the participatory culture of environmental policy-making could open up the development of trade policies and make them increasingly open to science-based discussions[283].

These are substantial and controversial issues, particularly because they hit at the heart of our nation's history and current modes of resource use, with profound implications for our traditional economic relations, both at home and abroad. The trade agreements were negotiated explicitly without detailed considerations of, but with inevitable, environmental impacts. As the FTA has expanded to include Mexico within NAFTA, so is NAFTA now embracing new signatories in Latin America. The agreements are detailed, with the FTA legislated in Canada in its entirety[284], in contrast to a more general *Biodiversity Convention* which has yet to receive the same legal analysis or incorporation.

International trade and its codification of rules has great momentum, while biodiversity law and policy is still in its infancy. The impacts of the FTA, NAFTA and GATT will not be fully apparent for some five to ten years, but trade panel decisions have not been supportive of biodiversity conservation or sustainable use to date. The

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281 Clayton D.A. Rubec, Kenneth W. Cox and James H. Patterson, "NAFTA Opportunities for Conserving Continental Biodiversity", Invited Paper, Expert Meeting on Cooperation, Conservation and Ecosystem Protection, North American Commission on Environmental Cooperation (Ottawa: Secretariat, North American Wetlands Conservation Council (Canada), 1995).

282 Ibid.

283 Francesca Scala, Luc Juillet and Jeffrey Roy, *The Trade-Environment Nexus: Implications for Agricultural Producers in Canada* (Ottawa: National Agriculture Environment Committee, 1995), at pp.34-35.

284 *Canada-United States Free Trade Agreement Implementation Act*, R.S.C. 1985, c.C-10.6.

next round of GATT supposedly will deal more centrally with environmental issues, but doing so will require immense efforts to reexamine and address increasingly entrenched trade policy and practices. Nonetheless, it may provide a new forum to integrate and more effectively recognize environmental and social matters alongside economic ones -- the key behind the World Commission on Environment and Development's concept of "sustainable development"[285].

3. Pollution and Pesticide Control

Pollution and the inappropriate use of pesticides can have a significant impact upon biodiversity, including organisms' food sources, health and behavioural changes, population size effects, and reproduction, as well as changes in habitat quantity and quality. For example, bald eagle, peregrine falcon and beluga whale populations have suffered severe declines from toxic loadings; fish-eating cormorants and terns are born with twisted beaks; male mink and herring gulls are born with female sex organs; trout swim upside down and birds abandon nests; and terns, gulls and belugas are more susceptible to disease from the suppression of immune systems[286]. Long documented for other species, human health and reproductive functions are also affected[287]. Given the monitoring of toxics and their effects, the *Biodiversity Convention*, Article 8(l), broadly calls upon parties to regulate or manage processes and activities adverse to biodiversity. Reducing and eliminating the release of harmful substances, the conservation of soil, water, air and other essential resources, and the long-term integrity of ecosystems are also generally recognized in the *Canadian Biodiversity Strategy*[288].

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285 World Commission on Environment and Development, *Our Common Future* (Toronto: Oxford University Press, 1987). The Commission was chaired by Ms. Gro Harlem Brundtland of Norway, and its members included Canada's Maurice Strong and Jim MacNeill (also the Commission's Secretary General).

286 See chapter 2, "The Health Effects of Toxic Contamination", in: National Wildlife Federation and Canadian Institute for Environmental Law and Policy, *A Prescription for Healthy Great Lakes: Report of the Program for Zero Discharge* (Toronto: National Wildlife Federation and Canadian Institute for Environmental Law and Policy, 1991).

287 Theo Colborn, Dianne Dumanoski and John Peterson Myers, *Our Stolen Future: Are We Threatening Our Fertility, Intelligence, and Survival? - A Scientific Detective Story* (Toronto: Penguin Books, 1996).

288 Strategic Directions 1.28 and 1.30.

Federal controls over pollution are directed primarily through the *Canadian Environmental Protection Act* (CEPA)[289]. The Act attempts to take a multimedia approach to the control of pollutants and especially chemicals determined to be toxic, regulating them (within the scope of federal authority) from production, distribution, release into the environment, and disposal. The Act relates to seven main areas: environmental quality objectives, guidelines and codes of practice; toxic substances; nutrients; federal agencies, works, undertakings and lands; international air pollution; ocean dumping; and other general matters.

CEPA has just undergone its first five-year review. Numerous environmental non-governmental groups conducted an extensive analysis of the Act and proposed major reforms[290]. These relate to issues of: the federal role, enforcement and administration, environmental and worker rights, economic instruments, toxic substances and pollution prevention, new chemicals, ocean dumping, coastal zone management, air pollution, biotechnology, the ecosystem approach, emergency planning, putting the federal house in order, and transboundary waste movement. Many of these recommendations were adopted by the Parliamentary Standing Committee on the Environment and Sustainable Development in its June 1995 report. The federal government released its disappointing response to the Standing Committee's report in December of the same year, and must now advance a strong package of reforms if it is to ensure stronger, current and effective environmental protection across the country[291].

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289 Supra note 193.

290 See *The Canadian Environmental Protection Act: An Agenda for Reform*, note 163.

291 House of Commons Standing Committee on Environment and Sustainable Development, *It's About Our Health*, Ottawa, June 1995; and *CEPA Review: The Government Response*, Ottawa, December 1995. The Government response has been criticized by, for example, the Canadian Environmental Law Association and Canadian Institute of Environmental Law and Policy, in *It's Still About Our Health!* (Toronto: CELA and CIELAP, March 1996).

Other federal legislation also relates to the release of pollutants into the environment[292]. These include the *Arctic Water Pollution Prevention Act*[293], *Canada Shipping Act*[294], *Environmental Contaminants Act*[295], *Fisheries Act* (as discussed in the Wildlife section), *Navigable Waters Protection Act*[296], and *Transportation of Dangerous Goods Act, 1992*[297], among others.

On a related note, pesticides have been included within this section because they may have similar effects upon biodiversity as do pollutants. The federal government regulates pesticides through the *Pest Control Products Act* (PCPA)[298]. The PCPA relies on its section 4 provisions requiring registration, packaging and labelling of "control products". To be registered, the Minister of Health (formerly the Minister of Agriculture) must have sufficient information and determine that the product has merit for the purpose claimed, when used according to directions, and can refuse to register the pesticide where it has an "unacceptable risk of harm to ... public health, plants, animals or the environment"[299]. This language suggests a U.S.-style risk/benefit approach, with its numerous limitations, and the FTA and NAFTA may require Canada to move towards the U.S. approach through "equivalence" in "process for risk/benefit assessment"[300].

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292 For more discussion of these Acts and related policy, see Mark Winfield and John Swaigen, "Water", in: David Estrin and John Swaigen, *Environment on Trial*, note 1, pages 522-529.

293 *Arctic Water Pollution Prevention Act*, R.S.C. 1985, c.A-12.

294 *Canada Shipping Act*, R.S.C. 1985, c.S-9.

295 *Environmental Contaminants Act*, R.S.C. 1985, c.E-12.

296 *Navigable Waters Protection Act*, R.S.C. 1985, c.N-22.

297 *Transportation of Dangerous Goods Act, 1992*, S.C., c.T-19.01.

298 *Pest Control Products Act*, R.S.C. 1985, c.P-9.

299 *Pest Control Products Regulations*, C.R.C. 1978, Vol.XIII, c.1253, section 18(d)(ii). In practice, human health considerations are given much more attention than impacts upon biodiversity.

300 J.F. Castrilli and Toby Vigod, "Pesticides", in *Environment on Trial*, note 218, pp.624-625. These authors also provide a comprehensive study paper on pesticides law and policy in *Pesticides in Canada: An Examination of Federal Law and Policy* (Ottawa: Law Reform Commission of Canada, 1987).

In addition to the *Pest Control Product Act*, the *Canadian Environmental Protection Act* prohibits the export of pesticides that have lost their PCPA registration status and have been placed on the priority substances list, except where the pesticides are exported for destruction. The *Food and Drugs Act*[301], section 4, prohibits the sale of food that "has in or upon it any poisonous or harmful substance", but a pesticide manufacturer can apply to allow a residue, and the *Food and Drug Regulations*[302] establish maximum residue limits for agricultural chemicals that provide an exemption from the prohibition in the Act.

Concerns have been voiced about pesticides regulation in Canada, including the potential abuse of temporary registrations, no labelling of information on the formulants (containing the pesticides) or their by-products or contaminants, no guaranteed public access to information or participation rights in the registration and reregistration processes, and ineffective enforcement[303]. A multi-stakeholder review team was appointed in 1989, issued a report in 1990, and the government had agreed to implement 23 of the team's 27 recommendations. An interim advisory council has been established, but a number of environmental and public health concerns about implementation remain[304]. Recent recommendations for reform of CEPA have advocated that the screening of new chemicals, such as pesticides, assess toxicity, ensure public participation, and consider prevention options for toxic or potentially toxic substances[305].

Assessment, Trade and Pollution Recommendations

1. **Strengthen the *Canadian Environmental Assessment Act* to allow for independent assessments, and ensure that statutory triggers for other legislation remain in place.**

2. **Bring environmental and biodiversity issues to the forefront and include meaningful public participation in any new trade (eg. GATT) negotiations, and ensure that biodiversity concerns are addressed and expertise available in the resolution of relevant trade disputes.**

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301 *Food and Drugs Act*, R.S.C. 1985, c.F-27.

302 *Food and Drug Regulations*, C.R.C. 1978, c.870, Part B, Division 15, Table 11.

303 J.F. Castrilli and Toby Vigod, "Pesticides", supra note 218, at pp. 625-633.

304 Ibid, at pp.635-636.

305 *The Canadian Environmental Protection Act: An Agenda For Reform*, note 163, at pp.13-14.

3. Implement the environmental group and Parliamentary Standing Committee recommendations for reforming, broadening and strengthening the *Canadian Environmental Protection Act.*

G. GENETIC DIVERSITY, PATENTS AND BIOTECHNOLOGY

Genetic diversity and the related subject of genetically altered organisms are increasingly becoming important issues for biodiversity, and law and policy, in Canada and around the world. The issues can be divided into three categories: maintaining genes generally and as a source of resources; patenting; and their use to alter lifeforms, with associated concerns about biosafety and effects upon domestic and wild species.

The protection of genetic diversity depends upon the purpose involved, and among others can involve conservation, phytosanitary and intellectual property rights issues[306], while access to genetic resources is a separate, and increasingly contentious, area. Much remains to be examined and discussed on these subjects, and 1996 projects of the Native Law Centre in Saskatoon and Canadian Institute for Environmental Law and Policy will contribute to this knowledge base. Unfortunately, federal cuts in Canadian Museum of Nature taxonomic staff in the early 1990s undermine the county's capability to fully understand and analyze its scope of genetic and species diversity.

1. Genetic Diversity Conservation

Genetic conservation is concerned with loss of genetic variation within populations, due to the extinction of distinct populations from habitat loss or direct harvesting (such as past high-grading of the best trees), population crashes where subsequent generations are produced by a limited number of parents, and inbreeding genetic depression[307]. Wild "genetic resources", the term used in the *Biodiversity Convention*, have four main uses: regeneration and enhancement of wild resources; domestication of new crop and livestock species; improvement of established crop and

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306 Brad Fraleigh, supra note 245.

307 D. Joyce, "Genetic Resource Management Principles and Their Application in the Forests of Ontario", in T. Neiman, A. Mosseler and G. Murray, *Forest Genetic Resource Conservation and Management in Canada* Proceedings of a Workshop (Chalk River, Ontario: Canadian Forest Service, 1995), at pp. 48-49.

livestock species; and industrial production of biochemicals through cell culture[308].

Almost all of the conservation work in Canada on genetic resources has been done on commercial forest or agricultural species, with governments and non-government organizations such as Seeds of Diversity and Rare Breeds Canada playing important roles[309]. Animal pedigree associations can also make by-laws to recognize and inspect pedigree and breeding records[310]. Because of this situation, much of the rest of this section will thus emphasize the forestry and agricultural application, but this also highlights the considerable work yet to be done for wild species.

The presentations at a national workshop on forest genetic resources consistently identified methods of conserving genetic diversity: the protection of appropriate reserves (both existing and those managed for *in situ* genetic conservation), and taking *ex situ* measures such as maintaining collections of germplasm[311]. As in California, "Genetic Resource Management Units" might be established, or overlain on existing designations, to maintain the integrity of the local gene pool. Existing protected areas, described above, could be examined, zones established and management procedures (especially for successional species) developed for these purposes; the issue is identifying the genetic resource in order that such means of protection can be taken[312].

Little formal law or policy on managing protected areas for genetic diversity or maintaining genetic collections appears to exist. Much seems to occur through Department programs, and thus derive from general Department Acts and powers. For

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308 Robert Prescott-Allen and Christine Prescott-Allen, *Canada's National Parks as In Situ Genebanks: Towards a Canadian System of In Situ Genebanks for the Maintenance of Wild Genetic Resources*, A Report to Parks Canada (Up-P-147) (Victoria: PADATA Inc., 1984), at p.2.

309 See (Anonymous), *Country Report for Canada to the International Conference and Programme for Plant Genetic Resources* (undated; 1995?), available through Agriculture and Agri-Food Canada.

310 *Animal Pedigree Act*, R.S.C., c.8 (4th Supp.).

311 See particularly A.D. Yanchuk, "A Gene Conservation Strategy for British Columbia Conifers: A Summary of Current Approaches", in T.C. Neiman et al, ibid, at pp. 5-12.

312 Robert Prescott-Allen and Christine Prescott-Allen, *Canada's National Parks as In Situ Genebanks*, supra note 308, at pp. 20-21. The authors note that Parks Canada policy permits active management when shown (eg. identified in a park management plan) to be necessary, such as to maintain successional species.

forestry, this is accomplished through some federal-provincial agreements, such as funding the maintenance of graft collections in the Canada-Manitoba Partnership Agreement in Forestry, and operating the Rare and Exceptional Stand Program under the Canada-Alberta Resource Development Agreement[313]. The Canadian Forest Service has also supported an Ecological Reserves program under the *Green Plan* to identify and assess the representation of ecological regions in Canada through a network and National List of Protected Areas, thereby enabling consideration of *in situ* conservation of genetic resources.

For agricultural crops, an *International Undertaking on Plant Genetic Resources* was adopted by 110 countries in 1983, with eight countries (including Canada) filing reservations. The Undertaking's purpose is to "ensure that plant genetic resources of economic and/or social interest, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes". The U.N. Food and Agriculture Organizations is currently facilitating negotiations to revise the Undertaking to address the concerns of Parties making reservations by finding a balance between the rights of breeders and farmers, ie. access to products of biotechnology (commercial varieties, breeders' lines) on the one hand, and farmers' varieties and wild material on the other[314]. FAO has prepared a preliminary legal analysis of whether the Undertaking should be converted into a legally binding agreement, either under FAO's auspices or as a protocol to the Biodiversity Convention, but a decision on this has been postponed until later stages of negotiating revisions to the Undertaking[315]. Plant breeders' rights were provided for by the 1978 *Union for the Protection of New Varieties of Plants"* (UPOV) Convention[316], and in 1989 these rights were agreed to be not inconsistent with the Undertaking.

To meet these international commitments and as noted earlier, the Plant Gene Resources of Canada (PGRC, within the Department of Agriculture and Agri-Food Canada) is mandated to protect, preserve and enhance the genetic diversity of Canadian crop plants and wild plants of economic importance by acquiring, evaluating, researching, documenting and distributing samples of plant genetic resources for food

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313 J.I. Klein, "Forest Genetic Resources in the Northwest Region, Canadian Forest Service", at p.45, and N.K. Dhir and L.K. Barnhardt, "Forest Genetic Resources and Conservation in Alberta" at p.36, both in T.C. Nieman et al, supra note 311.

314 Ole Hendrickson, supra note 210.

315 Ibid.

316 CTS 1991 No.5.

and agriculture[317]. The national network preserves over 110,000 samples, and has signed a Memorandum of Understanding with Seeds of Diversity Canada (a non-profit organization formerly known as the Heritage Seed Program) to work together to preserve heritage crop varieties. The Research Branch of Agriculture and Agri-Food Canada houses and curates the largest living collection of fungal isolates (more than 10,000 strains) in Canada, and holds numerous bacteria and virus collections, while the Department generally provides financial and technical support to prepare systems and manuals for the conservation of farm animal genetic resources[318].

Further efforts might be undertaken within the scope of federal authority. Cooperation and coordination is needed among museums, historic houses and sites to maintain and exchange "living artefacts" (heritage plant varieties and animal breeds), and thus see these as part of the depiction of history and cultural heritage in these locations[319]. This might be accomplished through the Heritage Minister's powers to make agreements or provide for the administration, preservation or maintenance of historic places and museums under the *Historic Sites and Monuments Act*[320], to designate and regulate "heritage features" under the *Heritage Railway Stations Protection Act*[321], or under other authority[322].

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317 Brad Fraleigh, supra note 245.

318 Ibid.

319 Ghan Chee, Seeds of Diversity, personal communication, May 21 1996.

320 *Historic Sites and Monuments Act*, R.S.C. 1985, c.H-4, section 3. "Historic place" is defined in section 2 to *include* sites, buildings and structures.

321 *Heritage Railway Stations Protection Act*, S.C. 1988, c.62; R.S., c.H-3.5, sections 4(b) and 5(1)(b).

322 For example, the *Museums Act*, S.C. 1990, c.3, or the 1982 federal *Policy on Heritage Buildings*, which provides for identification, evaluation, management and protection to federal heritage buildings. Under the Policy, the Federal Heritage Buildings Review Office will review actions affecting a federal heritage building's "heritage character", defined to include distinctive traits and features, and the entire building and its immediate surroundings. Historic parks established under the *National Parks Act* could be similarly managed.

2. Gene Patenting

The *Biodiversity Convention* contains numerous directions concerning the development and equitable sharing of genetic resources[323]. Such provisions could well constrain the chemical, agricultural and pharmaceutical companies now busily collecting genes from the far reaches of the globe and privatizing ownership through seeking patents for a wide array of lifeforms, including human genetic material. While collecting helps preserve diversity, it also raises ethical and access issues, especially for indigenous peoples whose traditional ecological knowledge often contributes to commercial applications (see the Aboriginal People chapter). The genetic resources aspect of the Convention has been the focus for U.S. resistance to ratifying the Convention, since it would involve sharing profits and access to intellectual property rights.

There has been a steady expansion of the scope of life patenting, particularly in the United States, whereby an applicant is granted exclusive rights to use or licence the use of a new item for a prescribed period of time. The scope of life patenting is in part determined by international trade agreements. If a country does not have the same form of patent protection that American companies enjoy in the U.S., then that is seen to violate Americans' ability to do business in that country, and therefore it is a trade violation. Patents are thus fundamentally a trade issue, and wrapped up in GATT and NAFTA. Under GATT, it is accepted that even human beings and the entire DNA of the human being is patentable[324].

In the U.S., early patents were given for unicellular organisms, then multi-cellular, and now applications have been made to patent the genetic material of a Guaymi woman from Panama, persons in the Solomon Islands and Papua New Guinea, and other indigenous people, usually without their knowledge or informed consent. Various governments, universities and companies are sampling the human cell lines of persons on small islands in the South Atlantic, East China Sea, and Pacific Ocean, as elsewhere, to isolate particular genes and possibly seek patents on these[325].

In contrast to the U.S. trend, a patent application for all female mammals (including humans) resulted in a protest in Europe, and life patenting was rejected by the European Parliament in March 1995. At home, Canadians must wrestle with the

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323 Articles 8(g), 15, 16 and 19.

324 Pat Roy Mooney, "GATT, Intellectual Property, and Biological Diversity", *Seeds of Diversity*, Vol. 9, No. 2, pp. 6-11, at p.9.

325 Ibid, pp. 9-10. The patent applications are often made by the U.S. government or companies.

prospects of genetically engineered, faster growing Coho salmon and trees for reforestation, while review of a bovine growth hormone has produced substantial opposition due to effects on milk and the dairy industry[326]. Numerous applications for the patenting of multi-cellular life have been made in Canada, but most have yet to be determined.

Canada's *Patent Act* defines a patentable invention as "any new and useful art, process, machine, manufacture or composition; or any new and useful improvement in any art, process, machine, manufacture or composition of matter"[327]. Upon disclosure by the inventor and a successful application, the Act grants exclusive property rights in the invention. The *Intellectual Property Law Improvement Act* enables the deposit of biologically-engineered inventions rather than their description[328]. In part following along the path of U.S. decisions, the Patent Appeal Board granted the first Canadian patent of life for a fungal species that can metabolize chemical waste; a case concerning the patenting of a strain of soybeans, a multi-cellular organism, was dismissed upon technical grounds by the Supreme Court of Canada without dealing with the broader issues[329].

Thus single celled organisms may be patented in Canada, while multi-celled lifeforms are more uncertain. A U.S. application to patent the Harvard onco-mouse (genetically engineered to be susceptible to cancer and already patented in the U.S.) became the first multi-celled lifeform patent application to receive a decision, being rejected by an examiner and upheld in August 1995 on appeal[330]. An appeal to the Federal Court was made in February 1996, and the case is likely to be taken to the

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326 Canadian Institute for Environmental Law and Policy, *The Citizen's Guide to Biotechnology* (Toronto: Canadian Institute for Environmental Law and Policy, 1995).

327 *Patent Act*, R.S.C. 1985, c.P-4.

328 *Intellectual Property Law Improvement Act*, S.C. 1993, c.15. Regulations are also being developed to implement this Act.

329 *Re: Application of Abitibi Co.* (1982), 62 C.P.R. (2d) 81 (PAB), and *Pioneer Hi-Bred Ltd. v. Commissioner of Patents* (1989), 25 C.P.R. (3d) 257 (SCC); see discussion in Paul Muldoon and Burkhard Mausberg, "The Regulation of Biotechnology", note 335, at pp.254-255.

330 Ken Traynor, "Canadian Intellectual Property Office Initiatives - Rejecting the Rush to Patent Life", in Canadian Environmental Law Association, *Manipulating Life: Patenting Lifeforms and biotechnology Development in Canada Today* (Toronto: Canadian Environmental Law Association, 1995), at p.4.

Supreme Court of Canada.

New life forms from cross-breeding are not likely patentable because they are a "chance transformation", but some genetic engineering approaches could meet the tests for a new "invention". Nonetheless, limited proprietary protection is now provided under the *Plant Breeders' Rights Act* for completely new plant varieties through recognition in a regulation[331]. The holders of rights must maintain propagating material, and receive exclusive rights to produce, sell and create new varieties from such varieties, although farmers may retain seed of protected varieties for their own use without paying a royalty[332].

NAFTA and GATT's harmonization pressures are drawing Canada towards the U.S. approach. Led by Industry Canada, the federal government had announced a two-year policy review on the patenting of life forms, partly due to the intellectual property provisions of GATT and interrelationships with the *Biodiversity Convention*; however, this has since been essentially dropped[333]. Much of the debate now may occur surrounding the appeals of the Harvard onco-mouse application, although a courtroom is a poor forum for issues of such broad public interest and implication.

3. Biosafety and Biotechnology

Similarly broad to the *Biodiversity Convention*, the only federal legislation which directly defines "biotechnology" is the *Canadian Environmental Protection Act*, section 3:

> "biotechnology" means the application of science and engineering in the direct or indirect use of living organisms or parts or products of living organisms in their natural or modified forms.

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331 *Plant Breeders' Rights Act*, S.C. 1990, c.20, and *Plant Breeders' Rights Regulations*, SOR/91-594, *Canada Gazette* Part II, 06/11/91, p.3516, as amended.

332 David Allin, *Convention on Biological Diversity: Report on Canadian Legislation and Policy Regulating Access to Genetic Resources*, Prepared for Environment Canada and Justice Canada (Ottawa, 1995), at p.2; and *Country Report for Canada*, supra note 309, at p.31.

333 Ken Traynor, "Patenting Life: Who Decides?", *Intervenor*, Vol.19(6), November/December 1994, p.3; and personal communication, May 3 1996.

Generally, biotechnology can mean anything from planting a seed and milling and creating flour, to genetic engineering, where a gene is taken from one organism and inserted into the replicating genetic makeup of another. It is the use of genetically modified organisms, their metabolic products and the introduction of unmodified ("exotic") species into new environments that raises considerable concerns for biodiversity, and will be the focus of the following discussion. The use of such organisms is currently being explored for pesticide and pest resistant crops, and faster growing trees and aquacultured fish, to name a few.

Concerns arise for genetically modified organisms because of certain hazards[334]: they have potential for mutation, and they are self-replicating and thus capable of wide-spread distribution and becoming pests in non-target locations and for non-target species. They may enhance effects of existing pests or create new ones through hybridization or gene transfer, or by the selective pressures on pests of plants modified for pest or pesticide resistance. As reproducing organisms, there is limited ability to control such products upon release, and less so should they escape. With only a recent history of applications, current assessments of genetically modified organisms can only be preliminary evaluations of target and non-target impacts.

Where genes have crossed the species line, these organisms become fundamentally new. Environment Canada has an important role in regulating biotechnology through the toxic substances and new substances sections of the CEPA. Biotechnology products are treated as a category of new substances, and section 26 requires that Environment Canada and Health Canada receive notice prior to the import, manufacture or sale of *all* new substances, and that new substances be assessed for whether they are capable of becoming "toxic". Sections 29 and 34 provide for conditions, regulations or prohibitions on the import, manufacture, use or sale of a new substance suspected or found to be "toxic". CEPA also plays a powerful role because new substances can only be exempted from these provisions if they are regulated under another Act with equivalent or better notice and assessment provisions.

There is a diverse array of other federal statutes with some degree of regulation for broadly defined biotechnology, many of which were not originally drafted to deal with genetically altered products[335]. These statutes include the: *Canadian Environmental*

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334 See Mark S. Winfield and Brewster Kneen, *For Whose Future? A Response to the Government of Canada's Proposal for the Regulation of Biotechnology Under the Canadian Environmental Protection Act (CEPA)*, Prepared for the Biotechnology Caucus, Canadian Environmental Network, March 1996, at pp.4-5.

335 See Paul Muldoon and Burkhard Mausberg, "The Regulation of Biotechnology", in *Environment on Trial*, note 1, at p.245.

Protection Act[336], *Feeds Act*[337], *Fertilizers Act*[338], *Food and Drugs Act*[339], *Hazardous Products Act*[340], *Health of Animals Act*[341], *Plant Protection Act*[342], and *Seeds Act*[343]. Differences in agencies, procedures, and criteria exist between these statutes.

Weaknesses remain in this regulatory framework for biotechnology[344]. CEPA deals with biotechnology products as an adjunct to its provisions regarding chemical new substances, and thus fails to recognize the unique environmental and human health risks associated with them. The "toxicity" definition is rooted in chemical toxicology, and provides too narrow an evaluative structure for biotechnology effects. Public participation in decision-making under CEPA (and other statutes) is very limited, including rights to information, and does not include notice of new product assessments or field trials, nor rights to appeal various decisions in the process.

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336 CEPA deals with chemical and other products not covered by the other statutes.

337 *Feeds Act*, R.S.C. 1985, c.F-9, concerning the registration of seeds, including those of genetically altered plants (unless exempted in the Regulations).

338 *Fertilizers Act*, R.S.C. 1985, c.F-10, concerning registration and inspection of fertilizers, such as biotechnology products which add nutrients to or improve the soil or promote plant growth.

339 *Food and Drugs Act*, R.S.C. 1985, c.F-27, concerning foods and food additives as biotechnology products.

340 *Hazardous Products Act*, R.S.C. 1985, c.H-3, concerning consumer products.

341 *Health of Animals Act*, R.S.C. 1985, c.H-3.3, concerning production, evaluation, importation, and registration of veterinary biologics (which alter organic functions), animal products, and animal pathogens.

342 *Plant Protection Act*, R.S.C. 1985, c.P-14.8, concerning plant "pests", and could regulate field-tests, movement of transgenic crops, and control deemed "pests".

343 *Seeds Act*, R.S.C. 1985, c.S-8.

344 Mark S. Winfield and Brewster Kneen, *For Whose Future?*, supra note 334, at pp. 10-13.

The legislative framework does not provide clear authority to consider environmental and human health effects under other, particularly agricultural, statutes, and thus the government's regulatory framework and equivalency regulations could be subject to legal challenge. Agriculture and Agri-Food Canada is also often in a conflict of interest position as promoter and regulator, having to assess products that it may have helped develop and will promote. Further, these statutes do not contain provisions for appeals of decisions nor for civil liability for harm to the environment or human health; those measures for enforcement and penalties are weak in comparison to CEPA. Finally, the Biosafety Protocol being negotiated under the *Biodiversity Convention* will likely deal with evaluating biotechnology products' impacts upon biodiversity, and the transboundary movement of such products, but there is an absence of such provisions in the current Canadian legislative framework. These weaknesses then point to the need for further statutory reforms in addition to the proposed new regulations.

In 1993, after circulation of an industry guide to various federal Department roles, the nine federal regulatory departments concerned with biotechnology (in the broader sense) agreed to a national framework to help pull the diverse suite of authority into a cohesive package. When announced, the Minister of Energy, Mines and Resources stated that biotechnology "must be developed within a credible framework that puts the priority on health, public safety and the environment", with thorough environmental and human safety assessments conducted in a timely and cost-effective manner[345]. The Framework's Principles include: maintaining high human health and environmental standards; building on existing legislation and institutions, clarifying responsibilities and avoiding duplication; developing guidelines, standards, codes of practice and monitoring capabilities for pre-release environmental assessment of risk; developing a sound scientific date base; promoting open and consultative development and enforcement of Canadian regulations; and fostering a favourable climate for sustainable Canadian biotechnology products and processes[346].

Negotiations and consultations have been ongoing since 1988 on new biotechnology regulations. These new regulations, expected in June 1996, will define the notice and assessment requirements under CEPA, and also provide the first of equivalent regulations for feeds, fertilizers and foods under agriculture-related Acts. Agriculture and Agri-Food Canada has been given the lead in reviewing most biotechnology applications and has been working hard to simplify proposals for new biotechnology regulations, while Environment Canada is proposing detailed criteria and procedures to ensure that environmental considerations are clear and fully addressed.

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345 Government of Canada, "Federal Government Agrees on New Regulatory Framework for Biotechnology", News Release (available from Agriculture Canada), Ottawa, January 11, 1993, at page 2.

346 Ibid.

CEPA has also been under a five-year review, as mandated under the Act. Various non-government organization and industry submissions were made to the Standing Committee on Environment and Sustainable Development, with members of the Canadian Environmental Network advocating many reforms, including a comprehensive new part concerning biotechnology. The Committee released its strong report in June 1995, followed by highly political negotiating among federal Departments and eventually release of an environmentally disappointing government response[347]. Non-government organizations have made further responses to this government position[348]. Further Standing Committee hearings are to take place in June 1996, with revisions to CEPA possibly introduced in the fall of the same year.

Without regulations and revisions to CEPA, Canada is essentially in an unregulated situation concerning biotechnology, especially genetically modified organisms. However, certain products such as herbicide resistant canola, Bt potatoes (with insect resistance) and other crops are coming into commercial production and are approved for unconfined release. There are no provisions for monitoring commercial production. There are December 1995 draft guidelines for voluntary labelling of such products from the Department of Agriculture and Agri-Food, but the question remains whether consumers will be aware of or will avoid such crops.

Once released, such organisms cannot be recalled and may reproduce and effect other varieties or other species. Should insects become resistant to the biological control Bt through exposure to Bt potatoes, this may threaten the widespread use of Bt as a more environmentally sound control of forest pests. Without a comprehensive regulatory system, such potential threats to biodiversity cannot be controlled.

The *Biodiversity Convention*, Article 19(3) calls on parties to consider developing a protocol concerning "the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect[s]". The second Conference of the Parties to the Convention in Jakarta, Indonesia, November 1995, agreed to begin negotiating such a Biosafety Protocol. This will likely specify notification and labelling procedures for transboundary shipments of genetically modified organisms[349], thus providing an early and more specific focus to this aspect of genetic resources in the

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347 House of Commons Standing Committee on Environment and Sustainable Development, *It's About Our Health*, Ottawa, June 1995; and *CEPA Review: The Government Response*, Ottawa, December 1995.

348 For example, Canadian Environmental Law Association and Canadian Institute of Environmental Law and Policy, *It's Still About Our Health!* (Toronto: CELA and CIELAP, March 1996).

349 Ole Hendrickson, supra note 210.

agreement.

Canada is thus at a moral, ethical and legal crossroads, with complicated yet rapidly evolving legal mechanisms to grapple with the enormous issues involved. The nation has international responsibilities under the Convention, and yet has not implemented its own domestic regulations, despite eight years of discussion. Resolution requires comprehensive and clear regulations and complementary amendments to associated statutes to achieve the environmental and health protection goals announced with the federal Framework. Enhanced and clear roles and support for the public to become involved in these controversial issues is therefore key. Other principles must be factored in as well, such as ethical and animal welfare questions, the wider perspective of the ecosystem, and scientific uncertainties[350].

Genetic Diversity, Patents and Biotechnology Recommendations

1. **Adapt and expand measures and provide resources to conserve wild genetic resources in particular, as well as heritage agricultural varieties of plants and animals.**

2. **Implement comprehensive, detailed and effective CEPA regulations and the Biotechnology Framework for the regulation of biotechnology.**

3. **Amend statutes within the Framework to ensure clear public participation, the full assessment of environmental (including biodiversity) and human health impacts, civil liability for harm resulting from products, enhanced penalties and enforcement measures, powers to regulate transboundary product movement, and equitable sharing of technology, knowledge and revenue with indigenous source communities.**

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350 Greg Cento, "Coalition claims biotechnology regulations are inadequate", *Alternatives*, Vol.20(2), 1994, pp.6-8, citing Burkhard Mausberg and Brewster Kneen, *Concerns About Biotechnology: Issues Identified by Environmental Groups*, prepared for the Biotechnology Caucus, Canadian Environmental Network. For a discussion of these wider perspectives outside of the biotechnology context, see: Nina-Marie E. Lister, "Biodiversity Conservation Planning in Canada", Doctoral Comprehensive Examination, Faculty of Environmental Studies, University of Waterloo, 1994.

H. ECONOMIC INCENTIVES

The federal government exercises a substantial amount of its role in biodiversity through financial means. These may come in the form of direct grants (such as contributions under the North American Waterfowl Management Plan), or more indirectly through providing services, tax incentives or penalties, and various other means. Often, financial incentives as well as disincentives may be found in federal agreements signed with the provinces, and positions taken and agreements signed regarding international trade have far-ranging impacts upon biodiversity (see also the discussions above).

The federal Task Force on Economic Instruments and Disincentives to Sound Environmental Practices reported to the Ministers of Environment and Finance in late 1994 on a variety of measures within the federal mandate. These included measures for the 1995 budget, longer-term considerations, and a framework and implementation process for a more in-depth analysis of barriers and disincentives. Such discussions could explore the broader realm of "ecological economics", such as ecological taxation, full-cost accounting of activities, national ecological debts, standardized and reported quality of life indices, alternatives to the predominant 'growth' model, and the like[351].

While public measures are often more prominent, the federal Task Force did recommend reforms to the *Income Tax Act* affecting private landowners[352]. Implementing this, the federal 1995 and 1996 Budgets removed key barriers to private conservation of biodiversity, particularly the 20 percent cap on the usability of income tax credits against taxable income for donations of ecological lands given to municipalities and certain charities.

Previously, the federal *Income Tax Act* did not encourage donations of ecological lands because the landowner had to pay a tax on the land's increase in value (the capital gain), even though the landowner gave away the land and received no money for it. Until now, landowners did receive a tax credit usable over six years against up to 20 percent of their net income for donations to charities and municipalities. They also had the option of choosing to value the donation below the market price. However, with a modest income, any tax credits would usually give only partial tax relief. Sadly, the result of this tax system has been to discourage many willing landowners across the country who, for tax reasons, could not afford to donate their valuable lands to conservation charities.

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351 Paul James, Saskatchewan Wildlife Branch, personal communication, April 7 1996.

352 *Income Tax Act*, R.S.C. 1985, c.1 (5th Supp.), especially sections 110.1 and 118.1.

The 1995 announcement removes the 20 percent cap on the use of credits, and allows a limit of 100 percent of net income for qualified donations (including conservation covenants and easements). Working with the provinces, the federal Minister of the Environment will set up a process to certify broad categories of "ecologically sensitive lands", designate qualified charities which have a conservation purpose, and approve post-donation changes in land use or ownership.

The 1996 Budget announced further measures useful for conservation donations: all donations to charities of property that appreciates in value over time (eg. land or stocks) or given within a year of or on death will qualify for tax credits usable against 100 percent of the donor's income. Any tax on the often large increase in value (capital gains) of donated lands will be countered by enhanced tax credits in the year of donation. More donations of money to conservation charities will be encouraged since they will now qualify for credits up to 50 percent of the donor's income, up from the 20 percent cap.

Land trusts and some other conservation organizations are community-based and acquire lands, or rights to conserve land, through purchase or donation. Such organizations can issue tax receipts to donors, and protect for the long term their suite of properties and encourage others to wisely steward lands of ecological or cultural value. Many older landowners are now considering the future ownership, and possible transfer, of their properties. The 1995 and 1996 Budget changes to the *Income Tax Act* will enhance tax benefits for landowners, put land donations on par with those given to the federal and provincial governments, and encourage donations of ecologically sensitive lands to conservation organizations and municipalities. This will support land stewardship at the local level, where often the most tangible conservation work is done as citizens advance creative initiatives and become actively involved.

In the agricultural arena, there are a number of incentive programs that may help farmers but also may have unintended negative impacts upon biodiversity[353]. These federal programs provide insurance against both the hazards of nature (eg. Crop Reinsurance Program) and against market fluctuations (eg. the National Tripartite Stabilization Program)[354], deficiency payments (eg. Special Grains Program), or

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353 See the analysis and recommendations in: John Girt, *The Feasibility of Implementing Cross-Compliance Measures in Federal-Provincial Programs as a Means of Increasing Natural Resource Conservation and Environment Protection* (Ottawa: Agriculture Canada, 1992); Parliamentary Standing Committee on Agriculture, *The Path to Sustainable Development* (Ottawa: House of Commons, 1992).

354 Philippe Clément, *Environmentally Perverse Government Incentives*, Working Paper No. 6 (Ottawa: National Round Table on the Environment

subsidized transport for export (eg. *Western Grain Transportation Act* and the "Crow" rate", recently cancelled[355]).

Biodiversity impacts occur because such support programs often have been provided on the basis of land area in cultivation (or indirectly encourage this result), such as the Special Grains Program's deficiency payments and the Canadian Wheat Board's individual marketing quotas. This thereby acts as encouragement to bring marginal lands into agricultural production, when they often would be better left in permanent cover or as wildlife habitat. As more land is put into cultivation, there is an increase in erosion and less biodiversity is maintained on site. Cultivation also discourages mixed farming and the grazing of cattle, thus increasing erosion and reducing indigenous grasses[356]. Most programs have not had environmental conditions attached to them or actually promoted the conversion of natural areas, while farm marketing institutional arrangements and programs affecting size and ownership of farms have contributed to environmentally destructive production practices[357].

Payments to retain wildlife habitat, such as the Prairie Habitat Joint Venture, save both provincial and federal governments three times the cost of the program by reducing subsidy payments, in addition to providing ecological services (wildlife, water supply, erosion control, aesthetics, etc). Such programs could be further targeted towards marginal lands (ie. sensitive, erodible, poorly drained) that would not be in production without the cultivated area-based subsidies[358].

In 1991 after a major agricultural policy review, the *Farm Income Protection Act* was passed as the framework for all Safety Net Programs, focusing on farmer's income rather than agriculture stabilization as in the past[359]. For agreements with the provinces, the Act states that the program "should encourage long-term environmental and economic stability", enables the agreement to restrict insurance for environmental

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and Economy, 1992), p.12.

355 *Western Grain Transportation Act*, R.S.C. 1985, c.W-8, repealed by the *Western Grain Transition Payments Act*, S.C. 1995, c.17, s.26.

356 Robert Sopuck, *Canada's Agricultural and Trade Policies*, note 241, at p.32.

357 See the discussion in Phillipe Clément, *Environmentally Perverse Government Incentives*, supra note 354, at p.16

358 Robert Sopuck, *Canada's Agricultural and Trade Policies*, note 241, at p.41.

359 *Farm Income Protection Act*, S.C. 1991, c.22 (now R.S.C. 1985, c.F-33).

protection purposes, and requires the federal government to conduct an environmental assessment of the program within two years[360]. Mitigating any adverse environmental impacts of its Safety Net Programs, and considering measures such as cross-compliance to deal with environmental concerns, are also included[361].

While there has been long-standing criticism of agricultural subsidy programs by conservation interests in the country, it may well be the international *North American Free Trade Agreement* and particularly the recent Uruguay Round of the *General Agreement on Tariffs and Trade* that will phase out such subsidies, or at least transform them into biodiversity-benign or beneficial programs. The agreements may provide the opportunity to convert countervailable agricultural subsidies of some $1 billion annually into environmental and rural economic development (especially on the prairies), including payments to private landowners for specific ecological services and products, thus shifting towards a more biologically diverse and sustainable landscape[362]. However, subsidies should not be relied upon now that we are getting over their economic distortions[363].

The federal Task Force on Economic Instruments and Disincentives to Sound Environmental Practices recommended that Agriculture Canada sponsor programs to assist farmers to adopt more environmentally sustainable farming practices. One aspect of this has been already underway through financial support for the award-winning Environmental Farm Plan program, developed by a coalition of agricultural organizations in Ontario (for more detail, see the Sustainable Use section of the Ontario chapter). This is one example of how environmental and agricultural interests can be achieved together by using a voluntary, peer-based program, and how the economic incentive measures advocated in Article 11 of the *Biodiversity Convention* can be implemented through a federal Department.

Economic Incentives Recommendations

1. **Implement the Task Force on Economic Instruments and Disincentives' recommendations for a long-term analysis of barriers to sound environmental practices, particularly those relating to agriculture and taxation.**

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360 Ibid, ss. 4(2) and 5(2).

361 Ibid.

362 Ibid, at pp.39-43 and 46.

363 John Girt, supra note 198.

2. Implement and assess agriculture-related incentive programs with biodiversity concerns in mind.

I. CONCLUSIONS

Biodiversity law at the federal level in Canada is essentially a patchwork quilt[364]. A few key statutes, such as the *Canada Wildlife Act*, *Migratory Birds Convention Act* and *National Parks Act*, are specifically directed towards biodiversity conservation, while a diverse smattering of other provisions provide additional measures. Besides these, most legislation does not explicitly contemplate, nor usually support, biodiversity conservation or sustainable use. This is in spite of the demonstrated importance, in fact necessity, of these concepts to Canada's national well-being and economy, and the leadership shown by this country during the negotiations and endorsement of the *Biodiversity Convention*.

What is needed is a systemic approach, which involves coordinated and inclusive actions. This need not result in centralisation, but suggests leadership, commitment, the full assumption of personal and jurisdictional responsibility, and a willingness to engage and work with others. The Biodiversity Convention has advanced this approach, and the *Canadian Biodiversity Strategy* has begun to spur this process in Canada.

The federal government has shown positive progress on environmental law over the past few years: stronger wildlife and national parks statutes, passage of CEAA, and announced reforms to the *Income Tax Act*, as examples, with CEPA under review and endangered species, fisheries and oceans legislation continuing to be discussed. Strong, consistent enforcement powers and fines are now in place for most federal wildlife legislation, but the will and resources to use these provisions effectively has been lacking[365]. Yet CEAA is weak, and demonstrates frequent themes in Canadian

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364 This is a similar to criticism levied against the extensive and complex legal regime in the United States. See Reed F. Noss and Allen Y. Cooperrider, *Saving Nature's Legacy: Protecting and Restoring Biodiversity* (Covelo, California: Island Press, 1994), p.329, which also cites the U.S. Government's Office of Technology Assessment, *Technologies to Maintain Biological Diversity* (Washington, D.C.: U.S. Government Printing Office, 1987).

365 Greg McDade, editorial, *Sierra Legal Defence Fund Newsletter*, No. 10 (July 1995), p.2, reporting that for all federal environmental laws, only 19 charges were laid in 1994, and that the federal government recently dropped charges in two solid private prosecutions. For a discussion of the hurdles in conducting private prosecutions, see: Roger W. Proctor, "Individual Enforcement of Canada's Environmental Protection Laws: The

legislation: laws are enabling, highly discretionary, presume the provinces will fill in the gaps, ineffectively enforced, and often handed off to another agency.

Except in areas of clear federal jurisdiction (eg. fisheries, migratory birds and income tax), the legislative result for biodiversity has been timid and piecemeal. This may be understandable to some degree in a federal state comprised of strong provinces. However, the trend towards loose federal laws, exemptions from environmental standards through private agreements under the proposed *Regulatory Efficiency Act*[366], the "Environmental Harmonization Initiative" with the provinces, and Environment Canada and Department of Fisheries and Oceans program reviews demonstrates a growing reluctance to exercise federal leadership. Given Canada's complex constitution on the subject, lack of federal leadership will undoubtedly hinder the implementation of the *Biodiversity Convention*. It is also feared that this may lead to a lower common denominator and less consistency across the country. This does not bode well for biodiversity in this country, nor for its people who fundamentally depend upon and care for it.

There is a strong constitutional and practical rationale for having a greater federal role in Canadian society than simply promoting economic interests and growth. Thus, several roles for the federal government need to be strongly emphasized:

- the conduct of Canada's international environmental relations and the provision of leadership on international environmental issues such as climate change, ozone depletion, biodiversity conservation and persistent toxic pollutants;
- the provision of leadership on environmental issues of national concern such as toxic substances, biotechnology products, pesticides, endangered species, and activities which pose transboundary threats to the environment;
- the provision of environmental protection in areas of federal jurisdiction, including the operations and activities of federal agencies, and environmental protection in relation to navigation and shipping, interprovincial transportation, sea coasts and inland fisheries, and Indians and lands reserved for Indians;
- the provision of environmental protection in areas of national concern and provincial incapacity, such as the evaluation and regulation of new chemicals, biotechnology products and pesticides;
- the provision of an adequate science base for environmental policy-making in Canada; and

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Weak-spirited Need Not Try", 14 *Dalhousie L. J.* 112 (1991).

366 Bill C-62. This Bill died on the Order Paper when Parliament prorogued in early 1996, but the concepts may resurface.

- ensuring that all Canadians have a minimum level of environmental quality, regardless of where they live in Canada, through the provision of assistance to those provincial governments which lack the resources to ensure a minimum level of protection of their residents' environment and through the existence and active enforcement of federal environmental standards[367].

Environment Canada has generally been reluctant to enforce its environmental legislation, and *Fisheries Act* enforcement has been described as "inconsistent and sporadic"[368]. Thus, a commitment to a federal environmental presence must be bolstered by the mandate, structure, authority and resources to make this presence effective.

The federal government must also put its own house in order, such as drafting environmental management plans (or sustainable development strategies) by key departments, and ensuring that it abides by the standards it sets for others. It recently took a significant step in this direction, amending the *Auditor General Act* to include environmental considerations and responses to environmental petitions in the Auditor General's reports, appointment of a Commissioner of the Environment and Sustainable Development, and requiring the tabling by 1997, and monitoring and reporting on the achievement, of Departments' sustainable development strategies in the House of Commons[369]. Bill C-229, the *Intervenor Funding Act*, has also been introduced[370].

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367 Canadian Environmental Non-Governmental Organizations, 1996 statement on "The CCME Environmental 'Harmonization' Agreement", p. 4. Also see Canadian Institute for Environmental Law and Policy, "Editorial: The Federal Role in the Protection of Canadians' Environment", *CIELAP Newsletter*, Spring 1995, p.3.

368 Karen Clark and Barbara Rutherford, "CEPA and Environmental Law Enforcement", Appendix 2 in: Mark Winfield (ed.), *Reforming the Canadian Environmental Protection Act*, Submission to the Standing Committee on Environment and Sustainable Development by the Canadian Institute for Environmental Law and Policy (Toronto, 1994); and Mark Winfield and John Swaigen, "Water", in: David Estrin and John Swaigen, *Environment on Trial*, supra note 1, page 523. Also see L.J. Gregorich, *Poaching*, supra note , especially pages 67-72, concerning the success of and needs for wildlife enforcement efforts.

369 *An Act to amend the Auditor General Act* (Bill C-83), S.C. 1995, c.43. *Auditor General Act*, R.S.C. 1985, c.A-17.

370 *Intervenor Funding Act* (Bill C-229), deemed to receive Second Reading on March 8, 1996.

But regulation by command and control is certainly not the only means to accomplish the conservation, sustainable use and equitable sharing of biodiversity. In fact, control measures may not be politically popular, and given that ecological science is not predictive, control may be temporary and ultimately illusory. An adaptive management approach is increasingly required, which involves monitoring, adjustment, coordination and cooperation. Such an approach then begins to mirror the realities of ecosystem dynamics, the limitations on human knowledge and scientific uncertainties[371]. The *Canadian Biodiversity Strategy* moves Canada towards this direction, but will require further efforts to succeed.

Economic and other incentives, support of Convention-compatible private initiatives, and involving the wider public and institutions through education, voluntary guidelines[372], and research are all important, and often prove to be very effective. As task forces and reviews proceed, more and more of these kinds of mechanisms will be added to the tried and true regulatory approach. This will then build upon the *Convention* and the *Strategy* to ensure strong and more comprehensive federal biodiversity law and policy in Canada.

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371 Nina-Marie Lister, note 206.

372 There are many excellent voluntary guidelines available from governments, companies and non-government organizations to help private landowners and organizations better manage biodiversity. Often dealing with values, education, rationales and "how to" approaches, these relate to raptor platforms, building nest boxes, prairie conservation, restoration of riparian and fish habitat, fence setbacks from streams, farm manure and milkhouse waste handling, etc. Ted Mosquin, supra note 216.

BIODIVERSITY LAW AND POLICY IN THE YUKON AND NORTHWEST TERRITORIES

Laurie A. Henderson*

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A. INTRODUCTION

The first peoples of what is now known as the Canadian North long knew the value and importance of protecting plant and animal diversity. From the earliest times, whether hunting for mammoth, skinning caribou for parkas and pants, collecting lichens and small Arctic plants for medicinal teas and poultices or drying fish for the winter, the original inhabitants of the northern boreal forest and Arctic knew the importance of protecting the wild animals and plants that their lives depended upon.

This knowledge has not faded, although over the centuries some species appeared and disappeared in response to a changing environment. Throughout time, human dependence on wild life for survival ensured that wild species were respected and honoured. In support of the ongoing relationship between wild life and people, social rules and mores developed within all early societies to control hunting and harvesting patterns and akin to present-day laws, these cultural codes of conduct were modified and enforced in response to changing social circumstances.

The first law (as the term is commonly understood today) designed to conserve wildlife in the North was the *Unorganized Territories' Game Preservation Act* of 1894[1]. This statute, as have those following it, was designed to control hunting through closed seasons, bag limits and other hunter restrictions. Within the Yukon, one of the first items of business for the first elected Territorial

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[1] Canada, House of Commons, *Debates*, 1894.

Council was the passing of *An Ordinance for the Preservation of Game*, enacted in 1901[2]. In the Northwest Territories, wildlife were managed by the federal (Dominion) government under the *Northwest Game Act* of 1906.[3] No mention is made in any of these early statutes to the protection and conservation of plants, an omission which remains true today.

In the years since the Yukon and the Northwest Territories were officially established as part of Canada[4], interest in conservation of the natural environment has increased and decreased just as it has elsewhere across the country. However, in the end analysis, although the natural environment has always played a fundamental role in the development and psyche of northerners, there is surprisingly little legislation and policy to ensure protection of the North's wild plants, animals and lands.

The next decade promises to be one of great change in the Yukon and the Northwest Territories and both territories now face a number of common issues and opportunities which will affect the future direction of all legislative action and decision-making, including biodiversity law and policy. Three of the key issues and opportunities which will affect protection of wild animals, plants and lands are briefly described below.

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2 *Yukon Territory Ordinances*, 1901, c.2.

3 R.S.C. 1906, c.151.

4 The area we now know as the Yukon and Northwest Territories, as well as the provinces of Alberta,Saskatchewan and Manitoba and the northern portions of Ontario and Quebec, were originally part of Rupert's Land and the North-West Territory. In 1870, these lands officially became a part of Canada (*Order in Council Transferring Rupert's Land and the North-West Territories to Canada*, June 23, 1870, R.S.C. 1985, App. II, c.9). In 1898, the Yukon Territory was created as a territory separate from the North-West Territories by the passing of the *Yukon Territory Act* (61 Victoria, c.6). In 1905, Alberta and Saskatchewan were created as separate provinces. By 1912, Manitoba and Ontario attained their present boundaries and Quebec was extended northward to Hudson Bay and Hudson Strait, thereby establishing the southern boundary of the present Northwest Territories.

1. Jurisdiction over the Environment

With the passing of the *Yukon Act*[5] and the *Northwest Territories Act*,[6] the Government of Canada created a unique government structure; a structure that has persisted for just short of a century[7]. Although both territorial governments are now virtually self-governing within the scope of the powers accorded to them in the *Yukon Act*[8] and *Northwest Territories Act*[9], both remain the creation of a federal statute and thus, at least in theory, their powers can be altered by Parliament. As well, within their sphere of authority, any exercise of power must be undertaken recognizing two additional factors. First, all laws passed by the territorial Legislative Assemblies are subject to confirmation by the Commissioner, the federal government's representative in each of the territories. Second, all laws passed are subject to the *Yukon Act* or *Northwest Territories Act*, as the case may be, and to any other Act of the Parliament of Canada.

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5 R.S.C. 1985, c. Y-1.

6 R.S.C. 1985, c.N-27.

7 The federal Parliament's power to legislate for the Yukon and Northwest Territories comes from the *Constitution Act, 1871,* 34-45 Victoria, c.28 (U.K.), which provides in s.4 that the "Parliament of Canada may from time to time make provision for the administration, peace, order and good government of any territory not for the time being included in any province.

The Yukon began exercising its legislative powers at the turn of the century when the Yukon Territory was carved out of the North-West Territory. The first Territorial Council was elected in 1898, however, the path to self-government was not quick, however, as it was not until 1979 that the executive function was turned entirely over to the Legislative Assembly and the Commissioner was removed from the day to day activities of governing.

Institutional development in the Northwest Territories lagged behind that of the Yukon. The first Northwest Territories' residents were not elected to the territorial council until 1951. The council did not become fully elected until 1975. Administration of the N.W.T. only began to be based in Yellowknife rather than in Ottawa in 1967. Ottawa's appointed representative, the Commissioner, did not stop chairing cabinet meetings until 1986.

8 *Yukon Act, supra* note 5, s.17.

9 *Northwest Territories Act, supra* note 6, c.N- 27, s.16.

The continued presence of the federal government in all territorial matters has profound effects on environmental management and responsibility. As has been recognized by the courts in the federal-provincial context, the environment does not constitute a homogeneous constitutional unit, cutting across as it does many different areas of responsibility. In the Yukon and Northwest Territories an analogous situation exists in that responsibility for the environment can be found within several of the powers accorded to the territories in the *Yukon Act* and *Northwest Territories Act* and also within the powers retained directly by the federal government. In this respect, the jurisdictional confusion and uncertainties familiar in the provinces exist in the North. Additionally, however, the North has the added complexity that the vast majority of land (greater than 95%) and control over some renewable and non-renewable resources remains under the federal government's control. This jurisdictional relationship requires that both levels of government work closely together, harmonizing what are often competing goals and objectives. In terms of enacting environmental protection legislation generally, and biodiversity legislation specifically, this joint jurisdictional responsibility has had, and will continue to have, significant effects on legislation and policies respecting biodiversity as sound biodiversity protection requires close integration of land and resource management.

2. Resolution of Land Claims

All across the Canadian North land claims settlements are slowly being concluded and implementation of these agreements is beginning. Starting in 1984, with the passing of the *Western Arctic (Inuvialuit) Settlement Agreement*[10], the environmental management and biodiversity protection regime has been changing in both the Yukon and Northwest Territories[11]. To date these changes have been felt the most in the Western Arctic and Yukon North Slope region where implementation of the Inuvialuit Settlement Agreement has been underway for close to ten years. Elsewhere across the Yukon and Northwest Territories, although numerous pre-

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10 S.C. 1984, c.24.

11 Land claim agreements concluded, to date, in the Yukon and Northwest Territories include:
Inuvialuit Settlement Agreement (1984)
Gwich'in Comprehensive Land Claim Agreement (1992)
Tungavik Federation of Nunavut Settlement Agreement (1992)*
Vuntut Gwitchin first Nation Final Agreement (1993)*
Champagne and Aishihik First Nation Final Agreement (1993)*
First Nation of Nacho Nyak Dun Final Agreement (1993)*
Teslin Tlingit Council Final Agreement (1993)*
Carmack/Little Salmon First Nation Final Agreement (1996)*
Ta'an Kwach'an First Nation Final Agreement (1996)*
* related to Yukon Umbrella Final Agreement (1993).

implementation initiatives have altered the administrative landscape, the exact nature and effect of the various land claims agreements on land and resource management is only now beginning to be felt.

Each of the negotiated agreements establishes new procedures and processes for environmental management within the settlement regions. Each is predicated upon a new method of decision making in which First Nation governments are fully and equally recognized, with the territorial and federal governments, within their respective spheres of power and authority. In addition, all of the completed claims contain provisions for special management areas which designate new protected areas and each establishes a variety of co-management boards to manage various aspects of renewable resources based upon stated objectives of conservation. The significance and importance of the agreements to environmental management and the protection of biodiversity is heightened by the fact that the agreements are constitutionally entrenched[12]. The result is that the environmental protection regime contained in the agreements cannot be extinguished or amended by Parliament exclusively; any changes must be negotiated by all parties signatory to each of the respective agreements.

3. Devolution of Federal Responsibilities

In addition to land claims negotiations, federal and territorial governments, and to varying degrees First Nations, have been involved in negotiating the transfer of control and administration of various federal responsibilities. The responsibilities transferred have varied dramatically between the two territories as has the speed of negotiations. For example, the Northwest Territories assumed control over forestry several years ago while the Yukon remains stalled in negotiations. On the other hand, both the Yukon and the Northwest Territories assumed control over freshwater fisheries in the late 1980s.

In each area of responsibility transferred, new management and decision-making procedures and processes have resulted. However, to date, no transfers have extended to ownership of land. Thus, while new administrative arrangements have been implemented affecting management and control of certain resources, at present, it remains that the federal government is the primary landowner. Consequently, the biodiversity law and policy matrix, as will be described below, remains fraught with complexities as management of resources and ownership of land continue to be separate.

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12 *Constitution Act, 1982,* enacted as Schedule B to the *Canada Act 1982*, U.K.) 1982, c.11, s.35.

4. Summary

The balance of this chapter assesses the state of biodiversity law and policy in both the Yukon and the Northwest Territories. The analysis proceeds within the context of the current jurisdictional relationships discussed above. Greatest attention is paid to legislation enacted at the territorial level. As required, federal legislation is also referenced, however, the reader is referred to the chapter on federal biodiversity law and policy for a more complete treatment of federal initiatives in this area.

To the fullest extent possible, the analysis includes comments on the fundamental changes that will occur as a result of implementing the various land claim settlements enacted across the North. Many of these agreements are at the preliminary stages of implementation and thus their full effect remains uncertain such that conclusions as to their impact on biodiversity law and policy cannot accurately be made. As well, each agreement, while addressing a number of common issues and themes, is unique, reflecting the priorities and objectives of the negotiating parties involved. Consequently, although reference is made to the various agreements and the effect they may have on biodiversity law and policy, the reader is referred to each of the agreements to fully assess the effect the settlement may have on biodiversity protection in each of the settlement areas.

B. WILDLIFE

1. Yukon and Northwest Territories Responsibilities

The authority for managing wildlife in both the Yukon and the Northwest Territories rests, primarily, with the governments of the Yukon and Northwest Territories. The *Yukon Act* and the *Northwest Territories Act*[13] give both territories the authority to make laws, subject to any other federal legislation, for the "preservation of game". Both territories have adopted a broad definition of "game", encompassing all vertebrates, except fish, that are wild by nature and naturally occur in the territory. Application of this definition, in terms of protection and management, however, has not been equally expansive.

a. Game Species

The Yukon and Northwest Territory *Wildlife Acts*[14] primarily deal with management of hunting and trapping of game species, whether mammals or birds. Neither statute specifically identifies protection of genetic diversity as a goal of

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13 The Yukon authority arises from *Yukon Act, supra* note 5, s.17 and the *Northwest Territories Act, supra* note 6, s.16.

14 *Wildlife Act*, R.S.Y. 1976, c.178; *Wildlife Act*, R.S.N.W.T. 1988, c-W-4.

management, nor do they specifically articulate that conservation is a management goal. Although it is generally understood, in policy, that management initiatives presuppose conservation, instances of overhunting have been reported in both territories. Throughout both territories, increased access to backcountry areas combined with greater concentrations of people has had detrimental impacts on wildlife notwithstanding the presence of detailed statutes directing wildlife management.

Neither the absence of legislative direction concerning objectives of conservation and protection of genetic diversity nor concerns about localized overhunting should suggest, however, that conservation is not a priority for either territorial government. In fact, given the cultural and social significance of hunting and trapping to both First Nations and non-First Nations residents, combined with increasing recognition of the economic value of tourism based upon wildlife viewing, wildlife conservation continues to be an important territorial initiative, at least with respect to large mammals.

b. Non-Game Species and Endangered Species

Beyond game species and furbearers, neither the Yukon nor the Northwest Territories effectively address, in either legislation or policy, non-game animals or birds or endangered species. As noted earlier, the definition of 'wildlife' used by both governments encompasses all vertebrate animals, excluding fish. Non-game species of animals and birds, however, receive virtually no attention in the statutes, although programs involving such species do receive some level of support within both governments. For example, the Yukon Department of Renewable Resources has created a Wildlife Viewing Program which provides information on observing wildlife at both established viewing sites and throughout the territory. These programs are very poorly funded in comparison to game species programs, however, and continue to have comparatively low profiles with respect to biodiversity protection.

With respect to endangered species, very little is contained within the legislative regime. The Northwest Territories do not mention endangered species in their *Wildlife Act*. In the Yukon, the *Wildlife Act* permits, by regulation, identification of 'specially protected wildlife' for which prohibitions, restrictions or other measures to be observed or implemented for the protection or survival of the species can be enacted[15]. At present, such species as elk, musk ox, deer, cougar, gyrfalcon, peregrine falcon and trumpeter swan are listed as specially protected species. In addition, the *Wildlife Act* enables the Commissioner in Executive Council to designate as endangered species, species of animals that are wild by nature outside of the Yukon and to regulate the possession of such an animal[16].

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15 *Wildlife Act, supra* note 15, s.184.

16 *Ibid.*, s.185.

Outside of the legislative regime, both territorial governments participate, with the provinces and federal government, in COSEWIC, RENEW and CITES. Under the auspices of these programs and legislative mandate, both territories have participated in species recovery programs. For example, an intensive re-introduction program was conducted on the Yukon North Slope to assist peregrine falcons when populations crashed as a result of pesticide-related impacts. Similarly, in the southern reaches of the Northwest Territories, wood bison have been introduced to sanctuaries to enhance and ensure their survival.

c. Wildlife Sanctuaries and Similar Designations

The Northwest Territories *Wildlife Act* permits designation of areas for special protection of wildlife. These designations include wildlife sanctuaries, wildlife preserves, wildlife management areas, critical wildlife areas and special management areas[17]. In each of these areas, save sanctuaries, the Commissioner, on the recommendation of the Minister, may make regulations respecting management[18]. In sanctuaries and preserves hunting is either prohibited, restricted to certain species or limited to the amount of hunting necessary to feed the hunter and his/her dependents[19].

A similar situation exists in the Yukon. The *Wildlife Act* permits establishment of wildlife sanctuaries in which hunting is either prohibited or greatly restricted. The impact of these sanctuaries is, however, reduced, and perhaps significantly so depending upon the circumstances, as neither the Yukon nor the Northwest Territories has control over the land. Thus the designation of a wildlife sanctuary alone may not ensure protection as the control of development in the area falls to the federal government.

d. Other Wildlife Issues - Importation

Both territories provide regulatory controls in their statutes to control importation of fauna that in its natural range is found wild in nature[20].

e. Plants

The definitions applied in both territorial *Wildlife Acts* do not encompass plant species. As such, beyond some protective measures that can be implemented under the auspices of habitat protection and management (discussed in Section C.), there are no legal tools for protecting plant biodiversity in either territory.

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17 *Wildlife Act, supra* note 16, s.18(2).

18 *Ibid,* s.19.

19 *Ibid.*, s2. 29 and 30.

20 *Wildlife Act, supra* note 15, s.28(2); *Wildlife Act, supra* note 16, s.59(2).

2. Federal Government Responsibilities

Under the authority of the *Canada Wildlife Act*[21] and the *Migratory Birds Convention Act, 1994*[22] , the federal government is involved in the management of transboundary wildlife, such as the Porcupine Caribou which migrates between Alaska, the Yukon and the Northwest Territories, and waterfowl. To a limited degree, the federal government has also been involved in management work on passerine birds.

Through the *Territorial Lands Act*[23], the federal government can designate land management zones in either the Yukon or the Northwest Territories for the purposes of protecting ecological balance or physical characteristics. Both territories have subsequently been so designated with regulations now controlling the development and use of these lands[24]. Through the permitting regime established in the *Territorial Land Use Regulations*, wildlife and habitat matters can be included in any issued permits. In addition, under the *Territorial Lands Act*[25], the Governor in Council may set apart and designate appropriate territorial lands for use as game preserves, game sanctuaries and bird sanctuaries. Several areas, including the North Slope of the Yukon and Polar Bear Pass in the Northwest Territories, have been protected in this manner.

As noted for the territorial legislation, none of the federal legislation specifically reference protection of biodiversity as an objective, although all statutes reflect the goal of wildlife conservation.

3. Implementation of Land Claim Agreements

As indicated in Section A.2, resolution of land claims across the North resulted in the creation of new decision-making procedures and responsibilities. One area in most clearly affected is wildlife management. Decision-making is to be shared between all three levels of government, and wildlife co-management boards are to be established under all negotiated

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21 R.S.C. 1985, c.W-9.
22 S.C. 1994, c.22.
23 R.S.C. 1985, c.T-7, s.4.
24 C.R.C. 1978, c.1527.
25 *Supra* note 23, s.23.

claims agreements. Further, in most agreements, the First Nations/Inuit have authority to enact laws respecting wildlife and habitat protection for their settlement lands or areas.

Although the success of the new decision-making structures is, by and large, presently unknown due to the early stages of claim settlement implementation, similar organizations which have been operative for a number of years have proven this model to be an effective conservation management tool. Most notable of these is the Porcupine Caribou Management Board. This Board, comprised of federal, Yukon and Northwest Territories government officials and First nation representative of the Inuvialuit, the Vuntut Gwitchin and the Tetlit Gwich'in, has worked tirelessly to protect the caribou population, and its habitat, in Alaska in the face of threatened oil and gas development.

To varying degrees, all of the claims agreements specifically acknowledge the importance of conservation and recognize the goals of biodiversity. For example, the Inuvialuit Final Agreement states in Article 14(1) that a basic goal of the Settlement is to protect and preserve the Arctic wildlife, environment and biological productivity through the application of conservation principles and practice. In addition, in at least two claims, the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty in Right of Canada and the Teslin Tlingit First Nation Final Agreement, National Wildlife Areas are either given additional protection through recognition in the settlement agreement or new areas are to be established pursuant to the land claim agreement.

Given these entrenched goals of wildlife conservation, and the cultural and social importance of healthy wildlife populations to indigenous communities, there is a strong incentive to conserve wildlife. As such, implementation of the claims agreements may greatly assist in ensuring biological diversity is protected, both through new legislative tools and through management policies.

C. HABITAT

1. Yukon and Northwest Territories Responsibilities

Habitat protection in both the Yukon and the Northwest Territories remains a controversial and thorny issue. At least in part, this controversy can

be traced back to uncertainties surrounding jurisdiction. As indicated earlier, the *Yukon Act* and the *Northwest Territories Act* give authority to the territorial government for 'preservation of game'. The *Acts* are silent with respect to both habitat and conservation of plants.

Federal-provincial caselaw developed in relation to fisheries and fisheries management disputes[26] suggests that management of habitat is an important component of managing the fishery. Extrapolating from this, it is suggested that management of wildlife, for which the territorial governments have authority, should include wildlife habitat management. Reflecting this idea, both jurisdictions have passed, in their respective *Wildlife Acts*, provisions designed to protect habitat in relation to wildlife.

In the Yukon, the *Wildlife Act* permits designation of protected habitat areas based upon the uniqueness of the area, its sensitivity to disturbance, the likelihood of disturbance and its importance as habitat for any species of wildlife or type of wildlife[27]. The Northwest Territories has no comparable section, although as indicated earlier, its legislative regime provides for designation of wildlife preserves, sanctuaries and critical wildlife areas. All of these designations would, indirectly, provide some level of habitat protection, although in both instances, the habitat protection provided must be tied to wildlife protection. Habitat protection as a goal in itself, as a means to ensure plant biodiversity, is much less tenable under the current jurisdictional regime.

In addition to jurisdictional limits associated with the scope of habitat (i.e. plant biodiversity) protection, enforcement of habitat protection is also problematic. Land ownership, use and control of over 95% of Yukon and Northwest Territorial lands remains the responsibility of the federal government. As such, the ability of the territorial governments to enforce habitat protection is reduced given that the federal government has the authority to direct the use to which land is put. Notwithstanding this, in its *Wildlife Act*, the Northwest Territories has provided a right of action against any person who wilfully or negligently and without legal justification destroys or damages habitat[28]. The Yukon passed a similar provision in 1992, however, it has yet to bring this section into effect. The practicality of either of these sections, however, remains questionable given that a federal approval to undertake a land use activity that may damage habitat would constitute legal justification for the destruction. Thus, the usefulness of the habitat protection prohibitions are questionable.

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26 *Fowler v R.*, [1980] 2 S.C.R. 213, 53 C.C.C. (2d) 97, 113 D.L.R. (3d) 513; *Northwest Falling Contractors Ltd. v R.*, [1980] 2 S.C.R. 292, 9 C.E.L.R. (N.S.) 145, [1981] 1 W.W.R. 681.

27 *Wildlife Act, supra* note 15, s.197(1).

28 *Wildlife Act, supra* note 16, s.38(2).

The net result of the jurisdictional confusion and complexities respecting habitat is inaction in terms of plant biodiversity protection. Any designations of habitat protection areas, as per the Yukon legislation, or wildlife sanctuaries, preserves or critical wildlife areas, as per the Northwest Territories legislation, requires a transfer of land from the federal government to the territorial government or acceptance of the designation by the federal government *vis a vis* its regulatory activities over land use control and management. In the end analysis, plant biodiversity, either as a component of wildlife habitat or unto itself, is poorly protected in legislation or in fact across the North.

2. Federal Government Responsibilities

The federal government, through the *Canada Wildlife Act*, has the ability to acquire land for the purpose of research, conservation and interpretation of migratory birds or with agreement of the territorial government, other wildlife. Under the *Migratory Birds Convention Act*, sanctuaries can also be designated for protecting critical breeding and staging areas for waterfowl and other avian species. In the Northwest Territories, there are several bird sanctuaries and a few wildlife areas. There are presently no federal sanctuaries or wildlife areas in the Yukon established under the *Migratory Birds Convention Act*.

Another mechanism for designating areas, as mentioned previously, is the *Territorial Lands Act*. This Act permits establishment of sanctuaries and preserves which may benefit habitat (plant) biodiversity as the area may, depending upon the scope of the designation, be withdrawn from industrial development and other activities. Similarly, the inclusion of habitat related terms and conditions in permits issued pursuant to the *Territorial Lands Act* may be beneficial in terms of conservation and protection of habitat.

3. Implementation of Land Claim Agreements

Habitat protection has been included as an underlying objective of wildlife conservation in all of the northern land claims agreements. In addition, in several agreements, habitat protection areas are included as one of several designations constituting 'special management areas'. For example, under the First Nation of Nacho Nyak Dun Final Agreement[29], the Horseshoe Slough Habitat Protection Area is to be established pursuant to the Yukon *Wildlife Act*. At the same time, the federal government is to enact legislation to ensure that no new mining exploration and

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29 First Nation of Nach Nyak Dun Final Agreement between the Government of Canada, The First Nation of Nacho Nyak Dun and the Government of the Yukon, March, 1993, Schedule B to Chapter 10.

development activity occurs in the Area.

The success of land claims negotiated mechanisms for protecting habitat remain unknown as implementation is still in the beginning stages in most settlement areas. However, the importance of the agreements, both constitutionally and politically, may assist in ensuring habitat protection and thus enhance biodiversity protection across the North.

D. PARKS AND PROTECTED AREAS

1. Yukon and Northwest Territories Responsibilities

A variety of legal mechanisms are available for designating parks and protected areas in both the Yukon and the Northwest Territories. Although each government has slightly different designations, overall the possibilities include parks, wilderness areas, wildlife sanctuaries and preserves and protected habitat areas. Several of these, notably, wildlife sanctuaries and preserves as delineated in the Northwest Territories' *Wildlife Act*, and protected habitat areas as defined in the Yukon's *Wildlife Act*, have been discussed earlier. Other designations, namely parks and wilderness areas, are discussed below.

a. Parks

Legislation permitting the designation of parks is in effect in both the Yukon and the Northwest Territories. A variety of classes of parks may be established, each with varying purposes and opportunities for development.

In the Northwest Territories, five categories of parks are defined in the *Territorial Parks Act*, ranging from natural environment recreational parks through to wayside parks and historic parks.[30] All designations are primarily to meet human use objectives, either in terms of outdoor recreation, convenience and comfort of the travelling public or as sites where the natural environment can be enjoyed by the public. Development is controlled according to the classification, noting, however, the primary goal of meeting the public use objectives of each park type rather than protecting the wild lands, plants or animals in the park[31].

Designation of parks in the Northwest Territories has not been a systematized process of identifying key biodiversity components. Lands began to be designated

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30 *Territorial Parks Act*, R.S.N.W.T. 1988, c.T-4, s.3.

31 *Ibid.*, ss. 3(2) to 3(6).

over twenty-five years ago and only recently has the government begun to coordinate its parks into a system of territorial parks[32]. The legislation does not provide direction with regards to criteria for selecting park lands although it does establish different mechanisms for designating parks depending upon the classification of the land. For example, designations of natural environment recreation parks, in which the greatest level of protection is afforded, can only be established by order of the Legislative Assembly. Parks with lesser protection requirements, such as wayside parks, can be established by the Minister[33]. It is assumed that to dismantle a park, the same authority which established the park must "de-establish" it.

Prior to designation of a park in the Northwest Territories, the legislation requires public consultation with representatives of those groups that live in or near the proposed park or with those that may be affected by the park. Following designation, there is no further legislated requirement for consultation on any aspect of park management nor is there any requirement for a management plan. The NWT *Territorial Parks Act* does, however, allow for the establishment of consultative committees who are to be consulted on matters of public interest, including matters concerning the establishment, operation and management of the park.[34]

In comparison to the Northwest Territories legislation, the Yukon *Parks Act*[35] provides somewhat more direction as it calls for the establishment of a system of parks[36]. The purpose of the system is to protect unique natural and historic features and to provide for comprehensive outdoor recreational opportunities. Once again, protection of biodiversity is not a legislated objective of the Yukon parks system.

With regards to classification and zoning, although most of the classes of parks identified in the legislation reflect human use objectives, not all classes are related to public enjoyment and recreation. For example, under the *Parks Act*, an area may be designated as a wilderness preserve in which natural ecological units are to be

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32 Reilly, R. "The Northwest Territories Park System", in: J. Peepre and B. Jickling (Eds.), *Northern Protected Areas and Wilderness*, Proceedings of a Forum on Northern Protected Areas and Wilderness, November, 1993.

33 *Territorial Parks Act, supra* note 29, ss.5(1) and 5(2).

34 *Territorial Parks Act, supra* note 29, s.4(2).

35 *Parks Act,* R.S.C. 1986, c.126.

36 The Government of the Yukon has for some time been reviewing and revising its park policy and working towards implementing a parks system plan to complement the existing legislation. In some respects, the policy and plan more fully reflect the goals of biodiversity and will require legislative changes to allow effective implementation of the policy and plan, when completed.

protected and preserved in their natural state.[37] In addition, in all parks, various zones are identified under the *Parks Act*, ranging from primitive zones, where development is not permitted, through to multiple use and recreation zones[38]

Development in Yukon parks is generally restricted to that which is consistent with the purpose for which the park was established. However, where the Executive Council considers development to be in the best long term economic interest of the Yukon, development may be permitted[39]. Prior to any development, both a master plan for the park and a detailed site plan for each development proposed must be prepared[40]. Public consultation is not legislatively required before either plan is accepted by the Minister, although such consultation is a prerequisite to establishing a park[41]. Similar to the Northwest Territories, advisory committees may be appointed to assist in the management and administration of the parks.

Although both the Yukon and the Northwest Territories have enacted legislation which permits a wide range of park lands to be designated, comparatively few parks have been designated over the years. In addition, most of the parks established to date are recreational parks designed to meet local and tourist camping needs. Biodiversity protection is not the goal of these parks, and the small size of most of the sites does little to ensure biodiversity protection accompanies recreational development.

b. Other Territorial Designations

As mentioned earlier, the *Wildlife Acts* in both jurisdictions enable designations of land for wildlife and/or habitat protection (See sections B.1.c and C.1). In addition, the Yukon *Environment Act* permits establishment of wilderness management areas for the purpose of preserving the wilderness resource in the Yukon[42]. The statute, however, does not call for a system of wilderness areas nor does it establish the criteria by which an area would be assessed prior to designation. Selection criteria, the selection process and management standards for these areas are to be determined by regulation; regulations which, to date, have not been developed. In the absence of these regulations, although there is no legal impediment to establishing a wilderness management area, it appears unlikely that any such designations will be made.

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37 *Parks Act, supra* note 34, s.1.

38 *Ibid.*, s.10.

39 *Ibid.*, s.8.(2).

40 *Ibid.*, ss.9 and 11.

41 *Ibid.*, s.13.

42 *Environment Act*, S.Y. 1991, c.5, s.74(1).

c. Private designations of protected areas

In the Yukon, legislation provides two opportunities for designating private land for protected purposes. First, the *Parks Act* allows the Minister to accept lands and designate the same for the purposes of establishing a park[43]. Once accepted and designated, the land is treated as any other park established pursuant to the *Parks Act.*

A second mechanism for private designations is found in the *Environment Act.* This statute enables an owner in fee simple to grant an easement to either a government body empowered to hold an interest in real property or to a charitable corporation, charitable association or charitable trust, the purposes or powers of which include conservation. Such easements are deemed to be 'conservation easements' and can either impose restrictions or positive obligations related to, amongst other things, protecting natural open spaces, assuring natural resources are available for recreation and conserving or enhancing natural resources, the land in its natural state, wildlife habitat, plant habitat or conserving soil, air or water.[44] To date, no easements have been established.

2. Federal Government Responsibilities

Legislative mechanisms for designating parks and protected areas in the Yukon and Northwest Territories are similar to those found elsewhere in Canada and thus will not be discussed in this chapter.

3. Implementation of Land Claims Agreements

Across the North, negotiation and implementation of land claims agreements have been an important vehicle for designating parks and other protected areas. Virtually all agreements require that certain lands be designated as either national parks, territorial parks or other special management areas, such as national wildlife areas, ecological reserves or habitat protection areas. Too numerous to mention in detail, the reader is referred to each of the settlement agreements for specific sites and designations.

Management objectives for each of the designated sites arise from both the originating statute, such as the *National Parks Act*[45], *Wildlife Act* or *Parks Act*, and from the land claim agreement referencing the designated area. In several instances, such as in the Agreement Between the Inuit of the Nunavut Settlement Area and Her

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43 *Parks Act, supra* note 34, s.2.

44 *Environment Act, supra* note 41, ss.76 and 77.

45 R.S.C. 1985, c. N-14.

Majesty in Right of Canada[46] and in the Inuvialuit Final Agreement, parks are to be primarily zoned or otherwise managed to ensure wilderness protection and preservation. This requirement, contained as it is in the settlement agreements, is of particular significance with regards to biodiversity protection as the agreements are constitutionally entrenched. This suggests that any changes to the zoning or management objectives from wilderness or special preservation will require the consent of all parties to the agreement. The decision will not rest with one government, but with two and perhaps three depending upon the given area and amendment requirements of each land claim agreement.

Under most agreements, joint management committees are to be struck for each park and protected area. Management plans are also to be prepared within specified timelines. For example, under the Yukon Umbrella Final Agreement, management plans are to be prepared within five years of establishing a special management area, which include parks and several other protected areas designations. Revisions to the plan are to be conducted not less than ten years after establishment[47]. Similar five year time limits are enshrined in the Nunavut Settlement Agreement.

In addition, through the agreements, new models of conservation protection are being considered and advanced. An example of this is the special conservation regime established for the Yukon North Slope pursuant to the Inuvialuit Final Agreement. This designation calls for the conservation of wildlife, habitat and traditional native use to be the dominant purpose of the region. Any development activities proposed for the area must be assessed against this purpose such that, amongst other things, the interests of the users of the area and conservationists must be weighed against the public convenience and necessity of the development proposed.[48]

E. RESTORATION AND REHABILITATION

Biodiversity concerns in the area of restoration and rehabilitation are primarily focused on both restoration of species and populations and rehabilitation of ecosystems. Overall, no legislation or policies have been enacted at either the federal or territorial level to solely to address either of these tasks. Indirectly, however, there are legislative and policy tools which can assist in restoration and rehabilitation of both species and ecosystem biodiversity.

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46 Tungavik Federation of Nunavut and Department of Indian Affairs and Northern Development, 1992.

47 Umbrella Final Agreement, *supra* note 12, Chapter 10, s.10.5.0.

48 *Inuvialuit Settlement Agreement, supra* note 11, ss 12(2) and 12(23).

1. Yukon and Northwest Territories Responsibilities

In the area of species restoration, neither the Yukon nor the Northwest Territories *Wildlife Acts* provide legal direction for restoring depressed wildlife populations. Nonetheless, both governments have been involved in several restoration projects and thus, at minimum, there exists an implicit policy supporting restoration and rehabilitation of threatened species and populations. These activities, which range from reintroductions of gyrfalcon, peregrine falcon and bison through to rehabilitative work on depressed moose and caribou populations, have been conducted both through national programs such as COSEWIC and RENEW and through local territorial programs.

With respect to ecosystem rehabilitation, there is no legislation that directly addresses rehabilitation of ecosystems. However, both territories have enacted legislation which promote and facilitate clean-up of contaminated sites and chemical or other spills.

In the Northwest Territories, the *Environmental Protection Act*[49] provides legal tools to assist in cleaning up contaminated sites through inspection and court action.. It is interesting to note that an earlier version of the *Act* authorized an inspector to order that a person repair or remedy any injury or damage to the environment that resulted from a discharge of contaminants[50]. This section was amended in 1990 such that the inspector no longer has this power; presently, an order to remedy any harm to the environment must be made by a court as a part of a sentencing order when an offence has been committed[51].

The Northwest Territories *Environmental Protection Act* also addresses the clean-up of premises which are unsightly due to unused dilapidated buildings, rubbish or discarded materials, vehicles, machinery and equipment[52]. Assuming that the owner or occupier of the materials can be located, this provision, if effectively enforced, could assist in rehabilitating many sites across the North which are littered with abandoned equipment and machinery.

The Yukon has enacted similar legislation to the Northwest Territories with regard to contaminants and prohibiting the abandonment or discarding of rubbish, construction materials and vehicles or machinery, amongst other things.[53] With regards to restoration of contaminated sites, although the sections are not presently in effect, the *Environment Act* states that the Minister may order the responsible party to

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49 R.S.N.W.T. 1988, E-7.

50 *Ibid.*, s.7(1).

51 *An Act to Amend the Environmental Protection Act*, S.N.W.T. 1990, c.30, s.12.2.

52 *Environmental Protection Act, supra* note 47, s.9.

53 *Environment Act, supra* note 41, ss. 100-104.

carry out restoration and rehabilitation work where a contaminated site has or is likely to cause unsafe conditions or irreparable damage to the natural environment[54]. The provisions respecting contaminated sites, when combined with those requiring the reporting and mitigation of spills, should assist in restoring and rehabilitating Yukon lands if effectively implemented and administered.

2. Federal Government Responsibilities

As primary landowner, the federal government bears much of the responsibility for ensuring ecosystem health and biodiversity. Much of the federal effort in this area has come from implementation of the Arctic Environmental Strategy which directed considerable funds across the North to cleaning up a variety of damaged ecosystems. Efforts focused on removing hazardous materials and abandoned dumpsites with considerable less attention paid to reclamation and restoration activities.

Within the legislative context, no federal statutes have been enacted to direct ecosystem or species restoration and rehabilitation. To a degree, however, federal agencies undertake to ensure ecosystem health through development permitting under the *Territorial Lands Act*[55] and the *Yukon Waters Act*[56]*/Northwest Territories Waters Act*[57].

Operative in both the Yukon and the Northwest Territories, the *Territorial Lands Act* requires that a permit be obtained for most significant land uses in the territories. The two *Waters Acts* require that a water licence be obtained when certain levels of water are used in an activity or when wastes are deposited into waterways. When used effectively, these permitting and licensing requirements, combined with application of the Environmental Assessment and Review Guidelines Order and the recently enacted *Canadian Environmental Assessment Act*[58], can contribute positively to ensuring that ecosystems, and species within those systems, are adequately protected while development activities are ongoing and that damaged populations or ecosystems are fully restored and rehabilitated when activity ceases.

One of the major shortcomings of this regime, from a biodiversity perspective, is to what extent the federal government can, and does, address wildlife and habitat concerns in its permitting and assessment activities given the territorial responsibility for wildlife. As mentioned previously, the governing federal legislation, the *Territorial Lands Act* and the *Territorial Land Use Regulations*, do address wildlife and habitat inasmuch as the Act enables the designation of ecological land management zones and

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54 *Ibid.*, s.115(1).

55 *Territorial Lands Act,* R.S.C. 1985, c. T-7.

56 S.C. 1992, c.40.

57 S.C. 1992, c.39.

58 S.C. 1992, c.37.

the Regulations state that permits may include terms and conditions addressing wildlife and habitat protection. However, the clear mandate of the Yukon and Northwest Territories governments for the preservation of game, as detailed in the *Yukon Act* and *Northwest Territories Act*, creates a jurisdictional issue which is not always resolved in favour of wildlife and habitat protection. This is particularly so when development is at issue. Added to this is the fact that the territories do not have development assessment process in place at this time and thus, in the end analysis, biodiversity issues in relation to wildlife and habitat protection, restoration and rehabilitation are poorly addressed.

In addition to the above concern, a major exception to the land use management regime imposed by the *Territorial Lands Act* involves mining in the Yukon. Unlike the Northwest Territories where the *Territorial Land Use Regulations* apply to mining claims, mining activity occurring on mineral claims or leases is exempt from virtually all land use controls. The absence of land use management in the mining industry has been challenged by lawsuits initiated by the Canadian Parks and Wilderness Society (Yukon Chapter) and the Yukon Conservation Society, however, thusfar, these cases have not altered the existing management regime. In the future, as a result of legislative changes to the *Yukon Quartz Mining Act*[59] and the *Yukon Placer Mining Act*[60], land use controls affecting both operations and rehabilitation should be implemented in the Yukon.

3. Implementation of Land Claims Agreements

Land claims agreements do little to address restoration and rehabilitation of ecosystems in a direct fashion. However, each of the northern claims agreements establishes an environmental screening and review process that either builds upon existing government regimes or is independent of those processes. Through this mechanism, ecosystem monitoring and rehabilitation, as necessary, may be addressed.

A unique feature among the northern claims agreements is found in the Yukon Umbrella Final Agreement. This Agreement creates the Yukon Fish and Wildlife Enhancement Trust which has as its objective the restoration, enhancement and protection of fish and wildlife populations and their habitat[61]. Contributions to this tax-free fund will initially be made by the Government of the Yukon, the Government of Canada and Yukon First Nations. The trust capital may be increased by donations, grants and other sources of funds. Just now being established, this fund, targeted as it is to complement rather than replace government expenditures on fish and wildlife management, may make significant contribution to restoring damaged ecosystems across the Yukon.

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59 R.S.C. 1985, c.Y-4.

60 R.S.C. 1985, c.Y-3.

61 Umbrella Final Agreement, *supra* note 12, chapter 27.

F. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

1. Yukon and Northwest Territories Responsibilities

a. Agriculture

In both territories, agriculture remains a small industry, with most efforts directed at intensive small-scale market gardening. Farm-gate meat sales are increasing and in both the Yukon and the Northwest Territories, eggs are now produced on a commercial scale.

The low level of agri-business in the North has translated into few significant concerns regarding biodiversity of natural ecosystems, although in localized areas concerns regarding habitat loss and wildlife displacement have arisen where intensive market gardening has been undertaken in river valleys comparatively rich in biodiversity. Such concerns may be anticipated to increase as the industry grows in the absence of a legislative or policy regime designed to protect biodiversity.

b. Hunting, Trapping and Fishing

As mentioned earlier, hunting and trapping are regulated through the *Wildlife Acts* operative in the two territories. Neither of these two statutes specifically address biodiversity or conservation as an objective of management, however, these principles do appear to underlie management activities and efforts.

In addition to 'recreational' hunting undertaken by residents, both territories have a long history of commercially-guided sports hunts. In the last decade, in many northern communities, and particularly in the Northwest Territories, sports hunting has become a lucrative economic opportunity.

All hunting activities, whether commercial or otherwise, are regulated through the use of closed seasons, bag limits and in certain situations for male-only hunts. Reporting is also fundamental to the management regime. The success of the regime varies tremendously depending upon the species and locations involved. Some species are apparently well-managed to ensure conservation of biological diversity while others are not as successfully managed.

With respect to trapping, strict use of registered traplines and seasons has instituted a conservation regime which assists in making each trapper a manager of his/her line such that, for the most part, furbearing species are conserved and biodiversity protected.

Responsibility for freshwater fishing has only recently been assumed by the territorial governments. New legislation directs the management of such sports fishing. Similar to the *Wildlife Acts*, however, there are no legislated objectives of protecting biodiversity, although this intent appears to underlie conservation management goals.

c. Tourism

Wilderness-based tourism is one of the fastest growing economic sectors in both the Yukon and Northwest Territories. Associated with the economic benefits of this growing industry is ever-increasing pressure on the northern wilderness and concomitant environmental impacts to wildlife and habitat. The response to these impacts varies significantly between the two territories.

The Northwest Territories enacted the *Travel and Tourism Act*[62] to regulate the activities of commercial wilderness guides. Licensing is now a prerequisite to offering commercial trips anywhere in the Northwest Territories. Licences are issued based upon a variety of factors, including the level of environmental impact anticipated from the activity and the potential for conflict with traditional use of the land. Violations of the *Wildlife Act* and the federal *Fisheries Act*[63] may also affect licensing.

No comparable legislation exists in the Yukon and thus, at present, only business licences are necessary to operate wilderness trips in the Yukon. Training of guides to reduce environmental impact is encouraged, however, not required.

Beyond commercial trips, private recreationalists also have significant impacts on biodiversity in localized areas. No legislation or policies regulate or guide private activities and thus sustainable use of wilderness for tourism purposes remains, to a large extent, subject to the vagaries of the individual traveller.

d. Forestry

The Northwest Territories assumed administrative responsibility for forestry in the late 1980s. Guiding management of the use of these resources is the *Forest Management Act*[64]. The *Act* does not articulate protection of biodiversity as a goal or precondition to forestry activities nor does it state the need for sustainable development of the forest resource. However, the statute is designed to ensure 'management of forests', a term defined to include conservation of forests. This requirement is translated into action through permits which are to contain terms and

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62 R.S.N.W.T. 1988. c. T-7.

63 R.S.C. 1985, c.F-14.

64 R.S.N.W.T. 1988, c. F-9.

conditions for the proper management of forests and hence, conservation of forests. The permit requirement is complemented by other provisions related to silviculture and reforestation.

The Yukon has yet to assume responsibilities for forest management. The federal role in forestry is discussed in the following section.

2. Federal Government Responsibilities

a. Fishing

Commercial fishing is an important activity for a small segment of both the Yukon and Northwest Territories population. Within the Yukon, there is considerable reliance within the commercial fishing sector on salmon. Management of the salmon stocks requires international cooperation and resolution of long-standing disputes respecting harvest levels and habitat protection. To date, although negotiations have been ongoing for over a decade, agreements have not been reached and thus, in some areas, biodiversity of both fish and habitat remains vulnerable.

b. Forestry

In the Yukon, forestry continues to be controlled and managed by the federal government, although devolution discussions with the territorial government have been ongoing for several years. Forestry is regulated through the *Territorial Lands Act* and the *Territorial Timber Regulations*[65]. Neither of these legislative instruments establish biodiversity protection as a management objective. Also, neither addresses silviculture or the need for reforestation. Two key aspects of the forestry industry, which are at least indirectly related to biodiversity protection, have recently been modified in the Yukon. Historically, stumpage fees were as low as $0.20 per cubic metre, as compared to up to $25.00 per cubic metre in British Columbia. In late 1995, the federal government introduced amendments to the *Territorial Timber Regulations* which significantly increased the stumpage fees. In addition, a discussion paper released in April 1995 by the Department of Indian and Northern Affairs indicates harvesting allocations "are expected to remain within the limit of the forest's ability to regenerate and biodiversity is expected to be maintained"[66].

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65 C.R.C. 1978, c. 1528.

66 Department of Indian and Northern Affairs, *Discussion Paper on Policy Changes to Stumpage Pricing, Reforestation and Forest Tenure in the Yukon* (April 26, 1995), at p.1.

3. Implementation of Land Claims Agreements

The land claims settlements all stress the need for sustainable use of biological resources and include objective statements to that effect in their provisions respecting fish and wildlife management through to environmental impact assessment. As appropriate, mechanisms for monitoring resource use, such as co-management boards and committees and joint harvest studies, are included in the various agreements to ensure sustainable use. Where these mechanisms have been established and operative for some time, such as under the Inuvialuit Final Agreement, they have proven effective. In other areas, the mechanisms remain to be established.

The long term importance and significance of these mechanisms and the constitutionally entrenched provisions respecting sustainable use of biological resources remains unproven, however, the new environmental regimes included within the land claims agreements across the North can significantly contribute to ensuring that protection of biological diversity remains a central issue in the management and use of biological resources.

G. CONCLUSIONS AND RECOMMENDATIONS

Similar to the experience noted across Canada, there are few legislative tools in place in the North to effectively address biodiversity protection. Jurisdictional divisions in responsibility between the federal and territorial governments, particularly in the area of wildlife and habitat protection and management, combined with the separation of land and resource ownership, underlie much of difficulties in implementing an effective legislative regime for protecting biodiversity. Added to this has been a lack of political will to address these issues, particularly in the face of devolution and land claim settlements.

The consequence of the above has been virtual inaction on developing and implementing legislation directed at protecting the variety of life forms, habitats and ecological processes noted across the Canadian North. At the same time, the time is now optimal for beginning to address these legislative gaps. Across much of the North, land claims are either settled or negotiations underway. Devolution is slowly becoming a reality. With both of these major initiatives now being realized, new opportunities exist for designing and implementing new decision-making structures and legal tools to ensure wild fauna and flora populations and habitats are protected, and where necessary, restored and rehabilitated. In light of these new opportunities, the following recommendations are put forward for consideration:

1. Outstanding jurisdictional issues respecting wildlife and habitat management and protection should be addressed by the three governments operative in the North (i.e. federal, territorial and indigenous) to remove institutional barriers to effective protection of biodiversity.

2. Until these issues can be resolved by legislative amendment to the *Yukon Act* and *Northwest Territories Act*, administrative agreements should be negotiated and implemented to ensure that development activities are assessed and permitted and, subsequently, inspected and monitored to ensure sustainable development and complete ecosystem protection.

3. The *Wildlife Act* of both the Yukon and the Northwest Territories should be amended to reflect existing understanding of biodiversity protection and to more fully address management of all species, both game and non-game species. Either through these statutes or through new statutes, legal tools should be developed to address and ensure plant and habitat protection.

4. The *Territorial Parks Act* of the Northwest Territories and the *Parks Act* of the Yukon should be amended to establish biodiversity protection as a goal underlying the establishment of territorial parks and protected areas. In this respect, guidelines for the selection, establishment and management of parks and protected areas should reflect the need for biodiversity protection in addition to public use and enjoyment.

5. Regulations should be developed under the Yukon *Environment Act* to enable designation of wilderness areas and these areas should be integrated in a biodiversity strategy for the Yukon.

6. Land claim agreements should be implemented in such a way as to ensure adherence to the goals of plant and animal conservation. Governments at all three levels should be encouraged to account for their actions in relation to the stated goals of conservation in each of the agreements.

7. Parks and protected area designations called for under the land claims agreements should be made expeditiously and efforts should be advanced to consider designation of new areas, pursuant to special management area provisions contained in each of the agreements.

BIODIVERSITY LAW AND POLICY IN BRITISH COLUMBIA

Linda Nolan*

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A. INTRODUCTION

This report is about the laws and policies that affect protection of biological diversity in British Columbia. Biodiversity means the whole spectrum of life on earth. It includes species diversity , genetic diversity and ecosystem diversity.[1] Biodiversity is in crisis: species extinctions have reached a rate not seen since the time of the dinosaurs. The biodiversity crisis arises from "inadequate nature reserves, human overpopulation and non-sustainable resource consumption, species extinction, endangered ecosystems, impending rapid climate change, and imperfect laws."[2]

Law can be a powerful tool for biodiversity protection. Law regulates resource extraction, and also protects land and species. The current environmental and resource laws in B.C., while strong in relation to the rest of Canada, are not strong enough to halt the biodiversity crisis. The law treats species and their habitats separately. One branch of law has developed for wildlife protection, another for reserving land as parks or protected areas and yet another for managing land for resource use. A preferable holistic approach to biodiversity protection would incorporate principles of ecosystem management into law, include laws to protect both species and their habitat, and require sustainable use of biological resources.

This report looks at whether B.C.'s laws reflect the principles of ecosystem management which have been designed to address the biodiversity crisis. The ultimate goal of ecosystem management is to maintain biodiversity by focusing on several narrower goals:

1. To maintain viable populations of all native species where they naturally occur.
2. To represent, within protected areas, all native ecosystem types across their natural range of variation in proportion to their natural occurrence on the landscape.
3. To maintain evolutionary and ecological processes such as hydrological processes and nutrient cycles.
4. To manage over periods of time long enough to maintain the evolutionary potential of species and ecosystems.
5. To accommodate human use and occupancy within these constraints.[3]

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1 See Lee Harding, ed. *Biodiversity in British Columbia: Our Changing Environment*, Environment Canada, Canadian Wildlife Service, 1993 [hereinafter *Biodiversity in B.C.*]; Edward O. Wilson, *The Diversity of Life* (Cambridge Mass.: Belknap Press of Harvard University Press, 1995).

2 R. Edward Grumbine, *Ghost Bears: Exploring the Biodiversity Crisis* (Covelo, California: Island Press, 1994) at 20.

3 R. Edward Grumbine, "What is Ecosystem Management?" (1994) 8 *Conservation Biol.* 27, cited in Tracey Cook, "Implementing Ecosystem

The laws are also examined to see how well they embody the themes and the legal requirements of the international treaty titled the *Convention on Biological Diversity*. The *Biodiversity Convention* has three themes:

- conservation of biodiversity,
- sustainable use of biological resources, and
- equitable sharing of benefits derived from the use of biological resources.

Canada was one of the first countries to sign the *Biodiversity Convention* in 1992 at the Rio Earth Summit, and the federal government has already fulfilled one of the key obligations of the Convention by preparing a national biodiversity conservation strategy.[4] The strategy describes actions required to prevent destruction of Canada's biodiversity. Law reform to promote biodiversity conservation is paid scant attention. The strategy recommends only a "review" of existing laws and policies. Public interest environmental law groups from across the country criticized this defect of the draft strategy.[5] Their response documented a number of deficiencies in Canada's existing web of biodiversity protection laws. However, the final strategy was not amended to reflect the concerns of these groups. An additional purpose of this report is to expand on the need for specific legal reforms to fully comply with both the spirit and the letter of the international law on biodiversity.

First, the report presents background information about biodiversity in the province including a brief historical overview and a description of biodiversity preservation initiatives. Then it discusses guiding principles for environmental and resource law. Next, five areas of law relevant to biodiversity protection are examined:

- wildlife and endangered species protection;
- habitat preservation, including: forests, protected areas, wetlands, riparian areas, land use planning, and private land;
- ecological restoration;
- sustainable use of biological resources including forestry, agriculture and fisheries; and
- environmental impact assessment.

Finally, the report draws some preliminary conclusions and makes recommendations

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Management in B.C.'s protected Areas legislation: Is Consolidation Enough?", December, 1995 [unpublished].

4 Article 6 (a), *Convention on Biological Diversity*, UNEP, 5 June 1992. The *Canadian Biodiversity Strategy* was published in 1995.

5 *A Legal and Policy Response to Draft Canadian Biodiversity Strategy,* Canadian Institute of Environmental Law and Policy on behalf of six environmental organizations, September 1994.

for law reform.

History Of Biodiversity Legislation And Policy In B.C.

British Columbia has a great stake in biodiversity conservation as the Canadian province with the greatest diversity of ecosystems, birds and mammals.[6] The province's landscapes range from towering mountains along the coast to desert areas in the Okanagan Region. Forests dominate the landscape, and most wildlife species are forest-dwelling.[7] Old growth forests are particularly important as habitat for threatened and endangered species.[8] Spectacular examples of intact forests still exist in B.C.: the provincial government recently set aside the world's largest unlogged coastal temperate rainforest, the Kitlope Valley, as a protected area. However, conflict persists over the method, rate and amount of logging in the province.

Threats to biodiversity exist in other ecosystems in B.C. besides old growth forests. Grasslands and deserts in the interior of the province are diminishing. Only 2% of the land in the Okanagan Basin, one of Canada's three most endangered ecosystems, is designated as a protected area and the Basin faces intense development pressure.[9] Alpine tundra, urban streams, coastal zones, oak meadows, hotsprings and wetlands are also under threat.

The value of the landscape has long been the subject of intense conflict. Environmentalists and industrialists have battled for years over how B.C.'s forests should be managed. Protesters against logging in South Moresby, the Slocan, Carmanah and Walbran Valleys have faced arrest and civil suits for damage. The furor over the government's decision to allow logging in Clayoquot Sound, an internationally renowned ancient forest on the West Coast of Vancouver Island, led to the arrest of over 800 demonstrators who chose to defy the logging company's injunction to stay away from the area in 1992.[10]

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6 *State of the Environment Report for British Columbia*, B.C. Environment, 1993, at 41-42 [hereinafter *1993 Environment Report*].

7 Fred Bunnell & Laurie Kremstater, "Wildlife in Managed Forests" (1990) 6:2 Northwest Environmental J. 243 at 246.

8 Lee Harding, "Threats to Diversity of Forest Ecosystems in British Columbia," in *Biodiversity in B.C.*, *supra,* note 1 at 254.

9 Geoffrey Scudder, "The Okanagan Basin – Overview of an Ecological Treasure" in *Proceedings: Land for Nature Workshop*, Federation of B.C. Naturalists, 1993 at 5.

10 Sierra Legal Defence Fund in Vancouver has received leave to appeal the legality of MacMillan Bloedel's injunction to the Supreme Court of Canada, on the issue of whether the Chambers judge, in a civil lawsuit between private

The conflicts over sustainable resource use and conservation arise in part from the laws and policies of the province which reflect an historic economic reliance on resource extraction. B.C. has been characterized as a "a region dependent on the extraction of timber by large, integrated companies in a provincial economy that has been a client state over most of its history ...an economy too long dependent on mining the forests."[11] Yet forest companies were not required to pay for the cost of replanting or other silviculture treatments until 1987.[12] Even though clearcut logging and over-harvesting of forests have been the source of major environmental conflicts for many years, forest practices were not the subject of legislation until the introduction of the 1994 *Forest Practices Code.*[13] The *Code* explicitly incorporates some principles of conservation biology, but since it did not come into force until 1995, it is too early to judge its effectiveness.

Another example of the province's historical legal bias favouring resource industries is Alcan's Kemano Project, starting with the *Industrial Development Act* of 1949, which gave incentives for the massive dam building and construction project, and continuing with exempting the Project from environmental assessment procedures in the late 1980s. The public outcry over the damage the Kemano Completion Project would have caused to First Nations' hunting and trapping areas as well as to water levels, fish and fish habitat in the Nechako and Fraser Rivers convinced the government to cancel the project in January 1995, a major gain for biodiversity protection in the province.

The provincial Ministry of Environment, Lands and Parks is committed to conserving biodiversity through two complementary actions: completing the protected areas system and applying integrated resource management principles outside protected areas.[14] B.C.'s network of protected areas has dramatically expanded in the past few years. Regional land use plans developed by the Commission on Resources and Environment (CORE), and modified and adopted by the government, have been

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parties, had jurisdiction to grant an interlocutory injunction directed to the general public who were not parties to the lawsuit: *Greenpeace Canada* v. *MacMillan Bloedel Limited*, indexed as *MacMillan Bloedel Ltd.* v. *Simpson* (1994), 96 B.C.L.R. (2d) 201, 93 C.C.C. (3d) 289 (C.A.). Application for leave to appeal to Supreme Court of Canada was granted June 1, 1995.

11 M. Patricia Marchak, *Logging the Globe* (Montreal: McGill-Queen's University Press, 1995) at 115-6.

12 Section 88 of the *Forest Act*, R.S.B.C. 1979, c.140 was amended in 1987 to eliminate credits licensees had previously received for silviculture treatments.

13 *Forest Practices Code Act*, Bill 40, 3d Sess. 35th Parl., B.C., 1994.

14 Kenneth Morrison & Anthony Turner, "Protected Areas in British Columbia: Maintaining Natural Diversity" in *Biodiversity in B.C.*, *supra*, note 1 at 355.

established for three of the province's most contentious areas: Vancouver Island, the Cariboo/Chilcotin, and the Kootenays. Plans at the subregional level are also underway. Thirteen land and resource management plans (LRMP) are either completed or are now in progress. The task of forest restoration has started through Forest Renewal B.C., a Crown corporation responsible for reinvesting increased stumpage fees in a wide range of forest activities. The government has also given unprecedented weight to scientific advice on resource management by adopting all the forest management practices recommended by the Clayoquot Sound Scientific Panel.[15]

Unfortunately, the progress made in land use planning and protected areas has not been matched in other areas crucial for biodiversity protection:

- the B.C. *Wildlife Act* is rarely used to protect endangered species and their habitat;
- biodiversity protection is not the foremost goal in the new *Forest Practices Code*;
- the *Park Act* needs revision to emphasize the conservation purpose of parks;
- a new provincial *Environmental Protection Act* emphasizing pollution prevention has been delayed repeatedly[16];
- a revamped *Water Act* is required to promote conservation of water flows and to protect fish and other aquatic creatures;
- the province lacks a coastal zone management policy;
- a formal provincial wetlands protection policy is also missing;
- municipal environmental protection powers should be strengthened through revisions to the *Municipal Act*;
- growth management legislation has been introduced, but is not strong enough to deal with B.C.'s urbanization problems; and
- government subsidies encourage harmful resource exploitation.[17]

For the province as a whole, law reform on a number of fronts is essential to preserve biodiversity.

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15 The Panel's three final reports including *Sustainable Ecosystem Management in Clayoquot Sound: Planning and Practices,* the "Clayoquot Scientific Panel Report", were released in June 1995. The government adopted all of the Panel's recommendations.

16 This law is sorely needed, both for the inclusion of the public trust doctrine (discussed below) and for the pollution prevention focus.

17 John C. Ryan, *Hazardous Handouts – Taxpayer Subsidies to Environmental Degradation*, Northwest Environment Watch Report No. 2, Seattle, Wa., April 1995. Based on work by a B.C. economist, Michael Mascall, quoted in this report, taxpayers provided more than $2 billion of support to B.C.'s forest industry in 1991-2. *Ibid.*, at 7.

Changing consumption patterns is also required to preserve biodiversity, and reduce the province's "ecological footprint" on the world. The law cannot easily dictate such fundamental shifts until society is ready to make the changes, but a combination of appropriate legal tools can encourage changing behaviour.

Organizations Active In Preserving Biodiversity

B.C.'s environmental community is very active. B.C. Wild, a new group formed by representatives of major environmental groups across the province, is an activist voice for wilderness preservation. Other major groups campaigning for wilderness preservation and biodiversity conservation are B.C. Spaces for Nature (an affiliate of the World Wildlife Fund), Sierra Club of Canada, the Federation of B.C. Naturalists and its Land for Nature program, the Western Canada Wilderness Committee, the Canadian Parks and Wilderness Society, the Canadian Earthcare Society, Greenpeace and a host of smaller organizations. Ducks Unlimited pursues wetland preservation and acquisition. The Nature Trust of B.C. and the Nature Conservancy of Canada both acquire land in the province for conservation purposes.

The chief legal groups involved in public interest environmental/legal issues are the West Coast Environmental Law Association, working on law reform such as conservation covenants and legal representation in alternate dispute resolution, and the Sierra Legal Defence Fund, specializing in environmental litigation.

The provincial government has recognized the importance of biodiversity on numerous occasions. The 1971 *Ecological Reserves Act* has until recently been the major pivot for biodiversity conservation, although few new reserves have been established in recent years. A number of biodiversity initiatives are underway:

- the Protected Areas Strategy aims to protect 12% of representative sections of B.C. by the year 2000;
- gap analysis and geographic information system (GIS) mapping of biodiversity resources is being incorporated into the Protected Areas Strategy;
- the Commission on Resources and the Environment (CORE) incorporated biodiversity conservation in its work on regional land use plans, a provincial land use strategy and the proposed *Sustainability Act*, though CORE is now defunct;
- regulation of forest practices has shifted more towards biodiversity conservation with the new *Forest Practices Code*;
- ecosystem restoration has started under the direction of Forest Renewal B.C.;
- the province's Conservation Data Centre, established in 1991, is assembling necessary information on rare and endangered plants, animals and habitats, in accordance with the Biodiversity Convention's obligation to identify and monitor

components of biological diversity.[18]

- Land and Resource Management Plans are being prepared in 13 areas of the province. The completed Kamloops LRMP has protected important habitat such as the Lac du Bois area.
- a Land Use Coordination Office (LUCO) has been established to coordinate land use issues previously dealt with separately by a number of different Ministries.

B. GUIDING PRINCIPLES FOR IMPROVING LEGAL PROTECTION FOR BIODIVERSITY

1. Biodiversity Conservation, Sustainable Use and Equitable Sharing of Benefits Required as Statutory Goals

The *Convention on Biological Diversity* is an important example of guiding principles for laws regulating biodiversity in B.C. The three themes of the Convention (biodiversity conservation, sustainable use and equitable sharing of benefits) should be reflected in B.C. statutes.

There are no clear guiding principles in legislation in the province requiring the government to maintain biodiversity.[19] Under B.C.'s current legal framework, the government has the power to protect a species in a number of ways: for example, by designating it as endangered, by setting aside an ecological reserve or by limiting logging in riparian zones. But there is no statutory obligation to conserve biodiversity to ensure the continued health of the entire range of species and habitats in the province. Two proposed laws have included explicit commitments to biodiversity conservation. The shelved B.C. *Environmental Protection Act* (*BCEPA*) stated preservation of biological diversity as one of its purposes.[20] The *Sustainability Act,* proposed in a discussion paper from the now defunct Commission on Resources and the Environment, was intended to incorporate CORE's Land Use Charter which says that the province "shall conserve biological diversity in genes, species and ecosystems."[21] It is not clear what priority this goal of the Land Use Charter was intended to have over other conflicting goals.

Biological resources must also be used sustainably, in accordance with the

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18 *Convention on Biological Diversity, supra*, note 4, Article 7.

19 Colin Rankin & Michael M'Gonigle, *Legislation for Biological Diversity: A Review and Proposal for British Columbia* (1991) 25 U.B.C. Law. Rev. 277 at 312.

20 BCEPA, s.2(1)(d) draft dated May 25, 1994.

21 *A Sustainability Act for British Columbia,* 1994 at 42.

second theme of the *Biodiversity Convention.* The new *Forest Practices Code* lists biodiversity as one of a number of purposes for which forest land can be "managed and used,"[22] and the *Biodiversity Guidebook*, part of the *Code*, also stresses the importance of biodiversity preservation. These are important developments, and precedent setting in Canadian forest law. Mining law has no requirement for sustainable use. B.C.'s fisheries are in a state of crisis due to over-exploitation. Agricultural practices in the province also may not be sustainable. Agricultural land is being converted for residential and industrial development, pesticide use continues to rise and government subsidies may in some cases encourage agriculture on marginal land.[23]

The third theme of the Biodiversity Convention, sharing the benefits from sustainable use of biological resources with all members of the community, particularly indigenous people, is also not embodied in law in B.C.

Explicit statutory recognition of the importance of biodiversity conservation would provide guidance to government officials faced with difficult decisions over competing resource uses.

2. Public Trust Doctrine Essential

The public trust doctrine, requiring the Province, as trustee, to manage public resources in a way that maintains their value for future generations would provide additional legal protection for biodiversity in the province by imposing trust obligations on the government and by giving the public the legal remedies to protect that trust. This doctrine gives citizens more powers to force government to take action to preserve the environment than are currently available.

Statutory recognition of the public trust doctrine has been a valuable tool for protection of the environment in the United States. Public resources must not be used in a way which will decrease their value to the general public. It is in the public interest to provide every person with a remedy to protect the environment and the public trust. This doctrine is the reason for giving individuals the power to use the courts to call the government to account, if it violated the trust.[24] Legislatures in the Yukon, the NWT, and in a modified form, Ontario, have included the public trust

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22 *Forest Practices Code of British Columbia Act*, , S.B.C. 1994, c.41 Preamble; *Ibid.*, s. 2(1).

23 See below, section G.2.

24 *Report of the Task Force on Ontario Environmental Bill of Rights,* July 1992, Ontario Ministry of the Environment, p.85.

doctrine in environmental statutes.[25] Many American jurisdictions have incorporated this doctrine into their environmental laws, expanding citizens' rights to enforce the trust. Empirical studies have shown that this statutory form of action has not created a flood of litigation, and that governments have used the laws more than environmental groups.[26]

To encourage greater consideration of biodiversity protection by those B.C. government agencies entrusted with resource management, the doctrine should also be enshrined in this province. The public trust doctrine must be given a statutory basis, because it has not yet been recognized by Canadian courts based on common-law principles, unlike in the U.S. Efforts to argue the doctrine on common law grounds have been unsuccessful to date.[27]

The public trust doctrine was included in the draft B.C. *Environmental Protection Act* (*BCEPA*)'s Environmental Bill of Rights.[28] But the entire Bill of Rights was deleted from the draft *Act*, after opposition from industry and municipal governments. The announcement to delay the Environmental Bill of Rights provisions of *BCEPA* signaled a significant step backwards in the development of the type of law required to fully implement the *Biodiversity Convention*, since it contained innovations for improving public participation in environmental protection. The fate of the entire bill is uncertain.

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25 *Environment Act*, S.Y.T. 1991, c.5; *Environmental Rights Act*, S.N.W.T 1990, c. 28; *Environmental Bill of Rights*, S.O. 1993, c.28.

26 J. Haynes, "Michigan's Environmental Protection Act in its Sixth Year: Substantive Environmental Law from Citizen Suites" (1976) 53 J. Urb. L. 589, cited in Constance Hunt, "The Public Trust Doctrine in Canada" in J. Swaigen, ed., *Environmental Rights in Canada* (Toronto: Butterworths, 1981).

27 In *Green* v. *Ontario* (1972), 34 D.L.R. (3d) 20, an Ontario judge refused to recognize its applicability to the *Provincial Parks Act*, and in *Canadian Parks and Wilderness Society* v. *Canada* [1992] 55 F.T.R. 286, the Federal Court did not rule on the issue.

28 S.30 of the June 30, 1994 , draft, *B.C. Environmental Protection Act* said the government of B.C., as trustee, has a duty to conserve and protect the environment.

3. Precautionary Principle

The Preamble to the *Convention on Biological Diversity* emphasizes the precautionary principle, that where there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation. The principle has been advocated by many scientists and policy makers concerned that waiting for proof of harm before taking action to cut pollution is dangerous:

> The current requirement for "proof" of harm creates a situation that can resolve itself only through costly errors. One by one "proof" of harm can never keep pace with the rates of introduction of chemicals.[29]

This precautionary approach contrasts with the traditional approach of delaying regulation of a pollutant until it is conclusively proven that it is harmful to humans or the environment. The traditional approach ignores how little is really known about the multitude of pollutants that are released into the environment and the overwhelmingly complex web of life that such pollutants affect.

This principle must be enshrined in a wider range of environmental and resource laws in B.C. to preserve biodiversity. It was included in *BCEPA*, and is also found in the draft Policy for Developing Standards and Criteria.[30] The province used this principle in drafting pulp mill pollution control regulations, which have had demonstrably positive impacts on restoring marine ecosystem health and reducing shellfish closures.[31]

4. Pollution Prevention Principle

Attempts to control pollution have not been successful in preventing widespread contamination of the environment. There is an increasing recognition that reducing the generation of pollution at source has numerous advantages over trying to control the end results of the waste discharge pipe. Controlling pollution at source is necessary for biodiversity protection because some pollutants may cause very adverse effects on

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29 Great Lakes Science Advisory Board, *Report of the Great Lakes Science Advisory Board to the International Joint Commission* (Windsor: International Joint Commission, 1989) at 67.

30 S. 2 (1) (d), BCEPA; Ministry of Environment, Lands and Parks, draft Guidelines and Standards Policy, September 1995, s.4.

31 *Pulp Mill and Pulp and Paper Mill Liquid Effluent Control Regulation,* B.C. Reg. 470/90. For information on the reopening of shellfisheries, see *1993 Environment Report, supra*, note 6 at 38.

species (including extinction) at doses that do not affect humans due to higher sensitivity, greater exposure or both. This principle must also receive statutory recognition, to require industries to reduce their emissions of pollutants and to plan how to prevent pollution. The current "command and control" laws continue to allow unacceptable levels of pollution into the environment.[32]

Recommendations for Reform

1. An explicit statutory commitment to protect biodiversity as a priority for all land and resource use decisions is required. This commitment could be made in *BCEPA*, revised land use planning laws and in a consolidated protected areas law.[33]

2. Statutory recognition of the following doctrines is also required:
- **public trust**
- **precautionary principle**
- **pollution prevention.**

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32 Pollution prevention planning is in *BCEPA*. See also, *It's About Our Health: Reforming the Canadian Environmental Protection Act,* Standing Committee on Environment, House of Commons, 1995.

33 See below, section D.2.

C. WILDLIFE AND ENDANGERED SPECIES PROTECTION

The chief law directly affecting species protection is the *Wildlife Act.* B.C. has no separate legislation for endangered species, though this has been a long standing promise of the government.[34]

The federal government has recently proposed the first federal *Endangered Species Protection Act.*[35] Because the federal and provincial governments both have constitutional jurisdiction over different areas of wildlife management, the federal *Act* is designed to work with complementary provincial legislation.[36] The province is currently reviewing its wildlife laws to see how they meet the requirements of the proposed national approach for the protection of endangered species. For example, the definition of wildlife under the B.C. *Act* is limited to "raptors, threatened species, endangered species, game or other species of vertebrates prescribed as wildlife" and does not include plants, invertebrates and fish only in some circumstances. The scope of an amended *Wildlife Act* must be expanded to include all taxonomic groups, as proposed in the joint federal-provincial discussion paper on endangered species.[37]

1. *Wildlife Act*

Wildlife laws historically focused on consumptive uses of wildlife such as hunting and fishing. The first colonial government in British Columbia passed the *Act Providing for the Preservation of Game* which stated in its preamble: "Birds and beasts of game constitute an important source of food, and the pursuit thereof affords occupation, and means of subsistence to many persons in the Colony, as well as a healthy and manly recreation."[38]

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34 See, for example, the speech by the Hon. John Cashore, then the NDP Environment Critic, at a 1991 public symposium reprinted in Susanne Rautio, ed., *Community Action for Endangered Species* (Vancouver: Federation of B.C. Naturalists and Northwest Wildlife Preservation Society, 1991) [hereinafter *Community Action for Endangered Species*] at 213-215.

35 Environment Canada, Canadian Wildlife Service, *The Endangered Species Protection Act – A Legislative Proposal*, 1995.

36 For a full discussion of what should be included in a federal endangered species law, see The Canadian Endangered Species Coalition, *A New Endangered Species Act for Canada,* 1995.

37 *A National Approach to Endangered Species Conservation in Canada*, Discussion Document, May 1995. This discussion document was prepared by the provincial, territorial and federal government departments responsible for wildlife management.

38 Cited in Donald Robinson, "Wildlife and the Law" in *Our Wildlife Heritage – 100 Years of Wildlife Management, Centennial Wildlife Society*, Victoria, B.C.,

As ecological awareness grew, government efforts shifted more towards conserving wildlife for its own sake. The present *Wildlife Act* addresses management and conservation, but the primary focus remains regulation of hunting and fishing and licensing of guides and trappers.[39] The importance of wildlife in the lives of British Columbians for aesthetic, spiritual, recreational, and ecological reasons is not reflected in the current legislation.[40]

The *Wildlife Act* vests ownership of all wildlife in the province with the provincial Crown. The *Act* grants the Minister of the environment broad powers to manage and protect wildlife, including the power to:

- acquire and administer land, and timber rights on private land (s.3)
- designate land as a wildlife management area (WMA) (s.4)
- designate land in a WMA as a critical wildlife area if required as habitat for an endangered or threatened species (s.5)
- designate species as endangered or threatened (s.6)
- bring an action for damages against a person who destroys or damages wildlife habitat (s.8).

The *Act* establishes a system for issuing licences for hunting, firearm possession and angling. It gives the Lieutenant Governor in Council (Cabinet) the authority to make regulations to limit hunting for any particular wildlife species. There are a number of sections which place limits on how hunting, trapping, guiding and angling can be conducted in the province. For example, it is an offence to kill big game while it is swimming (s.31).

Species are protected by the *Wildlife Act* through the creation of offences such as: damaging wildlife habitat in a WMA; damaging muskrat or beaver houses, dens or dams; trafficking in live wildlife or wildlife meat; and hunting, killing or wounding a threatened or endangered species. Section 35 of the *Act* provides additional protection for birds, nests and eggs by prohibiting the possession, taking, injuring, molestation or destruction of a bird or its egg.

The province also makes grants for wildlife and habitat protection through the

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1987 at 44.

39 S.B.C. 1982, c.57.

40 The importance of wildlife to British Columbians is illustrated by figures from a 1983 provincial survey which found that over 87% of B.C. residents stated an interest in wildlife; 75% were involved in wildlife associated activities near their homes; and 94% listed wildlife as an important part of their recreational trips: *1993 Environment Report, supra*, note 6 at 53.

Habitat Conservation Fund (HCF), established in 1981,which is composed of surcharges on hunting, fishing, trapping and guiding licences issued under the *Wildlife Act*; money from the Crown Land Account; compensation funds from industry; and donations. The funds are used for public education, habitat restoration, enhancement and acquisition.[41] The funds are collected in and disbursed from a special account in the province's general fund of the consolidated revenue fund.[42] The province has recently introduced a bill to convert the HCF into a trust fund.

The province also participates in national wildlife protection efforts such as the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Recovery of Nationally Endangered Wildlife (RENEW) program, which is a committee that prepares recovery plans for species listed by COSEWIC.

CONTROL OF POACHING

Poaching, the illegal taking of wildlife, is one threat to the continued health of wildlife in B.C. There is evidence that there are gaps in both the content of wildlife law across Canada's jurisdictional spectrum as well as in enforcement activities, because of lack of resources and the vastness of Canada's territory.[43] In a recent survey of enforcement of poaching prohibitions across Canada, wildlife officials from the province of B.C. identified elk, moose, sheep, deer, eagle, grizzly bear and black bear as animals currently in use in wildlife trade.[44] The parts are used for trophies, food and ceremonial and medicinal purposes.

Black bears and grizzly bears are particularly prized by poachers. Bear gall bladders are lucrative and are used commonly in traditional Chinese medicines. In 1991 a federal wildlife trafficking expert estimated that at least 100 poachers were slaughtering more than 3,500 bears per year in B.C.[45] At that time, trafficking in bear parts was legal in B.C. In response to the increase in poaching, and the perceived increase in trafficking in bear parts, in 1993 a regulation was passed banning the

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41 Ministry of Environment, Lands and Parks, *Habitat Conservation Fund, Project Review, 1988-89 to 1991-2* at 2.

42 *Special Accounts Appropriation and Control Act*, S.B.C 1988, c.26, s.8.

43 L. J. Gregorich, *Poaching and the Illegal Trade in Wildlife and Wildlife Parts in Canada* (Ottawa: Canadian Wildlife Federation, 1992), at 23. This report reviews all wildlife laws in Canada, and compares the regulation of hunting and trapping in all the provincial and territorial legislation.

44 *Ibid.*

45 *From Forest to Pharmacy: Canada's Underground Trade in Bear Parts,* Investigative Network for the Humane Society of the U.S./Humane Society International/Humane Society of Canada [hereinafter *From Forest to Pharmacy*] at 6.

possession of and commercial trade in bear gall bladders, bear genitalia and bear paws separate from the carcass or hide.[46]

Although the regulation is credited with reducing bear poaching in the province, the sale of bear gall bladders in traditional Asian pharmacies continues. An undercover investigation in Vancouver in 1995 revealed that 13 out of 20 pharmacies had bear gall bladders for sale which were offered to undercover investigators. In July 1995, the largest wildlife law enforcement operation of its kind in North America was launched to investigate trade in bear gall bladders in Vancouver's Chinatown. Law enforcement officers from the Ministry of the Environment, the RCMP and Environment Canada seized 191 galls and other wildlife parts including elephant hide, tiger bone and rhino horn with a total estimated street value of several hundred thousand Canadian dollars.[47]

These enforcement efforts will publicize the penalties for violating the regulations and may act as a deterrent to poachers. Other deterrents have been recommended by conservation officers. Court fines for illegal hunting of grizzlies have been too low, since the average court fine for a first offence of shooting a grizzly out of hunting season is only $1,000. In response, the provincial government has increased the fines under the *Wildlife Act* for offences involving grizzly bears. A first offence is now subject to fines of $1000 (minimum) to $25,000 (maximum) and/or six months imprisonment, while a subsequent offence is punishable by fines of $6000 (minimum) to $50,000 (maximum).[48] Wildlife conservation officers in Northern B.C. believe organized poachers should be charged with theft under the Criminal Code rather than regulations under the *Wildlife Act*. Another idea is to ban sale of bear pelts.[49]

Enforcement has been strengthened by the establishment of the Special Investigation Unit, which has investigated wildlife trafficking such as that described above, illegal guiding, illegal export of endangered species, illegal dumping and protection of habitat from forestry related offences. [50]

The province has recently announced a grizzly bear conservation strategy to halt their declining population. The strategy identifies the main cause of declining grizzly

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46 *Commercial Activities Regulation*, 338/82, s. 2.08.

47 *From Forest to Pharmacy, supra,* note 45 at 7.

48 *Miscellaneous Statutes Amendment Act (No.3) 1995*, S.B.C. 1995, c. 53, s. 52.

49 Larry Pynn, "Ban on Sale of Grizzly Pelts Urged" *Vancouver Sun* (11 July 1995).

50 Province of B.C., Ministry of Environment, Lands and Parks, Annual Report 1993/94, 18.

population as destruction of habitat.[51] Hunting, illegal poaching and destruction of bears that threaten humans also contribute to grizzly declines.

ENDANGERED SPECIES PROTECTION

The Wildlife Branch prepares lists of endangered, vulnerable and management species, known as the Red, Blue and Yellow Lists, to help decide on priorities for conservation and to assist in wildlife management. The B.C. Conservation Data Centre tracks the populations of wildlife species in the province. It is part of the Wildlife Branch of the Ministry of Environment, Lands and Parks.

The Red List includes any indigenous species or subspecies (taxa) considered to be extirpated, endangered or threatened in B.C., or under consideration for that status. As of April 1995, 94 taxa were listed on the Red List.[52] The Blue List is for species that are vulnerable or "at risk" and also contained 94 taxa as of April 1995. Wildlife on the Yellow List is not at risk, but is managed for public uses, such as hunting, trapping and wildlife appreciation. Examples of species on this List include rocky mountain bighorn sheep, mountain goats, and ruffed grouse.

When the Wildlife Branch adds a species to the Red List, it becomes a candidate for legal designation as an endangered species under the *Act*. Section 6 of the *Wildlife Act* says the Lieutenant Governor in Council *may* designate a species at risk and section 5 also uses the discretionary word *may* to refer to the power to designate land as habitat for endangered or threatened species. The Wildlife Branch is supposed to prepare a brief for Cabinet to decide if an Order in Council should be issued designating a new species. However, that step has never been taken; no species on the Red List has been "uplisted" to legal designation under the *Act* since the original four species were designated in 1980.[53] The Director of Wildlife Branch explains that it focuses on compiling the Red and Blue Lists rather than on asking the government to use its designation power because it is necessary to first compile information on the species before working on new administrative and legislative initiatives.[54]

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51 *Grizzly Bear Conservation Strategy,* Ministry of Environment, Lands and Parks, 1995.

52 Ministry of Environment, Lands and Parks, B.C. Conservation Data Centre, Tracking Lists for Vertebrate Animals, Vascular Plants and Plant Communities, April 30, 1995.

53 David Nagorsen, "Endangered Mammals in British Columbia" in *Biodiversity in British Columbia, supra*, note 1 at 143.

54 Ray Halladay, "Provincial Government Endangered Species Legislation" in *Community Action for Endangered Species, supra,* note 34 at 230.

Under the current procedure, there is no opportunity for the public to nominate a species for listing. The public can nominate species for protection in both the U.S. and Australia. [55]

The definition of wildlife under the *Act* is limited to "raptors, threatened species (a species of animal which is designated as a threatened species), endangered species (a species of animal which is designated as an endangered species), game or other species of vertebrates prescribed as wildlife". This means that some species which have been scientifically identified as threatened are not eligible for any of the possible protection measures provided by the *Act*. For example, though plants are not counted as species under the definition used in the B.C. *Wildlife Act*, they are included on the Red and Blue Lists of endangered and threatened species. Currently 634 plants are designated as rare in B.C. of which 124 are considered threatened or endangered.[56] The B.C. Conservation Data Centre tracks rare plants in its work. New endangered species legislation must expand the species covered by the regulatory regime.

Adequacy of Current Law

Species continue to decline under B.C.'s current discretionary approach to endangered species protection. The number of species assessed as endangered in B.C. rose between 1991 and 1993 from 107 to 151.[57] As species are listed when they are assessed rather than when they become endangered, it is difficult to determine exactly how many species are at risk in the province.

The current provincial law has rarely been used to designate species, and has only been used once to protect critical habitat. Since 1980, only four species have been designated under the *Wildlife Act*: the Vancouver Island marmot, the sea otter, the burrowing owl, and the American white pelican. These species were all designated in 1980 and remain the only species to have received legal designation in the province.

The current practice underscores the need for new or amended legislation. New laws should require the government to act when species are in danger of extinction. Since the government does not now make use of the law, it should be changed to

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55 *Endangered Species Act*, 16 U.S.C. s. 4(3)(A) (1973) and *Endangered Species Protection Act,* Statutes of Australia, no. 194 of 1992, s. 25.

56 Hans Roemer, "Rare and Endangered Vascular Plants in British Columbia" in *Biodiversity in British Columbia*, Ministry of the Environment, 1993, at 98. Some plants are controlled through the *Dogwood, Rhododendron and Trillium Protection Act*, R.S.B.C. 1979, c. 96, which restricts harvesting these plants.

57 Bill Harper *et al.*, "Terms of Endangerment" in *Biodiversity in British Columbia,* Environment Canada, Canadian Wildlife Service, 1994, at 16.

mandate an official response to species in danger of extinction. Other species protection laws do not depend on this discretionary approach. The U.S. *Endangered Species Act* requires endangered species to be listed and requires identification of their critical habitat. Legislation should also *require* action for species in decline. Focusing solely on species near extinction has been called the "deathbed" approach to conservation, which will never be sufficient to protect species.[58]

Habitat loss is the single most important factor affecting species loss in B.C.[59] Yet, the Ministry of Environment, Lands and Parks (MELP) does not control most of the habitat on which species depend. MELP controls only those Crown lands which have been designated as Wildlife Management Areas or Critical Wildlife Areas. The province currently has designated 12 Wildlife Management Areas, but these amount to only 0.021% of the province's area.[60] Most of the province is forested land, managed by forest product companies. Providing a legal mechanism that must be used to protect critical habitat is necessary to ensure that endangered species are not permanently sacrificed for continued forest operations. Clearly, protection of endangered species in B.C. requires not only a new provincial endangered species law, but also improved habitat protection in forest planning and practices.[61]

Conservation of Ecosystems and Multiple Species

Many authorities are increasingly voicing the opinion that the most effective way to protect the full range of biodiversity is to protect ecosystems through a new statute such as a *Representative Ecosystems Act* or *Habitat Protection Act.*[62] This type of law would resemble B.C.'s *Ecological Reserve Act* [63][discussed in the Protected Areas section below]. The goal of this type of *Act* would be to preserve representative samples of all different types of ecosystems in a particular jurisdiction. Priority would be given to ecosystems most reduced from their historic range; with a

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58 John Kunich, "The Fallacy of Deathbed Conservation under the Endangered Species Act" (1994) 24 Environmental Law 501. "By waiting until a species is on its deathbed, the ESA delays intervention until the point at which, biologically, it is likely too late to save the species. Only rarely can a species approach extinction and recover fully to a sustainable population size and vigor." *Ibid.*, at 551.

59 *1993 Environment Report, supra,* note 6 at 55.

60 Morrison & Turner, *supra,* note 14 at 360.

61 See below, section D.1.

62 Jensen, Tom & Harte, *In Our Own Hands - A Strategy for Conserving California's Biodiversity*, (University of California, 1993); Holly Doremus, "Patching the Ark: Improving Legal Protection of Biological Diversity" (1991) 18 Ecology L.Q. 265.

63 See below, section D.2.

high proportion of endemic species; with species that are particularly intolerant of habitat modification and that contain particularly large numbers of species. There are obvious difficulties in designing this type of system, such as deciding how much of each selected ecosystem to protect, how many examples of an ecosystem type to preserve and what degree of protection to give to selected areas.[64] The public favours ecosystem preservation. In B.C., public support for wilderness preservation is very high, as over 80% of respondents in a recent survey conducted on behalf of BC Parks said acquisition of parks was the highest priority for BC Parks and a similar percentage rated preservation of the environment and protection of wildlife as very important.[65]

Integrated protection for species and habitats can also be accomplished through changes to existing endangered species laws. The *Australian Endangered Species Protection 1992* protects both endangered species and "ecological communities" defined to mean:

> "an integrated assemblage of native species that:
> (a) inhabits a particular area in nature; and
> (b) meets the additional criteria specified in regulations made for the purposes of this definition.[66]

Another legal tool that shows promise is planning for multiple species, rather than preparing a recovery plan for an individual species. This type of plan, known as a habitat conservation plan or a natural community conservation plan, is designed to protect the habitat of several species. Habitat conservation plans are increasingly used under the U.S. *Endangered Species Act*. Natural community conservation plans are used in California to "conserve long-term viable populations of the State's native animal and plant species, and their habitats, in landscape units large enough to ensure their continued existence."[67]

Habitat conservation plans for multiple species can promote a wider range of biodiversity than single species efforts and can provide more predictability to private landowners. These plans, together with procedures for critical habitat protection, are complementary parts of a biodiversity protection law. The tools work together – the plan can allow a landowner to concentrate development on a small area of the critical habitat , acting as a "carrot", while the threat of listing the species as endangered acts as a "stick", since a listing and consequent designation of habitat can freeze the possibility of all further development.

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64 Doremus, *supra,* note 62 at 322-3.

65 *Vancouver Sun* (1 April 1996), B1.

66 Australian Statutes, No. 194 of 1992, s. 4.

67 Jensen, *et al.*, *supra*, note 62 at 241.

The coastal sage scrub community in southern California provides an example of how this type of plan works. In 1991, the Manomet Bird Observatory and the Natural Resources Defence Council petitioned to list the California gnatcatcher as an endangered species. They presented evidence that between 70-90% of the coastal sage scrub habitat on which the gnatcatcher depends had been lost to agricultural and residential development. Because of the value of the real estate involved, developers aggressively opposed the petitions. [68] The California state government decided this was a good opportunity to try out its new natural community conservation plan (NCCP) program. Instead of proceeding with a single species recovery plan, the California Fish and Game Commission sought the advice of a scientific review panel on a conservation plan for the coastal sage scrub ecosystem. The panel focused on three species of vertebrates of concern and produced interim guidelines for limits on land development: for example, no more than 5% of the coastal sage scrub was to be affected. The plan that was developed protects the gnatcatcher as well as more than 20 other threatened or endangered vertebrates and nearly 100 other rare or endangered plant species, while allowing some limited development to occur.[69]

2. Alien Species in B.C.

Alien or exotic species continue to be introduced into British Columbia and once introduced, expand their range.[70] It is difficult to adequately monitor the impact of alien species, since knowledge about how ecosystems function is still limited.

Alien range and agricultural weeds are controlled by the *Weed Control Act,* which requires occupiers of land to control noxious weeds.[71] But control methods for unwanted or alien weed species may have negative environmental impacts in and of themselves. Pesticides used to control weeds or alien plant species can negatively affect the biodiversity of an area.

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68 See Jonathan L. Atwood & Reed Noss, "Gnatcatchers and Development : A 'Train Wreck' Avoided?" (1994) 10 Illahee 123; Michael Mantell, "Beyond Single Species: The California Experiment" (1994) 10 Illahee 131.

69 National Research Council, Committee on Scientific Issues in the Endangered Species Act, *Science and the Endangered Species Act*, National Academy Press, 1995, at 84-89. The Committee identified this NCCP program as a model for better recovery planning.

70 Lee Harding, *et al.*, "Exotic Species in British Columbia", in Biodiversity in B.C., *supra*, note 1.

71 R.S.B.C. 1979, c.432.

Introduction of exotic or alien species into B.C.'s marine waters can be controlled by regulations pursuant to the federal *Fisheries Act* and the *Canada Shipping Act*. The federal *Plant Quarantine Act* is also used to control exotic or alien submersed aquatic plants in British Columbia, such as the Eurasian watermilfoil.

Recommendations for Reform

3. A new Endangered Species Law is needed, which would:

- **provide a centralized registry of information about endangered species;**
- **list species at risk through a COSEWIC-like, independent, arms-length scientific process;**
- **prohibit harming, killing, trafficking or disturbing of the species;**
- **identify the critical habitat needs of the species;**
- **prohibit destruction of or modification to that habitat;**
- **require preparation of recovery plans for the species;**
- **bind the government to ensure that actions it authorizes, funds or carries out do not jeopardize the continued existence of any endangered, threatened or vulnerable species;**
- **allow and encourage multiple species planning; and**
- **prevent unauthorized introduction of exotic species into B.C.**

D. HABITAT PRESERVATION

1. Forests And Forest Law

Most provincial Crown land is managed by the Ministry of Forests since about 86.7% of the province is in a timber supply area or under a tree farm licence or other form of tenure such as a woodlot licence.[72] The Ministry of Forests also controls all grazing leases in the province. The laws regulating forests, including the *Forest Practices Code Act* of British Columbia (the "*Code*"), the *Forest Act* and the *Forest Land Reserve Act* are therefore an integral part of the legal framework for biodiversity protection, both because wildlife habitat occurs on forested land, and because the range of forest types is part of the province's ecosystem diversity.

Impacts of Forestry on Biodiversity

Many species are affected by logging, such as the endangered Vancouver Island marmot.[73] Fish habitat is also affected by logging. Spawning areas are often degraded by materials from logging roads and areas. A recent study which examined the effects of logging on salmon streams in selected cut blocks on Vancouver Island found that 64.2% of streams studied were affected to some degree and 35.3% suffered complete habitat loss.[74] The Mountain Caribou in Managed Forests multistakeholder group has found that clearcutting in critical caribou habitat regions will not allow the long term survival of caribou (a vulnerable species on the provincial Blue List) and is now developing a provincial strategy for caribou habitat management.[75] Bird and invertebrate populations are very vulnerable to the impacts of forest fragmentation that logging can cause. Logging also has a marked impact on the invertebrates in forested ecosystems.

As well as being home to many threatened species, certain species of trees and forests are themselves threatened ecosystems, at risk of disappearance. Three of B.C.'s twelve forested biogeoclimactic zones (coastal Douglas fir, interior Douglas fir and Ponderosa pine) are more than 90% fragmented by roads or, in other words, large roadless

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[72] B.C. Ministry of Forests, *1994 Forest, Range & Recreation Resource Analysis* at 38.

[73] Nagorsen, *supra,* note 53.

[74] A. Tripp, Nixon & R. Dunlop, *The Application and Effectiveness of the Coastal Fisheries Guidelines in Selected Cut Blocks on Vancouver Island.* Victoria: Ministry of Environment, Land and Parks Fish and Wildlife Division, 1992.

[75] *1993 Environment Report, supra*, note 6 at 76.

areas make up less than 10% of their area.[76] Roads may break up intact ecosystems. A road could sever travel corridors between winter dens and early spring food sources in the lowlands affecting the ability of bears to survive, for example.[77] Even if no timber harvesting or mining occurs, roads give people greater access to wilderness which can lead to harmful impacts through hunting, offroad vehicle use, and camping. Forest fragmentation has been recognized as a serious problem for animal and plant populations. Breaking up large habitat areas into smaller islands can reduce the probability of individual species survival, by actual destruction of habitat, increasing microclimatic and edge effects as the size of forest patches is reduced, and through the increasing isolation of the remaining forest patches, imposing barriers to gene flow and dispersal.[78]

A brief description of the major forest laws follows.[79]

FOREST PRACTICES CODE

The *Forest Practices Code of British Columbia Act* was introduced and passed in 1994. The *Code* is divided into four components: the *Act,* regulations, standards and field guides. Only the first three components have legal force.

The *Act* is the legislative umbrella authorizing the other components of the Code. It enables the Code, establishes mandatory requirements for planning and forest practices, sets enforcement and penalty provisions and specifies administrative arrangements. It creates the Forest Practices Board, which has the power to receive public complaints about enforcement of the Code, carry out audit and inspection functions to determine compliance with planning and operational requirements and take part in appeals to the Forest Appeals Commission.[80] Biodiversity protection is not an

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[76] Lee Harding, "Threats to Diversity of Forest Ecosystems in British Columbia," in *Biodiversity in British Columbia, supra,* note 1 at 245.

[77] Grumbine, *supra,* note 2 at 24.

[78] Ministry of Forests, *Forest Practices Code of BC. Act, Biodiversity Guidebook,* 1995, at 78.

[79] A complete discussion of forest law is beyond the scope of this report. See Monique M. Ross, *Forest Management in Canada,* Canadian Institute of Resource Law, 1995; Davis & Co., *Annotated Forest Practices Code of B.C. Act,* 1995.

[80] *Forest Practices Code Act,* S.B.C. 1994, c.41, part 8, s.176.

overriding goal of the new *Act*. Instead, biodiversity is listed as one of a number of purposes for which forest land can be "managed and used."[81] Regulations allow the chief forester to "establish, vary or cancel standards for operational planning and forest practices respecting....(a) biological diversity."[82]

Part 2 of the *Act* enables the establishment of four types of higher level plans: resource management zone objectives; landscape unit objectives; sensitive areas objectives; and interpretive forest site, recreation site and recreation area objectives. The regulations provide more guidance for developing these plans.

Regulations

Many regulations have been established under the *Act*, including the:

- strategic planning regulation;
- operational planning regulation;
- timber harvesting practices regulation;
- silviculture practices regulation;
- range practices regulation;
- forest recreation regulation;
- forest service road use regulation;
- forest road regulation;
- Forest Practices Board regulation;

Of these, the most important are the strategic planning and operational planning regulations.

The strategic planning regulation gives further details on planning for landscape units and objectives to maintain important forest values such as biodiversity at a landscape level. The purpose of landscape units is to "meet old growth and connectivity objectives while minimizing negative impacts on timber and range resource values."[83] District managers are responsible for preparing these plans, which must follow the *Forest Practices Code's* Regulations and any direction from the Chief

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[81] Preamble and section 2(1).

[82] *Strategic Planning Regulation,* B.C. Reg. 180/95, s.10.

[83] *Biodiversity Guidebook, supra*, note 78 at 53.

Forester.[84]

This regulation provides for the establishment of sensitive areas and objectives, also established by the District Manager. Designating a sensitive area can be initiated by either a District Forest Manager or a designated environment official, as defined in the *Act*. Sensitive areas may be used for old growth management areas or special wildlife habitat, for example of endangered species.

The operational planning regulation is the other key regulation. This regulation establishes operational planning requirements for forest holders.

It establishes riparian management areas (RMA) of 20 -70 metres (for some streams only). The RMA is divided into a riparian reserve zone where harvesting is prohibited and a riparian management zone in which harvesting is restricted.[85] The reserve zones are established on the larger categories of fish streams or streams in community watersheds but not on the narrower fish streams or on non-fish-bearing streams, areas where there is a need for biodiversity protection. The reserve zones are likely too narrow for effective biodiversity conservation and do not protect small wetland areas such as bogs, fens and marshes.[86] The operational planning regulation also prohibits clearcutting in areas where wildlife depends on forest canopy for habitat.[87] It requires protection of "other values" identified in any higher level plan, forest development plan or silvicultural prescription which could be used for biodiversity protection.[88]

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[84] Ministry of Forests, *Introduction to the Forest Practices Code,* 1995, at 4-7.

[85] *Operational Planning Regulation,* B.C. Reg. 174/95, ss. 72-77. Yet, the Clayoquot Scientific Panel recognized that protecting zones of arbitrary distance from the shore may be inadequate to protect the entire hydroriparian zone and drainage system. The Panel made a series of site-specific prescriptions for hydroriparian reserves in the area they were reviewing. *Clayoquot Scientific Panel Report 5,* s.7.4, p.175-185.

[86] Dr. G.G.E. Scudder, Department of Zoology, University of British Columbia, personal communication, April 3, 1996.

[87] *Operational Planning Regulation*, B.C. Reg. 174/95, s. 24(1)(c).

[88] *Ibid.*, s. 36. This section also requires protection of, or minimization of negative impacts of timber harvesting, on "identified wildlife."

Guidebooks

A series of Guidebooks is also part of the *Forest Practices Code*. The recommendations in the Guidebooks are not mandatory. Once a recommended practice is included in a plan, prescription or contract, it becomes legally enforceable. But there is no guarantee that this "incorporation by reference" will occur. Under the current framework, the public must rely on Ministry of Forests administrators to incorporate the guidelines into individual plans.

In general, the Guidebooks describe procedures, practices and results that are consistent with the legislated requirements of the Code.[89] The Guidebooks are intended to provide assistance to those preparing operational plans. They reflect the government's decision that performance-based forest management is preferable to detailed regulatory management standards since it provides for greater flexibility and less constraints on the exercise of professional judgment.[90]

The three Guidebooks of most relevance for biodiversity protection on forest land in B.C. are: *Biodiversity Guidebook* September 1995; *Riparian Management Area Guidebook* December 1995 and *Managing Identified Wildlife Guidebook,* not yet released. Together, these three Guidebooks are intended to address the majority of biodiversity concerns on forested land in the province.

The *Biodiversity Guidebook* notes that the government has provided policy direction to "limit the impacts of this Guidebook, on short term timber supply, to no more than 4% over the amount specified in the timber supply review, on a province-wide basis."[91]

The *Guidebook's* chief requirements are:

- specifications for retention of specified percentages of mature and older forest cover, and
- wildlife tree patches to be left within cutblocks.

To maintain biodiversity at the landscape level, the *Biodiversity Guidebook* directs forest planners to set objectives for maintaining biodiversity for a range of possible characteristics of the forest such as landscape connectivity, stand structure and species

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[89] Preface to Guidebooks, Ministry of Forests 1995.

[90] Ross, *supra,* note 79 at 345.

[91] *Biodiversity Guidebook, supra,* note 78 at 9.

composition. An additional tool for maintaining biodiversity are forest ecosystem networks which are planned landscape zones that serve to maintain or restore the natural connectivity within a landscape unit.

Monitoring for Biological Diversity

Under the *Forest Practices Code*, all three ministries involved in forest regulation (Ministry of Forests, Ministry of Environment, Lands and Parks, and Ministry of Energy, Mines and Petroleum Resources) have more responsibility to monitor all forest practices in order to identify potential code violations.

The *Code* requires the forest industry to identify and classify wildlife habitat areas, if required by the regulations, and to describe strategies for addressing specified wildlife species, a situation characterized as "an obvious conflict of interest to timber companies whose normal business is the logging of habitat, and a surprising new responsibility."[92] The *Code* does not require identification or protection of management indicator species (MIS). MIS are used as indicators of the general health of ecosystems. By monitoring changes in the population of MIS, the impact of activities such as logging can be assessed. The Clayoquot Sound Scientific Panel recommended using indicator species as one method of monitoring biological diversity in the Sound, and suggested potential candidate species for monitoring, such as elk, Vaux's swift and marten (associated with older forest) and bald eagle and great blue heron (associated with large trees).[93]

Laws in other jurisdictions, notably the U.S. *National Forest Management Act*, require MIS to be identified in forest planning.[94] Objectives must be established for the maintenance and improvement of their habitat. The indicators must be monitored in response to events like logging and road building. Population trends for these species must be tracked. Similar provisions could be included in B.C.'s *Forest Practices Code*.

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[92] Mark Haddock, *Forests on the Line – Comparing the Rules for Logging in British Columbia and Washington State,* (Vancouver: Sierra Legal Defence Fund and Natural Resources Defense Council, 1995), at 45.

[93] *Clayoquot Scientific Panel Report 5*, p. 207, 266.

[94] *Grumbine*, *supra,* note 2 at 105-114. Also, see Haddock, *supra*, note 92 at 42; and Rankin and M'Gonigle, *supra*, note 19 at 287-88 and 321-22.

The *Clayoquot Sound Scientific Panel Report* contains a site-specific and comprehensive approach to monitoring for biological diversity while practising forestry. The recommendations for resource planning and silviculture are intended to maintain habitat. Monitoring focuses on both habitats and organisms. The Panel acknowledges that monitoring for species and genetic diversity will be indirect, concentrating on maintenance of representative habitats and connectivity among habitats. It recommends monitoring endangered, threatened and rare species, on the advice of appropriate experts.

The Report identifies two broad categories of monitoring indicators: those detrimental to maintaining biodiversity such as forest fragmentation and those necessary for biodiversity such as species. Specific recommendations for species monitoring include the use of indicator species and checklists. Monitoring should also be done for oldgrowth characteristics, and aquatic environments. The monitoring methods recommended by the Panel should be included in forest practices in other parts of the province.

Recommendations for Reform

4. The effects of the existing provisions of the *Code*, Regulations and Guidebooks should be closely monitored to see if they are adequately protecting biodiversity in forests. If revisions are required, documentation on the impact the *Code* is having on wildlife habitat, for example, should be obtained with a view to eventual revision of the *Code*.

5. Information on incorporation of conservation biology principles, such as the use of increased monitoring procedures and the use of management indicator species, should be gathered and analyzed for possible future amendments to the *Code*.

FOREST ACT

Annual Allowable Cut and Timber Supply Review

The Timber Supply Review, carried out in each of the timber supply areas (TSAs) and tree farm licences (TFLs) in the province, is another important feature of forest law that can negatively affect biodiversity preservation. The Ministry of Forests conducts this review for each of B.C.'s 36 TSAs and 35 TFLs, to determine how much

timber is available for harvesting.[95] One of the purposes of the review is to give the Chief Forester information to fulfil his obligations under the *Forest Act* to set the annual allowable cut (AAC) for each of these areas and licences every five years.

Due to growing concern about dwindling supplies of timber, the Ministry of Forests started an accelerated timber supply review in 1992. This review was to address both the dwindling supplies as well as the changes in forest practices developed since completion of the last review.[96] The accelerated review was initiated partly because of a 1991 report which concluded that AACs for most TSAs were based on assumptions of forest management practices that were out of date. The report identified lack of recognition of non-timber resources such as fish and wildlife habitat as the weakest area in the AAC process[97].

The rate of cut can have a dramatic impact on biodiversity conservation, since logging and logging roads can eliminate habitat, and ecosystem characteristics of natural forests may be lost when converted to managed forests. Forests managed according to current cut prescriptions, for example, do not provide winter habitat for caribou, since for about six months of the year, the main forage of Mountain caribou is arboreal lichens, which grow on oldgrowth trees.[98] As one of the Co-Chairs of the Clayoquot Sound Scientific Panel report has noted in relation to caribou and other species dependent on certain characteristics of oldgrowth forests: "When age itself is the critical feature, there is no management option other than preserving some areas of oldgrowth."[99]

Section 7 of the *Forest Act* sets out the factors that the Chief Forester must consider when determining AACs. None of these factors explicitly relate to biodiversity. The Ministry of Forests considers that subsection (a)(vi) is the authority to consider environmental and biodiversity factors. This section requires the Chief

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[95] B.C. Ministry of Forests, *1994 Forest, Range & Recreation Resource Analysis* at 90.

[96] *Ibid.* at 300.

[97] Ministry of Forests, *Timber Supply Review Backgrounder* February 1994 at 2 quoting study titled "Review of Timber Supply Analysis Process for B.C.

[98] Susan Stevenson, "Maintaining Caribou in Southeastern British Columbia" in *Community Action for Endangered Species*, *supra*, note 34, at 126.

[99] Bunnell & Kremstater, *supra*, note 7 at 250.

Forester in determining an AAC to consider "the rate of timber production that may be sustained on the area, taking into account: ...any other information that, in his opinion, relates to the capability of the area to produce timber." The Chief Forester must make the AAC determination independently of the government. The only input the government may give to the decision is expressed in s.7 subsection (d) "the economic and social objectives of the Crown, as expressed by the Minister, for the area, for the general region, and for the province."

There is some question about exactly what types of evidence must be considered by the Chief Forester when he makes the AAC determination. Environmental groups have challenged the Chief Forester's interpretation of his obligation to set an AAC that "may be sustained." Also, the Western Canada Wilderness Committee is appealing a court decision in which they sought judicial review of recent AAC determinations made in two TSAs which are the only known range of the northern spotted owl in Canada. The Committee argued that the Chief Forester was expressly required to consider protection of the northern spotted owl and other endangered species among the broad range of non-timber values listed in section 7. The court disagreed, finding that the provincial Cabinet had the responsibility to provide adequate habitat for this bird.[100]

Other cases have also challenged AAC determinations. In 1991, the Sierra Club of B.C. argued that the Chief Forester had set too high an AAC for TFL 44 on Vancouver Island (which includes Clayoquot Sound and the Upper Carmanah and Walbran Valleys). The Sierra Club argued that AACs should be approved at levels that can be maintained in perpetuity, because the *Forest Act* states that the Chief Forester must approve an AAC that "may be sustained ". An Appeal Board established under the *Forest Act* ruled that "sustained yield is a goal to work towards" and "blind commitment to [sustainable yield] as immediate management policy would involve unacceptable sacrifices of the social good if Forests were not converted to other forms." An application for judicial review of this determination was dismissed in 1993.[101] The Trial Judge upheld the Ministry of Forest's opinion that it was not obligated to restrict logging to the rate of regeneration until all oldgrowth trees had been cut and replaced with second growth managed forests. An appeal of the case was dismissed on the grounds of mootness, as the relevant sections of the *Forest Act* had

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[100] *Western Canada Wilderness Committee* v. *B.C. (Chief Forester)* [1996] B.C.J. No.562 (B.C.S.C.).

[101] *Sierra Club of Western Canada* v. *B.C. (Chief Forester)* (1993), 13 C.E.L.R. (N.S.) 13 (B.C.S.C.).

been amended and a new lower AAC had been set for the area before the appeal was heard.[102]

This case was significant as it was the first time that an AAC had been reduced for ecological reasons, and the first time a company had ever challenged an AAC determination. The harvest level was eventually reduced for ecological reasons, demonstrating the increasing role of ecological issues in forestry in B.C.

Recommendations for Reform

6. Timber harvesting must be done in a sustainable manner, and amendments to the *Forest Act* may be required to ensure this occurs.

Forest Act Wilderness Areas

The *Forest Act* provides for the creation of wilderness areas by Order in Council.[103] In B.C., four wilderness areas have been established representing 1.7% of the protected areas in the province.[104] Under the *Forest Act*, wilderness areas must be managed and used for "the preservation of wilderness" or "any purpose permitted...under the regulations." The provincial Forest Regulations authorize the Ministry of Forest's Regional Managers to approve uses which are inconsistent with the preservation of wilderness where they are of the opinion that the use is of sufficient public benefit. These provisions have been used to allow mining exploration in wilderness areas. To make wilderness areas under the *Forest Act* more useful for biodiversity preservation, the Regulations should be amended to limit these discretionary decisions. Uses of a wilderness area should not be allowed if they would compromise a species' habitat needs or threaten the ecological integrity of the area.

Recommendations for Reform

7. Regulations under the *Forest Act* should prohibit uses of wilderness areas inconsistent with wilderness preservation.

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[102] (1995) 17 C.E.L.R. (N.S.) 265 (B.C.C.A.).

[103] R.S.B.C. 1979, c.140.

[104] Morrison & Turner, *supra*, note 14 at 358-360.

FOREST LAND RESERVE ACT

Under this 1994 law, privately managed forest land will be protected from urban development. The law resembles the province's Agricultural Land Reserve process since land can only be removed from both Reserves after a decision-making process involving the public and an independent Commission. The use, subdivision and removal of land from the Forest Land Reserve is all restricted and may be prohibited. Owners removing land from the Reserve must repay a portion of the tax benefits received over the years. An owner may apply for designation as forest reserve land to receive the tax benefits associated with that designation. Forest reserve land must be used in a way that is consistent with one or more of a number of purposes, including "Water, fisheries and wildlife, biological diversity and cultural heritage resources purposes."[105]

2. Protected Areas

Recent research on endangered ecosystems of the U.S. produced alarming findings. In the U.S., 85% of the original primary forest had been destroyed by the late 1980's, there was a 90% loss of ancient old growth forests, 30% loss of wetlands from the 1780's to the 1980's, 12% loss of forested wetlands from 1940 to 1980 and 81% of fish communities are adversely affected by human-caused limiting factors. The report listed critically endangered ecosystems that had experienced more than 90% decline as well as endangered and threatened ecosystems. More than 30 critically endangered, 58 endangered and 38 threatened ecosystems were identified, with the effects most pronounced in the South, Northeast, Midwest and California.[106]

In Canada, and in B.C., the opportunity to preserve more wilderness is still available. Yet here too there is some urgency in the drive to increase the amount and type of protected areas. Two recently created parks faced impending large scale resource extraction which may have threatened their ecological integrity: the Tatshenshini Alsek Park was slated to become the site of a large open pit copper mine, and the old growth forests in the Kitlope Valley were scheduled for logging.

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[105] *Forest Land Reserve Act,* S.B.C. 1994, c.40, s.13(d).

[106] Reed Noss *et al., Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation,* U.S. National Biological Service, Washington, D.C., Biological Report No. 28, 1995.

Protected areas are part of the solution to conserving biodiversity. One of the purposes of protected areas is "to allow natural forces to drive ecological processes such as competition or succession over the short term and evolution over the long term with as little impact from human use as possible in order to protect the creative source of biodiversity. Protected areas (when they are of appropriate size) can provide habitat for widely dispersed sensitive or rare species, large scale natural processes and more complete, less disturbed ecosystems than elsewhere. They act as baselines for change, controls for the land use "experiments" in their region, and future pools from which natural resources may be drawn. As parks, they are also associated with a wide range of spiritual, educational, experiential and economic benefits." [107]

The main laws in B.C. regarding protected areas are the :

- *Park Act*
- *Ecological Reserves Act*

Other laws also are related to protected areas. Altogether there are over 16 types of protected areas in the province, which vary in legal securement, function, scope, size, objectives, management policies and level of legislative protection afforded to ecosystems, species and natural features.[108] Land use planning also affects protected areas. The Land and Resource Management Plan (LRMP) processes make recommendations about resource management zones, including protected areas designations. The Land Use Coordination Office (LUCO), a government office, also plays a role through its coordination of the activities of different ministries that affect land use and planning.

The importance of protected areas to biodiversity conservation is the main focus of this discussion of the B.C. *Park Act* and *Ecological Reserve Act.*

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[107] *Biodiversity in Canada: A Science Assessment for Environment Canada,* 1994, William Stephenson, Parks Canada, Adequacy of Canada's Protected Areas Network at 204.

[108] Morrison & Turner, *supra*, note 14, at 356. Three of these legal designations are federal Acts: the *National Park Act,* the *Migratory Birds Convention Act*, and the *Canada Wildlife Act.* There are six national parks or national marine parks, seven migratory bird sanctuaries and five national wildlife areas in B.C. with respectively 0.664%, 0.003% and .002% of the provincial land base. See the Federal Jurisdiction chapter for discussion of the federal framework.

- How do the *Acts* currently contribute to biodiversity conservation?
- What provisions exist in the *Acts* to ensure ecological integrity?
- How secure are the areas once they have been legally designated?
- How does the *Park Act* reconcile competing human uses for parks?
- What constraints are placed on planning decisions made by park managers?
- How does the *Park Act* deal with the need to involve local communities?
- How does the *Park Act* deal with the competing claims to the land made by First Nations in the land claims process?

These questions are discussed below, followed by recommendations for possible legislative reform or amendments to the *Acts*. First, to set this discussion in context, the main features of the Protected Areas Strategy and the *Park Act* are described.

PROTECTED AREAS STRATEGY

The *Park Act* and other protected areas laws have been criticized for not producing an integrated plan for a network of representative protected areas. The patchwork of laws administered by agencies with different mandates resulted in no overall vision for protected areas.[109] The provincial government responded in a number of ways to this criticism: creation of the Commission on Resources and the Environment (CORE); preparation of a Land Use Charter; and preparation of a Protected Areas Strategy (PAS or the Strategy), released in 1993.[110] The last development is the most important from the point of view of protected areas. By completing PAS, the government will fulfil the obligation of Article 8 (a) of the *Biodiversity Convention* to "establish a system of protected areas... where measures need to be taken to conserve biological diversity". The Strategy provides the overall vision for a network of protected areas in B.C. It sets a target of protecting 12% of the province's land area by the year 2001. It includes a definition, goals and guiding principles.

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[109] *The Wilderness Mosaic*, Report of the Wilderness Advisory Committee (Vancouver: 1986); David Loukidelis, "Wilderness Preservation" in Canadian Bar Association, *Law Reform for Sustainable Development* (Vancouver: 1990) .

[110] Province of British Columbia, *A Protected Areas Strategy for British Columbia*, 1993.

Definition of a Protected Area

PAS defines protected areas as: land and freshwater or marine areas set aside to protect the province's diverse natural and cultural heritage. The definition states that protected areas are inalienable – land and resources in the protected area may not be sold. PAS also says that no mining, logging, hydrodams or oil and gas development will occur within protected areas. The definition states that the strategy will respect treaty and aboriginal rights in B.C.

PAS recognizes that some of the designations currently used in the province do not fit the definition of a protected area as used in the strategy. "Legislation is therefore required to coordinate existing designations and, where appropriate, redefine those that do not currently fit the definition."[111]

Goals of PAS

The two goals of the Protected Areas Strategy are:

- Goal 1: Representativeness. To protect viable, representative examples of the natural diversity in the province representative of the major terrestrial, marine and fresh water ecosystems, the characteristic habitats, hydrology forms and the characteristic recreational and cultural heritage values;

- Goal 2: Special Features. To protect the special natural, cultural, heritage and recreational features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and paleontological features, outstanding or fragile cultural heritage features, and outstanding outdoor recreational features such as trails.

Guiding Principles of PAS

PAS is based on two guiding principles:

- the first priority is to protect ecological viability and integrity of protected areas,
- recreational activities, facilities, services and cultural heritage policies must be compatible with each protected area's objectives.

PAS is an important step forward for biodiversity conservation in the province, and stands in sharp contrast to the federal government's apparent abandonment of their previous protected areas commitment. Yet PAS has limits. It may not succeed in

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[111] *Ibid.*

preserving "hotspots" of species richness and habitat areas for rare and endangered species, since it is restricted to Crown Land; it focuses on cultural heritage and recreational diversity as well as biodiversity; and it relies on measurements of vertebrates which is not a sufficient indicator of the richness of all species in the area[112].

PARK ACT

The *Park Act* is B.C.'s main law for protected areas.[113] The provincial parks under the *Park Act* comprised 84.83% of B.C.'s protected areas as of 1994.[114]

The *Act* provides for both classes and categories of parks. Zoning or master plans are another tool for park management, though they are not statutorily required, but are done as a matter of policy. Parks may be designated as Class "A", Class "B" or Class "C" or Recreation Areas. These classes are not defined in the *Act*, and are not used in practice.

There is no general purpose clause in the Park Act. The *Act* has some guidance for Class "A" parks (the classification used for the majority of B.C.'s parks) – they are "dedicated to the preservation of their natural environments for the inspiration, use and enjoyment of the public."[115] Class "A" parks are intended "to preserve outstanding natural, scenic and historic features for public recreational use" and are to be free of commercial or industrial exploitation "except as may be necessary to planned recreational use."[116]

The Class "B" designation is not used anymore. Class "C" parks are managed by park boards appointed from area residents and are intended primarily for public recreational use. Recreation Areas have less potential for biodiversity conservation since they allow resource extraction and commercial uses, if it does not materially

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[112] Geoffrey Scudder, "Biodiversity Conservation in British Columbia" (1995) 2 Cordillera 2.

[113] R.S.B.C. 1979, c.309.

[114] Morrsion & Turner, *supra,* note 14 at 365.

[115] *Park Act*, ss. 5(3), 5(3.10).

[116] Ministry of Environment , Lands and Parks, *BC Provincial Parks List*, 1992, at 111-2.

detract from the area's recreational potential.

The Minister of the Environment is required to categorize parks, and the development and improvement of a park is to be "directed toward and limited to that necessary to the preservation, for public enjoyment of" what is specified in each category. The categories are:

1. Preservation of its particular atmosphere, environment or ecology;
2. Preservation and presentation to the public of specific features of scientific, historic or scenic nature;
3. Enjoyment, convenience and comfort to the travelling public;
4. Recreational opportunity to the public of a particular community or area;
5. Opportunities to participate in a specific recreational activity;
6. For 2 or more of the above purposes.[117]

Park managers have a wide discretion in deciding what happens in a park. They may grant park or resource use permits to allow a variety of activities to take place, without any public involvement. Park use permits are subject only to a determination that the issuance is necessary to preserve or maintain the recreational values of the park involved.[118] Permits may be issued for "an activity or a course of behaviour or conduct, or the occupancy, use, development, exploitation, extraction of a natural resource on or in a park.[119]

Park Act and Protected Areas Strategy

It is clear that the *Park Act* needs revision if it is to accord with the definition, goals and guiding principles of PAS. First, many parks do not meet the definition of a protected area, since some resource extraction continues. Mining continues in Strathcona Park, the province's oldest park. Logging, right-of-ways and other industrial uses have also historically been permitted. Recent amendments to the *Act* have eliminated this problem for new parks : park managers are prohibited from issuing park use permits in new parks for mining, logging or hydroelectricity.[120] The *Park Act* should be revised to ensure that all extractive uses are prohibited in all parks,

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[117] *Park Act,* s.12.

[118] *Park Act*, s. 8 (1) (c).

[119] *Park Act,* s. 1.

[120] *Park Amendment Act*, Bill 53, 1995, s. 5.

even though this opens up the question of compensation to holders of resource tenures in parks.

Second, the law does not go far enough meet PAS' first goal: to protect representative features. Currently, 21 out of a total of 105 ecosections in the province have greater than 12% of their area protected, 19 ecosections have no protected areas whatsoever and another 38 have less than 1% of their area protected.[121] In the past, environmentalists correctly identified that government protected "rocks and ice" but ignored old growth forests, wetlands, and other more commercially valuable land. The Strategy recognizes that alpine ecosystems are over-represented in B.C.'s network of protected areas. Marine ecosystems are particularly under represented as less than 2% of B.C.'s marine waters are protected.[122]

Third, designation under the *Park Act* may not be sufficient to ensure protection of the area's ecological integrity.

Recommendations for Reform

8. The *Act* should be amended to accord with the Protected Areas Strategy. It should prohibit extractive resource uses in all parks. It should include a statutory goal of preserving a full range of representative ecosystems.

Maintaining Ecological Integrity of Parks

Human activities are the chief threat to the ecological integrity of protected areas. Resource extraction is the obvious culprit, but the increasing number of visitors to B.C.'s parks may pose an equal threat to the ecological integrity of parks. Park visits have been growing from about 15 million visits in 1984 and 1985 to about 23 million visits in 1993.[123] B.C. Parks has taken some steps to limit the impact of human activities on parks, such as limiting access to popular spots such as the Bowron Lakes, and O'Hara Lake. Other restrictions have been imposed for sea bird colonies and for the Robson Bight (Michael Bigg) Ecological Reserve. Steps such as building

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[121] Morrison & Turner, *supra*, note 14 at 365.

[122] Ministry of Environment, Lands and Parks, Environmental Indicator Series, *Protected Areas in B.C.*, October 1995.

[123] Coopers & Lybrand Consulting, *Economic Benefits of British Columbia Parks*, Report for the British Columbia Ministry of Environment, Lands and Parks, April 1995, at 4.

boardwalks over sensitive areas, relocating trails away from sensitive features and restrictions or contemplated restrictions on activities such as heli-hiking and heli-skiing and snowmobiling have all been taken or are being considered by B.C. Parks.[124]

Recreation and conservation are both important uses for parks, but as the PAS Guiding principle says "[t]he first priority in the use and management of protected areas is to protect their ecological viability and integrity."[125] B.C.'s *Park Act* has some positive features to ensure that the ecological integrity of parks is maintained. For example, the *Park Act* requires the establishment of a certain minimum area of land to be set aside as parks. The figure has recently been amended to mandate protecting 12% of B.C.'s land area.[126] Setting this target for land protection is a positive step towards maintenance of ecological integrity.

But the *Park Act*, unlike other *Acts,* does not include a requirement of maintenance of ecological integrity. The *National Parks Act* states that "maintenance of ecological integrity through the protection of natural resources shall be the first priority when considering park zoning and visitor use in a management plan."[127]

The actual state of the ecological integrity of parks in B.C. is unknown since no comprehensive analysis has been carried out.[128] This analysis should be statutorily required, and regular reports presented to the Legislative Assembly. Reports could focus on the state of the parks, including ecological integrity and progress towards establishing new parks. Again, this provision is found in the *National Parks Act.*

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[124] Morrison & Turner, *supra,* note 14 at 370-371.

[125] Province of British Columbia, *A Protected Areas Strategy for British Columbia*, 1993 at 6.

[126] *Park Amendment Act, 1995.* s. 1, Bill 53.

[127] *National Parks Act*, R.S.C. 1985, c. N-14, s. 5 (1.2).

[128] Morrison & Turner, *ibid.* at 370.

The size of parks also affects their ecological integrity. Species loss in parks has been documented in other areas outside B.C., in large as well as smaller parks. One of the problems in terms of biodiversity conservation for protected areas in the province of B.C. is the small size of many of the areas. Biodiversity conservation scientists have shown the importance of maintaining large areas of protected space, to avoid fragmentation of habitat. Large protected areas can maintain biodiversity much more easily than small fragmented areas. In British Columbia this problem is acute: 50.3% of the province's protected areas are smaller than 1 sq. km; 82.0% are smaller than 10 square km; and only 8.2% are larger than 100 sq. km.[129] To put these numbers in perspective, one group estimates that the minimum area requirement for habitat to maintain a minimum viable population of grizzly bears in B.C. is between 7,860 to 58,950 sq. km, and another says between 19,650 and 78,600 sq. km. is required , an area two to eight times as big as Tweedsmuir Park.[130]

Amendments are also required to fully implement the *Biodiversity Convention.* Controlling development adjacent to protected areas is not dealt with in any of the statutes.[131]

Recommendations for Reform

9. The *Act* should be amended to require the government to maintain the ecological integrity of parks, and to report on the state of the parks to the public and the Legislature, including progress in establishing new parks.

Security of Designation

The permanence of a park designation is another way to ensure maintenance of ecological integrity. Another potential change to the *Park Act* to achieve more permanency for parks would be to require deletions to parks to be done only by

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[129] *Ibid.* at 364.

[130] Bruce McLellan, "Current Status and Long Term Threats to Grizzly Bears in British Columbia" in *Community Action for Endangered Species, supra,* note 34 at 115.

[131] Article 8(e) of the *Biodiversity Convention* requires signatories to "promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas."

legislation, rather than Order in Council.[132] Acting by Cabinet decision does not allow either the opportunity for public participation or scrutiny by bodies such as the legislature and media.

Recent amendments to the *Park Act* designated 106 new parks by legislation, converting 32 parks previously set by regulation to legislated status. The procedures for establishing parks did not change, however.

One suggestion to accomplish the goal of increasing the number of legislated parks is to amend the *Park Act* to allow Cabinet by Order in Council to add new parks to the *Park Act* schedule, but require an *Act* of the legislature for deletions of any parks.[133] A more extensive public process should be required for deletions from parks where an area's ecological integrity or biodiversity would be affected. This public process should be set out in regulations.

Recommendations for Reform

10. The *Act* should be amended to provide more security of designation of parks.

Reconciling Competing Uses

Another issue that must be addressed either through revisions to the *Park Act*, or by the release of a policy which would guide park managers, is the control of commercial interests in parks. Several recent conflicts have highlighted the need to address this issue. The proposed expansion of ski facilities in Cypress Provincial Park, which will require logging of more than 20 hectares of old growth forest, is one example. Heliskiing, helihiking, snowmobile access, all-terrain vehicle access, and trophy hunting and guiding are other commercially managed activities that take place

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[132] Section 7 of the *Act* currently allows the Lieutenant Governor in Council to cancel or again establish any park or recreation area, except any park or recreation area established under section 5 (3) and (3.1), established under this Act, and may revise the boundaries of any such park or recreation area to increase or decrease the area of the park or recreation area or to consolidate 2 or more parks or recreation areas or to divide an existing park or recreation area into 2 or more parks or recreation areas.

[133] Mark Haddock, "Legislative Reform Workshop" in CPAWS Protected Areas Conference, Proceedings, 1994 at 4.

in parks. Regulation of these activities is left up to the individual discretion of park managers and the very broad authority given to these managers to issue park use permits. The extent of this authority must be clarified and limited in revisions to the *Park Act.*

The controversy over expansion of commercial ski development in Cypress Park illustrates some of the deficiencies of the *Park Act.* Cypress is a Class "A" park, designated as category 6, established for two or more purposes. The provincial government privatized ski operations in the Park on Vancouver's North Shore in 1984 and granted a park use permit to the commercial operators of the ski facilities. Before B.C. Parks prepared a master plan for the Park, it asked the ski operators for its plan governing activities in the commercially operated area. This plan was prepared, which proposed extending the commercial area. When both B.C. Parks and local environmental groups objected to the proposal, the commercial operators restricted access across the area under their control and required back country users to pay ski pass fees. Some users refused and were charged with trespass. The ski facility operators have now sued the Province for violating the park use permit.

A Special Planning Commission established by the provincial government recommended allowing some limited additional ski facility development to take place and emphasizing conservation as the major thrust of management in other areas of the Park.

Both conservation and recreation are important purposes of Cypress Park. One of the chief problems the special Commissioner found in examining the controversy was the lack of guidance provided by the *Park Act* for resolving conflicts between these two key purposes. The Act provides no answer to the key question: What is acceptable development within a Class "A" Park? The Commissioner recommended that the government consider revising the *Park Act* and regulations to define zoning permitted in parks and the changes acceptable to the environment in achieving the permitted uses so that there is less perceived conflict with the conservation thrust of the *Park Act.*[134]

The Commissioner also found that the park use permit granted to the commercial ski operator in Cypress was one of the major causes of conflict in the Park. Several features of the permit caused concern. The term of the park use permit was for 50 years, with the right of extension of another 50 years. Also, the permit

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[134] Report of the Cypress Park Special Planning Commission, August 1995, Recommendation number 24 at 39.

contained a clause allowing the operator to charge park users for crossing the commercial recreation area even if they were on their way to other parts of the Park. The public clearly expects free access to provincial parks. These terms demonstrate the wide discretion parks officials have to grant a permit. If there had been public process participation in the park use permit process, or if the *Park Act* included clear criteria for granting the permits, it is unlikely that these exceptionally generous terms would have been granted to the commercial licensee.

As the Commissioner noted, revision of the *Park Act* is required, since conflicts like those in Cypress Park are only likely to increase in the future, with B.C.'s growing population, growing use of protected areas for both wilderness and recreational purposes.

Recommendations for Reform

11. The *Park Act* should be amended to provide criteria for awarding park use permits and place limits on the discretion of park managers in issuing these permits. A policy should also be developed regulating commercial operators in parks.

Park Planning

Planning is an important tool for restricting the impact of recreational activities in parks. The *Park Act's* planning mechanisms should be more directly aimed at maintenance of the ecological integrity of a park. The *Act* itself does not require plans to be prepared, although the current policy of the Ministry requires the preparation of park master plans for "significant" parks, defined as those over 5000 hectares in size with complex resource issues; those that contain major private sector commitments; and those having substantial new facility development proposals.[135] A Master Plan establishes zones for the park. Zones are applied in a park based on objectives for recreation, conservation, and vision statements. The park planning policy is currently being revised.

Recommendations for Reform

12. Amendments to the *Park Act* should formalize the Master Plan policy. The requirements for master plans, including maintenance of ecological integrity as the first priority, should be set out in the statute. The statute should require:

- **management plans with objectives for resource protection, zoning, and visitor use.**

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[135] Ministry of Lands, Parks and Housing, *Park Master Plans*, 1986.

- **time limits for preparing plans after a park has been declared and a requirement to notify the public about the plan preparation process; and,**
- **public participation in the preparation and review of the plans.**[136]

Involving Local Communities

Co-management of parks is an area of great interest to the conservation community. The precedent for establishing local control over resource uses has been established by the creation of Community Resource Boards. Similar ideas have been proposed for protected areas. A Protected Areas Council was proposed by an influential report from a multistakeholder committee in the late 1980s, and was reiterated by the Canadian Bar Association's report on Law Reform for Sustainable Development in B.C.[137] The Protected Areas Strategy also deals with the issue of community participation in protected areas.[138] Yet the *Park Act* contains few provisions for public participation or co-management.

The *Environment and Land Use Act* has been amended to include the Champagne/Aishihik First Nation in park management decisions in their area.

Recommendations for Reform

13. The *Park Act* should be amended to provide for co-management with local communities.

Inclusion of Public Trust Doctrine

Legislative recognition that parks are created and maintained in trust for the public would help ensure the maintenance of their ecological integrity, and would improve the public's rights to participate in park stewardship. The mission statement for the Ministry includes the concept of the public trust, but the statement is not

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[136] All these requirements are now in section 5 of the *National Parks Act*, R.S.C. 1985, c.N-14.

[137] *The Wilderness Mosaic*, Report of the Wilderness Advisory Committee (Vancouver: 1986); David Loukidelis, "Wilderness Preservation" in Canadian Bar Association, *Law Reform for Sustainable Development* (Vancouver: 1990) .

[138] PAS, p.22, states that the public is encouraged to participate in all areas of protected areas planning; and that a protected area management plan will be prepared with public involvement for each area designated.

enforceable.[139]

One possible precedent for amending the *Park Act* in B.C. is found in the federal *National Parks Act* which requires parks to be "maintained and made use of so as to leave them unimpaired for the enjoyment of future generations." Another B.C. example is found in the *Creston Valley Wildlife Act,* which obligates the province to maintain the area for public trust conservation purposes.[140]

Recommendations for Reform

14. The *Act* should be amended to establish a Protected Areas Council which could make recommendations concerning co-management of parks.

15. The *Act* should be amended requiring parks to be protected as a public trust.

Land Claims and Protected Areas

One of the most important issues in B.C. today is the implications of First Nations land claims settlements on all aspects of provincial law. The relationship between the land claims process and the Protected Areas Strategy is one part of the larger issue. While the Protected Area Strategy states that parks are to be established "without prejudice" to aboriginal rights, there is much concern, and at least one pending lawsuit about the effect that a new park will have on a land claim. The Burrard Indian Nation has sued the provincial government for creating a new park in land that is part of its claims as traditional territory. The federal government has managed in part to deal with this politically charged conflict in the Haida Gwaii proposed park in the Queen Charlotte Islands. The *National Parks Act* was revised to authorize the Governor in Council to set aside the Gwaii Haanas Archipelago as a reserve for a national park. This would allow Parks Canada to manage the area jointly with the Council of the Haida nation and to receive Parks Canada funding for their operations. By designating the area as a park reserve rather than as a park, effective

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[139] It states that the mission of B.C. Parks is to "protect and present as a public trust, representative and special natural places for conservation, outdoor recreation and scientific study." See above, section B.2, for further discussion of the public trust doctrine.

[140] R.S.B.C. 1979, c.82 , s.2.(1) .

notice is given to the public that the Haida have an unresolved dispute with the government of Canada.[141] Similar provisions should be included in the provincial *Park Act.*

Recommendations for Reform

16. The *Park Act* should be amended to accommodate the needs of the First Nations' land claims process.

ECOLOGICAL RESERVE ACT

Another way in which protected areas can be legally designated in B.C. is under the *Ecological Reserve Act.*[142] Reserves are found in all of B.C.'s 14 biogeoclimactic zones. The Biodiversity Convention's emphasis on *in-situ* conservation is mirrored in the *Act's* requirement to protect rare, threatened and endangered species "in their natural habitat." Reserves have been established for important and threatened plant and tree species such as wildflower stands, stands of Douglas fir, Ponderosa pine and Engelmann spruce as well as Garry oaks and Arbutus. Seabird colonies have been protected in 20 ecological reserves. Other wildlife protected in reserves include eagles, falcons and sandhill cranes and killer whales.

The Ecological Reserve Program is unique in its focus on preservation of representative and unique samples of ecosystems and rare species, habitats and natural phenomena. The Ministry of the Environment described the objectives and approach of this program as offering the greatest opportunity to conserve biodiversity of all the protected areas programs.[143] Given this emphasis, the *Act* should explicitly prohibit human uses other than strictly regulated research. Access to reserves should be prohibited, save for permitted research uses. One way to shift the emphasis to conservation would be to make the Wildlife Branch, rather than the Parks Service,

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[141] For an in-depth discussion of the relationship between First Nations, aboriginal rights, the land claims process and the Protected Areas Strategy in B.C. see Ecotrust Canada, *Strengthening Protected Areas in B.C.: The Next Step and Beyond,* draft January 1996.

[142] R.S.B.C. 1979, c.101.

[143] B.C. Parks, "British Columbia Ecological Reserves Program" in *Biodiversity in British Columbia,* supra, note 1 at 376.

responsible for managing these reserves.

Despite the importance of this *Act* and the 131 ecological reserves established under it, the smallness of the reserves is a critical problem, since large areas are often required to preserve viable populations of rare species. The average size of an ecological reserve is 1,212 hectares, though they range in size from 0.6 to 48,560 hectares.[144] More large reserves should be established.

Currently, only provincial Crown lands may be made into reserves and, therefore, the land must be owned and acquired by the Crown before a reserve can be created. Since examples of rare species or habitats may be found on private land, the Ecological Reserve Program is of little use for these areas, though many other legal tools for private land conservation do exist. The *Act* should be amended to allow reserves to be established on private land.

Ecological reserves are established and cancelled by Orders in Council.[145] As with the *Park Act*, it should be possible to cancel a reserve only by an *Act* of the legislature, after sufficiently advertising the intention to cancel, and only using specified criteria, such as a demonstrated lack of need for protection.

Areas protected by statute should accord with the definition of a protected area in the Strategy. Not all extractive uses are prohibited even in ecological reserves, the strictest form of legal designation available under B.C. law. Commercial fishing may still occur in marine ecological reserves.[146] Ecological reserves in grasslands or Ponderosa Pine areas should be fenced to exclude cattle, and should be periodically burned to retain natural progression.

Recommendations for Reform

17. The *Ecological Reserve Act* should explicitly prohibit human uses in ecological reserves other than strictly regulated research.

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[144] *Ibid.* at 375.

[145] *Ecological Reserve Act,* ss. 3, 4.

[146] The Marine Protected Areas Society is working in the province to create marine reserves in which no extractive uses are permitted and has been successful with the creation of Whytecliffe Marine Sanctuary, the first such reserve of this kind in Canada.

18. More large reserves should be established under the *Act*.

19. The *Act* should be amended to allow reserves to be established on private land.

20. It should be possible to cancel the reserve only by an *Act* of the legislature after sufficiently advertising the intention to cancel and using only specified criteria.

21. Enforcement and penalties in this *Act* must be revised.

OTHER PROTECTED AREAS

Under the *Park (Regional) Act*, Regional Districts operate many regional parks in the province. There are 74 regional parks with a total land base of 13,440 hectares, amounting to 0.18% of the province's protected areas. The *Act* allows Regional Districts to acquire, develop and administer regional parks and trails. Regional parks have traditionally been devoted to recreational use for urban dwellers, and the *Act* says that "unless otherwise declared, all land acquired by a regional park district shall be deemed to be dedicated for public use and enjoyment as a regional park or regional trail."[147] More emphasis should be placed on the contribution these parks make to biodiversity conservation.

Additional protected area programs within the province include:

- federal National Parks and National Wildlife Areas;
- Provincial Wildlife Management Areas or National Wildlife Areas which can be designated on provincially or federally owned land, to ensure that the areas are managed in a manner that does not negatively affect wildlife populations, and varying degrees of human activity are allowed;
- Provincial Orders in Council have been used to create new protected areas;
- the Canadian Heritage River System;
- the Convention for the Protection of the World Cultural and Natural Heritage;
- the Convention on the Conservation of Wetlands of International Importance;
- Man and the Biosphere Program (allowing for creation of biosphere reserves); and,
- the Western Hemisphere Shorebird Network Program.

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[147] *Park (Regional) Act,* R.S.B.C. 1979, c. 310, s.4.

3. Wetlands Protection

Wetlands in B.C. have little statutory legal protection. The province has an informal, unpublished policy on wetlands, and the federal government works through the *Fisheries Act* "no net loss of wetland functions" policy for wetlands under federal fisheries jurisdiction,[148] and Environment Canada's policy for federal lands.[149]

The legal protection that does exist is found in different laws. The provincial *Water Act* requires permits for activities such as filling which may alter the water course. Recent regulations under that Act also require permits for changes in and about a stream.[150] The riparian management areas under the *Forest Practices Code* contain limitations on logging for different classes of streams.[151] Residential and industrial development pose the biggest threat for urban streams, yet the *Land Development Guidelines for the Protection of Aquatic Habitat* have no legal force.[152]

B.C. needs a specific written policy to raise the profile of wetlands protection for the public and all levels of government to ensure that wetlands are not forgotten. The policy should be based on a classification system that identifies all provincial wetlands and ranks them according to their ecological significance.[153] Anchoring the policy in a specific law requiring local governments to address wetlands protection in

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[148] Section 35 of the federal *Fisheries Act* prohibits the destruction of fish habitat, but federal fisheries policy allows such destruction if mitigation is such that there is "no net loss" of habitat: Department of Fisheries and Oceans, *Policy for the Management of Fish Habitat,* 1986.

[149] Environment Canada, *The Federal Policy on Wetland Conservation*, Ottawa, 1991.

[150] *Water Act Regulation,* B.C. Reg. 204/88, part 7.

[151] *Forest Practices Code of B.C. Act*, ss. 72-77; *Operational Planning Regulation, supra,* note 85; and Riparian Management Guidebook, 1995.

[152] Department of Fisheries and Oceans, and Ministry of Environment, Lands and Parks, *Land Development Guidelines for the Protection of Aquatic Habitat,* 1992. See below, section D.4 for more discussion of these guidelines.

[153] North America Wetlands Conservation Council (Canada), *Wetland Evaluation Guide,* 1992.

their planning processes is likely to achieve a higher degree of protection than the current voluntary Guidelines. Finally, the policy should provide a statutory goal of "no net loss of wetland functions."

ESTUARIES

There are several different legal regimes in place for estuaries, a form of wetland. Estuaries are rich biological areas where rivers meet the sea. The human impact on estuaries in B.C. has been considerable, as over 70% of the wetlands in the Lower Fraser River have been lost to dredging, dyking, filling and other development.[154] The most recent estuary to be protected is the Englishman River Estuary on the east coast of Vancouver Island, which at 873 hectares is the largest coastal ecological reserve in the province, and has been designated as a Wildlife Management Area.

Habitat loss continues at three other estuaries: Squamish, Cowichan and Fraser. The Squamish Estuary Management Plan has no formal legal basis, existing solely on "inter-agency cooperation and existing resources."[155]

In contrast, the Cowichan Estuary Plan has been approved by Order in Council, citing both the *Environment Management Act* and the *Environmental Land Use Act* as authority. As a result no licence, permit or power under an enactment can be issued or exercised in the Cowichan estuary without the written approval of the Minister of Environment "to the effect that the issuance or exercise will have no significant detrimental environmental impact .. and is in conformity with the plan."[156]

The Fraser River Estuary Management Plan (FREMP) is based on an agreement between the federal and provincial governments. An Order in Council on impact assessment prohibits any development or improvement of land in designated areas and

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[154] B.C. Environment, *State of the Environment Report for British Columbia*, (Victoria: B.C. Environment, 1993), at 46.

[155] P.S. Elder personal communication with G.K. Lambertson, in P.S. Elder, "Estuary Protection in British Columbia", *Int'l J. Estuarine & Coastal Law*, Vol. 4, No. 2, 1989, 117 at 125, cited in : Alexander, Lawrence, *Comments on the Proposed Amendments to the Squamish Estuary Management Plan* (Vancouver: West Coast Environmental Law Association, 1991).

[156] Province of British Columbia, Order of the Lieutenant Governor in Council No. 1652, Approved and Ordered Sept. 12, 1986, s. 2.

forbids the approval of a subdivision, issuance of a Crown lease, or issuance of a building, development, pollution control or sewage-disposal permit, until an environmental assessment is prepared and approved.[157] The complex management plan has not stopped degradation of the Fraser River estuary, as development continues in zones that have been approved, and as industrial, agricultural and municipal effluents continue to enter the estuary. At the same time, the Pacific Coast Joint Venture has acquired important estuarine habitat and key waterfowl nesting areas. This is done independently of FREMP.

A formal wetlands policy would help guide decision-makers with development in these estuaries.

Recommendations for Reform

22. A specific wetlands protection policy should be based in law requiring:
- **classification of wetlands;**
- **ranking of wetlands according to ecological significance;**
- **local governments to address wetlands protection in planning; and,**
- **a statutory goal of "no net loss of wetlands functions."**

4. Riparian Protection

Riparian areas are crucial habitat for salmon, other fish, birds, amphibians and many other species. There is no single provincial law which regulates riparian areas. The *Forest Practices Code* and the Land Development Guidelines discussed in the section above regulate certain types of riparian areas on Crown land. The provincial *Waste Management Act* can also protect rivers and streams from degradation by pollution, but it is ineffective at regulating non-point source pollution such as agricultural and urban runoff. The *Water Act* can protect riparian areas, although it was not designed for this purpose.

WATER ACT

The *Water Act* sets up a system of water rights which are acquired through the issuance of licences. The rights are allocated on a 'first come first serve' basis except where water has been reserved or is subject to the existence of other rights such as

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[157] Elder, *supra,* note 155 at 131-2.

aboriginal water rights or the vestiges of riparian rights.[158] So, a licence obtained before another will always prevail over the other right. This model of water rights legislation which had historical advantages has obvious defects in today's world. First, there is the problem of over-allocation. Once all the rights have been distributed to licensees, there is no provision for granting water rights to new users. Secondly, the law does not adequately deal with the need to maintain instream flows for conservation purposes, rather than dividing up rights to the water amongst residential, agricultural and industrial users. Thirdly, neither the B.C. *Water Act* nor regulations made under the *Act* deal with the problem of low flow periods, when not enough water is entering the stream or river to satisfy all the users, let alone for conservation purposes. Although the *Act* does make provision for cancellation of water licences, in fact these provisions are rarely if ever used.

Competing resource rights such as protection of fisheries are a "potentially serious qualification" on water licence rights.[159] On a number of streams and creeks in B.C. more than 100% of the flow has been allocated through water licences. For example, on the Tsolum River on Vancouver Island, about 150% of the instream flow of water has been allocated to water licences primarily for irrigation and other agricultural purposes. Although many of these licences are not being used, the cumulative effect if they were all used at once would be to drastically reduce water levels in the streams and rivers. Section 35 of the federal *Fisheries Act* prohibits disruption, alteration or destruction of fish habitat. The needs of fish which live in these streams and creeks are directly in conflict with the rights exercised or that may be exercised by the water licensees.

The issue of determining priority between a B.C. water licence and the federal *Fisheries Act* has not been directly addressed by the Courts. However, the closest case on point favours giving priority to fish habitat requirements over provincially regulated uses. In that case, the first Court case regarding the Kemano Completion Project (KCP), Mr. Justice Berger granted an interlocutory injunction to the Attorney General of Canada allowing it to compel Alcan to comply with the directions of the Department of Fisheries and Oceans to release the quantity of water required to ensure the safety of fish, despite the fact that Alcan had a conditional water licence granting it

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[158] David R. Percy, *The Framework of Water Rights Legislation in Canada* (Calgary, Alberta: Canadian Institute of Resources Law, 1988) at 22.

[159] Alistair R. Lucas, *Security of Title in Canadian Water Rights* (Calgary, Alberta: Canadian Institute of Resources Law, 1990) at 95.

all rights to water above the site of their dam.[160] The ensuing cases and hearings which followed in the complicated history of the KCP did not address the question of conflict between the *Fisheries Act* and provincial water licences.

Different procedures apply, and there are different requirements under the *Water Act* depending upon whether a licence, permit or approval is required.

A **licence** allows a holder to: divert and use a specified quantity of water for a specified time; store water; construct works for the diversion of water; alter or improve a stream or channel; and construct fences, screens or guards across streams for the purpose of conserving fish or wildlife. A licence may be acquired by certain types of people , including landowners and municipalities. A licence is issued by the Comptroller of Water Rights or a regional water manager. It is the current policy of the Ministry of Environment, Lands and Parks to consider fish and habitat requirements before issuing new water licences. The Ministry can refuse to issue, or put conditions on, a new water licence if issuing the licence would significantly impact on uses of water. For example, a "fish clause" may be included in the water licence to protect fish and fish habitat.

A **permit** is required for flooding Crown land or for the construction, maintenance, or operation on the land of works authorized by a licence or approval. An **approval** may be issued instead of a licence in certain circumstances, for example, for short term uses of the water (under 12 months) for activities such as placer mining and work camps.[161]

Changes In and About a Stream

Approvals also are given for "changes in and about a stream" which includes any modification to the nature of a stream, including the land, vegetation, natural environment, or flow of water within a stream or any activity or construction within the stream channel that has or may have an impact on the stream.[162] Regulations further define the standards for protection of water quality and habitat that apply to

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[160] *A.G. Canada* v. *Aluminum Co. of Canada Ltd.*, (1980) 115 D.L.R. (3d) 495 (B.C.S.C). This case was appealed on other grounds, *A.G. Canada* v. *Aluminum Co. of Canada Ltd., A.G. British Columbia and B.C. Wildlife Federation* (1986) 15 C.P.C. 8 (B.C.S.C.), reversed (1987) 10 B.C.L.R. (2d) 371 (C.A.).

[161] *Water Act*, s. 7.

[162] *Ibid.* s. 7.1.

changes in and about a stream.[163] The Comptroller of Water Rights, Regional Water Manager (or an engineer, in the case of changes in and about a stream) may place conditions on the approvals. Generally, standard conditions on approvals will reflect the concerns of the Water Management Branch for water quality implications, downstream flooding, and potential effects on the works of downstream licensees, and habitat and ecosystem concerns from provincial and federal fisheries and wildlife agencies.

However, a recent case demonstrates that the *Water Act* does not provide adequate legal protection for wetlands. [164] Windermere Lake lies in eastern British Columbia near the town of Invermere. In 1990, a parcel of land bordering the Lake was sold by the Province to a development company. Environmentalists were concerned that if the company's proposal to construct a four-season lakefront resort was approved, it could potentially damage to the ecologically sensitive wetland. When the company began filling some of its land without a permit, required under the *Water Act,* a local environmental group attempted to intervene and protect the land. After a series of appeals to officials in the Water Management Branch, the Environmental Appeal Board, and the courts, the East Kootenay Environmental Society was denied standing to make its arguments about why the wetland should not be filled. The case is still under appeal.

Land Development Guidelines for Protection of Aquatic Habitat

The *Land Development Guidelines for the Protection of Aquatic Habitat* were produced in May 1992 by the Habitat Management Division of the Department of Fisheries and Oceans and the Integrated Management Branch of the Ministry of Environment, Lands and Parks. The *Guidelines* apply to development in or adjacent to waters containing fish or fish habitat.

The *Guidelines* apply primarily to salmon, trout and char, but are applicable to all fish species that may be affected by developments in or adjacent to their waters. Out-of-stream habitat features such as wetlands are included. The goal of the *Guidelines* is to "ensure that the quantity and quality of fish habitat are preserved and maintained at the productive level that existed prior to land development activities. Thus, land development projects are subject to the following guideline objectives:

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[163] *Water Act Regulation*, B.C. Reg. 204/88, ss. 41, 42.

[164] *EKES* v. *Deputy Comptroller of Water Rights et al.*, EAB 94/03.

- leave strip protection and provision;
- erosion and sediment control and site development practice;
- storm water management;
- instream work controls;
- fish passage and culverts maintenance; and,
- prevention of deleterious substance discharges.

While the *Land Development Guidelines* have no legal force (unless they are incorporated directly into a bylaw), they may be of use in deciding whether there has been a breach of the standard of care required of developers in a prosecution for alteration or destruction of fish habitat under the *Fisheries Act*. The guidelines also help the Minister of Fisheries and Oceans to decide whether development should be allowed, if there is the possibility of a net loss of fish habitat under federal control. The *Guidelines* do not adequately protect wetland and other aquatic habitat for non-fish species.

Some municipalities in B.C. (such as the District of North Vancouver) have incorporated these *Guidelines* directly into their bylaws. This is an important tool for wetlands protection, as it limits what type of development can occur near riparian and aquatic habitat. An approving officer for the municipality may refuse to give planning permission for a new development if the *Guidelines* have not been followed.

Recommendations for Reform

23. The *Water Act* needs revision to provide better protection for instream conservation uses, to address historical over-allocation problems and to provide better tools for water conservation.

5. Land Use Planning

Provincial Land Use Strategy

There have been many provincial initiatives to improve land use planning. The Commission on Resources and Environment (CORE) was created in 1992 to prepare a comprehensive Land Use Strategy.[165] As part of its work, CORE developed a Land Use Charter and provincial land use goals. Both documents refer to biodiversity protection as one of a number of possibly conflicting goals. CORE is no longer in existence.

One of CORE's recommendations was to develop a *Sustainability Act* which would direct all decisions of government to aim for a healthy environment, sound economy and social well-being. Decision makers would also be directed to consider the environment needs of future generations. CORE's work built on many previous commissions and studies which recommended various reforms for land use planning.[166] Provincial land use is coordinated by an interministerial office in the government. Their work, and the work of the subregional planning processes, would benefit from improved legislative direction, such as a *Crown Land Use Planning Act.*

Regional and Subregional Land Use Plans

CORE also developed three régional land use plans using multistakeholder negotiated public involvement processes to define zones for settlement, high intensity resource extraction, low intensity resource extraction and protection.[167]

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[165] The four volume *Strategy for Sustainability* includes Commission on Resources and the Environment, *A Sustainability Act for British Columbia* 1994; *Planning for Sustainability* 1994; *Community Participation* 1994 and *Dispute Resolution* 1994.

[166] For example, reports from the B.C. Round Table on the Environment and the Economy, the 1991 Forest Resources Commission, the 1992 Old Growth Strategy, and the 1991 Dunsmuir II Agreement. See Commission on Resource and Environment, 1994, *Planning for Sustainability*, Appendix 5 for a summary of these and other proposals.

[167] Each plan is different. See CORE, Vancouver Island Land Use Plan, Kootenay Land Use Plan, Cariboo-Chilcotin Land Use Plan, 1994.

Planning is also proceeding in smaller regional areas that roughly correspond to forest districts in the province. About 13 subregional planning processes called Land and Resource Use Management Plans, are underway in the province.

Growth Management

Growth management legislation has been introduced to begin to deal with the increasing pressure of urbanization in the province's major cities. The new law provides regional districts with the authority to adopt regional growth strategies, mechanisms for co-ordination between municipalities and regional districts on issues crossing municipal boundaries, and establishes tools for co-ordinating local and provincial government actions for implementing a regional growth strategy. The *Act* does not set any overall provincial objectives or targets that must be met in the regional growth planning process, nor does it require even the fastest growing regions to embark on the process.[168]

The *Act*, which amends the *Municipal Act,* states that the purpose of a regional growth strategy is to "promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources." It provides that a regional growth strategy should work towards a number of commendable objectives, including

- avoiding urban sprawl;
- settlement patterns to minimize automobile use and encourage walking, cycling and public transit;
- protecting environmentally sensitive areas;
- preventing pollution;
- protecting ground and surface water;
- promoting energy efficiency and conservation;
- affordable and appropriate housing; and
- linking urban and rural open space[169].

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[168] *Growth Strategies Act*, S.B.C. 1995, c. 9.

[169] Section 942.12 (2) of the amended *Municipal Act* contains the minimum requirements for a growth strategy.

Cabinet may designate an area where a regional growth strategy must be developed and specify the deadline for adopting it. However, designation will only happen where that area is experiencing significant change in its population, its economic development or an aspect of growth or development that involves co-ordination between local governments. Otherwise, a regional district is permitted – but not required – to adopt a regional growth strategy.

The *Act* also sets out provisions for public consultation during the development of a regional growth strategy and a number of mechanisms to facilitate agreements and resolve disputes.

MUNICIPAL PLANNING POWERS

The *Municipal Act* gives municipalities a range of powers which can be used to protect biodiversity. For example, a municipality may make bylaws regulating tree cutting, flood prevention, drainage, watercourses and soil removal. Or a municipality may use its planning and zoning powers to achieve environmental objectives. Section 945 of the *Municipal Act* allows municipalities to place restrictions on environmentally sensitive areas (ESA) through an Official Community Plan (OCP). All bylaws enacted or works undertaken must be consistent with the OCP. A number of municipalities in B.C. have designated ESAs in their community plans. Of the 25 municipalities in the Lower Fraser Valley, 14 have identified or designated environmental sensitive areas such as wetlands in a manner that would allow them to establish comprehensive regulations to manage and protect these areas. Most of the other municipalities have also partially identified this type of habitat or have started the process.[170]

Identification of ESAs such as wetlands should be followed by the development of regulations or policies to protect these areas. A number of methods have been adopted by local governments. One of the most common ways to regulate development in ESAs is to require a development permit. Section 976(d) of the *Municipal Act* says that if an OCP identifies an ESA, a development permit must be obtained before land in that area can be altered in any way. The community plan may specify conditions under which a development permit may be required. The municipalities in the Lower Fraser Valley surveyed in 1995 scored a lot lower on actual protection – less than half

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[170] Department of Fisheries and Oceans, Fraser River Action Plan, *Protection of Aquatic and Riparian Habitat by Local Governments*, 1995, A-6.

of the governments had established objectives for protecting riparian and aquatic habitat which were backed up by regulatory guidelines and measures that could be implemented.

Directly acquiring environmentally sensitive land may be the best way to protect it. Land can be acquired by purchase, expropriation or dedication of certain areas. Part 12 of the *Municipal Act* concerns acquisition and disposal of property. Section 533 of the Act gives a municipal the power by bylaw to dedicate for public purpose real property owned by the municipality.

Where land is being subdivided, section 992 of the *Municipal Act* requires the landowner to provide without compensation park land of an amount and in a location acceptable to the local government or pay to the local government an amount equaling the market value of the land that may be required for park land purposes. Section 993(4) sets out that not more than 5% of the land being proposed for subdivision will be required to be dedicated as parkland. Some local governments have made great use of the 5% parkland dedication.

Municipalities have been reluctant in some cases to use their powers to protect land, because of possible increased liability for activities on the land, and because of uncertainty over the limits of their jurisdiction. Amendments to the *Municipal Act* could clarify the scope of municipal powers to protect the environment.

Recommendations for Reform

24. A *Crown Land Use Planning Act* should be developed and passed.

25. The new growth management legislation should require, at a minimum, the Greater Vancouver Regional District and the Capital Regional District, to embark on the growth planning process.

26. The *Municipal Act* should be amended to clarify the scope of municipal powers to protect the environment.

6. Private Land

The province's private land conservation initiatives have been growing in recent years in recognition of the ecological importance of the many privately owned valley bottoms and riparian areas that are rich in biological diversity. Both the Agricultural Land Reserve and the Forest Land Reserve apply to private land. There is also increased recognition that even privately owned land must be managed to protect biodiversity, since it may be part of an endangered ecosystem or home to threatened or keystone species (a species that plays a role in an ecosystem that far outweighs the role of other species).

CONSERVATION COVENANTS

Recent changes to the *Land Title Act* passed by the provincial government allow land owners to protect their private property by granting a conservation covenant to a non-government organization. The *Land Title Amendment Act, 1994*, provides that a conservation covenant can be held by "any person designated by the Minister of Environment, Lands and Parks on terms and conditions he or she thinks proper." The *Act* provides a mechanism to have conservation covenants registered on title to the affected property, remaining on title even if the land subsequently is sold to a new owner. The *Act* allows a conservation covenant to provide that "land or a specified amenity in relation to it be protected, preserved, conserved, maintained, enhanced, restored or kept in its natural or existing state in accordance with the covenant and to the extent provided in the covenant." An amenity is defined as including "any natural, historical, heritage, cultural, scientific, architectural, environmental, wildlife or plant life value relating to the land that is subject to the covenant." The *Land Title Amendment Act* also amended the *Assessment Act* by adding a subsection providing that "in determining actual value, the assessor shall give consideration to any terms or conditions contained in a covenant registered under Section 215 of the *Land Title Act*." This tool promises to be extremely useful in the future in B.C. as it has been elsewhere. This should provide the basis for property tax relief to property owners who use conservation covenants to protect their property.

Other Legal Tools

There may be situations in which a conservation covenant is not appropriate, and there are a range of other legal tools which can be used to protect private land. A catalogue of these tools was published by West Coast Environmental Law Research Foundation (WCELRF) in 1994.[171] The catalogue of legal tools for private land

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[171] barbara findlay and Ann Hillyer, *Here Today Here Tomorrow: Legal Tools for the Voluntary Protection of Private land in B.C.* (Vancouver: West Coast

protection was designed primarily for use by large and small conservation organizations. The report examines the concept of land stewardship, developing a strategy for protecting private land, the role of conservation organizations, basic land law concepts and legal tools currently available that can be used to protect private land. Each option – ranging from leases to trust agreements – reviews the legal context, possible applications, maintenance and monetary concerns and advantages/disadvantages. Using examples and illustrations from throughout the province and elsewhere, the report examines how conservation organizations can work with landowners to protect private land. The report includes a strategy section which discusses how to choose the best legal mechanism in light of the interest to be protected, the resources available and other factors. WCELRF is also publishing a user's guide to conservation covenants, which includes "how-to-do it" instructions, and sample covenants that have already been registered by non-governmental organizations in B.C.[172]

F. RESTORATION AND REHABILITATION

Programs to restore and rehabilitate degraded ecosystems have begun only recently in the province. Habitat renewal is essential in many areas in B.C. if biodiversity is to be maintained. Areas such as the South Okanagan have been subject to excessive human interference, and biodiversity will be permanently lost if critical habitat areas are not restored.

1. Forests

Forest Renewal B.C. is the province's chief program for restoring and rehabilitating ecosystems. This Crown corporation was established by legislation in the province in 1994 to plan and implement a regionally equitable program of expenditures in order to "renew the forest economy of B.C., enhance the productive capacity and environmental value of forest lands, create jobs, provide training for forest workers and strengthen communities." The province estimates that Forest Renewal B.C. will have about $2 billion from increased stumpage and royalty rates to invest in the first five years of operation, in projects such as:

- cleaning up environmental damage to rivers, streams and watersheds;

Environmental Law Research Foundation, 1994).

[172] William Andrews & David Loukidelis, *Leaving a Living Legacy: Using Conservation Covenants in B.C.* (Vancouver: West Coast Environmental Law Research Foundation, 1996).

- removing unnecessary logging roads and restoring hillsides to prevent soil erosion;
- restocking and protecting fish and wildlife;
- developing new environmentally sound forest practices, including more selective harvesting and commercial thinning;
- improving reforestation and reducing time lag between harvest and replanting; and,
- increasing the amount of land available for replanting.[173]

2. Wildlife Habitat

The Habitat Conservation Fund, composed of surcharges on hunting, fishing trapping and guiding licenses as well as other government, corporate and community group contributions, is spent on habitat restoration, enhancement and acquisition.[174] In 1995, the Ministry announced that $3.7 million would be spent on 123 Habitat Conservation Fund projects throughout the province on species such as Rocky Mountain bighorn sheep in the East Kootenays, Kokanee trout in the Okanagan and black bear in the Nimpkish area.[175]

Approximately $16 million has been allocated from Forest Renewal B.C. for watershed restoration to protect salmon habitat in 1994-5.

3. Estuaries

Restoration programs are also carried out under the Fraser Basin Management program for the Fraser River Estuary, used annually by about 800 million juvenile salmon and 1.5 million birds, and threatened by urbanization and industrial development.[176]

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[173] Government of British Columbia, *Forest Renewal Plan Report*, 1994.

[174] B.C. Ministry of Environment, *Habitat Conservation Fund, Project Review, 1988-9-1991-2.*

[175] B.C. Ministry of Environment, Lands and Parks News Release (1 May 1995).

[176] B.C. Ministry of Environment, *State of the Environment Report for B.C.*, 1994, 94-96.

G. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

1. Forestry

Problems with unsustainable forestry and inadequate forestry regulation have been discussed earlier.[177] The *Forest Practices Code* and its related Biodiversity Guidebook are designed to protect biodiversity.

The *Clayoquot Sound Scientific Panel Reports* are a valuable source of ideas for improvements to forestry practices which will preserve biodiversity. The monitoring procedures recommended by the panel have three goals: ensuring compliance with prescribed standards for ecosystem integrity; determining whether the forest practices standards are appropriate for the intended management objectives and improving the basis for understanding natural and human activities that create ecosystem changes. These reports set a much higher environmental standard for forestry than the requirements of the *Forest Practices Code.*

2. Agriculture

> "Of all human activities, agriculture has probably had the greatest effect, directly and indirectly, on wildlife. By clearing forests, replacing natural vegetation with crops, draining wetlands, and destabilizing natural biochemical balances by the use of chemical fertilizers, insecticides and herbicides, agriculture has been responsible for dramatic reductions in numbers and range of some species and the introduction of other species into new areas."[178]

The impact of agriculture on the environment can be substantial. A joint federal-provincial committee on environmental sustainability in agriculture listed soil degradation and stream sedimentation; wildlife habitat conservation; contamination of surface and ground water by agricultural by-products, pesticides and nutrients from fertilizers and manure as the largest environmental problems associated with farming in British Columbia.[179]

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[177] See above, section D.1.

[178] Canada, *The State of Canada's Environment* (Ottawa: Supply and Services, 1991) at 6-6.

[179] The Advisory Committee to the Accord on Environmental Sustainability in the Agri-Food Sector, *A Strategy: Towards Environmental Sustainability in the Agri-Food Sector in British Columbia,* 1993.

Agricultural subsidies, pesticide policies, discharges of agricultural pollutants and agricultural land protection policies all relate to sustainable agriculture.

AGRICULTURAL SUBSIDIES

A variety of financial subsidies are available to agricultural producers from the federal and provincial governments including income, revenue and crop insurance programs; tax breaks; price stabilization programs; subsidizing the cost of farming practices, capital improvements or management plans; and grants for taking land out of or not putting land into production.[180]. These subsidies are often linked to environmental problems such as overuse of pesticides and planting on marginal lands. To encourage more sustainable agriculture, ,subsidies are increasingly tied to compliance with environmental goals. Programs of this nature include:

- management practice subsidies;
- set-aside and acreage reduction programs;
- equipment and capital improvement subsidies;
- provision of infrastructure; and
- incentives for organic farming.[181]

Pesticides

The use of pesticides in B.C. continues to increase, both in relation to the overall quantities used and the amount of agricultural land that is treated with pesticides.[182] Decisions made under the *Pesticide Control Act* may be appealed to the Environmental Appeal Board. However, since pesticide safety and registration is regulated by the federal government, the Board will not examine issues of toxicity of contaminants in pesticides. In one recent case, a group of organic producers concerned with the effects of pesticide drift on their land were unsuccessful in challenging pesticide permits issued to their regional district.[183]

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[180] Chris Rolfe, *Using Subsidies to Promote Environmental Protection in Agriculture*, (Vancouver: West Coast Environmental Law Research Foundation, 1993).

[181] For more information on all these programs, see Rolfe, *ibid.*

[182] *1993 Environment Report, supra,* note 6 at 64.

[183] *Shuswap-Thompson Organic Producers Association* v. *Thompson-Nicola Regional District*, EAB No.94/04.

Agricultural Pollutants

The provincial *Waste Management Act* includes an Agricultural Waste Control Regulation, but enforcement remains a problem. The regulation governs the storage and spreading of manure, disposal of dead animals, exhaust from building ventilation systems and the proximity of agricultural operations and livestock feeding areas to watercourses. It is intended to have a major impact on improving ground and surface water quality in many areas of the province affected by intensive agricultural operations, including the Lower Fraser Valley. The regulation will be coordinated by the Agricultural Environmental Protection Council, which will oversee 150 volunteer farm inspectors trained to investigate and resolve complaints at the farm level. Farmers who do not comply will face fines.

There are also regulations under the federal *Fisheries Act* which control pollutants from different agricultural sectors, such as meat and poultry product plants, and potato processing plants.[184]

Agricultural Land Protection

In B.C., the Agricultural Land Reserve has been established by legislation to preserve agricultural land and open space and to prevent residential, commercial or industrial development encroaching upon agricultural land. Approximately 5% of the provincial land area is designated as Agricultural Land Reserve (ALR). Land is increasingly being withdrawn from the Reserve because of its high commercial value. In order to remove land from the ALR, a public hearing must first be held.

The new *Farm Practices Protection (Right to Farm) Act* is intended to protect agricultural operations in the province especially when nearby land undergoes residential or other development. It limits the common law action of nuisance in situations where the agricultural activities are licensed, are not in contravention of other specific Acts, and are conducted according to "normal farm practices". The definition of "normal farm practices" is extremely broad, requiring only that activities be conducted in a way consistent with "proper and accepted customs ... followed by similar farm businesses" and any prescribed standards. This permits a wide range of activities to occur, some of which could well constitute a nuisance.

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[184] *Meat and Poultry Products Plant Liquid Effluent Regulations*, C.R.C. 1978, c. 818; *Potato Processing Plant Liquid Effluent Regulations*, C.R.C. 1978, c. 829.

3. Fishing

Salmon are a vital part of B.C.'s biological heritage. When 1.5 million salmon went missing from the Fraser River's annual run in 1994, the federal government quickly called a Commission of Inquiry. The final report listed many threats to sustainable fisheries, but could not pinpoint the exact cause of the salmon's disappearance.[185]

Problems with fisheries are not limited to sockeye salmon. A recent review of all the Pacific fisheries concluded that they were not sustainable on either ecological or economic terms, and that "... we are not even coming close to sustaining the biodiversity that virtually everyone involved with fisheries would agree is necessary for sustaining long term productivity."[186] This review recommends a number of changes for moving to a sustainable fishery, including creating a legal requirement, either through the *Fisheries Act* or new legislation, that conservation of all remaining populations should be the first priority in all fisheries management planning and administration. This change would be a useful guiding principle for all uses of biological resources, and has particular relevance for fisheries in view of the collapse of the Atlantic cod fishery.

AQUACULTURE

The effect of the burgeoning aquaculture industry on biodiversity is also not fully understood. Conflicts over aquaculture were examined in a 1986 provincial inquiry by the Minister of Forests and Lands, and a 1988 report of the Ombudsman, both which recommended that the province establish clearer policies for regulation of aquaculture.[187] The provincial aquaculture regulatory structure is focused on licensing requirements, prohibitions on escape of farmed species, and record-keeping requirements.[188] An assessment of salmon farming in the Broughton Archipelago

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[185] *Public Review Board, Fraser River Sockeye 1994 - Problems and Discrepancies*, Public Works and Government Services Canada, 1995.

[186] Carl Walters, *Fish on the Line - The Future of Pacific Fisheries* (Vancouver: David Suzuki Foundation, 1995).

[187] Gillespie Report 1986; and Ombudsman of B.C., Public Report No.15, *Aquaculture and the Administration of Coastal Resources in British Columbia*, 1988.

[188] *Fisheries Act*, R.S.B.C. 1979, c. 137; *Aquaculture Regulation*, B.C. Reg. 364/89.

is currently underway under the new *Environmental Assessment Act* to examine the effects of fish farming and to determine what conditions should be placed on these operations in this and other areas. The Ministries of Environment , Lands and Parks and Agriculture, Fisheries and Food are also developing a provincial finfish aquaculture policy. The relationship between aquaculture and biodiversity deserves further analysis.

Recommendations for Reform

27. Sustainable use of biological resources should be statutorily required.

28. The *Fisheries Act* should be amended or new legislation passed requiring that conservation of all remaining populations should be the first priority in all fisheries management planning and administration.

H. MONITORING AND IMPACT ASSESSMENT

The B.C. *Environmental Assessment Act* came into force on June 30, 1995. This new piece of legislation consolidated the fragmented approach to environmental impact assessment that previously existed in BC. through separate provisions for impact assessment of energy projects, major projects, and mine developments. The Act will be applied to assess major project proposals in the following categories: industrial, mining, waste, transportation, energy, water, fin-fish aquaculture/food processing and tourism. If a project does not fall within the list of reviewable projects established by regulation, Section 4 of the *Act* allows the Minister, by Order, to designate a project to be a reviewable project, if the Minister is satisfied that the project has or may have a significant adverse effect.

The new *Act* is also designed to ensure meaningful public participation in the environmental assessment and review process, with public input opportunities:

- when an application is received by the environmental assessment office;
- when draft project report specifications are being prepared;
- when the project report is filed at the environmental assessment office;
- when the draft terms of reference for a public hearing are being prepared; and
- during a public hearing, if one is held.

Although biodiversity is not explicitly mentioned in the *Act*, examining the environmental impacts of a proposed project will necessarily include the effects on the biodiversity of a particular area. The list of reviewable projects set by regulation

is extensive, and this new *Act* should lead to greater protection of biodiversity in British Columbia.

Before the enactment of the new provincial environmental assessment law, the public tried to use federal environmental assessment laws to protect biodiversity. A case concerning habitat protection for endangered species involved a legal challenge by the Western Canada Wilderness Committee to require the federal Ministry of the Environment to conduct an Environmental Assessment and Review Process (EARP) of logging in the Carmanah and Walbran Valleys on Vancouver Island based on the habitat needs of the marbled murrelet, an endangered migratory bird dependent on temperate forest with old growth characteristics.[189] The case did not proceed since the Walbran and Carmanah were recommended for protection by CORE, making the issues raised in the case moot. Both Valleys are now protected areas.

I. CONCLUSION

Currently there is a fragmented approach to protection of biodiversity in the province that needs to shift to focus on ecological health, a concept broad enough to ensure that crucial wildlife and wildlands are not lost forever. Concepts of conservation biology must be incorporated into laws for species protection and land use, particularly forestry. The current provincial strategy for biodiversity conservation, consisting of integrated resource management and the protected areas strategy, needs to be examined carefully to see if it will suffice to adequately protect B.C.'s public resources. There are a number of reasons to believe that the current framework is not adequate:

- the protected areas strategy cannot deal adequately with areas in which no additional public land is available for protection, such as the Okanagan;
- the dominant land use industry in the province, forestry, is still practiced in a way that does not ensure sustainable use of resources;
- non-existent or ineffective growth management strategies are not enough to deal with the very rapid expansion in B.C.'s major urban areas;
- the rate of species extinction continues to rise; and,
- reform of land use practices proceeds very slowly.

Performing an analysis of the overall health of B.C.'s environment is a crucial first step, as much remains to be learned about biodiversity in the province. The

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[189] *Western Canada Wilderness Committee v. B.C. (Ministry of Environment)* (1991), 48 F.T.R. 236 (FCTD).

funding of biodiversity research by Forest Renewal B.C. is a positive beginning. Once more basic information on the state of ecological health in the province is obtained, it will be possible to design monitoring systems to ensure the maintenance of ecological integrity as required by Article 7(b) of the Biodiversity Convention. These monitoring approaches must be enshrined in legislation.

As this report has demonstrated, law reform on a number of fronts is essential to preserve biological diversity in the province of British Columbia.

An ecosystem approach to government decision-making would greatly help in our quest towards sustainability, and ensure that B.C.'s rich biodiversity legacy is preserved for future generations.

PRAIRIE PROVINCES

Arlene J. Kwasniak*

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I. INTRODUCTION

A. Ecoregions of the Prairie Provinces

150 years ago a hike on the Canadian prairies might well present a vista of thousands of bison slowly moving across a seemingly endless expanse of grass. Perhaps a plains grizzly would emerge into view, a swift fox, a multitude of antelope, even elk. Birds of prey might swoop overhead, including peregrine falcons and ferruginous hawks. As night fell, the hiker could settle, perhaps nestle in native tallgrass prairie, stare at a brilliant, flickering sky and listen to a pack of howling wolves.

A modern hiker experiences a different prairie, a prairie where cattle rule and bison graze only on reserves or game farms, where the swift fox virtually has vanished in the wild and the prairie wolf is gone, where the ferruginous hawk and peregrine falcon rarely light, where agriculture almost totally has obliterated tall grass prairie.[1]

Yet observing closely and searching beyond the ranches, the cultivation, the roads, the diverted streams and irrigation works, the subtle complexity of what remains of the natural prairie strikes the observer. One knows there is much invaluable nature left, and much work to done to maintain and restore what remains.

Unfortunately, ecoregions eroded and tampered with by time and so-called "progress" do not stop with the grasslands so often associated with the prairie provinces. Prairie grasslands are but one of the seven ecozones found in the prairie provinces.[2]

- *Prairie* (Manitoba, Saskatchewan and Alberta). Prairie consists of plains and some foothills containing short and mixed grasslands and aspen parkland.

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[1] For an extensive discussion of the state of certain prairie flora and fauna *see*, Geoffrey Holroyd *et al*, *Endangered Species in the Prairie Provinces*, Natural History Occasional Paper No.9 (Edmonton: Provincial Museum of Alberta, 1987).

[2] The noted ecozones are from Canada's standardized ecological land classification system as described in the *Terrestrial Ecozone and Ecoregions of Canada Map*. Much of the descriptive information following each ecozone title is from Environment Canada, *State of the Environment Report for Canada* (Ottawa: Environment Canada, 1986).

Prairie grasslands are one of the most endangered ecoregions in Canada.[3] The most rare of these types is tall grass prairie; the remaining remnants in Canada being in Manitoba. Prairie grasslands, with its native grasses, fruiting shrubs and other plant life support a variety of wildlife including pronghorn antelope, coyotes, ground squirrels, mice, voles, hawks, owls, short-horned lizard, prairie rattlesnakes, bull snakes, and gartersnakes. Prairie potholes are a significant feeding and breeding habitat for many North American waterfowl and shorebirds.

Aspen parkland, which is a transition zone between boreal forest and grassland, typified by fescue grasslands intermixed with aspen and poplar, is another of the most endangered ecoregions in Canada.[4] This region extends along the Alberta foothills continuing in a band across Saskatchewan to Lake Agassiz in Manitoba. Aspen parkland harbours major wetlands and provides lowland and upland habitat for a profusion of plants and animals.[5]

- *Boreal Shield* (Manitoba and Saskatchewan). Boreal Shield consists mainly of plains and some interior hills. Boreal Plains contain conifer and broadleaf boreal tree species.
- *Boreal Plains* (Manitoba, Saskatchewan and Alberta) Boreal Plains consists mainly of plains and foothills. Like Boreal Shield, Boreal Plains contain conifer and broadleaf boreal forests.

Boreal Shield and Boreal Plain bridge much of the mid-latitudinal belt of Canada. These primarily coniferous forests provide habitat for a variety of species including moose, white-tail and mule deer, black bear and wolves, lynx, marten, fisher, beaver, squirrels, caribou, orchids, fungi, a variety of berries and numerous songbirds.[6] Both zones are significant waterfowl breeding grounds.

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[3] Ibid.

[4] Ibid.

[5] J. Stan Rowe, "Status of the Aspen Parkland in the Prairie Provinces", in Holroyd *et al., supra,* note 1 at 27.

[6] Information on boreal forest, Canadian shield, foothills and rocky mountain areas from various sources including, Holroyd *et al supra* note 1, Mary Helen Posey, *Saving the Strands of Alberta's Biodiversity* (Edmonton: Environment Council of Alberta, 1992) and Alberta Recreation, Parks and Wildlife, *Alberta Parks -- Our Legacy* (Edmonton, 1992).

- *Hudson Bay Plain* (north-east corner of Manitoba). This mainly cold weather ecozone contains abundant wetlands, arctic tundra and some coniferous forests. The region is the world's most southerly habitat of the polar bear.

- *Taiga Shield* (northern reaches of Saskatchewan and Alberta). This ecozone supports many subarctic birds and mammals including caribou and muskox. The zone is characterized by granite outcrops, lakes, plains, dunes, scattered pines, black spruce bogs, lichens and mosses.

- *Taiga Plain* (northern reaches of Alberta). This ecozone consists of plains, foothills and wetlands. Vegetation includes open woodlands and shrublands. The endangered whooping crane finds refuge in this zone's Wood Buffalo National Park. The zone is home to the endangered wood bison.

- *Montane Cordillera* (midwestern and southwestern Alberta). This ecozone consists of mountainous highlands and interior plains. It supports spruce-fir forests, lodgepole pine, alpine fir and larch, mosses, heather, saxifrages, numerous alpine flowering plants, bighorn sheep, mountain goats, pika, golden eagles, elk, moose, mule deer, cougar, wolf, grizzlies, black bear, and numerous birds and fish.

B. Stresses on Ecoregions

Elements of these ecoregions and their constituent biodiversity are at risk from a variety of sources. Grazing pressures and cultivation have eliminated indigenous vegetation from most of the prairie grasslands. Prairie wetlands drainage persists, in order to increase cultivatable land. Small mammals considered agricultural "pests" continue to be killed, with legislative blessing. Pesticide use continues, upsetting biodiversity with its general effects extending beyond target species. Some pesticide use can cause particular havoc with species, for example, carbo-furan, which specifically imperils the existence of burrowing owls, an endangered species. Loss of plains cottonwood forests bordering riparian areas as a result of flow alterations from dams fragment and destroy habitat for many wildlife species.[7] Clearing of forests for cultivation, oil and gas exploration and development, mining, utility corridors, transportation and urbanization advance habitat destruction and depletion of biodiversity. Timber harvesting modifies forest habitat, sometimes replaces older

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[7] For example, "... 60% of the bird species in the Great Plains nest, feed or rest during migration in riparian cottonwood forests". Cheryl Bradley, "Disappearing Cottonwoods: The Social Challenge", in Holroyd *et al*, supra 1 at 119.

growth, mixed forests with monoculture or only certain tree species, breaking down and upending natural forest biodiversity. Pollution, municipal sewage, run off from cultivation and intensive livestock operations, pulp mill effluent, chemical and other inorganic wastes all may stress and reduce biological diversity in prairie provinces' waters.

C. Legislative Responses

Laws and policies in the prairie provinces can play a crucial role to attempt to meet the challenges posed by declining biodiversity in accordance with our obligations under the *Biodiversity Convention*. Sections II and III of this chapter describe and evaluate the wildlife and protected areas laws and policies of Alberta, Manitoba and Saskatchewan which could be employed to preserve, protect or restore biodiversity. Federal projects such as Ramsar wetland sites, National Parks, Prairie Farm Rehabilitation Administration initiatives, federal Migratory Bird Sanctuaries, National Wildlife Areas or Canadian Heritage Rivers will not be covered, as they are described in the federal chapter. As well, the sections focus on protection/preservation legislation and not on general environmental legislation nor natural resource disposition legislation. Section IV describes some legislative or policy stumbling blocks to protection. Section V offers recommendations for the prairie provinces to better realize obligations from the Biodiversity Convention.

II. WILDLIFE

A. Alberta

1. Wildlife Act

Although the Alberta government claims that native wildlife and plants are important public resources[8], legislative protection of these resources is limited. Moreover, provincial legislation virtually ignores populations of native plant life on public or private lands. No Alberta statute focuses on protecting endangered species and habitat. The provincial *Wildlife Act*[9], the primary legislation governing fish and wildlife resources in Alberta, mainly concerns hunting.

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[8] On October 14, 1982, the Alberta government made public the Fish and Wildlife Policy for Alberta which established that the primary consideration of the Government is to ensure that fish and wildlife populations are protected from severe decline and that viable populations are maintained. *See*, Alberta Energy and Natural Resources, Fish and Wildlife Division, *Status of the Fish and Wildlife Resource in Alberta*, (Edmonton, 1984).

[9] S.A. 1984, c.W-9.1.

The *Wildlife Act*, like the wildlife Acts of the other prairie provinces, provides that the property of all wildlife vests in the provincial Crown.[10] The Act outlines rules for hunting, possession and commerce in wildlife and exotic animals and establishes enforcement procedures and penalties. Regulations under the Act set out hunting and guiding license requirements, bag limits and generally, prohibitions regarding the hunting, possession and transport of wildlife.

Although primarily designed to regulate hunting, one section of the *Wildlife Act* in a limited manner addresses habitat.
S.38(1) states

> A person shall not wilfully molest, disturb or destroy a house, nest or den of wildlife prescribed by the Minister in areas and at times prescribed by the Minister.[11]

The Minister has prescribed that s.38(1) applies to all dens and nests of endangered animals and migratory game, insectivorous and non-game birds throughout the year; snakes and bats September 1 to April 30; and to wildlife and game birds in designated sanctuaries.[12] The use of the word "wilful" in s.38 indicates a *mens rea* offence. Accordingly, to successfully prosecute, the Crown must show beyond a reasonable doubt that a person committed the Act described in the offence with intent or recklessness.[13]

The Act provides some authority to address habitat protection by regulation. It enables the Lieutenant Governor in Council by regulation to establish wildlife

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[10] Ibid, section 10.

[11] S.38(2) exempts any molestation, disturbance or destruction specifically authorized by the *Agricultural Pests Act* (SA 1984, c.A-8.1), S.6(1)(b) of the *Water Resources Act* (RSA 1980, c.W-5) states that the Minister or anyone authorized by the Minister may remove beaver dams on private land where the dam diverts water or interferes with water flow.

[12] *Wildlife Act, General Wildlife (Ministerial) Regulation*, Alta. Reg 95/87, sections 23, 31 and 34. Sanctuaries are designated under the *General Wildlife Regulation*, Alta. Reg.50/87.

[13] It is clear that a person who intentionally molests, disturbs or destroys a den or nest to which s.38 applies violates that section. However, it is not clear to what extent, if at all, the section applies to indirect disturbances, molestation or destruction, for example, by logging operations or grazing livestock.

sanctuaries and habitat development areas.[14] To date, twenty-two wildlife sanctuaries have been established and four habitat development areas.[15] Although never used[16], the Act also authorizes the Minster to make regulations:

> ... respecting the protection of wildlife habitat and the restoration of wildlife that has been altered, and enabling the Minister to order the person responsible for the alteration to restore the habitat and to charge that person with the cost of it if he has failed to effect the restoration.[17]

Other than this Act, no Alberta legislation provides for wildlife protection.

B. Manitoba

1. The Endangered Species Act

The Endangered Species Act[18] is Manitoba's most significant plant and wildlife protection legislation. The Act applies to both plant and animal species on either private or public land.

The Act:

- requires research and advice on threatened, endangered, extirpated, or extinct species[19];

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[14] Ibid, section 96(d) and (e).

[15] Wildlife sanctuaries are divided into three categories: wildlife sanctuaries (2), game bird sanctuaries (7) and corridor wildlife sanctuaries (13). Hunting and related use restrictions vary with category. No resource development restrictions apply. Four Habitat Development areas have been established, partly through personal donation of private land.

[16] Patrick Dunford, Fish and wildlife Services, Environmental Protection, personal communication, May 31, 1995.

[17] Supra., note 9, section 97(j).

[18] *The Endangered Species Act*, SM 1989-90, c.39 (c. E111).

[19] Ibid., section 6.

- authorizes regulations to declare species to be endangered, threatened, extirpated or extinct and to protect habitat[20]; and

- with certain exceptions and exemptions[21], prohibits any person from harming or killing any members of a declared species, destroying or interfering with its habitat, or damaging, blocking or removing any natural resource upon which a declared species depends for its life and propagation.

Although enabling significant strides towards protecting biodiversity, the Act is not flawless.[22] Its major shortcoming may be its failure to require, or even emphasise restoration and recovery plans for declared species.

2. The Wildlife Act

Like Alberta's *Wildlife Act*, Manitoba's *The Wildlife Act*[23] primarily regulates hunting and trapping. The Manitoba Act does contain a few provisions relating to protection of species and habitat.

The Act prohibits:

- the possession of or taking by any means of any member of an animal species declared in a Schedule to be protected[24];

- the taking, possession or destruction of any nest or eggs of any protected birds, except as authorized by permit or license[25]; and

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[20] Ibid., sections 8 and 9.

[21] The prohibition does not apply to person with permits to take or capture members for scientific purposes relating to the protection or reintroduction of the species. It also does not apply to developments exempted by the Minister under section 12 (Ibid.).

[22] For example, the Act does not require that a species be declared under it, no matter how compelling the evidence. As well, section 12 gives the Minister a fairly broad discretion to exempt developments from the Act's prohibitions.

[23] RSM 1987, c. W130.

[24] Ibid., section 20. This section is subject to more permissive regulations or provisions of the Act.

[25] Ibid., section 49.

- the destruction of any habitat on Crown land except as authorized under a Crown disposition[26].

Numerous categories of protected areas have been established by regulation under this Act, including Wildlife Management Areas, nature centres, Game Preserves and Special Conservation Areas.[27]

C. Saskatchewan

1. The Wildlife Act

Notwithstanding the long title of this Act, *An Act Respecting the Protection of Wildlife,* the Saskatchewan *Wildlife Act*[28] primarily governs hunting and trapping in the Province. The Act does not cover plants. It does, however, bestow regulatory power[29] relevant to habitat protection and possibly restoration including:

- to constitute an area for protecting, propagating, perpetuating, managing, harvesting, controlling or regulating wildlife or its habitat, and accordingly regulating hunting, trapping and activities by other persons;

- respecting protection, management, regulation and use of any wildlife or habitat;

- prescribing species of wildlife to be protected and respecting the management and control of such species and any products thereof; and

- respecting the keeping and propagation of wildlife.

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[26] Ibid., section 50.

[27] See Manitoba regulations under the *Wildlife Act*: 57/90, 29/87, 249/86 and 76/91.

[28] SS 1979, c. W-13.1

[29] Ibid., section 63.

A number of regulations have established reserves or other protected areas and set limits on the kinds of permitted activities, including wildlife refuges[30] and games preserves[31].

2. The Wildlife Habitat Protection Act

The *Wildlife Habitat Protection Act*[32] by schedule designates public land as wildlife habitat lands, including 1,365,333 hectares of public land to date.[33] Once designated, the Act:

- strictly limits the administrating Minister from granting or transferring wildlife habitat lands[34];
- prohibits dispositions except in accordance with the regulations and any ministerial terms[35]; and
- prohibits any person from altering any designated lands in a manner that reduces their value as wildlife habitat[36].

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[30] *The Wildlife Management Zones and Special Areas Boundaries Regulations, 1990*, RRS c.W-13, Reg.45, section 7 and *The Wildlife Management Zones and Special Areas Boundaries Amendment Regulations*, 1991, RRS c.W-13, Reg. 45, section 4.

[31] *The Wildlife Management Zones and Special Areas Boundaries Regulations, 1990*, RRS, c. W-13.1.

[32] SS 1992, c.66 (c.W-13.2).

[33] This figure is as of June, 1994. Kathy Johnson, Department of Environment and Resource Management, personal communication, May 29, 1995.

[34] Ibid., subsection 6(1). Subsections 6(4) and (5) enable grants or transfers to prescribed Crown corporations, Crown agents or authorized government departments.

[35] Ibid., section 6(2).

[36] Ibid., section 7.

The Act's power is evident in that it and its regulations prevail where there is a conflict between it, and any other Act or regulations.[37]

3. International Biological Program

International Biological Program (IBP) sites are tracts of terrain which preserve representative or unique flora, fauna and physiographic features. The tracts do not always have formal legal protection and are protected by policy only.[38]

III. PROTECTED AREAS AND HABITAT

A. Alberta

1. Provincial Parks Act

The *Provincial Parks Act*[39] states the purposes for "parks" to be for the conservation and management of flora and fauna, the preservation of specified areas and objects therein that are of geological, cultural or other scientific interest, and to facilitate their use and enjoyment for outdoor recreation.[40] Except as limited by these purposes nothing in the Act itself precludes any kind of development in parks. Parks are created by regulation[41] and regulations may restrict or authorize dispositions in any given park.[42] Although habitat protection may be required for

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[37] Ibid., section 10. Such provision can afford substantial protection to an area where another Act or regulations would enable a development precluded by the *Wildlife Habitat Protection Act* or regulations.

[38] From a draft report entitled *Protected Areas and Management Categories* for Saskatchewan, prepared by Laura Lawton, Saskatchewan Environment and Resource Management. Once completed and released, this report should prove an invaluable reference for biodiversity protection in Saskatchewan. See also Laura Lawton and Angela Hickie, *Protected Areas in Saskatchewan: A Statistical Report* (Regina: Government of Saskatchewan, 1993).

[39] RSA 1980, c.P-22.

[40] Ibid., section 3.

[41] Ibid., section 7(1).

[42] Ibid., section 8.

may be required for all or part of a park[43], nothing in the Act requires it, save what can be implied from the purposes clause. As of 1996, 66 parks have been created under this Act, covering 228,864 hectares.[44]

2. Wilderness Areas, Ecological Reserves and Natural Areas Act

The *Wilderness Areas, Ecological Reserves and Natural Areas Act*[45] shows greater potential to legally require protection of biodiversity than the *Provincial Parks Act.* The preamble to the *Wilderness Areas, Ecological Reserves and Natural Areas Act* recognizes that "progressively fewer areas" will survive in a natural state owing to continuing "expansion of industrial development and settlement". The Act enables three levels of protection: wilderness areas, ecological reserves and natural areas.

A Wilderness Area designation affords the greatest protection. The Act prohibits hunting, fishing, trapping, vehicles, horses, pack animals or aircraft landing in a wilderness area.[46] The Act requires that, "as far as practicable", virtually any disposition in a wilderness area can be "withdrawn, cancelled or otherwise terminated as soon as possible".[47] As well, the Minister may not make any new dispositions in a wilderness area except for grazing domestic livestock.

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[43] Ibid., section 13. This section enables the Minister to order that all or any part of a park or recreation area be closed for any period, and that areas be zoned to be confined to certain uses or to limit uses of land, resources and water.

[44] Dave Borutski, Senior Policy Analyst, Alberta Environmental Protection, personal communication, May 1, 1996.

[45] RSA 1980, c. W-8.

[46] Ibid., section 8.

[47] Ibid., section 6(1) "disposition" includes: under the *Public Lands Act* (RSA, c.P-30) and *Special Areas Act* (RSA 1980, c.S-20), grazing, excavation of clay, marl, gravel or stones, leases, recreational leases, and miscellaneous leases; under the *Forests Act* (RSA 1980, c.F-16), permits, quotas, and Forest Management Agreements; and any surface disposition, or a disposition under the *Mines and Minerals Act* (RSA 1980, c. M-15), i.e. oil and gas leases.

Three wilderness areas have been designated under this Act.[48]

Ecological Reserves may be created on public land for research on ecosystems, to protect an area representative of a natural Alberta ecosystem, to study potential restoration of a modified ecosystem area, or to protect an area containing rare plants or animals, or unique natural biological or physical features. Ecological reserve designation provides somewhat less protection than wilderness areas. Although access and travel may be limited,[49] motor vehicles or boats may be used in designated areas and horses and pack animals are allowed throughout.[50] While relevant Ministers are required to ensure that dispositions in a designated ecological reserve are as far as practicable, "withdrawn, cancelled or otherwise terminated as soon as possible", the Act provides several exemptions with appropriate Ministerial consent. Petroleum and natural gas as well as a number of other dispositions may continue and be renewed in an ecological reserve. Even some new mineral dispositions may be granted.[51] Fourteen ecological reserves have been created in Alberta.

Natural Areas may be designated on public land to protect scenic or sensitive land from disturbance, and to ensure the availability of land in a natural

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[48] Namely, Siffleur, White Goat and Ghost River. This Act should not be confused with the *Willmore Wilderness Act* (RSA 1980, c.W-10) which specifically establishes the 4598 square kilometre Willmore Wilderness Park. The *Willmore Wilderness Act* applies to just this specific area. Although the dedication section of the *Willmore Wilderness Act* speaks of "protection of its natural resources and by the preservation and its natural beauty ... for the enjoyment of future generations" ("subject to the regulations"), the Act enables the Lieutenant Governor in Council to make regulations to allow dispositions in the Park, as well as to alter its size (sections 4-8). As of January 1996, the province took an important step by prohibiting industrial activities and dispositions, and enabling regulations under the Act to vary powers under other Acts exercised within the Park: *Willmore Wilderness Park Amendment Act, 1995*, SA 1995, c.38.

[49] Ibid., section 11.

[50] Ibid., section 8.

[51] Ibid., section 6 allows dispositions to run and, with permission, to be renewed, including petroleum and natural gas dispositions; *Public Lands Act* and *Special Areas Act* dispositions (*see* note 47), the licenses and permits under the *Forests Act*, and livestock grazing under the *Forests Reserves Act*. With permission, section 7 allows new dispositions under the *Mines and Minerals Act*.

state for purposes including recreation and education.[52] Natural area designation affords the least protection. The Act does not prohibit any dispositions in a natural area, although no *Public Lands Act* or *Forests Act* dispositions are allowed without the consent of the relevant Minister. By implication, any other disposition is permissible without consent, although the Lieutenant Governor in Council may make regulations regarding the management and use of any natural areas.[53] At least 118 natural areas have been created in the Province.

3. Historical Resources Act

Although the *Historical Resources Act*[54] is aimed at protecting archaeological, paleontological and historical resources such as buildings and forts, its broad definition of "historical resource" could cover biological diversity. Under the Act "historical resource" means:

> any work of nature or of man that is primarily of value for its paleontological, archaeological, prehistoric, historic, cultural, *natural, scientific* or aesthetic interest, including, but not limited to, a paleontological, archaeological, prehistoric, historic or *natural site*, structure or object[55] (emphasis added).

The Act enables the Minister to designate on private or public land any one of three categories of designated protection.[56] The Act states that

> Notwithstanding any other Act, no person shall destroy, disturb, alter, restore or repair any historic resource or land that has been designated under this section ... without the written approval of the Minister.[57]

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[52] Ibid., section 5.

[53] Ibid., section 14.

[54] RSA 1980, c. H-8.

[55] Ibid., section 2.

[56] The three categories are *Registered Historic Resource*, *Provincial Historic Area* and *Provincial Historic Resource,* the latter two offering greater protection than the first.

[57] Ibid., section 16(9). This section would include any right of entry order under energy statutes or the *Surface Rights Act* (RSA 1983, c.s.27.1).

As well, under section 38, it is an offence to alter, mark or damage a historical resource without a permit or Minister's consent.

4. The Public Lands Act

A few provisions of the *Public Lands Act*[58] may be used to protect biodiversity on Crown lands. The Act enables:

- regulations "permitting, prohibiting or regulating the use of any public land that is not the subject of a disposition"[59];
- the Minister to classify public land and declare permissible uses[60]; and
- the Minister to put restrictions on the use of any public land when sold which may be registered at Land Titles and run with the land, binding successors in title.

5. Alberta Policy Initiative: Special Places 2000

"Special Places 2000" is a government initiative to coordinate the designation of diverse natural landscapes of Alberta's 6 natural regions by the year 2000.[61] The natural regions are Rocky Mountain, Grasslands, Foothills, Canadian Shield, Boreal Forest and Parkland.[62] In March of 1995, Environmental Protection released *Special Places 2000: Alberta's Natural Heritage, Policy and Implementation Plan* (the "Plan"). The Plan includes four cornerstone goals for Special Places: *preservation*, to protect a full range of landscapes, environmental diversity and special natural features of Alberta; *outdoor recreation,* to protect natural landscapes for a variety of resource-based, dispersed recreational pursuits;

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[58] RSA 1980, c.P-30.

[59] Ibid, section 9 (a.1). Little Alberta land is entirely free of dispositions so that this provision would likely have limited application.

[60] Ibid, section 10.

[61] *See* Alberta Environmental Protection, *Natural Regions Report No. 1, A Framework for Alberta's Special Places* (Edmonton: Alberta Environmental Protection, 1993), at 1.

[62] Alberta Environmental Protection, *News Release*, No.95-009 (March 28, 1995) at 3.

heritage appreciation to protect landscapes encompassing a full range of Alberta's natural heritage and *tourism* to protect areas capable of sustaining adventure, travel and ecotourism and *economic development*. Protected areas under existing legislation will be included under the Special Places program. New Special Places also are to be designated under existing legislation.

B. Manitoba

1. The Provincial Park Lands Act

The *Provincial Park Lands Act*[63] requires land to be developed and maintained for three purposes:

- for the conservation and management of flora and fauna;
- for the preservation of specified areas and objects that are of geological, cultural, ecological or other scientific interest; and
- to facilitate the use and enjoyment of outdoor recreation.[64]

The Act enables establishing by regulation various types of provincial park lands, including: provincial natural parks, provincial wilderness parks, provincial recreation parks, provincial recreational trailways, provincial heritage parks, provincial recreational waterways, wayside parks, marine parks, access sites and information centres. It also authorizes the specification of permitted and prohibited uses within parklands.[65] A number of regulations have established parks and limited activities.[66]

The Act itself contains only a few mandatory protection provisions, including prohibitions against sale or disposition except in accordance with Act, and prohibitions against permanent occupation. [67]

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[63] RSM 1987, c.P20.

[64] Ibid., section 2.

[65] Ibid., section 13(1)(b).

[66] For example, *Park Lands Activities Regulation* 539/88, 120/90, 220/90; *Restrictions on Resource Development and Other Activities Regulation* 18/95; numerous *Provincial Park Lands Designation Regulations.*

[67] Ibid., section 4.

2. The Provincial Parks Act

Although partially enacted and assented to, the *Provincial Parks Act*[68] has not yet been proclaimed.[69] If it is proclaimed, it will repeal the *Provincial Park Lands Act*, discussed above.

The recitals to the *Provincial Parks Act* which support both sustainable development and preservation specifically incorporate the goal of protecting 12% of the province's natural regions. The purposes for parks include to conserve ecosystems that maintain biodiversity, to preserve unique and representative natural, cultural and heritage resources and to provide outdoor recreational and educational opportunities and experiences in a natural setting.[70]

Under the Act, parks would be designated by regulation and classified as either:

- a wilderness park, if the main purpose is to preserve representative areas of a natural region;
- a natural park, if the main purpose is to preserve and to accommodate recreation and resource use;
- a recreation park, if the main purpose is to provide recreation;
- a heritage park, if the main purpose is to preserve heritage resources; or
- any other type as specified in regulations.[71]

Regulations would further categorize the designated land in a park into one or more categories, including:

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[68] SM 1993, c.39, sections 1-35 and 41-43, assent July 27, 1993.

[69] This Act was to be put out for public review during the summer of 1995. Glen McLeod, Natural Resources, Government of Saskatchewan, personal communication, May 23, 1995.

[70] Ibid., section 5.

[71] Ibid., section 7(2).

- wilderness, if the main purpose is to protect unique undisturbed natural landscapes and to provide recreational activities which depend on a pristine environment;

- back country, if the main purpose is to protect examples of natural landscapes and provide basic facilities and trails for nature-oriented recreation in a largely undisturbed environment;

- resource management, if the main purpose is to permit development that does not compromise the purpose of the classification;

- recreational development, if the main purpose is to protect a unique heritage resource;

- access, if the main purpose is to provide a point or route of access or a lodge and related facilities; or

- any other category specified in the regulations.[72]

The Act restricts the uses in a wilderness park, or an area in any park categorized as wilderness, back country or heritage, by prohibiting logging, mining, oil, gas , petroleum or hydro-electric power development, as well as any other activity specified in regulation.[73] Otherwise, uses may be restricted by regulation.[74]

3. Ecological Reserves Act

The *Ecological Reserves Act*[75] authorizes the Cabinet to establish and maintain a system of ecological reserves, the purposes of which include:

- the provision of opportunities for the study and research into the ecological features of the province;

- the provision of opportunities for the enjoyment of residents and visitors to Manitoba; and

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[72] Ibid., section 7(3).

[73] Ibid., section 7.

[74] Ibid., sections 10, 32 and 33.

[75] RSM 1987, c.E-5.

- the preservation in perpetuity of: (a) unique and rare examples of botanical, zoological and geological features; (b) examples of natural habitats or rare or endangered plants and animals that are native to Manitoba; (c) representative examples of natural ecosystems; and (d) representative examples of ecosystems that have been modified by man and that offer opportunities for the study and research of the recovery of the ecosystem from modification.[76]

Section 8 of the Act prohibits the sale or transfer of land designated as an ecological reserve, unless the designation is first removed. The removal of a designation can only occur after notice has been published in a newspaper of general circulation and, if considered necessary by the Minister, further consideration by a committee who will accept submissions from the public.

4. The Heritage Resources Act

This *Heritage Resources Act*[77], like the Alberta *Historical Resources Act*, is aimed at protecting archaeological, paleontological and historical resources such as buildings and forts. Also like the Alberta Act, its broad definition of "heritage resource" could cover biological diversity. Under the *Heritage Resources Act*, "heritage resource" includes a heritage site or object, and:

> any work or assembly of works *of nature* or of human endeavour that is of value for its archaeological, paleontological, pre-historic, cultural, *natural*, *scientific*, or *aesthetic* features and may be in the form of sites or objects or a combination thereof[78] (emphasis added).

The Act, like comparable legislation in the other prairie provinces, enables the Minister or a municipality to designate and protect heritage sites.[79]

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[76] Ibid., sections 2 and 3.

[77] SM 1985, c.H39.1.

[78] Ibid., section 1.

[79] Ibid., Parts I and III.

C. Saskatchewan

1. The Regional Parks Act

The purposes of the *Regional Parks Act*[80] are to encourage the appreciation and use of natural and recreational resources on a regional basis.[81] The Act establishes regional park authorities which may acquire land suitable for a park and carry out some of the purposes of the Act,[82] including making regulations regarding waste, vehicle use, and protection and personal health and safety.[83] The Act does not set out any specific restrictions on development or uses in a regional park. However, it enables the Minister, with approval of the Lieutenant Governor in Council to enter a maximum five year agreement with a regional authority regarding purposes, planning, management, maintenance and financial matters.[84]

2. The Ecological Reserves Act

The *Ecological Reserves Act*[85] defines "ecological reserve" to mean:

> any [designated] Crown land ... which sustains or is associated with unique or representative parts of the natural environment ....

including plant, animal life, water, minerals, land and humans.[86]
The Act

- enables the Lieutenant Governor in Council by regulation to designate any Crown land as an ecological reserve, and establish which activities may be conducted on it[87];

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[80] SS 1979, c. R-9.1.

[81] Ibid., section 3.

[82] Ibid., section 8.

[83] Ibid., section 9.

[84] Ibid., section 10.

[85] SS 1979-80, c. E-0.01.

[86] Ibid., section 2.

[87] Ibid., section 4.

- subject to the regulations, prohibits any transfer or granting of any ecological reserves or any interest or estates in an ecological reserve[88]; and

- has precedence over other legislation which conflicts with it.[89]

The Department of Environmental and Resource Management has created selection guidelines for ecological reserves which require that candidate sites:

- must be on provincial Crown land;

- must not contain encumbrances inconsistent with ecological goals;

- must be selected to first represent each of the province's major ecoregions, then be based on landscape areas within ecoregions;

- must be selected to represent equitable provincial distribution;

- must contain high levels of ecological diversity and unique ecological characteristics; and

- must be sensitive to human disturbance[90]

Management guidelines are made for each reserve with the objective of keeping human influence at a minimum. Regulations have been promulgated for three ecological reserves.[91]

3. Parks Act

The *Parks Act*[92] dedicates parkland to the people of and visitors to Saskatchewan for their education and enjoyment. It requires that the natural, prehistoric and historic resources of parks be maintained for future generations.[93]

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[88] Ibid., section 7.

[89] Ibid., section 10.

[90] Laura Lawton Draft Report, supra note 38 at 42.

[91] *Ecological Reserves Act*, Regs. 1, 3 and 4.

[92] SS 1986, c.P-1.1.

[93] Ibid, section 3.

The *Parks Act* describes five categories of provincial parks:

- Historic Parks, to be used primarily for the preservation and interpretation of prehistoric and historic resources and themes;
- Recreation Parks, to be used primarily as a natural setting for the pursuit of outdoor recreational activities;
- Natural Environment Parks, to be used primarily for the pursuit of outdoor activities consistent with the protection of natural landscapes;
- Wilderness Parks, to be used primarily for the preservation of natural landscapes in a natural state and the pursuit of outdoor activities consistent with that use; and
- Protected Areas, to be used primarily for the protection and preservation of natural, prehistoric or historic resources of interest or significance[94].

Although the Act prohibits any grants or transfers of any parkland[95], it gives the Minister considerable latitude to dispose of interests in parkland. Subject to the Act and regulations, the Minster may issue one year use and occupation authorizations, up to 21 year leases, easements or other authorizations, and with approval of the Lieutenant Governor in Council, leases, easements or other authorizations exceeding 21 years. The only disposition prohibition is that the Minster may not lease the 10 meters adjacent to any water in parkland.[96]

The latitude given to the Minister to dispose of interests of parkland may be limited by the Lieutenant Governor in Council through regulations prescribing categories of zones within park land and to prescribe the activities that shall not be carried on in a zone.[97] The *Provincial Parks System Plan* sets forth long term planning for park categories. The Plan identifies zones within categories and establishes prohibited and permitted uses.

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[94] Ibid, sections 4 and 5.

[95] Ibid, section 14.

[96] Ibid, section 15.

[97] Ibid., section 26.

4. An Act Respecting the Sale or Lease of Certain Lands Belonging to Her Majesty the Queen

This 1913 Act[98] enables the Lieutenant Governor in Council on a transfer or lease of Crown land to impose conditions, limitations, restrictions or covenants on the land, which run with title and are registrable at the appropriate land titles office.[99] The Act could be used to impose limitations on use of leased or transferred Crown land to protect biodiversity. The Act's major shortcomings are its limited application and its lack of enforcement provisions.

5. The Heritage Property Act

The Heritage Property Act[100] enables the municipal or provincial designation of any land in Saskatchewan to protect "heritage property". "Heritage property" is any property "whether a work of *nature* or of man, that is of interest for its architectural, historical, cultural, *environmental*, aesthetic or scientific value"[101][emphasis added]. The effect of designation is to protect the site for its identified value and to limit future use by the landowner. This Act has not yet been used to protect a site solely for its natural or environmental values.[102]

D. "Conservation Easements" under Prairie Province Statutes

1. Introduction

Much biodiversity, including habitat and native flora, is either located on or extends onto private land. Unfortunately, none of the prairie provinces have laws to facilitate a landowner who wants to preserve a part of his or her property in perpetuity. Except for a few statutes which do not quite fit the bill, landowners who want to save a bit of nature on land are left with the cumbersome common

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98 RSS 1978, c.S-8.

99 Ibid., sections 1 - 3.

100 S.S. 1979-80, c.H-2.2 and *The Heritage Property Amendment Act 1984*, SS 1983-84, c.39.

101 Ibid., section 2.

102 Stephen Schiffner, lawyer with Murphy and Murphy, Regina, formerly with the Saskatchewan government, personal communication, May 18, 1995.

law for easements and restrictive covenants to accomplish their ends.[103] Because of the problems in applying the common law, it is useful to mention these statutes. With a little ingenuity and the right political will, a landowner might use the statutes if the common law conditions cannot be met.

2. Alberta

Both the *Historical Resources Act*[104] and the *Alberta Environmental Enhancement and Protection Act*[105] provide for agreements with landowners to restrict the uses of land.

The *Historical Resources Act* enables an owner to enter into an agreement, registrable at Land Titles, with either the Minister, the Council of the Municipality in which the land is located, the Alberta Historical Resources Foundation, or an historical organization approved by the Minister. The conditions or covenants for particular purposes (see page 264) run with the land and may be enforced whether they are positive or negative in nature and notwithstanding that the person or organization that entered into the condition or covenant with the owner does not have an interest in any land that would be accommodated or benefitted by the condition or covenant. The conditions or covenants are assignable by the person who or organization which entered into the agreement with the owner to any other similar person or organization, and then the assignee may enforce the conditions or covenants. The Minister may order a discharge or modification of a covenant or condition if he considers it to be in the public interest, whether or not he is a party to the agreement.[106]

The *Environmental Protection and Enhancement Act* (EPEA) enables the Minister to enter into an agreement with the registered owner of land to restrict

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103 The common law requirements for an easement or restrictive covenant are:
- there must be a *dominant tenement* parcel of land which benefits from the easement or covenant and a separately owned and occupied *servient tenement* subject to the easement or covenant;
- the easement or covenant must benefit the dominant tenement in the sense of making it a better or more convenient property; and
- easements must be positive in character and restrictive covenants must be negative.

104 See page 264.

105 S.A. 1992, c.E-13.3.

106 Supra note 54, section 25.

the purposes for which that land may be used, in order to protect and enhance the environment. The agreement may be registered at the land titles office, runs with the land, and is enforceable whether it is positive or negative in nature, and notwithstanding that the government has no interest in any land that would be accommodated or benefitted by the agreement. In May 1996, the *Environmental Protection and Enhancement Amendment Act*[107] amended the Act to enable conservation easements for a variety of purposes. Conservation easement agreements may be made between any landowner and a "qualifying organization", meaning any level of government and non-governmental organizations which have charitable status and meet certain statutory conditions.

3. Manitoba

The *Heritage Resources Act* enables the Minister, a municipality, or any interested person, group, society, organization or agency to enter into a heritage agreement with the owner of a site containing heritage resources respecting the maintenance, preservation or protection of the site and the resources. The Minister must file the agreement at the proper registry office and from then on the covenants in the agreement run with the land and bind the owner and all subsequent purchasers.[108]

A heritage agreement could be, in effect, a conservation easement to be used to protect natural biodiversity on property. The main shortcomings of the heritage agreement provisions are they apparently were intended for use for historical, archaeological or paleontological resources, that the Minister may vary or cancel them at any time for any reason[109] and, the Act does not authorize them for restoration.

In 1996, Manitoba is in the process of developing new conservation easement legislation.

4. Saskatchewan

The *Heritage Resources Act*[110] of Saskatchewan also authorizes heritage landowner agreements that potentially could be used for protecting biodiversity on

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107 SA 1996, c.17 (Bill 39), section 4, adding new sections 22.1, 22.2 and 22.3 for conservation easements.

108 Ibid., section 21(1).

109 Ibid., section 21(3).

110 SM 1985, c.H39.1.

account of the broad definition of "heritage resources". However, it shares some of the shortcomings of comparable legislation of the other prairie provinces.

IV. PROMINENT RESTORATION AND REHABILITATION

A. Policies, Programs or Agreements Applying to Prairie Provinces

1. Prairie Conservation Action Plan

The Prairie Conservation Action Plan (PCAP) was originally a five year initiative commencing in 1988 organized by the Prairie Conservation Coordinating Committee (PCCC) to influence policy and attitudes to conserve the biological diversity of the Canadian prairies.[111] The PCCC consists of representatives of federal, provincial and local government, industry, agricultural organizations, academia, conservation groups and special interest groups. Its goals include protecting prairie grassland ecosystems by implementing recovery plans.[112]

Its five year tenure having recently expired, each prairie province partner is now outlining its vision for an extended Plan. For example, the draft Alberta vision sees 1996-2000 as a period in which the biological diversity of native prairie ecosystems in Alberta is conserved for the benefit of current and future generations. To realize this vision, Alberta participants propose four goals:

- to advance and continue identification and understanding of Alberta's prairie ecosystems;
- to ensure all relevant governments have in place policies, programs and regulations that favour conservation;
- to adopt land use and management practices across the whole prairie landscape that sustain diverse ecosystems; and
- to increase awareness of the values and importance of Alberta's native prairie ecosystem.[113]

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111 World Wildlife Fund Canada, *Prairie Conservation Action Plan 1989 - 1994* (Toronto: World Wildlife Fund Canada) at 11.

112 Ibid., at 11.

113 Alberta Prairie Conservation Forum, *Draft Outline for a Revised Alberta Prairie Conservation Action Plan, 1996-2000.*

Discussions are currently taking place among the PCCC regarding its renewal and potential improvements.[114] Hopefully this initiative will be given an extended life.

2. North American Waterfowl Management Plan, Prairie Habitat Joint Venture

In 1986, the United States and Canadian agency partners developed the North American Waterfowl Management Program (NAWMP)[115] to try to reverse a serious decline in waterfowl populations and nesting habitat.[116] The NAWMP is a 15 year, international action plan between Canada, the United States and Mexico. It is probably the largest habitat conservation initiative in history having a budget of over 1.5 billion dollars to be spent on stemming loss of wetland habitat.[117] This report describes a number of NAWMP initiatives pertaining to the individual prairie provinces.

The NAWMP joint venture relevant to species protection in the Canadian prairies is the Prairie Habitat Joint Venture (PHJV). [118] The PHJV, the largest NAWMP joint venture, seeks to enhance and restore wetland and upland habitat on 3.6 million acres of Canadian prairies and parkland belt. Through the PHJV, participating agencies undertake programs and plans to implement field recovery programs. Implementation requires the full cooperation of provincial, non-

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114 Ian Dyson, Secretary of PCCC, personal communication, May 23, 1995.

115 Canada, Department of the Environment, *North American Waterfowl Management Plan: A Strategy for Cooperation* (Ottawa: Supply and Services, 1986).

116 G. McKeating, "The North American Waterfowl Management Plan: An Example of National and International Cooperation in Resource Management" in M. Ross and J.O. Saunders, *Growing Demands on a Shrinking Heritage: Managing Resource-Use Conflicts* (Calgary: Canadian Institute of Resources Law, 1992) at 249.

117 *Quick Facts about the North American Waterfowl Management Plan (NAWMP) in Alberta*, available from any NAWMP Centre.

118 Ibid.

governmental and federal agencies.[119] The PHJV encourages wetland preservation and improvements to associated uplands by maintaining or restoring vegetative cover.

3. Operation Burrowing Owl

The tiny burrowing owl nests in abandoned ground squirrel burrows on the open prairie. Owing to habitat destruction, COSEWIC lists this bird as endangered. Habitat destruction results primarily from agricultural cultivation and use of the pesticide carbofuran, which sometimes kills these owls or significantly reduces reproductive success.

Operation Burrowing Owl is a World Wildlife Fund program seeking to brake the downward spiral of this migratory bird towards extinction. The program advocates banning carbofuran as well as preserving habitat. The program has enjoyed some success with the latter. Since 1987, *Operation Burrowing Owl* has enlisted about 1,000 prairie farmers to protect burrowing owl habitat on their farms from habitat destruction and chemical spraying. Although the United States is phasing out the granular version of carbofuran, Canada has not yet followed suit[120].

B. Alberta

1. Alberta Sport, Recreation, Parks and Wildlife Foundation

The *Alberta Sport, Recreation, Parks and Wildlife Foundation Act*[121] establishes the Alberta Sport, Recreation, Parks and Wildlife Foundation. The Foundation's objects include to develop and maintain parks, fish and wildlife

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119 Ibid., at 250. Alberta provincial working partners are Alberta Environmental Protection, Ducks Unlimited, Canadian Wildlife Service, Wildlife Habitat Canada, Alberta Agriculture and Rural Development, and U.S. Partners.

120 World Wildlife Fund, *Action Alert, Burrowing Owl at Risk*. The Pest Management Regulatory Agency under Health Canada has informed the author that the Government will likely soon release a decision document regarding any limitations on use of this powerful pesticide in Canada.

121 SA 1994, c. A-37.6.

programs, facilities and services.[122] The Park Ventures Fund of the Foundation enables donations of money, land or interests in land for conservation purposes. The Fund brings together landowners. community groups, industry, government agencies, volunteers and donors to achieve conservation goals sensitive to communities' and landowners' specific needs.[123] Between 1992 and 1994, 2.6 million dollars was committed or donated to the Fund.

2. Wildlife Act, Fish and Wildlife Trust Fund and Buck for Wildlife and Landowner Habitat Retention Program

The Fish and Wildlife Trust Fund, established under the Alberta *Wildlife Act* is funded through levies on wildlife certificates, hunting and fishing licenses. One of the primary programs supported by this Fund, and supported by Ducks Unlimited, the Alberta Fish and Game Association and Trout Unlimited, is the Department of Environmental Protection, Natural Resources Services' Buck for Wildlife Program.

Buck for Wildlife seeks to identify fish and wildlife species in Alberta, to retain sufficient fish and wildlife habitat to satisfy consumptive and non-consumptive demands of the user, to develop and manage habitat on public and private land and to promote an environmental ethic.[124] In the last 20 years, 831 Buck for Wildlife habitat projects have been completed including developing wetlands, fencing stream banks, planting shelter belts, creating nesting islands and platforms, lake aeration and habitat retention of private lands.

The Landowner Habitat Retention Program is a Buck for Wildlife and Wildlife Habitat Canada initiative where landowners are offered cash incentives to enter into formal agreements to maintain or improve wildlife habitat, and to forego or modify agricultural activities adversely affecting wildlife or habitat.

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122 Ibid, section 3.

123 Hiske Gerding, "Parks Ventures Program", in: Arlene Kwasniak (ed.), *Private Conservancy: the Path to Law Reform* (Edmonton: Environmental Law Centre, 1994), at 115.

124 Alberta Environmental Protection, Fish and Wildlife Services, *A Socioeconomic Assessment of the Buck for Wildlife Program* (Edmonton, 1993) at 3.

3. Northeast Region Standing Committee on Woodland Caribou (NERSC)

Since the late 1970's woodland caribou populations in Alberta have been a concern. NERSC strives to integrate caribou conservation with resource development in boreal and mixed coniferous, and alpine and subalpine regions where these caribou feed on ground and tree lichens. NERSC is a partnership between various Alberta resource departments, the University of Alberta Faculty of Science, and the forest and energy industries.

4. North American Waterfowl Management Plan in Alberta

NAWMP carries on programs in partnership with governmental and non-governmental organizations in all three prairie provinces. Some NAWMP partnerships specifically relevant to Alberta are described in this Report.

5. Alberta Prairie CARE

This partnership between NAWMP, Ducks Unlimited Canada and Alberta Government Natural Resources, was developed to help landowners practice conservation and land management options compatible with wildlife. In Alberta, Prairie CARE activities are concentrated in the three most productive wildlife regions: the prairie grasslands, aspen parklands and Peace parkland. In 1993-94 Alberta Prairie CARE involved over 4,300 farmers and ranchers to conserve a total of 300,000 acres of wetlands and uplands. A total of 2.8 million acres has been targeted for its 15 year habitat program.[125]

6. Prairie Biome Protection, Range Management at Medicine Wheel

This partnership between Alberta Prairie CARE, cattle ranchers and others, comprises more than 47,000 acres of native grasslands in southern Alberta within three miles of the archaeological site for which it is named. The purpose of the project is to improve grazing techniques on public land under grazing disposition as well as private ranches to enhance habitat as well as conditions for cattle.[126]

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125 North American Waterfowl Management Plan, *Partnerships: Caring for Land*, April 1993 to March 1994.

126 North American Waterfowl Management Plan, *Partnerships: Caring for the Land, April 1993 to March 1994 Progress Review NAWMP in Alberta*

7. Peace Parkland Biome

This project comprises a number of partnerships or joint efforts between NAWMP, Alberta Prairie CARE, the Nature Conservancy of Canada, the province's Buck for Wildlife project, the Town of Wembly and youth volunteers. The project involves securing about 4,000 acres of Peace parkland, restoring and maintaining degraded wetlands and providing nesting boxes and tunnels for certain migratory birds.

C. Manitoba

1. The Manitoba Habitat Heritage Corporation

The *Manitoba Habitat Heritage Corporation Act* establishes the Manitoba Habitat Heritage Corporation (MHHC).[127] The objects of the MHHC are the conservation, restoration and enhancement of Manitoba fish and wildlife populations.[128] To achieve these objects, the Act empowers the MHHC to manage habitat on Crown land, or on private land, with the agreement of the owner.[129] The MHHC may act alone or with any person or organization.[130] It may also enter agreements,[131] provide funding to others[132] and acquire land to assist in meeting its objectives.[133] Some of the MHHC projects are briefly described under b - i below. A full listing together with current status recently has been compiled by Wildlife Habitat Canada.

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at 12.

127 SM 1985, c. H3, section 2.

128 Ibid., section 3.

129 Ibid., section 5.

130 Ibid.

131 Ibid., section 18.

132 Ibid., section 5(c).

133 Ibid., section 17.

2. NAWMP Land Securements

MHHC coordinates the implementation of NAWMP in Manitoba[134]. Agencies involved in Manitoba NAWMP include Prairie Farm Rehabilitation Administration (Agriculture Canada), Delta Waterfowl Foundation, Ducks Unlimited Canada, Canadian Wildlife Service (Environment Canada), Manitoba Agriculture, Manitoba Natural Resources and Wildlife Habitat Canada. Manitoba NAWMP. Through its programs in Manitoba NAWMP has secured around 200,000 acres for habitat protection, conservation farming and partnerships between wildlife conservation and agricultural groups, for example, its Green Acres **Program** arranges leases and acquisitions of primarily native habitat lands that contain productive wetlands.

3. Manitoba Prairie CARE

A Ducks Unlimited NAWMP program, Manitoba Prairie CARE through leases, acquisitions, and management agreements with private landowners has restored grassland wildlife habitat and supported agricultural practices improving conservation and habitat.

4. Habitat Enhancement Land Use Program

Supported by Wildlife Habitat Canada, Ducks Unlimited and Manitoba Natural Resources, this program secures and improves habitat in the Rural Municipality of Shoal Lake.

5. Adopt a Pothole

This NAWMP initiate delivered by Delta Waterfowl Foundation matches donor funds for conservation of upland nesting habitat on private lands.

6. Heritage Marsh Program

This program identifies, conserves, manages and develops large wetlands with a diversity of wildlife.

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134 Manitoba Habitat Heritage Corporation, *Annual Report 1992/93.*

7. Manitoba Agro Woodlot Program

A Canada/Manitoba partnership, this program promotes through tree planting, field programs, eduction and partnerships, the conservation and enhancement of biodiversity through private woodlots.

8. Critical Wildlife Habitat Program

This habitat conservation program administered by the Manitoba Department of Natural Resources began in 1989. MHHC is one of this program's seven partners. The program focuses on protecting upland habitats and targets the flora and fauna in agricultural areas of Manitoba. It emphasizes unique, rare and endangered species, the prairie landscape and its ecotypes, and remnant habitats. This program has secured over 20,000 acres of important habitat including tall and mixed grass prairie, burrowing owl nesting habitat and other endangered species sites as well as white tailed deer wintering areas.

9. Manitoba Forest Wildlife Management Project

This cooperative initiative between government, industry and private conservation organizations addresses sustainable forest management in the boreal and aspen parkland zone in Manitoba. A program objective is to quantify wildlife habitat values in boreal forest landscapes in order to incorporate wildlife values into forest management plans.

D. Saskatchewan

1. The Natural Resources Act

The *Natural Resources Act*[135] enables the Minister to do anything he considers necessary to "conserve, develop, manage and utilize parks and natural resources in a sustainable manner.[136] The Act defines "natural resources" broadly to include fish, wildlife, resource lands and forests, ecological reserves, and living components of ecosystems, and "parks" to include parks under the *Parks Act, Regional Parks Act* and any other land the Minister deems of interest for

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135 SS 1993, c. N-3.1.

136 Ibid., section 4.

its recreational, environmental, natural or historical value.[137]

The Act continues a number of previously established funds, the most important for biodiversity being the Fish and Wildlife Development Fund. Among other purposes, the Fish and Wildlife Development Fund may be used to: acquire land suitable for fish or wildlife purposes; restore degraded fish populations or habitat; provide assistance to conservation groups for fish or wildlife enhancement projects; educate and promote fish and wildlife awareness; and assess and evaluate water or land for potential as fish or wildlife habitat.[138] This Act could be used to fund other biodiversity restoration projects, as well.

2. Wildlife Development Fund Lands

Saskatchewan Environment and Resource Management has purchased approximately 55,000 hectares of natural land with this fund. Selection criteria for purchases include that habitat should be first secured based on representation within some of the province's major ecoregions, the land must contain at least 75% habitat to provide food and winter shelter for wildlife, and preference is given to critical habitat.

3. NAWMP in Saskatchewan

The Saskatchewan Wetland Conservation Corporation coordinates NAWMP programs and partnerships in Saskatchewan.[139] A number of these programs are described in sections 4-6, below.

4. Prairie CARE in Saskatchewan

Saskatchewan Prairie CARE, delivered by Ducks Unlimited, endeavours to improve waterfowl nesting success by agricultural techniques leaving vegetative cover during nesting season. As well, Prairie CARE develops nesting cover on leased or purchased cultivated lands. In total this program has secured through

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137 Ibid., section 1(d) and (e).

138 Ibid., sections 19 and 21.

139 Saskatchewan Wetland Conservation Corporation, *Annual Report 1992-1993*.

purchase, lease, or agreement about 54,500 acres of wetlands.[140]

5. Large Marsh Program

This international, government and non-governmental cooperative venture has secured 10,717 acres of wetlands and developed 6,528 acres. The program focuses on wetlands larger than 500 acres to provide waterfowl staging, moulting and production in rural Saskatchewan.[141]

6. Saskatchewan Quill Lakes Program

NAWMP PHJV partners have secured 40,000 acres of this internationally recognized waterfowl and shorebird habitat, with management including the use of rest-rotational range management systems, riparian fencing and dense nesting cover.

VI. IMPEDIMENTS TO PROTECTION OF BIODIVERSITY

Unless re-thought and amended to incorporate biodiversity protection provisions, agriculture and resource development statutes in the prairie provinces can frustrate gains made in wildlife or protected areas legislation or policy.[142]

Agricultural statutes common in the prairies treat agricultural operations as special. They allow, and sometimes even mandate certain flora and fauna viewed as "noxious weeds" or "pests" to be poisoned or killed. Governments exempt, or at least fail to enforce, environmental legislation and thereby allow pesticide and fertilizer run off which not only pollute watercourses and water bodies, but also distress natural ecology.

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140 Ibid., page 10.

141 Ibid., pages 12-13.

142 Unfortunately, since it is not possible in this short report to review the myriad of prairie province agriculture and resource development statutes, this section must be presented in general terms.

Forestry laws often perceive forests as potential woodpulp and only incidentally, if at all, as complex ecosystems.[143]

Although resource exploration and development statutes, either in law or in application policy, recognize environmental effects, the focus of these statutes is to further the goals of the resource industry and not to protect the environment. The statutes do not adequately address compensation for environmental damage if, for example the placing of a transmission line were to truncate key elk habitat.[144]

Water rights laws still are rooted in a period long past when it made sense for legislation to encourage diversion and consumptive uses. The powerful irrigation and other agriculture user lobbies make it difficult for legislators to make new laws to protect water bodies, including wetlands, watercourses and riparian ecosystems.[145] Government subsidies are still given for agricultural dams and irrigation projects without due regard for ecosystems effects.

The *Biodiversity Convention* imposes a range of duties on regulators. As noted in the recommendations in the following section, if governments are to carry out these duties, they must review and modify legislation and policies which do not focus directly on flora, fauna and protected area protection. In particular, they must review and put into place public participation processes to revise agriculture

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143 For example, the court in *Reese v. Alberta* (7 C.E.L.R. (N.S.) 89, Alta. Q.B.) was called on to interpret section 16 of the Alberta *Forests Act* (RSA 1980, c.F-16), which authorizes the Minister to enter into an agreement enabling a person to enter onto forest land provided that the agreements is designed to provide "a perpetual sustained yield". The court did not hesitate to find that an agreement allowing clearcutting was not inconsistent with section 16, notwithstanding adverse effects on the "forest" in a more ecological sense.

144 Typically compensation damages for surface disturbances are based on either loss of use or decrease in market value. Neither approach compensates for loss of environmental values such as habitat.

145 The author of this report speaks from personal experience as a member of the Alberta *Water Management Review Committee,* a Cabinet-appointed, multi-stakeholder committee struck to make recommendation to the Minster on new water legislation.

and resource use and development regulations to ensure that they facilitate and do not impede meeting Convention obligations.

V. RECOMMENDATIONS

It will be useful to relate recommendations to particular provisions of the *Biodiversity Convention*. In consideration of space footnotes provide additional commentary and explanation.

Art. 7(a) identify the components of biological diversity and monitor the components

Recommendation:

1. Legislation and policies should require identification and monitoring of biological diversity and encourage the involvement of grassroots non-governmental organizations.

Explanation:

Although, as is evident from the discussion in Section III of this report, numerous prairie province governmental and non-governmental partnerships work to identify and monitor aspects of biodiversity, more recognition and use could be made of non-governmental grassroots organizations. Hundreds, if not thousands, of such organizations exist in the prairies. They consist almost entirely of knowledgeable, caring individuals who count, monitor and improve conditions for a variety of flora and fauna in their communities. This source of dedication and information should be recognized, tapped and wherever possible, remunerated.

Art.7(c) identify processes and categories of activities which are likely to have a significant adverse impact on biodiversity and to monitor these effects

Art.10(b) adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity

Art. 6(a) where a significant adverse effect on biological diversity has been determined regulate or manage the relevant processes and activities

Recommendations:

2. **As set forth in Section IV of this report, if governments are to carry out these duties, they must review and modify legislation and policies which do not focus directly on flora, fauna and protected area protection, in particular, agriculture and resource use and development legislation.**

Art. 8(k) develop or maintain necessary legislation or other regulatory provisions for the protection of threatened species and populations

Recommendations:

3. **There should be effective endangered species legislation in all prairie provinces (not only Manitoba) covering plants, ecosystems and biodiversity.**

4. **In addition to endangered species legislation covering plants there should be legislation to protect native plant species not yet at risk[146].**

5. **Laws and policies need to focus more on ecosystems and biodiversity and not just on individual species, whether they be plants or wildlife.**

6. **Laws and policies must move towards being based on non-anthropocentric premises and not primary on the premise that wildlife, ecosystems or even biodiversity should be maintained and restored for their value to humans[147].**

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146 For example, by requiring the use of appropriate, and often native species in reclamation projects.

147 There is no doubt that groups like Ducks Unlimited, Fish and Game Association, Trout Unlimited, etc. have proven invaluable in habitat acquisition, maintenance and restoration. However these groups focus habitat objectives on meeting their own needs: hunting and fishing certain species. The approach of most governments through purpose and dedication clauses in legislation similarly adopt the view that habitat protection and maintaining protected areas are important because these

7. **Since substantial habitat, connecting habitat and buffer areas are on private lands, there is a need for effective conservation easement legislation to facilitate private landowners who want to preserve interests in private land in perpetuity.**[148]

Art. 10(e) encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological diversity

Recommendations:

8. **Meet the need for development of tools to effect ecosystem management in multijurisdictional areas, meaning an ecosystem area covering various kinds of public lands (federal, provincial, municipal), private land, and private interests in public or private land, such as grazing leases, oil and gas interests, timber dispositions, rights of way, and so on**[149]**.**

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ends serve humans, including future generations. However if our preservation, restoration and maintenance objectives with any facility are to move beyond the cute, the furry, the sublime, or the good to eat, to include biodiversity, a different philosophical approach is necessary. This is the approach that nature, and all of its complexity has value in itself, beyond its value to humans. For a history and development of this concept *see* Roderick Nash, *The Rights of Nature* (University of Wisconsin Press, 1989).

148 *See* Arlene Kwasniak, *Facilitating Conservation: Private Conservancy Law Reform,* 31 *Alberta Law Review* 4 at 607, and Arlene Kwasniak (ed.), *Private Conservancy: the Path to Law Reform* (Edmonton: Environmental Law Centre, 1994).

149 The author is currently carrying out a project funded by the Alberta Real Estate Foundation entitled *Ecosystem Management in a Multijurisdictional Area: a Legal Guide to the Beaver Hills*. This project will attempt to meet this need for Alberta, and might serve as a model for other jurisdictions.

9. **Meet the need for education, communication, cooperation and consistency of goals between different resource agencies in governments to meet biodiversity-related objectives[150].**

10. **Develop effective public participation processes in resource legislation to better ensure that public interest in protecting, restoring and maintaining biodiversity is substantively recognized in resource decisionmaking.**

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150 Too often government departments compete with one another for funding or for other reasons and thwart each other's objectives. This situation is compounded by the fact that some departments or agencies are understandably advocates for what they regulate. Agriculture typically takes the side of agricultural development, Energy the side of resource development and Forestry the side of timber development. Departments of the Environment, unfortunately, most often have to take the side of sustainable development instead of environmental protection *per se*. However, to attain the objective of maintenance and restoration of biological diversity all departments must cooperate.

ONTARIO

Ian Attridge*

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A. INTRODUCTION

Prairies, Carolinian forests, and species at their northern range limits at a latitude equal to northern California and southern Europe; the world's largest repositories of fresh water; a broad band of mixed and boreal forests draped around some 250,000 smaller lakes on the Canadian Shield; and tundra extending to its most southerly limits anywhere. This is the province of Ontario, stretching over 15° latitude and 20° longitude, with one of the most diverse landscapes in Canada or anywhere in the world.

But Ontario is also a landscape transformed. In most of arable Ontario south of the Canadian Shield, less than 25 percent of the pre-settlement woodlands still persist[1]. With an even smaller percentage left, the province's prairies are an endangered ecosystem, and old-growth pine forest cover is nearing the same state. Many of the southern habitats are fragmented or otherwise impacted by the roads, infrastructure and intense settlement and agricultural patterns that have been built up over three hundred years. As in some southern areas, northern ecosystems have been dramatically altered in many locales by the replacement of diverse forest stands with even-aged and genetically-identical tree cover, and by water control and water power structures.

As a consequence, native species have also not been faring well. A total of 80 species have been recognized as vulnerable, threatened or endangered in the province, while the Eastern Elk, Atlantic Salmon, Paddlefish, Greater Prairie Chicken, Passenger Pigeon, Timber Rattlesnake, Eastern Cougar, a few other animals and some forty plant

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[1] John L. Riley and Pat Mohr, *The Natural Heritage of Southern Ontario's Settled Landscapes: A Review of Conservation and Restoration Ecology for Land-Use and Landscape Planning* (Aurora, Ontario: Ministry of Natural Resources, 1994), p.1.

species no longer grace the province's fields, forests and waters[1]. The range of the woodland caribou has contracted behind the limits of industrial forestry. Invasive species such as purple loosestrife, garlic mustard, gypsy moth, and zebra and quagga mussels are overwhelming the native flora and fauna in Ontario's wetlands, woodlands and waterways.

Ontario is home to one third of Canada's human population, contains some of the nation's best agricultural lands, produces billions of dollars in forest-related products, and provides substantial industrial production and financial services for the entire country. Due to its population size and pressures, environmental concerns, and diverse social and economic makeup, the province has been an innovator in the development of environmental law and policy. Along with government responses, this increasingly offers potential for creative, voluntary and private-sector partnerships and initiatives.

For generations, children growing up in Ontario have been told "don't pick the trilliums", and adults have admonished (and believed) that to do so is against the law. This, in some ways, is the true "common law", for it engenders widespread respect and protective actions for the provincial flower. Many people will abide by this principle, or at least take extra precautions when walking or transplanting. This is in spite of the fact that there is no specific law prohibiting trillium taking or picking in the province[2].

Such respectful attitudes and sensibilities are key to ensuring public concern for maintaining and protecting biodiversity. An uncodified but deeply felt and spiritual responsibility towards plants and animals has been a fundamental aspect of Aboriginal societies inhabiting the province for millennia. This feeling of responsibility has contributed to maintaining habitats such as Walpole Island's vast prairie and marshes and the Six Nations Reserve's forests, both of which are surrounded by intensive agriculture which has transformed these landscapes.

But not every biodiversity issue is as cute, non-commercial, nor as simple as picking trilliums. And not every person or situation is imbued with the same sense of responsibility. Consequently, a collage of law and policy has emerged over the years to deal with the important and challenging aspects of conserving and sustainably using

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[1] Ministry of Municipal Affairs, *Natural Heritage and Environmental Protection Implementation Guideline* (Toronto: Ministry of Municipal Affairs, 1995), p.15.

[2] There is nothing in the *Floral Emblem Act*, R.S.O. 1990, c. F.21, that prevents picking, although statutes governing trespass or protected areas could provide sanctions in certain situations.

protected areas, restoration, sustainable use, economic incentives, and process and access to government. These topics correspond roughly to those in the *Canadian Biodiversity Strategy*, which was endorsed in 1995 by all the senior governments in Canada, including the Province of Ontario[4]. Ontario has also agreed to federal ratification of the *Convention on Biological Diversity* (see the Introduction chapter), and thus has assumed responsibilities for implementing the Convention within the scope of provincial authority.

However, before reviewing the current but ever-changing state of law and policy, some perspective is needed. Thus, a brief history of biodiversity law in the province is outlined below. This is followed by a recognition of some key non-government organizations and their efforts, and current trends affecting biodiversity.

1. History of Ontario Biodiversity Law and Policy

Ontario has a long-history of biodiversity-related legislation[5]. For wildlife, a closed season on hunting ruffed grouse in what is now Ontario was declared by the military governor of Montreal in 1762, and *An Act to Encourage the Destroying of Wolves and Bears in different parts of the Province* was passed in 1793[6], and later repealed and reinstated. In 1806, concern about salmon stocks led to enactment of the first wildlife conservation statute in Ontario, *An Act for the Preservation of Salmon*[7], followed by *An Act for the Preservation of Deer within this Province*[8]. This species by species approach was consolidated in 1839 into the province's first general game law[9]. Consolidations and

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[4] Federal-Provincial-Territorial Biodiversity Working Group, *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity* (Ottawa: Minister of Supply and Services Canada, 1995).

[5] See, for example, Ministry of Natural Resources, *Wildlife '87: A Chronicle of Wildlife Conservation in Ontario* (Toronto: Queen's Printer for Ontario, 1987), from which is drawn much of the background to the history of wildlife legislation in the province.

[6] *An Act to Encourage the Destroying of Wolves and Bears in different parts of the Province*, 33 Geo. III (1793), c.11; repealed by 47 Geo. III (1806), c.2.

[7] *An Act for the Preservation of Salmon*, 47 Geo. III (1806), c.12 (Province of Upper Canada).

[8] *An Act for the Preservation of Deer within this Province*, 2 Geo. IV (1821), c.17.

[9] *An Act to amend an Act passed in the fourth year of the reign of His late Majesty King George the Fourth, intituled "An Act for the Preservation of Deer within this Province", and to extend the provisions of the same; and to prohibit Hunting and*

Act for the Preservation of Deer within this Province[8]. This species by species approach was consolidated in 1839 into the province's first general game law[9]. Consolidations and expansions of general game laws occurred in 1843, 1856, 1860 (now including furbearers), 1868, 1872, 1900, 1927, 1946, 1953, and in 1962 became the *Game and Fish Act*[10].

Certain Treaties with Aboriginal people were also concluded in the 1800s and early 1900s, variously providing for hunting, fishing and sometimes trapping rights and the establishment of Indian reserves. These included a number of older Treaties in southern Ontario followed by the Robinson Huron and Robinson Superior Treaties (1850), and Treaties 3 (1873) and 9 (1905) in northern Ontario, among others. The extent of these rights and whether they extend beyond subsistence to commercial uses has frequently been considered in prosecutions for hunting or fishing offences under provincial and federal laws. Where Treaties do not deal with certain activities, such as gathering, Aboriginal rights may still exist in some cases. In any event, constitutional protection of Aboriginal and Treaty rights in section 35 of the *Constitution Act, 1982* continues to give these agreements a significant legal role in determining biodiversity management in Ontario.

Inspired by the 1966 U.S. *Endangered Species Preservation Act*, Ontario's *Endangered Species Act* was first passed in 1971, with the first four species listed in 1973[11]. Before this statute, the 1864 *Insectivorous Bird Act* provided a protected season for most birds[12], with additional species added as exceptions in the late 1870s and early 1880s. Later, any migratory game bird "in danger of extinction" or which had "for any reason become so diminished in numbers" could be protected by order of the

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[8] *An Act for the Preservation of Deer within this Province*, 2 Geo. IV (1821), c.17.

[9] *An Act to amend an Act passed in the fourth year of the reign of His late Majesty King George the Fourth, intituled "An Act for the Preservation of Deer within this Province", and to extend the provisions of the same; and to prohibit Hunting and Shooting on the Lord's Day* , 2 Vic. (1839), c.12.

[10] *Game and Fish Act, 1961-62*, S.O. 1961-62, c.48, now R.S.O. 1990, c.G.1.

[11] *Endangered Species Act, 1971*, S.O. 1971, c.52, and O.Reg. 433/73, which listed the Blue Racer, Timber Rattlesnake, Peregrine Falcon and Bald Eagle as endangered.

[12] *An Act to Protect Insectivorous Birds and Other Birds Beneficial to Agriculture*, 27-28 Vic. (1864), c.52 (Province of Canada).

Lieutenant Governor[13], and eagles and osprey were protected under game laws as early as 1936[14].

Ontario's first public parks were established locally in the mid-1800s, including the leasing of the Garrison Reserve to Toronto in 1848, the transfer to Kingston of the City Park in 1851, and the park operated since 1855 in Niagara-on-the-Lake[15]. Ontario's first park enactment dedicated Gore Square to the City of Hamilton in 1852 by provincial Act[16]. This individual park statute was followed some thirty years later by the *Public Parks Act*, the first of its kind in Canada[17]. This latter Act set out the authority for municipalities to establish and manage a "system of parks, avenues, boulevards and drives" for public use, and has remained much the same over the last 120 years.

The first regional level park legislation in Ontario was passed in 1880 to enable the federal government to establish a park at Niagara Falls[18]. After tiring of federal government delays, the province went ahead and created the Niagara Falls Park in 1885, renaming it the Queen Victoria Niagara Falls Park two years later[19]. From this individual park sprung a system of lands under the *Niagara Parks Act*[20], which contains the unusual provision that allows the Niagara Parks Commission to retain revenues from electric power generation at the Falls.

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[13] *An Act to Amend and Consolidate the Ontario Game Protection Act*, 63 Vic. (1900), c.49, ss.7(2) and (3).

[14] *Game and Fisheries Act*, 1 Edw. VIII (1936), c.23, s. 3. But see the current situation for raptors, discussed infra on page 306, which resulted in a court interpretation based on the removal of such species references in later consolidations of this Act.

[15] J.R. Wright, *Urban Parks in Ontario. Part 1: Origins to 1860* (Toronto: Ontario Ministry of Tourism and Recreation, 1983), at pages 55-66.

[16] *An Act to vest in the Corporation of the City of Hamilton, the "Gore" of King Street, for public purposes*, 16 Vict. (1852), c.33.

[17] *Public Parks Act*, 46 Vic. (1882-83), c.20, now R.S.O. 1990, c.P.46. See J.R. Wright, *Urban Parks in Ontario*, supra note 15, at page 84.

[18] *Niagara Falls and Adjacent Territory Act*, 43 Vic. (1880), c.13.

[19] 48 Vic. (1885), c.21; and 50 Vic. (1887), c.13.

[20] R.S.O. 1990, chapter N.3.

Regional park legislation followed for lands remaining after the hydroelectric development at the International Rapids section of the St. Lawrence River[21], and along the St. Clair River[22]. The *Conservation Authorities Act* formalized a novel, watershed-based partnership between the province and municipalities, which has produced an extensive collection of conservation areas across southern Ontario[23].

The earliest provincial park statutes in Canada were passed to establish Algonquin and Rondeau Provincial Parks in 1893 and 1894, respectively[24]. To consolidate their administration, the province in 1913 enacted its first Provincial Parks Act[25]. Park classification first gained legal expression in 1954 with the reconstituted *Provincial Parks Act*[26], followed in 1968 by a more innovative and comprehensive classification and zoning scheme prompted by the Federation of Ontario Naturalists[27]. To integrate the growing number of provincial parks with existing regional and conservation authority park systems, the province established the Parks Integration Board in 1956 under its own Act[28], which was later abolished in 1972 when the Department of Lands and Forests became the Ministry of Natural Resources.

Other protected areas have been established over the years. These include the first Crown Game Preserves in 1917, with over 121 established by 1940[29]. In 1936, the *Jack Miner Migratory Bird Foundation Act* gave provincial authorization to raise funds

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[21] *Ontario-St. Lawrence Development Commission Act*, S.O. 1955, c.59, now the *St. Lawrence Parks Commission Act*, R.S.O. 1990, c.S.24. Also see Gerald Killan, *Protected Places: A History of Ontario's Provincial Parks System* (Toronto: Dundurn Press and Ontario Ministry of Natural Resources, 1993), at page 88, and generally for the history of parks and protected areas in Ontario.

[22] *St. Clair Parkway Commission Act*, S.O. 1966, c.146, now R.S.O. 1990, c.S.23.

[23] *Conservation Authorities Act, 1946*, 10 Geo. VI (1946), c.11, now R.S.O. 1990, c.C.27.

[24] 48 Vic. (1885), c.21; 56 Vic. (1893), c.8; 56 Vic. (1894), c.15.

[25] *Provincial Parks Act*, Geo.V (1913), c.15.

[26] Statutes of Ontario 1954, chapter 75.

[27] Statutes of Ontario 1968, chapter 104.

[28] *Ontario Parks Integration Board Act*, S.O. 1956, c.61.

[29] Ministry of Natural Resources, *Wildlife '87*, supra note 5, at pages 10 and 13.

for this private sanctuary in Essex County[30]. The 1959 *Wilderness Areas Act* provided some early protection for "ecological reserves" and up to 1 square mile of "wilderness", beyond which "development and utilization" could occur[31].

Forest policy development in Ontario was essentially unregulated before 1849. After that date, the focus became profits and revenue until 1898, then conservation to minimize accidental or careless destruction of forests, and since 1947, management that increasingly included artificial regeneration[32]. These dates correspond to various policies and enactments, leading to the consolidation of a number of 1930s statutes into the 1952 *Crown Timber Act*[33]. In 1974, the *Algonquin Forestry Authority Act* created an Authority to coordinate logging in Algonquin Provincial Park[34]. A new "sustainability" period can be expected from the passage of the 1994 *Crown Forest Sustainability Act*[35], which has succeeded the *Crown Timber Act*.

To address overharvesting and extensive land clearing in the 1800s and early 1900s, numerous statutes were enacted to encourage the planting of trees and control cutting on private lands[36]. The 1883 *Ontario Tree Planting Act* replaced an earlier 1871 Act encouraging planting of trees along highways[37]. Despite municipal payments to landowners for planting trees, this later Act did not have the intended effect and in 1896 was repealed with unexpended funds remaining on hand. The 1911 *Counties Reforestation Act* was reformed into the 1921 *Reforestation Act*, and eventually

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[30] *Jack Miner Migratory Bird Foundation Act, 1936*, 1 Edw. VIII (1936), c.36.

[31] *Wilderness Areas Act*, S.O. 1959, c.107, now R.S.O. 1990, c.W.8. The Act is notable in that it was passed before the 1964 U.S. *Wilderness Act* and the 1971 B.C. *Ecological Reserves Act*, themselves milestones in protected areas legal history.

[32] See Monique Ross, *Forest Management in Canada* (Calgary: Canadian Institute of Resources Law, 1995), at pages 63 to 65.

[33] *Crown Timber Act, 1952*, 1 Eliz. II (1952), c.15.

[34] *Algonquin Forestry Authority Act, 1974*, S.O. 1974, c.99.

[35] *Crown Forest Sustainability Act*, S.O. 1994, c.25.

[36] See Ministry of Natural Resources, *Evergreen Challenge: The Agreement Forest Story* (Toronto: Queen's Printer for Ontario, 1986), for much of the history which follows, although the references to Acts are not always accurate.

[37] *Ontario Tree Planting Act*, 46 Vic. (1882-83), c.26; and 34 Vic. (1870-71), c.31, respectively.

amended to become the 1945 *Municipal Reforestation Act*[38]. These statutes allowed the Minister of Lands and Forests to acquire lands and "develop, protect, care for, and manage such lands", as well as to enter agreements with landowners for reforestation purposes.

Somewhat separate from the reforestation Acts, the *Tree Planting Act* of 1927 enabled the planting of trees along boundaries, with penalties for owners of animals injuring such trees[39]. The 1946 Trees Conservation Act enabled municipal by-laws to control tree cutting, and a major amendment to the subsequent *Trees Act* in 1970 defined "forestry purposes" to equally include wildlife habitat, flood and erosion control, protection of water supplies, as well as wood and wood production[40].

Acts to "protect the public interest" in watercourses and the beds of navigable waters were enacted around the turn of the last century[41]. Decades later, a number of lawsuits were brought in the 1940s and 1950s to protect Ontario's water quality through the doctrine of riparian rights. In one famous case, an injunction was obtained against a pulp mill to prevent it from continuing to pollute the Spanish River; however, the province passed the *KVP Company Ltd. Act* to dissolve this and any other injunction against the company[42]. In two others, landowners sued their municipalities for releasing untreated sewage into rivers[43]. Their success raised public awareness of this situation and prompted the creation of the *Ontario Water Resources Commission Act* to develop

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[38] *Counties Reforestation Act*, 1 Geo. V (1911), c.74; *Reforestation Act*, 11 Geo. V (1921), c.19; and *Municipal Reforestation Act*, 9 Geo. VI (1946), c.14, respectively.

[39] *Tree Planting Act, 1927*, 17 Geo. V (1927), c.69.

[40] Trees Conservation Act, 10 Geo. VI (1946), c.102; and *Trees Amendment Act*, S.O. 1970, c.115, s.1, respectively.

[41] *Act for Protecting the Public Interest in Rivers, Streams and Creeks*, 46 Vic. (1882-83), c.10, now the *Lakes and Rivers Improvement Act*, R.S.O. 1990, c.L.3; and *Act for Protection of Public Interests in the Bed of Navigable Waters*, 1 Geo. V (1911), c.6, now the *Beds of Navigable Waters Act*, R.S.O. 1990, c.B.4.

[42] *McKie* v. *KVP Co. Ltd.*, [1948] O.R. 398 (H.C.), and *KVP Company Ltd. Act*, 14 Geo. V (1950), c.33.

[43] *Stephens* v. *Richmond Hill* (1955), [1955] 4 D.L.R. 572 (H.C.), [1956] O.R. 88 (C.A.); and *Burgess* v. *Woodstock* (1955), [1955] 4 D.L.R. 615 (Ont.H.C.). See discussion in David Estrin and John Swaigen, *Environment on Trial: A Handbook of Ontario Environmental Law* (Revised Edition) (Toronto: Canadian Environmental Law Research Foundation, 1978), at pp. 151-152.

systems for water purification and supply and disposal of sewage[44]. Renamed after the Ministry of Environment was formed in 1972, this Act became the *Ontario Water Resources Act*[45], the principal statute governing water quality and quantity in the province. The other key law concerning pollution and waste management is the *Environmental Protection Act*, first enacted in 1971[46].

Government reorganization in 1971 amended the *Ontario Water Resources Commission Act* to create an Environmental Hearing Board[47]. This Board was the predecessor to the Environmental Assessment Board, now established under the *Environmental Assessment Act*[48]. This latter Act was the first environmental impact assessment legislation passed in Canada, and demonstrates the leadership role Ontario has played in developing biodiversity-related law over the last century.

2. Non-Government Organizations and Biodiversity

Ontario has a wide range of non-government groups active in biodiversity issues at the local, provincial and national levels[49]. This involvement varies substantially, but covers promotion of government action, land acquisition and stewardship, focused efforts on particular habitats (eg. wetlands and woodlands), and species monitoring, control (eg. exotic species), care, management and reintroduction. Many local naturalist, fish and game, cottage and woodlot owners and agricultural organizations have long been active in the appreciation, conservation and use of biodiversity locally. Other local and regional

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[44] *Ontario Water Resources Commission Act*, first enacted as S.O. 1956, c.2 to establish the Commission, and then as S.O. 1957, c.88 to grant supervision and regulatory powers over all surface and ground water in Ontario.

[45] *Ontario Water Resources Act*, R.S.O. 1990, c.O.40.

[46] *Environmental Protection Act*, S.O. 1971, c.86, now R.S.O. 1990, c.E.19.

[47] See *Government Reorganization Act*, S.O. 1972, c.1, s.70, and description in paragraph 1.40 of Michael I. Jeffery, *Environmental Approvals in Canada: Practice and Procedure* (Toronto: Butterworths, 1989).

[48] *Environmental Assessment Act*, S.O. 1975, c.69, now R.S.O. 1990, c.E.18.

[49] For excellent surveys of such organizations, see Wendy Luther and Chris Winter, *Greensteps: A Survey of the Activities of Ontario's Non-Governmental Organizations in Support of a Healthy Environment* (Toronto: Conservation Council of Ontario, 1994); and Sally Lerner, *A Study of Ontario Volunteer Environmental Stewardship Groups*, Technical Paper #6 (Waterloo: Heritage Resources Centre, University of Waterloo, 1991).

groups include Save the Oak Ridges Moraine (STORM), Coalition on the Niagara Escarpment (CONE), Save the Rouge Valley System, and over a dozen recently formed land trusts. They regularly provide education materials, hands-on opportunities to participate in practical projects, and contribute to local initiatives concerning natural areas, habitat and wildlife. Other groups such as Pollution Probe, Recycling Council of Ontario, and Women and Environments Education and Development Foundation have interests in pollution issues, resource use, and cross-sectoral concerns.

Over the years, these common local interests have coalesced into such provincial organizations as the Federation of Ontario Naturalists, Ontario Federation of Anglers and Hunters, Conservation Council of Ontario, Land-Use Caucus of the Ontario Environment Network, Federation of Ontario Cottagers' Association, Ontario Woodlot and Sawmill Operators' Association, Christian Farmers Federation of Ontario, Ontario Soil and Crop Association and Ontario Federation of Agriculture. While some of these groups involve professionals, others are more truly professional associations: Ontario Association of Landscape Architects, Ontario Forestry Association, Ontario Parks Association, Ontario Professional Planners Institute, and Ontario Society for Environmental Management. Numerous and well-established universities, colleges and affiliated institutes lead and complement this expertise.

These provincial-level organizations provide forums for the sharing, education and action of many local groups involved with biodiversity and related environmental interests. They are frequent and key contributors to the development of Ontario biodiversity law and policy, channelling local experience through dedicated staff and wider circles of professional expertise. Proposals, programs, and position papers are frequent and valuable products. Groups such as Greenpeace, Earthroots and Earth First! use direct action and more confrontational strategies to complement educational and other efforts. On the legal side, assistance and leadership is often provided by the Canadian Environmental Law Association, Canadian Institute for Environmental Law and Policy, Canadian Environmental Defence Fund, Canadian Bar Association (Ontario), and recently, the Sierra Legal Defence Fund.

Local chapters, provincial branches or sub-federations of national groups may also be present, such as those affiliated with the Canadian Parks and Wilderness Society, Sierra Club of Canada, Ducks Unlimited Canada, Canadian Nature Federation and Canadian Wildlife Federation. National organizations, often with headquarters in Ottawa or Toronto, play substantial roles within the province, including the Nature Conservancy of Canada, Wildlife Habitat Canada, World Wildlife Fund (Canada), Canadian Wildflower Society, Seeds of Diversity and Canadian Organic Growers. Such national organizations, of varying scales and scope of interest, provide leadership, funding and important links to initiatives occurring elsewhere in the country and the world.

Ontario benefits substantially from the local experience and provincial and national perspectives of its well-developed and diverse non-governmental sector. This is in addition to a powerful business sector, a large and relatively prosperous population, and numerous and influential governments and agencies. In consequence, Ontario has a wealth of ingenuity and organizational capacity available for biodiversity conservation and sustainable use. This human capital is only beginning to be enlisted towards these ends, but is subject to a number of conflicting priorities and current trends.

3. Current Trends Affecting Biodiversity

A few trends and dynamics should be noted as they affect biodiversity law and policy in the province. The first relates to the June 1995 change in government from the New Democratic Party of Bob Rae to Mike Harris' Progressive Conservatives. Mr. Harris' government was elected with a mandate to cut government spending, provide a 30 percent provincial income tax reduction, and deliver on the party's campaign platform, "The Common Sense Revolution". The new government is very pro-business in its policies, and has developed its positions and proposals largely without broader public involvement. This is in contrast to the extensive consultations conducted (and resultant delays) by the previous government, and its more moderated support of business positions.

The second trend is increasing industry support for de-regulation, and the adoption of voluntary compliance measures whereby the private sector will monitor and report upon itself. The new government's direction has supported this direction by establishing a "red tape commission" to eliminate or amend inappropriate regulatory measures (but without criteria to assess their environmental benefits), and Bills to enable voluntary compliance systems in the non-renewable resource sector. This is seen to help business become more competitive within a global marketplace (ie. require less paperwork and meet fewer and possibly lower standards), and to reduce government expenditures through less governmental supervision. This certainly meets a variety of political, public as well as private goals, but fails to establish the protection of health and the environment as critical foundations to our economic success - the capital that produces economic revenue streams.

Purely economic goals have been set, without the recognition found in international, national and provincial circles of the need to integrate the environmental, economic and social dimensions of our society[50]. Except for improving the provincial

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[50] See World Commission on Environment and Development, *Our Common Future* (Toronto: Oxford University Press, 1987) on the notion of "sustainable development", the work of the National Roundtable on Environment and Economy and the Ontario Roundtable on Environment and Economy. The latter has been disbanded by the new provincial government.

parks system and reinstating the Managed Forest Tax Rebate Program, environmental protection is almost totally absent from the governing party's "Common Sense Revolution" document. While the CSR did express the intent to repeal a few of the former government's environmental initiatives, the new government's implementation of this platform has clearly targeted environmental programs and institutions[51]. Financial resources, staff and programs of the Ministry of Natural Resources, Ministry of Environment and Energy, Niagara Escarpment Commission, regional conservation authorities and municipalities have all been hard hit. Transfer payments to non-government organizations which provide important advice have similarly been all but eliminated. This has left large gaps in the delivery of environmental leadership, guidance and services in the province.

Perhaps this approach is in part based on a third trend, the assertion that the public is generally disinterested in the environment, and even more so biodiversity concerns. However, the poll results show otherwise. In 1991, Ontarians over the age of 15 years participated in one or more wildlife-related activities at a rate of over 90 percent, spent an estimated $2.0 billion (up from $1.4 billion in 1981) and 535.9 million days (up 36.5 percent from 1981) on these activities[52]. Another poll reported that:

> ... most Canadians believe environmental protection does not have to be traded off for economic development. Seventy-eight percent of respondents said environmental regulations should be strictly enforced in times of recession.[53]

There was no support for reliance on voluntary encouragement as a strategy for pollution reduction in this poll. A separate survey of residents in the Greater Toronto Area in the fall of 1995 also found that provision of environmental services ranked first amongst all listed municipal services, and most wanted spending increased on environmental

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[51] See Mark Winfield and Greg Jenish, *Ontario's Environment and the "Common Sense Revolution": A First Year Report*, (Toronto: Canadian Institute for Environmental Law and Policy, 1996); and Canadian Environmental Law Association, *Cutting Ontario's Environment*, Special Report (Toronto: Canadian Environmental Law Association, 1996).

[52] Federal-Provincial Task Force on the Importance of Wildlife to Canadians, *The Importance of Wildlife to Canadians: Highlights of the 1991 Survey* (Ottawa: Environment Canada, 1993), at pp. 34-35.

[53] "Environmental Protection a Priority for Canadians", *Globe and Mail*, October 24, 1995, reporting on an Environics poll for the Canadian Council of Ministers of the Environment.

protection[54]. Thus, contrary to some assertions, popular support for environmental policies appears to be insufficiently recognized within the political arena.

The remainder of the chapter will emphasize government initiatives and how these are chiefly responsible for bringing biodiversity law and policy into effect. Nonetheless, the history of biodiversity law and policy clearly demonstrates the leading role of environmental groups in identifying issues, developing proposals, and advocating, delivering and monitoring their success. This role will be increasingly important as governments pursue measures for fiscal restraint and reductions in programs and administration. As public institutions "downsize" and withdraw from the field, private organizations and individuals will be called upon to carry environmental responsibilities forward. Measures to support the non-profit, charitable sector and to provide economic incentives to guide private actors will thus be essential to this new social, political and economic arrangement.

B. WILD ANIMALS

Concepts of biodiversity have been shaped very much by wildlife law and policy, originating at common law and gradually becoming partly codified into statutes. Unlike some other provinces, Ontario has not exercised its constitutional authority over "property" to declare its general ownership in wild animals[55], and thus common law principles apply to ownership questions. However, Ontario does have an extensive set of provisions governing the use of wild animals, as discussed in the following sections.

Under the common law, wild animals are not owned by anyone until they are "reduced to possession", either by killing or capturing the animal. Landowners have the right, subject to any statute, to kill or take wild animals on their own lands, and others who do so generally have a lesser claim unless the owner has in some way parted with such right[56]. Common law riparian rights to the use of water in waterbodies generally

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[54] Greater Toronto Coordinating Committee, Quality of Life Steering Committee, *Comparative Advantage: An Enviable Quality of Life* (Toronto: the Committee, 1995).

[55] But see the *Ministry of Natural Resources Statutory Amendment Act, 1996* (Bill 36), s.2(3), introduced for First Reading on April 3, 1996, which breaks with this position by declaring Crown ownership in deer killed under permit and in defence of property.

[56] See *Long Point Company* v. *Anderson* (1891), 18 O.A.R. 401 (C.A.), reversing (1890), 19 O.R. 487 (H.C.); and *Pamment* v. *Thompson* (1921), 20 O.W.N. 89 (C.A.).

do not extend to ownership of bacteria, viruses or microbes found in the water; larger aquatic animals would be subject to the "reduce to possession" principles.

1. Game and Fish Act

The core statute governing the use, management and conservation of wild animals in Ontario is the *Game and Fish Act*[57]. While the *Game and Fish Act* is the most significant statute, the *Municipal Act* also enables municipal support for zoological gardens and natural history collections, and the regulation of the keeping of animals (including pounds), the sale of game and fish and associated establishments, the destruction of tussock moths and spraying for gypsy moths, and the operation of pet shops, menageries and circuses[58].

The *Game and Fish Act* has broad purposes "to provide for the management, perpetuation and rehabilitation of the wildlife resources in Ontario, and to establish and maintain a maximum wildlife population consistent with all other proper uses of lands and waters"[59]. At the turn of the Twentieth century, hunting, fishing and trapping were principle concerns, as they remain so today. The Act thus is focused on such activities which make human use of wildlife.

Under the Act, species of wildlife are grouped into a number of categories. Game is divided up into game animals, game birds and fur-bearing animals. Amphibians, reptiles, and two other categories exist: unprotected birds and unprotected animals. Licences to hunt small game, seasons, and bag and possession limits control the hunting of non-migratory game birds, rabbit, hare, and squirrel[60].

Game birds are hunted with a provincial small game licence[61], while migratory game birds require an additional migratory game bird hunting permit and a wildlife habitat conservation stamp under the federal *Migratory Bird Convention Act*[62]. Game

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[57] *Game and Fish Act*, R.S.O. 1990, c.G.1.

[58] *Municipal Act*, R.S.O. 1990, c.M.45, s.207, para. 58; s.210, paras. 1-13, 53 and 68; s.227, para. 1; s.229; s.235, para. 1; and s.236, para. 7.

[59] Ibid, s.3.

[60] Ibid, s.50 and Regulation 300/93.

[61] Ibid, ss.54-60, and O.Regs. 493 and 494.

[62] *Migratory Bird Convention Act, 1994*, S.C. 1994, c.22.

bird eggs and nests are protected, and trade, captivity and propagation of game birds may be prohibited or regulated. Since there is no open season for raptors, the Court of Appeal has held that they are not "protected" as "game birds"[63], thereby illuminating a serious deficiency in recent consolidations of the Act. Once so authorized and released into the wild, birds except pheasants and Hungarian partridge may be hunted at any time of the year on a licensed hunting preserve[64]. The common loon has been designated as the province's avian emblem[65].

White-tailed deer and moose are the big game mammals, and hunting activity is governed by complex regulations concerning seasons, licences, licence draws, and hunting locations defined within a system of wildlife management units. Black bear may be baited and hunted in the spring after they emerge with cubs from denning, and also in the fall. This, along with the use of dogs during part of the spring and the fall season, have been controversial practices used extensively by U.S. and other foreign hunters[66]. Unless they own land in the area, non-residents must hunt with a guide, and baiting is within bear management areas assigned to an outfitter[67]. Polar bears are designated as fur-bearers but are not subject to a recreational hunt, although they may be taken by licence in defence of property or by indigenous people under their Treaty or Aboriginal rights[68]. Caribou and elk are protected under the Act.

Trapping regulations and licences with area- specific assigned quotas govern the location and numbers of animals designated as fur-bearing to be taken by trappers[69]. Some fur-bearing animals may also be taken by hunters (eg. wolf and fox), and this

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[63] *African Lion Safari and Game Farm Limited v. Kerrio* (1987), 1 C.E.L.R. (N.S.) 197 (Ont. C.A.), interpreting the Act's s.1 definition of "game bird". As used here, "raptors" are the birds of prey, and not the dinosaurs popularized by the book and film "Jurassic Park" (and now the name for Toronto's basketball team)! This decision is important in many respects, and has left falconry unregulated in the province.

[64] Game and Fish Act, s.55

[65] *Avian Emblem Act, 1994*, S.O. 1994, c.15.

[66] See Chris Lompart, *Black Bear in Ontario: Status and Management* (Don Mills, Ontario: Federation of Ontario Naturalists, 1996).

[67] O.Reg. 478.

[68] See O.Reg. 473, and also O.Reg. 517, which references holders and the area of fur licences under O.Reg. 492.

[69] Ibid, ss.61-2, and Regulation 492, R.R.O. 1990.

harvest is controlled by licensing and by prescribed hunting seasons. Increasingly, international and particularly European concerns about trapping methods are driving the standards implemented in Ontario in order to enable furs to be marketed abroad.

Some animals (including birds) may be killed without a licence where they are damaging property, including livestock[70]. Except in three townships southeast of Algonquin Provincial Park[71] and prohibitions on gun discharges on Sundays, timber wolves and coyotes may be hunted or trapped anywhere, have no closed season[72], and there is no limit to the number that may be hunted. Red fox, wolf or coyote may be chased during the day, so long as they are not captured, shot at or killed[73]; racoon may also be chased and hunted under licence[74]. The Ministry of Agriculture, Food and Rural Affairs can provide compensation to owners of livestock killed or injured by wild predators, and this may ease humans' feelings towards wolf depredations[75]. Problem animals may be removed with permission of the Ministry of Natural Resources District Office, which is granted for a limited period for particular animals. Provincial bounties on wolves ended in 1972, but some municipal bounties continued under *Municipal Act* by-law powers for *fox* bounties, until this authority was repealed in 1991. This extended interpretation of municipal authority occurred against provincial advice and despite

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[70] *Game and Fish Act*, s. 2(1)(b); endangered species, caribou, deer, elk and moose are exempted. See also s. 55, where the birds specified are crows, cowbirds, blackbirds, starlings and house sparrows, and released birds other than pheasants and Hungarian partridge. Many of such birds may be abundant, lack predators, be urban and non-native, or have impacts upon native species and crops.

[71] Regulation 510, s.1(4).

[72] However, the licence to hunt small game is not valid to hunt wolves and coyotes during the summer, in effect providing a closed season. Such a licence does not restrict trapping of wolves and coyotes at these times.

[73] *Game and Fish Act*, s.24, and *Licence to Chase Raccoon at Night and Fox, Coyote or Wolf During the Day*, O.Reg. 504.

[74] Raccoon may be hunted at night under special licence, and for the purpose of dog training, another licence is available to permit the chasing of raccoon at night. Ibid, and s.23.

[75] *Livestock, Poultry and Honey Bee Protection Act*, R.S.O. 1990, c.L.24, s.3.

becoming illegal in 1980 when regulations designated wolves as "fur-bearing animals"[76].

A licence is require to hunt, possess, buy or sell animals declared as "amphibians" or "reptiles" in regulations under the Act [77]. However, this list excludes the common garter snake, and several frogs, toads and salamanders. These species thus are given no protection from hunting or disturbance under the Act. Waters may be set apart for frogs, and bullfrogs and snapping turtles may be harvested for personal use[78].

The Act draws upon the province's constitutional jurisdiction over property to regulate the sale, purchase and possession of fish taken from Ontario waters, fishing preserves, and the sale and possession of fish nets[79]. Fish is defined to include molluscs and crustaceans and, subject to a licence and the regulations, fish culturing is permitted for listed and undiseased species, including a few exotic fish and native crayfish[80]. The province is reducing the number of classes of fish licences, and has exceeded its recreational capacity to supply fish and fishing experiences[81]. As demand exceeds supply, avid fishers may be willing to pay more for their recreational fishing experience in the future. The provincial authority complements the federal government's extensive mandate under the *Fisheries Act*, which is administered in Ontario by the same agency with responsibility for the *Game and Fish Act* - the provincial Ministry of

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[76] Regulation 473, R.R.O. 1990. For a full discussion of the law and policy affecting wolves in Ontario, see: Mike Buss and Maria de Almeida, *A Review of Wolf and Coyote Status and Policy in Ontario* (draft), (Toronto: Ministry of Natural Resources, 1995), pp.35-45.

[77] Ibid, ss.76-77. See O.Regs. 472 and 520, respectively.

[78] See O.Regs. 529 (only Nogies Creek in Peterborough County is set apart for frogs), 480 (bullfrogs may be taken for personal use with a fishing licence or up to ten without, or sold or bartered with a bullfrog licence that requires an annual return of harvest data) and 511 (snapping turtles can be harvested with a fishing licence, with seasons and limits).

[79] Ibid, ss.72-75, and O.Reg. 489 (Fishing Huts), Reg. 740/92 (Fishing Licences), O.Reg. 505 (Licence to Possess Nets), and Reg. 267/95 (licences for fish culturing and fishing preserves).

[80] Ibid, s. 1 definition of "fish" and "fishing preserve", and s. 72(1), as amended by the *Statute Law Amendment (Government Management and Services) Act* (Bill 175), S.O. 1994, c.27, s. 129, and Reg. 267/95.

[81] John Tilt, former Fisheries Legislation Development Coordinator, Ministry of Natural Resources, personal communications, April 10 and May 13, 1996.

Natural Resources[82].

Hunting is very broadly defined in the Act to include search and pursuit; the use of poison, automatic weapons, or lights (except for raccoon) to hunt is prohibited, as is the use of aircraft[83]. Licences may set out the species, number which may be taken, and form of hunting which is permitted, while regulations specify seasons and other conditions. Farmers may hunt or trap during an open season on their own land without a licence, and landowners generally may kill other than endangered or large ungulate animals which threaten or damage their property[84]. Trappers and farmers may use body-gripping or leg-hold traps to take fur-bearers, but these are illegal for use by other persons or for other purposes unless designated as a humane trap in the Regulations[85]. Allowing a fur-bearer's pelt or animal's flesh suitable for food to spoil or be destroyed is prohibited under the Act[86].

Enforcement powers are fairly broad but penalty powers are not extensive under the current Act. Conservation officers have the power to stop and search vehicles, vessels, aircraft, hunt camps, or containers, and where an offence is believed to have been committed, to seize and seek a court-ordered forfeiture of such transportation or other equipment used in committing such offence, and to arrest any person found committing an offence[87]. Violations can result in fines up to $25,000, with the additional possibility of a one year jail sentence for careless use of a firearm[88]. Compensation for damage from hunting activity may also be available through the *Hunter Damage Compensation Act*, administered by the Ministry of Agriculture, Food and Rural Affairs[89].

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[82] *Fisheries Act*, R.S.C. 1985, c.F-14. See Chapter 14, "Federal Jurisdiction", for more discussion of this Act.

[83] Ibid, ss.1 "hunting", 20, and 27, and Regs. 300/93 and 766/94. The federal *Criminal Code*, R.S.C. 1985, c.C-46, especially Part III, also governs the use of firearms.

[84] See s.3 of the Act, and discussion above.

[85] Ibid, s.30, and O.Regs. 527 and 528.

[86] Ibid, ss.31 and 70.

[87] Ibid, ss.8, 10, 14 and 16.

[88] Ss.19 and 91.

[89] *Hunter Damage Compensation Act*, R.S.O. 1990, c.H.21.

Despite these powers and penalties, inadequate legislative provisions have resulted in poaching becoming a substantial problem in Ontario; therefore, more innovative provisions are required to help address this problem[90]. New provisions introduced in Bill 36 will help by making the Act apply to "bear parts whether or not they originated in Ontario", and restrict the taking of black bear to one per bear licence[91]. There is also growing concern that underfunding of conservation officers on patrol threatens the integrity of some wildlife populations.

While the *Game and Fish Act* has evolved over the last century to deal with many wildlife concerns, there remain numerous limitations in this primary statute. Conceptually, the Act needs to move beyond game and non-game distinctions to taxonomically-based definitions (eg. mammals, birds, and specific species), and from species specific to strategic ecosystem-based programs[92]. Other needed changes include increased fines for commercial poaching, make greater licence prohibitions, and create violations for wildlife habitat destruction[93]. The most important deficiency can be addressed by developing new legislation to overcome definition limitations and the difficulties with species brought from outside the province (see discussion of the *African Lion Safari* case at page 313, below). Legislation is also needed to address the current lack of adequate categories of wildlife (including those for nongame and undesirable species), more detailed enforcement measures, wildlife trade, captive and released wildlife, wildlife custodians, plus enhanced fine and penalty provisions[94].

After years of preparation and months of careful drafting, Bill 162, *An Act to Amend the Game and Fish Act*, was introduced in November 1991 to address many of these legislative limitations. Unfortunately, unresolved issues caused the Bill to languish, primarily due to agricultural community concerns about restrictions on their current and future ability to have game farming opportunities and small opposing lobbies pressing for prohibition or authorization of wildlife compounds for the training and trialing of dogs. The Bill did not proceed despite widespread and vocal support of the Bill from diverse

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[90] See L.J. Gregorich, *Poaching and the Illegal Trade in Wildlife and Wildlife Parts in Canada* (Ottawa: Canadian Nature Federation, 1992); and Mohr, "Wildlife", at p.357.

[91] *Ministry of Natural Resources Statute Law Amendment Act, 1996* (Bill 36), s.2, introduced for First Reading on April 3 1996.

[92] Ray Stefanski, Senior Ecologist, Ministry of Natural Resources, personal communications, April 15 and June 12 1996.

[93] L.J. Gregorich, *Poaching and the Illegal Trade in Wildlife and Wildlife Parts in Canada* (Ottawa: Canadian Wildlife Federation, 1992), p.102.

[94] See Bill 162, below.

interests, including naturalist and hunting organizations.

While Bill 162 did not advance beyond the First Reading stage, it nonetheless provides the basis for a future attempt to clarify, expand and strengthen the *Game and Fish Act*. In February 1996, the Minister of Natural Resources announced plans to substantially amend the *Game and Fish Act* to deal with impaired hunting, standardized marking of commercial fishing nets, the illegal trade in animal parts, protection of raptors and regulation of falconry, and stiffer penalties[95]. Other regulation changes for two rods per angler on Lake Erie and for hunting apprentices, as well as positions on federal firearms and lead shot legislation, were also announced.

The Minister's announcement is important, but its full scope is unclear. The exercise needs to extend beyond mere streamlining to encompass the broader scope of Bill 162 in order to ensure science-based definitions which cover all Ontario species, close enforcement loopholes, address issues of wildlife in captivity and species at risk, as well as enable the new fish and wildlife business plan and associated partnerships. As a first step, Bill 36's proposed measures to restrict individual hunters to one licence per year and to control the trade in bear parts begins to address growing concerns about commercial poaching of such species[96].

Other new amendments to the Act make potentially profound changes by enabling the establishment of a separate fish and wildlife fund into which all licence and other revenues received under the Act or its regulations must be placed. The Minister may direct payment of the money in this special account for "the management, perpetuation or rehabilitation of wildlife or fish populations or the ecosystems of which those populations are apart", for "activities of people as they interact with or affect wildlife or fish populations" (including user or public safety), and refunds as prescribed by the Act[97]. Acquisition of lands under section 6(1) was similarly amended to correspond to the first purpose identified above. The dedicated fund has long been advocated by the Ontario Federation of Anglers and Hunters in order to ensure that licence fees are directed towards wildlife management, rather than being paid into the province's general Consolidated Revenue Fund and distributed based on other priorities.

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[95] "Notes for Remarks by Chris Hodgson, Minister of Natural Resources, at the annual Convention of the Ontario Federation of Anglers and Hunters", February 23 1996.

[96] Supra note 91

[97] *Game and Fish Act*, s. 5, as amended by the *Savings and Restructuring Act, 1996*, S.O. 1996, c.1, Schedule N, s. 2(1).

While dedicated funding is the norm in the United States and may be a way to reduce the impacts of government cutbacks in programs, there are some potential dangers. Fish and wildlife programs in Ontario have consistently received more funding than the revenue which they have generated. This is appropriate, of course, since fish and wildlife benefits extend beyond simple revenues. Also, as fewer and fewer hunting licences are issued, particularly with stricter federal regulation of firearms, this will decrease revenues for the dedicated fund and the programs it is intended to support[98]. Even with avid hunters and fishers possibly willing to pay more for their licences, estimates suggest that the revenues may not cover the full costs of running wildlife and fisheries management programs in the province. The dedicated fund derives its revenues primarily from extractive wildlife and fisheries uses, and coupled with the composition of the fund's advisory Board, these uses will drive much of the fund's expenditures with few alternative sources for non-game programs (eg. for endangered species). This situation will deserve close scrutiny in the upcoming years.

2. Wildlife in Captivity and Ex Situ Conservation

The *Game and Fish Act* applies to all native animal species whether or not they are kept in captivity, and to non-native species existing in a wild state; however, it generally excludes native species kept on a licensed fur farm, and also domestic species[99]. The Act specifically states that live game or wolves may not be kept in captivity for longer than ten days without a licence, except for in a zoo operated by a municipality or for scientific or educational purposes in a public institution[100]. Ministerial permission is required to take game animals, game birds and the like for scientific or educational purposes[101]. Fish culturing of prescribed (including exotic) species, the sale, disposal or stocking of cultured fish (especially if infected with prescribed diseases), and the collection of "fish or gametes from Ontario waters" for culturing purposes are controlled by licences and regulations under the *Game and Fish Act*[102].

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98 John Tilt, supra note 81.

99 *Game and Fish Act*, s.1, "domestic animals and domestic birds", and s.2. Subsections 2(2) and (3) make the Act applicable in limited circumstances to fur-bearing animals kept on fur farms and to domestic animals.

100 Game and Fish Act, s.82. Under O.Reg. 531 and subject to specified conditions and a licence, one male wolf or one male bear may be kept longer than ten days.

101 Ibid, ss.52 and 60(1).

102 Reg. 267/95. Exotic species in Schedule 1 include goldfish, tilapia, and certain salmonids, and native crayfish species may also be cultured as "fish".

For non-native or imported wildlife, there are virtually no provincial restrictions on who can operate a zoo, which species can be kept and from where, and in what condition they may be confined. Nonetheless, federal law may apply, and municipal by-laws may prohibit or regulate the keeping of animals for certain purposes[103]. There is also a private accreditation scheme of the Canadian Association of Zoological Parks and Aquaria.

An important case was decided in 1987 concerning the keeping of game as defined in the *Game and Fish Act*. Birds of prey originating from outside Ontario were being kept by the African Lion Safari and Game Farm Limited, and the company was charged with keeping live game without a licence. Through statutory and historical analysis, the court held that a closed season did not constitute "protection" under the definition of "game bird", and thus the game bird protections did not apply to raptors[104]. Further, no licence was needed because they originated outside of the province, and the Act states that "nothing can prevent the possession of imported game if it is legally taken"[105]. Game was held to include live as well as dead animals.

This case then widened the door to the unlicensed possession, trade, captivity and propagation of indigenous wildlife, due to the (at times dubious) claim that they were taken lawfully elsewhere. These activities hold potential risks of disease and animal mistreatment, as well as genetic weakening of and increased competition by escaped animals interacting with indigenous populations. Such risks also arise for game farming and fish culturing. The former has no specific provincial legislation governing it and is controversial between the agricultural and wildlife communities, while the latter was recently enabled under the *Game and Fish Act* (see above and page 308).

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103 See the authority under the *Municipal Act*, R.S.O. 1990, c.M.45, ss.207, para. 58 (zoological gardens and natural history collections); s.210, paras. 1-13 (keeping animals, pounds, breeding and dogs); s.227, para. 1 (pet shops); and s.236, para. 7 (menageries, circus-riding and other like shows). Also see the *Municipality of Metropolitan Toronto Act*, R.S.O. 1990, c.M.62, s.214. A City of Toronto by-law that regulated circuses and exotic animals was successfully challenged in *Stadium Corp. of Ontario Ltd.* v. *Toronto (City)* (1993), 12 O.R. (3d) 646, 101 D.L.R. (4th) 614 (C.A.), rev'g (1992), 10 O.R. (3d) 203 (Div.Ct.). The Court of Appeal decision declares the by-law to be *ultra vires* on somewhat questionable grounds, but nonetheless upholds some loosely-defined scope for municipal regulatory power within overlapping legislative authority.

104 *African Lion Safari and Game Farm Limited v. Kerrio* (1987), 1 C.E.L.R. (N.S.) 197 (Ont. C.A.). See discussion of raptors on page 306.

105 *Game and Fish Act*, s.33.

Lawfully taken game, whether dead or alive, may be transported within or exported from Ontario under permit[106]. Game may be imported into Ontario if it was legally taken elsewhere, but the release of the animals or their offspring without Ministerial permission is prohibited[107]. Without the requisite permission under this provision, there has been an increased importation of fox and coyote for use in compounds and enclosures used for training sporting dogs, and the Act has not been enforced to curb such practices. There are growing concerns that disease may be brought in from the United States and affect indigenous wildlife populations now free of these diseases[108].

Fur-bearers may be kept and raised under a *Fur Farms Act* licence, administered by the Ministry of Agriculture, Food and Rural Affairs[109]. The Minister of Natural Resources must grant permission to hunt or trap fur-bearers for the purpose of transferring them to a fur farm, but as noted above, the Ministry's *Game and Fish Act* otherwise does not apply to fur farm animals kept on a fur farm. A fur farm licence requires facilities to be kept clean and properly constructed and repaired to prevent escape or entry, and measures taken to prevent cruelty or neglect[110]. Penalties range up to $2,000 for first offences.

"Capturing" is included within the definition of hunting, and thus taking and keeping a wild animal is illegal without following the licensing and other hunting restrictions under the Act. This has caused some legal difficulties for wildlife rehabilitators who provide a worthwhile service by receiving and caring for injured wildlife. *Ex situ* conservation efforts, such as captive breeding for endangered species, are also hindered by these statutory limitations. There is no means to obtain a permit for such activities under the *Game and Fish Act*; however, rehabilitators can be authorized under the *Migratory Birds Convention Act*. Currently, discussions continue towards giving rehabilitators Crown agent status by way of contract with the Ministry of Natural

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106 *Game and Fish Act*, ss.83-84.

107 Ibid, ss.32 and 33.

108 Such diseases might include alveolar hydatid disease, which can be fatal to humans, and which is present in populations in the U.S. from where such animals have been imported in the past.

109 *Fur Farms Act*, R.S.O. 1990, c.F.37. However, the *Ministry of Agriculture, Food and Rural Affairs Statute Law Amendment Act* (Bill 46), Schedule J, s.1(4), introduced for First Reading on May 2 1996, proposes to repeal this Act, and the supervision of fur farms remains a point of discussion between this Ministry and the Ministry of Natural Resources.

110 Ibid, s.5.

Resources. As a result, rehabilitators would not be bound to follow the rules in the wildlife statute but would be required to meet certain conditions in the contract.

Other statutes concern the holding of plants and animals in *ex situ* conditions. Perhaps the most specific to the *ex situ* conservation requirements in Article 9 of the Biodiversity Convention is the *Royal Botanical Gardens Act*. This private Act establishes a corporation and Board in the Hamilton-Burlington area with objects to "develop, assemble, document and maintain living collections of plants and animals", "protect specific environments and flora and fauna that are of special value as parental stocks or may be in danger of extinction", "develop supporting resources such as herbaria, libraries, conservatories, greenhouses and propagation facilities", and "co-operate with other institutions", among others[111]. The *Royal Ontario Museum Act*[112] and *Science North Act*[113] contain very general objects to support the collection, exhibition and education of the public about various objects and other materials, and these have been used to authorize the collection and display of wildlife. The *Laboratory and Specimen Collection Centre Licensing Act* is concerned with licensing facilities that test specimens from the human body, including microbes, but does not contain any specific criteria to evaluate licence applications for either biosafety or *ex situ* conservation purposes[114].

As noted above, the *Game and Fish Act*, municipal statutes and the *Fur Farms Act* enable subordinate legislation to prescribe some conditions for holding animals in

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111 *Royal Botanical Gardens Act*, S.O. 1989, c.Pr.22, s.3, paragraphs (a), (c), (h) and (i). This institution was first established under the *Royal Botanical Gardens Act*, S.O. 1941, c.75.

112 *Royal Ontario Museum Act*, R.S.O. 1990, c.R.35. The objects in s.3 include "(a) the collection and exhibition of objects, documents and books of any kind to illustrate and make known to the public the natural history of Ontario, Canada and the world". The Board of Trustees' powers to make by-laws under s.5 include those for operating and public use of the museum, and the making of agreements with other similar organizations.

113 *Science North Act*, R.S.O. 1990, c.S.4. This is a Crown agency (s.5(2)), with general collection, exhibition and operation objects in s.3.

114 *Laboratory and Specimen Collection Centre Licensing Act*, R.S.O. 1990, c.L.1. There are general application evaluation criteria in section 9 to consider the "public interest" and whether "equipment and premises are not suitable". Regulations under section 18 may be made respecting "the management and operation", keeping and reporting records, and "classes of tests" by licensed facilities, but Regs. 682 and 683 are more generally concerned with operator qualifications and patient comfort.

captivity. The *Animals for Research Act* also governs the use and care of any type of animal in research institutions, such as universities and laboratories[115], while the *Pounds Act* is concerned with liability from and controlling domestic animals which run at large or escape (and thereby may harass or harm wild species)[116]. Where facilities or private individuals do not meet the expected standards of care and there is "reasonable grounds for believing that an animal is in distress", inspectors or agents of the Ontario Society for the Prevention of Cruelty to Animals may enter premises, take possession of the animal, and relieve its distress[117].

3. Endangered and Threatened Species

The *Game and Fish Act* is primarily directed towards the protection of animal populations from overexploitation, the activities of people relative to hunting, fishing and trapping, and less prominently protects some species from harassment. It is left to the *Endangered Species Act* to directly protect both animal and plant species "threatened with becoming extinct" and the habitat upon which they rely[118]. This statute lists a number of factors potentially leading to extinction and then makes the key prohibition that no person shall "wilfully kill, injure, interfere with, or take" any species declared in the Regulations or "destroy or interfere with" their habitat[119]. Currently, 8 species of endangered plant and 16 animal species are protected under the Act, including invertebrates[120]. Enforcement has been almost non-existent, with the plant or habitat

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115 *Animals for Research Act*, R.S.O. 1990, c.A.22.

116 *Pounds Act*, R.S.O. 1990, c.P.17. The owner of land is responsible for any damage caused by any animal under that person's charge (s.2), and there is a duty of all who confine animals to daily furnish "good and sufficient food, water and shelter" (s.13). As apparent from its language and its range of fines from $1 to $10, the Act dates from a much earlier era.

117 *Ontario Society for the Prevention of Cruelty to Animals Act*, R.S.O. 1990, c.O.36, ss.12-14. The Society was first incorporated under the *Act to Incorporate the Ontario Society for the Prevention of Cruelty to Animals*, S.O. 1919, c.124.

118 *Endangered Species Act*, R.S.O. 1990, c.E.15.

119 Ibid, s.5.

120 Fish and migratory birds are not included within the scope of the Act due to federal jurisdiction over these taxa (although possession and transfers of fish could be controlled, as is done for fishing).

provisions never being tested in court[121].

In 1993, an MNR-public Task Force produced a comprehensive report and series of recommendations to the Minister of Natural Resources on the endangered species program[122]. This report highlights a number of problems with the Act, and makes some recommendations for legal reform. Generally, these relate to:

- expanding the listings to include threatened and vulnerable species and endangered communities, with graduated controls;
- more detailed powers or controls on possession, propagation, transfer, transport, and registering and reporting of species, with sensitivity to native wild plants on private property;
- enabling scientific research under Ministerial approval;
- enabling land acquisition for species and their habitat;
- strengthening enforcement capabilities by: protecting all developmental stages and tissues of species, removing "wilfully" from the offence section and thus this higher burden of proving a "guilty mind", and more sophisticated penalties including restoration and restitution;
- accelerating policy review and program development, particularly specifying responsibilities across MNR, land use and forestry planning, information and survey needs, time lines, protection priority criteria, recovery plans, and incentives; and,
- forming an advisory committee to identify information gaps, review status reports and recommend listing for species.

Similar recommendations were also made in the advisory document, *Looking Ahead: A Wild Life Strategy for Ontario*, discussed below under wildlife policy. The relationship between this Act and the *Game and Fish Act* and *Planning Act*, especially for plant

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121 Three cases have involved minor fines, and some conservation officers are reluctant, or consider it a low priority, to enforce the provisions. In a fourth case, the provisions of the earlier *Jack Miner Migratory Bird Foundation Act*, S.O. 1936, c.36, to defend geese were held to take precedence over the *Endangered Species Act* when a golden eagle was captured after chasing geese at the Jack Miner Sanctuary. See "Earthwatch: Eagles Beware: Jack Miner Act Given Priority Over Endangered Species Act", 28(4) *Seasons* 7 (Winter 1988).

122 Irene Bowman and the Rare, Threatened and Endangered Species Task Force, *An Agenda for Change: Species of Special Status in Ontario* (Toronto: Ministry of Natural Resources, 1993). While this report has not been formally released, it was informally circulated through non-government participants on the Task Force.

species and enforcement powers, also needs to be clarified.

Limited administrative progress on the Task Force's recommendations have been made. A new internal Ministry advisory body, the Committee on the Status of Species at Risk in Ontario (COSSARO), has been established to commission and review species status reports and make recommendations to the Minister. In the past, listings of species under the Act have taken a long time, and frequently have only included species which are in critical decline and near to extirpation (ie. "extinction" within the province). In partnership with some conservation organizations, the province also operates the Natural Heritage Information Centre, which maintains a systematic inventory of known locations of rare species and natural communities.

A biennial series of Private Member's Bills to amend the *Endangered Species Act* have proposed measures that would address many of the Task Force's recommendations[123]. Of these, Bill 174 was prepared with tacit MNR support but was abandoned after Second Reading in 1994; it has now been reintroduced as Bill 62, currently before the Legislature. While the latter Bill's success is unlikely, it nonetheless provides a good model for re-introducing necessary reforms to the outdated *Endangered Species Act*. The Minister of Natural Resources could adopt or propose amendments to the current Bill, or advance amendments through an announced *Game and Fish Act* amendment package scheduled for the fall of 1996. These options provide opportunities to address long-standing and well-known limitations in the legal regime for species at risk. Reforms are particularly needed since Ontario has made commitments to a coordinated national effort to meet legislative obligations under the *Biodiversity Convention*, the *Canadian Biodiversity Strategy*, and the *National Approach to Endangered Species Conservation in Canada*[124].

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123 See *Endangered, Threatened and Vulnerable Species Act, 1990* (Bill 232), introduced for First Reading on June 26 1990; *Endangered, Threatened and Vulnerable Species Act, 1992* (Bill 91), introduced for First Reading on November 3 1992; *Endangered, Threatened and Vulnerable Species Act, 1994* (Bill 174), introduced for First Reading on June 6 1994; and *Endangered, Threatened and Vulnerable Species Act, 1996* (Bill 62), introduced for First Reading on June 5 1996.

124 Canadian Wildlife Service, *National Approach to Endangered Species Conservation in Canada* (Ottawa: Environment Canada, 1995). This document outlines a federally- and provincially-agreed framework for cooperation in endangered species conservation, including the development of legislation and other measures. Ontario has also separately agreed to the Convention and the Strategy.

In addition to the *Endangered Species Act*, other statutes and policies may apply to species at risk. The *Game and Fish Act* regulations, which declare species to be amphibians and reptiles, provide protection for a number of threatened and endangered species, such as the wood turtle and several snakes[125]. Limited protection is provided for birds of prey, and none is available for invertebrates under this Act. Approvals under such other Acts as the *Environmental Assessment Act*, and also its exemption orders, may require the protection of endangered or threatened species. As noted above, Acts establishing the Royal Botanical Gardens and the Jack Miner Bird Sanctuary provide for facilities and measures to protect species at risk[126].

Municipal land use planning documents now must have regard to the new *Provincial Policy Statement* issued under the *Planning Act*, which states that "development and site alteration will not be permitted in ... significant portions of the habitat of threatened and endangered species"[127]. This Policy will provide the primary protection for the habitat of species not designated under the *Endangered Species Act*, such as wild ginseng[128].

Within the Ministry of Natural Resources, a policy on *Management of Timber for Featured Wildlife Species* provides that forest habitat will be managed for threatened and endangered species, and other species locally designated by District Managers[129]. Cabinet-approved Strategic Land Use Plans for northwestern, northeastern and southern Ontario also identify the protection of the habitat of rare and endangered species as a

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125 O.Regs. 472 and 520.

126 *Royal Botanical Gardens Act*, S.O. 1989, c.Pr.22, s.3(c); and the *Jack Miner Migratory Bird Foundation Act*, 1 Edw. VIII (1936), c.36, s.7 (purposes and objects of conserving all types of migratory birds, including those in decline at the time).

127 See the discussion of these policies and reforms under the Habitat Stewardship and Land Use Planning section, below.

128 Wild ginseng is considered threatened in the wild. It used to be protected by the *Ginseng Act*, R.S.O. 1950, c.159, but this was repealed by S.O. 1960, c.43.

129 Wildlife Branch, Ministry of Natural Resources, *Management of Timber for Featured Wildlife Species*, Policy No. 6.04.01 (Toronto: Ministry of Natural Resources, 1990). Management for Provincially and Locally Featured Species may include "such means as allocating stands for harvest, modifying timber harvest, or defining reserves". See discussion in *Agenda for Change*, supra note 122, at pages 11-12.

strategy to meet general wildlife objectives[130]. However, municipal and MNR planning protection depends upon expertise and efforts to identify the presence of such species, and then designate such portions of their habitat. Institutional cutbacks and downloading of responsibilities to municipalities will make such planning more difficult in the future.

4. Wildlife Policy

Ontario has made a number of recent efforts to reexamine and revise its wildlife policies. Much of this activity was undertaken concurrent with the drafting of Bill 162. Unfortunately, current efforts to develop wildlife legislation are less likely to produce such results, given reductions in and extended demands on experienced staff. After extensive consultations, *Looking Ahead: A Wild Life Strategy for Ontario* was prepared by the Ontario Wildlife Working Group for the Ministry of Natural Resources in 1991. While it was developed by an advisory panel, it contained a strong MNR influence and input.

The document contains extensive discussion of issues and sixty-two strategies relating to the broad spectrum of "wild life". Strategy 3 calls on the Ontario government to "Create a wild life policy for Ontario". Concerning legislation, Strategy 5 identifies:

> As a matter of urgency, the Ministry of Natural Resources should undertake, in cooperation with the appropriate ministries, non-government organizations and other relevant partners, a review of the adequacy of existing legislation relating to wild life, the protection of habitat, and consider the need for amendments and new legislation.

In particular, the Working Group suggests that a wildlife policy include a broad definition of wild life (using two words to indicate all life forms), and recognize the need to sustain wild life populations and habitats and to adopt an ecosystem approach to the management of resources. The patchwork of existing legislation, lack of legislation designed to protect habitat, outdated Acts not designed for an ecosystem approach, and the need to examine the establishment of provincial ownership of wildlife, among others, were also identified as serious problems in the existing framework.

Neither of the wild life nor endangered species strategies have been comprehensively addressed, and remain outstanding. The Ministry has distanced itself from the wild life document, and in 1994 prepared a *Wild Life Action Plan* that had limited circulation and has not been approved nor advanced towards full implementation.

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130 Ministry of Natural Resources, *Southern Ontario Co-Ordinated Program Strategy*; *Northeastern Ontario Strategic Land Use Plan*; and *Northwestern Ontario Strategic Land Use Plan* (Toronto: Ministry of Natural Resources, 1982). See discussion in *Agenda for Change*, supra note 122, at pp. 10-11.

Many legislative measures were proposed but foundered in Bill 162, although some may be revived as announced by the current Minister.

Despite numerous policy setbacks, some 48 wildlife policies, 79 procedures, 72 guidelines and 4 plans have been under development or approved, with 10 guidelines and 1 plan for wildlife habitat[131]. These include a Cabinet-approved policy for moose, Ministerial policies on black bear, fur-bearers (5), featured species for timber management[132], the Strategic Plan for Ontario Fisheries (SPOF II), aquatic habitat inventories, electrofishing, fish stocking, Pacific Salmon Management Policy, and a Wild Turkey Management Plan approved by the Director of Wildlife Branch in 1994. Concerns about maintaining genetic integrity have been considered in the Wild Turkey Management Plan and in the Management of Aurora Trout Policy[133], among others, and will need to be addressed in announced programs to reintroduce elk to the province.

Other draft policies have been prepared, but have been languishing without final consultations or senior approvals. Among them are those for white-tailed deer, caribou, non-game species, wildlife in captivity (game farming, dog trialing and zoos), and a number of policies, guidelines, and a procedure relating to wildlife habitat and the *Class Environmental Assessment for Timber Management*. No comprehensive policies have ever been developed for large predator species.

The Ministry's 1996 *Fish and Wildlife Business Plan* has been developed internally and announced through the *Business Plan - Ministry of Natural Resources*. It will use new working relationships with clients and a trust fund and advisory board to focus on the core "businesses" of enforcement, knowledge and information, legislation and standards, strategic allocation and planning decisions[134]. A regulatory "Red Tape Committee" is also reviewing all provincial legislation and undoubtedly will recommend changes. However, this is being done from the perspective of increasing efficiency, reducing government involvement and barriers to business, rather than being primarily

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131 Ray Stefanski, supra note 92. All of these documents will be available on the Internet through the Ministry's Electronic Document Information Exchange, expected to be in operation by the fall of 1996.

132 The featured species include moose and deer, and may include others such as endangered and threatened species; see *Management of Timber for Featured Species*, supra note 129.

133 Ministry of Natural Resources, Fisheries Branch, *Management of Aurora Trout Policy*, MNR FI.3.02.02 (Toronto: Ministry of Natural Resources, 1987). Aurora trout is an Ontario endemic variety of fish.

134 Ministry of Natural Resources, *Business Plan - Ministry of Natural Resources* (Toronto: Queen's Printer for Ontario, 1996), at p.9.

concerned with the conservation and sustainable use of wildlife itself. Given other initiatives' effects on environment matters, such a process may produce detrimental results for biodiversity in the province.

The contributions of hundreds of wildlife users, scientists and managers to earlier draft policies, and the *Wildlife Strategy* document, are extensive and extremely valuable. Yet without ongoing consultation and proceeding to approval and full implementation, such policy exercises are rendered practically irrelevant. Thus, completion and approval of such reviews is necessary to effectively guide wildlife conservation and sustainable use in the province.

5. Aboriginal and Treaty Rights

As noted in the section on History of Biodiversity Law and Policy, numerous Treaties have been signed between Aboriginal people and the Government of Canada that contribute to the province's law and policy concerning wild animals. These Treaties apply on Indian Reserves and often within the broader Treaty area, and generally provide for the continuation of hunting and fishing, and sometimes trapping[135]. Subtle differences in the text and the context of the original negotiations may affect

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135 A few examples include:

> ... allow the said Chiefs and their tribes the full and free privilege to hunt over the territory now ceded by them, and to fish in the waters thereof, as they have heretofore been in the habit of doing, saving and excepting only such portions of the said territory as may from time to time be sold or leased to individuals or companies of individuals, and occupied by them with the consent of the Provincial Government. (Robinson Huron and Robinson Superior Treaties of 1850)
>
> ... the said Indians, shall have the right to pursue their avocations of hunting and fishing throughout the tract surrendered as hereinbefore described, subject to such regulations as may from time to time be made by Her Government of Her Dominion of Canada, and saving and excepting such tracts as may, from time to time, be required or taken up ... (Treaty 3 of 1873)
>
> ... having claimed ... such interests being the Indian title of the said tribe to fishing, hunting and trapping rights over the said lands, ... hereby cede [etc.] ... all the right ... [to] all other lands [in Ontario] ... except such reserves as have heretofore been set apart for them ... (Williams Treaty of 1923)

interpretations of the rights reserved, and interpretation questions frequently arise in prosecutions of Aboriginal persons under provincial or federal wildlife statutes.

Other rights, such as to gather plants and medicines or to maintain access to sacred sites, may not be specified or precluded by a Treaty, and thus may continue as an Aboriginal right. Both Aboriginal and Treaty rights are "recognized and affirmed" under s.35(1) of the *Constitution Act, 1982*, and thus constitutionally supersede provincial legislation where there is a legal conflict. The Supreme Court of Canada's landmark *Sparrow* case provides an analysis framework for determining whether an infringement of a right has occurred, and whether such an infringement is justified[136]. Generally, an infringement may be justified if there is a valid legislative objective (such as conservation and public safety), and the government shows that there is as little infringement as possible, fair compensation is made where there has been expropriation, and the affected Aboriginal group has been consulted.

Aboriginal compliance with the *Game and Fish Act* and other wildlife-related statutes had been dealt with according to the 1991 *Interim Enforcement Policy*, but this Policy has been dropped by the current government[137]. Evolving Ministry of Natural Resources policy and guidelines generally recognize safe, subsistence hunting by Status Indians in their traditional use area, not just on reserve or treaty land. Prosecutions and enforcement actions against Aboriginal people must be scrutinized by officials and the Deputy Minister, Treaty and other rights must be considered, and the Chief must be notified.

The eventual goal has been to negotiate specific agreements with First Nations to set out particular areas, practices and enforcement procedures. However, the new provincial government's cancelation in 1995 of one such "Community Harvest Conservation Agreement" affecting the Williams Treaty area provoked considerable anger in affected Aboriginal communities. Coupled with a police shooting of a member of an Aboriginal group occupying Ipperwash Provincial Park in 1995 and the assumption of fisheries authority by the Saugeen First Nation in 1996, such tensions do not bode well for the immediate future of Aboriginal-provincial cooperation in wildlife and fisheries management. Such escalating disputes concerning fisheries in the U.S. resulted in extensive litigation and eventual, court-imposed cooperative or joint management regimes[138]. One can hope that co-management solutions can be negotiated here.

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136 *R.* v. *Sparrow* (1990), [1990] 1 S.C.R. 1075, 70 D.L.R. (4th) 385.

137 Ministry of Natural Resources, *Native Interim Enforcement Policy* (Toronto: Ministry of Natural Resources, 1991).

138 See *Lac Courte Oreilles Band of Lake Superior Chippewa Indians* v. *Wisconsin (State)*, 700 F.2d. 341 (7th Cir. 1983), cert. denied 464 U.S.

Recommendations:

1. **Reform the *Game and Fish Act* to identify biodiversity conservation and sustainable use as objectives, and address wildlife in captivity issues such as dog trialing and game farming, by building upon Bill 162 proposals.**

2. **Reform the *Endangered Species Act* to implement the Task Force recommendations, similar to proposals made in Bill 174.**

3. **Review the adequacy of existing wildlife and habitat legislation for conservation and sustainable use purposes.**

4. **Develop, approve and implement a comprehensive Ontario wild life policy.**

5. **Negotiate and fairly settle Aboriginal wildlife management concerns.**

C. WILD PLANTS

The common law has long considered plants which grow in the soil to be part of the real estate, with title belonging to the owner of the land. The statutory and common law of ownership, trespass and theft thus would have application to all plants[139]. For example, landowners can generally specify what activities they allow on their properties, and various agencies can pass regulations or by-laws governing activities on lands under their management. Violations are then grounds for trespass, and taking of plants could be considered theft.

Besides such circumstances, legislation governing plants has evolved primarily to meet the needs of commercial enterprise and to restore deforested areas. The

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805, 104 S.Ct. 53 (1983), and subsequent decisions in 1985, 1987, 1988, 1989, 1990, and 1991; *United States* v. *Michigan (State)*, 471 Fed. Supp. 192 (W.D. Mich. 1979), varied by 653 F.2d. 277 (6th Cir. 1981), cert. denied 454 U.S. 1124 (1981); and *United States* v. *Washington (State)*, 423 U.S. 1086 (1976), 520 F.2d. 676 (9th Cir. 1975), varying 384 F.Supp. 312 (W.D. Wa. 1974), and subsequent cases 443 U.S. 658 (1979) and 506 F.Supp. 187 (W.D. Wa. 1980).

139 However, some intriguing circumstances are rarely contemplated and thus are not easily determined under these traditional legal concepts: floating and unrooted plants like duckweed (*Lemna*), epiphytes living on other plants and objects (such as mosses and fungi), and the "trespass" of creeping plants, fallen leaves and branches and dispersing pollen.

legislation may be divided into three groups, according to land ownership and purpose: Crown land forestry, trees on private land, and other plant legislation. The *Crown Forest Sustainability Act*[140] amounts to a complete overhaul of the legislation for Crown land forestry in Ontario, and this aspect of plant legislation will be merely referenced here but elaborated below in the section on Sustainable Use of Biodiversity. The latter two topics are discussed below.

1. Trees On Private Land

Ontario has a considerable number of statutes relating to trees and forests on private or municipal lands[141]. Among the most important is the *Trees Act* which enables counties and municipalities separated from a county to pass by-laws to control tree cutting, prevent the damaging of shade trees on boundary lines, and provide for replanting of trees[142]. By 1995, some twenty-six county, region or district municipalities and one separated city had passed such by-laws[143]. The by-laws have been used to protect areas under considerable development pressure or subject to ill-advised practices. Enforcement has varied across the province, with fines ranging up to $20,000 and replanting orders[144].

The *Trees Act* must address the complexities of a diverse rural and urban province with an historical reluctance to regulate private land. In consequence, it contains a long list of exceptions within the Act which weaken the scope of controls

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140 *Crown Forest Sustainability Act*, S.O. 1994, c.25 (Bill 171).

141 See Paul L. Aird, *Forest Legislation: A Digest of the Statutes of Ontario* (Richmond Hill: Ontario Professional Foresters Association, 1996).

142 *Trees Act*, R.S.O. 1990, c.T.20. See s.4 for this by-law power.

143 Kim Westley, *Municipal Tree Cutting By-Laws (Passed Pursuant to the Trees Act)* (Barrie: Simcoe County Municipal Forest Strategy and Ontario Ministry of Natural Resources, 1995), at page 1.

144 Kim Westley, ibid at page 9. See *Halton (Regional Municipality) v. Stainton* (1992), 7 O.R. (3d) 203 (P.D.), on appeal from 2 O.R. (3d) 170, upholding the conviction, but reducing the penalty and striking the replanting order due to the failure to hold a required hearing. Also see commentary by Graham Rempe, Tree Choppers Beware: Courts Tough on Unauthorized Choppers, 17(6) *Intervenor* 7 (Nov./Dec. 1992).

under the by-laws[145]. Other limitations in the Act include varied municipal jurisdiction across the province, enforcement difficulties, a narrow focus, and easily obtained exceptions[146]. A process to reform this Act was underway in 1992, but received a rural backlash against regulation and was consequently abandoned.

Despite the attempt to amend the *Trees Act*, reforms of the planning process led to local municipalities with populations greater than ten thousand people being granted new powers under the *Municipal Act* to pass tree-cutting by-laws[147]. These provisions essentially duplicate and expand the similar authority under the *Trees Act. Municipal Act* by-laws may prohibit or regulate the injuring or destruction of trees, require a permit and fees for such purposes, and delegate permit authority to an official, but the scope of the by-laws may be limited by a regulation. Should a by-law under this authority be in conflict with a *Trees Act* by-law, the most restrictive or the upper-tier municipality's by-law will prevail. This latter provision is important, given that it is now local municipalities with this new authority, which may be in conflict with the older *Trees Act* by-laws of the counties and regional municipalities which encompass them.

These new powers have been anxiously awaited by urban municipalities facing intensive development pressure, and were adamantly supported by environmental interest groups as a necessary complement to planning reforms embodied in the same Bill 163[148]. The legislation now enables more flexible and site- or tree-specific controls

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145 See s.5 for the exceptions, and John Swaigen, "Current Ontario Legislation and Trees", Unpublished Address to the Trees in the City seminar, Humber College, Toronto (Toronto: Canadian Environmental Law Association, 1973). Kim Westley, supra note 143, at page 7 also notes that challenges were made in court to definitions of the terms "good forestry practice", "own use" and "woodlot", as well as to tree size and methods of measuring them.

146 Ibid. See also Trees Bylaws Advisory Committee, *Before You Cut That Tree* (Toronto: Ministry of Natural Resources, 1992), which sought comments on reforms to the *Trees Act*.

147 *Planning and Municipal Statute Law Amendment Act*, S.O. 1994, c. 23, s.56 (Bill 163). This adds a new s.223.2 to the *Municipal Act*, R.S.O. 1990, c.M.45. See also the *Municipal Act*'s older sections 284(3) (no liability for trees on untravelled portions of highways); 308, paras. 6 and 9 (preserving or taking trees); and especially 312 (planting and protecting trees, and prohibiting the planting of unsuitable tree species).

148 For a discussion of the *Municipal Act* powers and implementation, see Julie Mulligan, "The Ontario Experience", in *Trees Have Rights Too: A Comparison of Bylaws Across Canada*, prepared for the Second Canadian

along with enhanced enforcement powers (including orders to stop the damaging activity) and penalties. The legislation also does not contain the *Trees Act* exceptions, although conceivably these could be mirrored in any regulations passed to limit the application of by-laws under this new authority. How effective these new powers will prove to be depends upon municipalities' willingness to pass appropriate by-laws, as it does under the *Trees Act.*

The tree cutting and designation powers noted above are the regulatory side of tree-oriented habitat legislation. There are also a range of mechanisms which encourage tree planting, rather than merely prevent tree cutting. Under the *Trees Act*, certain municipalities may pass by-laws for raising money for, acquiring, managing or declaring land for forestry purposes, and may make agreements for the planting, fencing and management of trees; this authority is subject to the approval of the Minister of Natural Resources[149]. This Minister is similarly authorized under the *Forestry Act* to encourage forestry, operate tree nurseries, provide nursery stock, and enter long-term agreements with landowners to promote a broad range of "forestry purposes"[150]. Related authority to enter agreements with landowners for such forestry purposes and tree planting is also found in the *Woodlands Improvement Act*[151]. The programs developed under these statutes have led to substantial reforestation and woodland management activity, particularly in easily eroded and rural areas.

2. Other Plant Legislation

Other legislation is used to regulate the use of trees, herbaceous plants, and habitat protection. Where there is not a specific reference, non-woody plants may be implied within terms such as "woodland" or "habitat" in some legislation[152].

One of the few non-tree, commercially-oriented statutes is the *Wild Rice Harvesting Act, which* prohibits the harvesting of wild rice without a licence on Crown

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Urban Forests Conference, July 1995, Windsor, Ontario.

149 *Trees Act*, ss.7 and 11-13.

150 *Forestry Act*, R.S.O. 1990, c.F.26, ss.2, 4 and 8. Under s.1, "forestry purposes" are defined to include wood production, "proper environmental conditions for wild life", protection for water supplies and from hazards, and recreation. For a history and discussion of the agreement forests program, see Ministry of Natural Resources, *Evergreen Challenge*, supra note 36.

151 *Woodlands Improvement Act*, R.S.O. 1990, c.W.10.

152 Mike Rosen, Stewardship Coordinator, Ministry of Natural Resources, personal communication, May 23 1996.

lands (ie. where rooted in shallow waters the bed of which is owned by the Crown)[153]. Only residents can obtain such licences, and these are issued based upon designated wild rice harvesting areas and subject to the payment of any royalties set out in the regulations[154]. The extraction and use of peat, including its living moss and surface plant component, is essentially unregulated in the province, despite increasing commercial interest in this area for horticultural and energy purposes and past impacts upon bogs and other wetlands.

The protection of plants and plant habitat is found in several statutes. As discussed above, the *Endangered Species Act* protects designated plants as well as animals, but the *Game and Fish Act* enforcement powers cross-referenced in this Act do not always transfer well to the plant context. Permits are required under the *Public Lands Act* and Regulations to dredge or fill any "shore lands" of navigable waters, and this provision has been used to regulate impacts upon wetland and shoreline vegetation[155]. This Act may also be used to generally control activities affecting plants on public lands, while *Planning Act* policies guide private land habitat protection.

Beyond tree-planting and -cutting by-laws and land use planning, municipalities may pass by-laws for certain landscapes. These may be for regulating public use and "protection" of municipally-owned lands, "for preserving shores, bays, harbours, rivers or waters and the banks thereof" (including preventing pollution and obstructions), and for regulating use of "pits, precipices and deep waters" dangerous to travellers[156]. Unfortunately, newer ecological understandings and planning policy directions are not reflected in some of the *Municipal Act*'s older sections which allow by-laws for "filling up, draining, cleaning and clearing of any grounds", purchase and draining of "wet land", and clearing streams and creeks of obstructions[157].

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153 *Wild Rice Harvesting Act*, R.S.O. 1990, c.W.7.

154 Ibid, subsections 3(2) and 4(1). In O.Reg. 1097, four areas are designated and a $1 licence fee is charged.

155 *Public Lands Act*, R.S.O. 1990, c.P.43, s.14. Note that the *Savings and Restructuring Act, 1996*, S.O. 1996, c.1, Sched. M, s.4, replaces this section, and this Act also creates the opportunity to limit this permitting process. See also the *Lakes and Rivers Improvement Act*, R.S.O. 1990, c.L.3, similarly affected by this Act, Sched. M, s.3.

156 *Municipal Act*, s.191; s.207, paras. 31, 33, 37 and 38; and s.308, paras. 6 and 7, respectively.

157 Ibid, ss.207, para. 38; s.210, paras. 80 and 81; and s.282.

Municipalities also have other authority for plant and habitat protection, including powers under regional, county, district, metropolitan or local municipality Acts. For example, the *City of Toronto Act, 1983* enables the City to pass by-laws to protect ravines from the destruction of trees and other vegetation, altering of elevation or contours, and disposal of water[158]. Municipal designation and protection of historic properties can occur under the *Ontario Heritage Act*, which may include landscaped and natural features[159]. The *Topsoil Preservation Act* allows municipalities to regulate the removal and restoration of topsoil, which can influence decisions that affect surficial vegetation[160].

The Ministry of Natural Resources may operate nurseries under the *Forestry Act*, and the regulations may prescribe certain purposes, classes of land, conditions and charges for furnishing nursery stock to the public[161]. The definition of "nursery stock" in section 1 of the Act does not include pollen, seeds or other reproductive components potentially stored and distributed by nurseries. Consequently, this older Act contains legal limitations for the *ex situ* conservation and restoration of plant populations and the genetic variability among them.

Nurseries provide a means to maintain, increase and distribute plant species, including rare species and varieties (although many nurseries have limited local and native stock). They also can be centres for plant infection and subsequent vectors for wider infestations where plants are introduced. Accordingly, non-MNR nurseries must operate with a licence under the *Plant Diseases Act*, and no person shall transport or ship from a nursery any plant having a plant disease designated in the Act's

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158 *City of Toronto Act, 1983*, S.O. 1983, c.Pr.30, s.8, replacing s.2 in the *City of Toronto Act, 1971*, S.O. 1971, c.130. See the City of Toronto *Ravine Control By-law*, By-law No. 652-84.

159 *Ontario Heritage Act*, R.S.O. 1990, c. O.18, s.29. Some 45 properties are so designated in Toronto, including the tree at 62 Laing Street (Maple Leaf Cottage) which inspired Alexander Muir's song, "The Maple Leaf Forever" (By-law No. 567-92). Kathryn Anderson, Preservation Officer, Toronto Historical Board, in facsimile to Mike Rosen, Stewardship Coordinator, Ministry of Natural Resources, November 17 1995.

160 *Topsoil Preservation Act*, R.S.O. 1990, c.T.12. "Topsoil" is defined to be the "A" horizon containing organic material.

161 Forestry Act, R.S.O. 1990, c.F.26, ss. 8 and 10, and O.Reg. 458.

regulations[162]. Municipalities may, by by-law, add plant diseases to those listed in these regulations, and may appoint inspectors with the powers to enter any nursery, farm, garden or orchard, and order the disinfection or prohibit the growing of plants[163]. Controls on forest tree pests are governed by the *Forest Tree Pest Control Act*, discussed on page 366.

While there is this suite of legislation concerning plants, it contains many inadequacies. Besides trees and wild rice, much of the legislation does not deal directly with plants, particularly herbaceous and non-commercialized plants and genetic considerations. Harvesting of and trade in peat and species not designated as endangered are largely unregulated, while provisions for designated plants and their habitat are generally not enforced. Further, provisions under the *Weed Control Act* do not recognize some indigenous species and restoration efforts (see discussion in the Restoration section). A number of additions to the legislative framework for trees have been recommended by the Urban Forest Working Group, including the dedication of forested land to municipalities in addition to existing parkland dedication requirements during development[164].

3. Plant Genetic Diversity

Considerations of plant genetic diversity are very limited in Ontario law and policy. The *Endangered Species Act* enables the protection of some Carolinian species at the northern edge of their range, thus indirectly protecting this genetic stock and creating the impetus for developing recovery plans. The University of Guelph Arboretum has sponsored the Tree Atlas Project to document species distribution and abundance, and an *ex situ* collection of rare Carolinian forest species.

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162 *Plant Diseases Act*, R.S.O. 1990, c.P.14, ss. 2, 3 and 17. Section 17 also enables the designation of "plant disease control areas" and control or eradication of plant diseases within these areas.

163 Ibid, ss.12-14.

164 Urban Forest Working Group, *Sustainable Forests in Urban Ontario: A Framework for an Ontario Urban Forest Strategy* (Toronto: Queen's Printer for Ontario, 1995), at page 15, available from the Urban Forests Centre, Faculty of Forestry, University of Toronto. This proposal would require amending section 51 of the *Planning Act*.

The primary other initiative has been the Genetic Heritage Program, launched in 1991 under the 5-year Sustainable Forestry Initiative[165]. The goals of the Program include developing gene conservation strategies for species that are vulnerable to extinction forces, developing genetic resource management policy and management guidelines for forest management planning, and conducting research directed at identifying spatial patterns of adaptive variation in some of Ontario's keystone species. The Program has developed an Ontario Climate Model to ensure seed zones reflect climatic gradients, a study of five species' genetic adaptation to geographic and environmental variation, and the Genetic Diversity Project (responsible for gene conservation strategies for species vulnerable to extirpation). Seed storage and genotype conservation methods are also recognized as useful *ex situ* measures to recolonize populations, and to control mating and protect against additional losses in extremely low populations.

While programs are advancing, it is apparent that Ontario has practically no law and policy specifically designed to address plant genetic conservation and use. As noted above, collection and nursery propagation and distribution of genetic materials are largely uncontemplated in the legal framework. As the few programs mature, measures will be needed to support the application of their lessons to designations and management of "Genetic Resource Management Units" and the specific roles of existing protected areas, as well as a variety of *ex situ* measures. This will take more consideration and discussion, and must extend beyond commercial tree species to address the full range of plant genetic conservation issues. By doing so, Ontario will then move towards meeting the requirements in the *Biodiversity Convention* to "establish and maintain facilities for *ex-situ* conservation of and research on plants, animals and micro-organisms, preferably in the country of origin of genetic resources" (Article 9(b)).

Wild Plant Recommendations:

1. **Create legislation dealing with wild plant species (eg. take, trade and habitat) and enhance provisions as they affect plant species at risk.**

2. **Encourage and pass municipal tree-cutting by-laws.**

3. **Develop measures to support plant genetic conservation, both through existing and new protected area designations and through *ex situ* methods.**

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165 See D. Joyce, "Genetic Resource Management Principles and Their Application in the forests of Ontario", in T. Nieman, A. Mosseler and G. Murray (eds.), *Forest Genetic Resource Conservation and Management in Canada*, Information Report PI-X-119 (Petawawa, Ontario: Canadian Forest Service, 1995), pp.47-51.

D. HABITAT STEWARDSHIP AND LAND USE PLANNING

While the law and policy relating to wild plants was discussed above, the following sections are oriented more towards broader habitat and land use than on particular species within such an assembly. Law is often seen as simply regulatory, and restrictive of what people can and can not do. However, law and associated policies can enable and support activities, and this is particularly evident in promoting the voluntary stewardship of private lands. Regulatory methods are nonetheless still necessary, and land use planning is a key process that allows different private and public visions to be expressed and resolved. Land use planning is undertaken by both municipalities and the province, and thus these are presented in separate sections below.

1. Voluntary Stewardship of Habitat

Voluntary stewardship of lands by private owners is critical to conservation and sustainable use of biodiversity, particularly in southern Ontario where much of the land base and a rich suite of biodiversity are held in private hands. Regulatory means have been, and continue to be, appropriately used, but often encounter resistance and misunderstandings. Voluntary approaches enable individuals to select the methods, timing and partnerships most appropriate to their needs, and thus open discussions to wider and more positive possibilities for biodiversity. The law can enable this potential in a variety of ways by creating organizations, defining mandates, providing incentives, and enabling tools to accomplish particular tasks. Some of these are sketched below. As well, creative approaches to land acquisition and management are important components of voluntary stewardship, and are enabled under a large number of real property and contract laws[166].

The *Conservation Land Act* is one of the key statutes that promote voluntary stewardship[167]. Under section 2 of the Act, the Minister of Natural Resources may establish programs for defined "conservation land"[168]. This broad authority has been

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166 For example, the *Land Titles Act*, R.S.O. 1990, c.L.5 and *Registry Act*, R.S.O. 1990, c.R.20. For excellent discussions of stewardship approaches, see Ron Reid and Stewart Hilts, *Land Stewardship Options*, Background Paper prepared for the Greater Toronto Area Greenlands Strategy (Toronto: Queen's Printer for Ontario, 1990); and Stewart Hilts and Ron Reid, *Creative Conservation: A Handbook for Ontario Land Trusts* (Don Mills: Federation of Ontario Naturalists, 1993).

167 *Conservation Land Act*, R.S.O. 1990, c.C.28.

168 "Conservation land" is defined in section 1 to include wetlands, Areas of Natural and Scientific Interest identified by the Ministry of Natural

used to establish the Conservation Land Tax Reduction Program (CLTRP) whereby the province fully reimburses owners who have paid property taxes on designated conservation lands. The Managed Forest Tax Rebate Program and Farm Tax Rebate Program provide similar property tax incentives at a 75 percent level to keep lands under a forest plan or in agriculture. These programs are discussed further in the Economic Incentives section.

The broad mandate of the *Conservation Land Act* has not yet been used to elaborate a fuller range of programs for habitat conservation and sustainable use on private land. However, a new section 3 was added to the Act to enable covenant and easement agreements to be entered between landowners and governments, their agencies, conservation authorities or qualified charities (termed "conservation bodies")[169]. Such agreements may be made for the "conservation, maintenance, restoration or enhancement" of land or wildlife, or access for these purposes. Other authority for entering such agreements exists and has been used extensively by the Ontario Heritage Foundation and municipalities, but only particular government agencies may enter such interests with landowners[170]. Common law easements and covenants and building schemes may enable similar measures; however, they are subject to

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Resources, land within the Niagara Escarpment Planning Area, conservation authority land, and other lands of non-governmental organizations which contribute to provincial objectives.

169 Ibid, as amended by the *Statute Law Amendment (Government Management and Services) Act, 1994*, S.O. 1994, c.27, s.128(2) (Bill 175), in force since January 31 1995.

170 *Ontario Heritage Act*, R.S.O. 1990, c.O.18, ss.7, 10, 22 and 37; and *Agricultural Research Institute of Ontario Act*, R.S.O. 1990, c.A.13, ss.3, 4, 4.1 and 9, as amended by S.O. 1994, c.27, s.5 (ibid), and proposed for re-enactment in the Ministry of *Agriculture, Food and Rural Affairs Statutory Law Amendment Act, 1996* (Bill 46), Schedule B, introduced for First Reading on 2 May 1996. Also see the following statutes for the registration of agreements with potential conservation applications: *Forestry Act*, R.S.O. 1990, c.F.26, ss.2-3; *Game and Fish Act*, R.S.O. 1990, c.G.1, s.6; *Ministry of Government Services Act*, R.S.O. 1990, c.M.25, s.10; *Planning Act*, R.S.O. 1990, c.P.13, ss. 41(10) and 51(26); and *Public Lands Act*, R.S.o. 1990, c.P.43, s.46, among others. See Ian Attridge, *Guide to Using Conservation Covenants and Easements in Ontario* (University of Guelph and Federation of Ontario Naturalists, forthcoming).

several limitations for conservation purposes[171].

Conservation covenants and easements are private, flexible agreements that run with the land and thus bind future landowners to their conditions. They have been used extensively in the United States to conserve land and biodiversity, to control resource extraction operations, or to create trails. Many private conservation organizations and newly formed land trusts are preparing to use the *Conservation Land Act*'s expanded authority, which will require regular monitoring to ensure compliance with the agreement's terms. Further, as many lands in Ontario are deemed by governments to be surplus or too expensive to maintain, they will be transferred from public to private hands. Such situations then provide opportunities for conservation covenants and easements to be used by these agencies or private conservation groups to ensure continued conservation of biodiversty on these lands.

Organizational and financial capacity is needed to support voluntary stewardship programs and respond to landowners' interests in participating in them. Non-profit organizations can be incorporated under Part III of the *Corporations Act*[172], thereby giving them a distinct legal identity with the ability to enter contracts and acquire lands, among other activities useful for biodiversity purposes. Ordinary corporation, employment and tax laws apply to non-profit organizations, but provincial or federal charity law may also apply[173]. Various agencies actively involved in habitat stewardship have been incorporated under other legislation, such as conservation authorities, the Niagara Escarpment Commission, the Royal Botanical Gardens, a Toronto Islands community trust and the Waterfront Regeneration Trust[174]. The establishment of these

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171 Under the common law, there must be land nearby which benefits from the easement or covenant on another property, it is unclear whether conservation would constitute such benefit, covenants can only provide restrictions (and not requirements to take particular actions), and they may not be assigned (passed on) to anyone else.

172 *Corporations Act*, R.S.O. 1990, c.C.38. Organizations can also incorporate under Part II of the *Canada Corporations Act*, R.S.C. 1970, c.C-32.

173 The *Charitable Gifts Act*, R.S.O. 1990, c.C.8, and the *Charities Accounting Act*, R.S.O. 1990, c.C.10 and the supervision of the Public Guardian and Trustee will apply to organizations operating as a charity, regardless of whether they have obtained charitable status under the federal *Income Tax Act*, R.S.C. 1985, c.1 (5th Supp.).

174 *Conservation Authorities Act*, R.S.O. 1990, c.C.27 (watershed conservation activities); *Niagara Escarpment Planning and Development Act*, R.S.O. 1990, c.N.2 (primarily regulatory, but also education and other

organizations has been accompanied with some form of funding, property tax or loan guarantee provisions, which have helped maintain financial viability for their stewardship activities. Other financial programs are discussed in the sections on Provincial Planning and Economic Incentives.

As examples of current biodiversity-oriented stewardship programs, the *Eastern Habitat Joint Venture*, a program of the *North American Waterfowl Management Plan* (NAWMP), has brought many agencies and organizations and substantial long-term funding together to secure significant wetland habitat (see further discussion of the NAWMP in the Federal and Prairie Provinces chapters). The Private Land Resource Stewardship Program was established in 1994 by the Ministry of Natural Resources to provide regional support for stewardship by landowners and other land interests. Ministry-based Stewardship Coordinators work with representatives of key organizations and agencies on county-scale stewardship councils. These councils foster coordinated stewardship actions, with a small fund available through the Program to leverage other contributions. The Program builds upon agricultural land stewardship models established by the Ministry of Agriculture, Food and Rural Affairs. It is intended to cover a range of resource concerns defined by the councils and to increasingly deliver more of the Ministry of Natural Resources' southern Ontario programs.

The Ministry of Environment and Energy's Business Plan also recognizes promotion of environmental stewardship as a "core business", but the means it outlines are limited to "public information and partnership activities", and a very general performance measure of "increased public involvement"[175]. While the Ministry has responsibilities for Niagara Escarpment lands which qualify for the CLTRP and is considering development of a land trust there, measures such as leadership and support (eg. coordination, funding, incentives, training), and outcomes such as increased landowner contact, donations and land committed to stewardship, are not mentioned. More specific directions of working with and coordinating Remedial Action Plan groups, and restoration of "degraded ecosystems to support a broader diversity of plants and wildlife", are identified for Environmental Remediation.

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stewardship); *Royal Botanical Gardens Act*, S.O. 1989, c.Pr22 (ownership, management and education); *Toronto Islands Residential Community Stewardship Act, 1993*, S.O. 1993, c.15, as proposed to be amended in Bill 38, which received Second Reading on May 2 1996 (holding property in trust); and the *Waterfront Regeneration Trust Agency Act, 1992*, S.O. 1992, c.2 (conservation and Lake Ontario trail development).

175 Ministry of Environment and Energy, *Business Plan - Ministry of Environment and Energy* (Toronto: Queen's Printer for Ontario, 1996), pp.10 and 12.

2. Planning Act and Private Lands

Land use planning on private lands is governed primarily by the *Planning Act*[176]. The responsibilities for such planning are shared between local municipal governments and the provincial government. The latter has supervisory, integration and coordinating roles for municipalities as well as being responsible for substantial infrastructure and other transfer payments and the broader public interest. The province determines the legislative framework, declares provincial interests, issues policies under the Act to which all planning decisions must "have regard", and has administrative oversight of the Ontario Municipal Board tribunal. The province also has approval authority for a variety of planning tools, but this is increasingly delegated in the Act or through administrative procedures to the municipalities.

Despite the important role of the province, municipalities are the principal decision makers for land use planning in the province. This is carried out through the development of official plans (policies and objectives guiding decisions) and implementing zoning by-laws (land use rules)[177]. Zoning and other controls must be in conformity with the official plan, and local area municipal plans must be in conformity with upper-tier (regional) official plans[178].

Zoning establishes permitted uses for designated areas. This mechanism is regularly used to identify "Environmentally Sensitive Areas" and similar designations in order to restrict development and certain uses, and thereby protect identified natural heritage features and functions in these areas. "Open Space" or "hazard land" designations have also been extensively used, but tend to be less specific in their purposes, and thus may allow uses which are incompatible with conservation of biodiversity on these sites.

Other land use controls are found in the Act, including:

- holding zones, density controls, or interim control by-laws (ss.36-38);
- site plan control by-laws, including landscaping (s.41);
- a Minister's zoning order, which supersedes local zoning (s.47(1));
- severance and plan of subdivision approvals (ss.50-53); and,
- dedication requirements for land or money towards parks (ss.42, 51.1 and 53).

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176 *Planning Act*, R.S.O. 1990, c.P.13.

177 Ibid, Part III (Official Plans) and ss.34-35.

178 Ibid, ss.24-25 and 27, among other sections relating to specific land use controls.

A discussion of all of these mechanisms is beyond the scope of this chapter, but municipalities and the province have used them for biodiversity purposes to complement and enhance traditional official plan and zoning by-law techniques[179].

Major reforms to the land use planning process in Ontario were developed in the early 1990s and were being phased in during the spring of 1995. These reforms under the previous government followed a series of reports indicating environmental and other limitations in the planning process, and a nearly four-year process of analysis, extensive consultation and emerging consensus by the province and the Sewell Commission on Planning and Development Reform in Ontario[180]. However, the new provincial government has largely "dismantled" these reforms, as promised, with a new legislative,

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179 For a more detailed discussion of the application of these tools to greenspace, see The Butler Group (Consultants) Inc., *Land Use Planning Controls*, A Background Paper Prepared for The Greater Toronto Area Greenlands Strategy (Toronto: Queen's Printer for Ontario, 1990); Thomas C. Moull and Gregory G. Norris, *Best Practices: Innovative Approaches for Achieving Public Benefits on Privately-Owned Natural Areas* (Toronto: Office of the Provincial Facilitator, Ontario Ministry of Municipal Affairs and Housing, 1995); and Neida Gonzalez, *A Citizen's Guide to Protecting Wetlands and Woodlands* (Don Mills, Ontario: Federation of Ontario Naturalists, 1996).

180 Key among the reports are: Ontario Environmental Assessment Advisory Committee, *Report No.38: The Adequacy of the Existing Environmental Planning and Approvals Process at the Ganaraska Watershed* (Toronto: Ontario Environmental Assessment Advisory Committee, 1989); Ontario Environmental Assessment Advisory Committee, *Report No.41 (Part 2): Environmental Planning and Approvals in Grey County* (Toronto: Ontario Environmental Assessment Advisory Committee, 1990); Ronald L. Doering, Donald M. Biback, Paul Muldoon, Nigel H. Richardson and George H. Rust-D'Eye, *Planning for Sustainability: Towards Integrating Environmental Protection into Land-Use Planning*, Discussion Paper prepared for the Commission (Toronto: Royal Commission on the Future of the Toronto Waterfront, 1991); Royal Commission on the Future of the Toronto Waterfront, *Regeneration - Toronto's Waterfront and the Sustainable City: Final Report* (Toronto: Minister of Supply and Services Canada, 1992); and Commission on Planning and Development Reform in Ontario, *New Planning for Ontario: Final Report* (Toronto: Queen's Printer for Ontario, 1993).

policy and administrative package[181].

The 1995 reforms married enhanced environmental protection, the streamlining of approvals, and delegation of provincial approval authority to the regional and local levels within clear rules and local accountability. This shift was accomplished by a combination of Bill 163 revisions to a raft of statutes, a new Comprehensive Set of Policy Statements setting out the provincial interest and objectives for planning matters (including specific measures for natural heritage, agriculture and settlement growth), and a series of administrative improvements driven by the new Provincial Facilitator.

These reforms were controversial and affected well-entrenched municipal, provincial and development interests, although they did not deal with associated issues of municipal restructuring and finance[182]. Despite widespread support and consensus on the need for change, some developers felt the policies were too restrictive and would annul their plans for sensitive sites, municipalities chaffed at provincial constraints, and rural landowners felt that natural heritage designations were an infringement on their property "rights" and called for compensation for such "expropriation". However, the land was not taken by government for its own purposes and thus did not amount to expropriation, and compensation for down- or up-zoning is not recognized in Canadian law[183].

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181 *Land Use Planning and Protection Act, 1996*, S.O. 1996, c.4, which amends the *Planning Act* and a few other statutes; and the *Provincial Policy Statement* (Toronto: Queen's Printer for Ontario, 1996), approved by Order in Council No. 764-96, and in force May 22 1996.

182 The former Commissioner of the Royal Commission on the Future of the Toronto Waterfront, David Crombie, was appointed in 1996 to head the literal "Who Does What" Panel, which will deal with these thorny issues. See Lisa Wright,"Action on Property Tax Promised in Six Weeks: Crombie to Head Fast Review", *The Toronto Star*, May 31 1996, p.A1.

183 See *British Columbia* v. *Tener* (1985), 17 D.L.R. (4th) 1 (S.C.C.), among others; Richard Lindgren and Karen Clark, *Property Rights vs. Land Use Regulation: Debunking the Myth of "Expropriation Without Compensation"*, Notes for an Address to the Oak Ridges Moraine Technical Working Committee (Toronto: Canadian Environmental Law Association, 1994); and the attempt to make property rights paramount through the *Human Rights Code* by the *Property Rights Statute Law Amendment Act, 1995* (Bill 11), introduced by a Private Member of the governing party on October 30 1995 (Québec Referendum day) and reaching Second Reading on November 2 1995 (and now sidelined in Committee).

While initially attractive, advocating property rights has become somewhat of a code for reducing or compensating for environmental restrictions, based upon extended interpretations of U.S. constitutional principles which do not apply in this country. Such arguments frequently fail to acknowledge other environmental, social or economic values, and their balance, in the community. On this controversial issue, it is important to note several points: landowners' concerns have not been expressed for the older *Mineral Aggregates Resource Policy* nor for building or fire codes and other restrictions protecting public safety; zoning arose as a publicly accessible process to protect property values from inappropriate uses and to ensure that persons not owning property have a role in determining the form of their communities; municipalities make most zoning decisions after elaborate processes and thus any compensation would ultimately flow from municipal taxpayers; governments are generally not compensated for landowners' increased property values resulting from zoning or infrastructure decisions (and property rights advocates do not suggest such reciprocity); and zoning changes can only restrict future (ie. speculative) use changes while establishing current uses as "legally nonconforming".

With concerted education and growing awareness of the benefits of ecological planning (including economics), over time the 1995 reforms might have overcome these concerns and amounted to one of the most significant single advances for conservation in the province's history. However, they were essentially untested before the newly-elected government announced that they were unworkable and then introduced its own package of reforms without further public consultations. The reforms game more control to municipalities. Many environmental organizations have strong and historically well-founded concerns about the delegation of approval authority to municipalities, especially since they often lack the resources, expertise and sometimes willingness to address biodiversity concerns. Resources and expertise will now be even less available under decreased transfer payments and the down-sizing of provincial Ministries and conservation authorities.

Under Bill 163, municipalities were required to make planning decisions "consistent with" provincial policy statements, as were provincial Ministries and agencies in making planning comments, submissions or advice[184]. In favour of more municipal discretion and less provincial control, Bill 20 has now returned this phrase to its looser, procedural and pre-reform wording of "have regard to"[185]. It also enables delegation of provincial approvals of official plans to municipalities themselves, and has largely eliminated the role of sectoral Ministries (eg. Natural Resources, Environment and Energy, and Agriculture, Food and Rural Affairs) and agencies by enabling "one-window"

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184 *Planning Act*, R.S.O. 1990, c.P.13, ss.3(5) and (6), added by S.O. 1994, c.23, ss.6(2) and (3).

185 S.O. 1996, c.4 (Bill 20), s.3, affecting the *Planning Act*, s.3.

provincial plan review, input and appeals through the Ministry of Municipal Affairs and Housing[186]. This latter Ministry will continue to reduce "provincial rules about how municipalities operate their services" and "provide education, training and information services to help improve the planning standards in the province"; "good development" and streamlined planning outcomes will be measured against reductions in approval times and administrative costs, and as yet undefined measures of "adherence to land use policy"[187].

Other *Planning Act* amendments in Bill 163 more clearly supported biodiversity conservation. The Act's purposes now include "sustainable economic development in a healthy natural environment", and the Act's provincial interests have been expanded to include "the protection of ecological systems, including natural areas, features and functions ... [and] the conservation and management of natural resources ..."[188]. Additional powers have been added to enable municipalities to regulate development within an identified natural heritage system and control tree cutting and landform modification, while planting and landscaping can be required as a condition of approval for site and subdivision plans[189]. Most of these general reforms have remained in place.

Before the reform processes were put in place, the province had issued four policy statements under the Act: Mineral Aggregate Resources (1986), Flood Plain Planning (1988), Land Use Planning for Housing (1989), and Wetlands (1992). The 1995 reforms took a broader approach and established a *Comprehensive Set of Policy Statements* setting out provincial policy and objectives ranging from natural heritage and agricultural land preservation to urban intensification, social services and housing, and aggregate and petroleum extraction[190]. The 1996 reforms have simplified, weakened and deleted

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186 Bill 20, ss.1 and 3, affecting the *Planning Act*, ss.1 and 3.

187 Ministry of Municipal Affairs and Housing, *Business Plan - Ministry of Municipal Affairs and Housing* (Toronto: Queen's Printer for Ontario, 1996), at pp.8-9 and 12.

188 Ss. 1.1 and 2.

189 *Planning Act*, R.S.O. 1990, c.P.13, ss.1.1, 2, 41(&) and 51(18), as amended by S.O. 1994, c.23, ss.4, 5 and 28.

190 Ministry of Municipal Affairs, *Comprehensive Set of Policy Statements* (Toronto: Ministry of Municipal Affairs, 1995), and as approved in Order in Council No. 336/95 on February 15 1995. See in particular the Natural Heritage, Environmental Protection and Hazard (Goal A) and the Interpretation and Implementation (Goal G) Policies and the definitions. These policies are interpreted in the *Natural Heritage and Environmental*

some categories in the revised *Provincial Policy Statement*[191], but the breadth of this provincial policy remains through policies on resources, public health and safety, and efficient, cost-effective development and land use patterns. No Guidelines are expected to be issued to assist with implementing these new policies, unlike previous policy statements. Under section 3 of the *Planning Act*, all municipal and provincial planning decisions must "have regard to" these policies.

The natural heritage policies in the *Provincial Policy Statement* are the most important for conservation and sustainable use of biodiversity. "Development" is defined to mean lot creation, change in land use, or construction of buildings or structures requiring approval under the *Planning Act*, and excludes infrastructure activities and works under the *Drainage Act*. The natural heritage policies can be paraphrased as:

- natural heritage features and areas will be protected from incompatible development (s.2.3.1);
- development and site alteration will not be permitted in significant wetlands south and east of the Canadian Shield and significant portions of the habitat of endangered and threatened species (s.2.3.1 a));
- development and site alteration may be permitted in fish habitat, in significant Shield wetlands and off-Shield woodlands and valleylands, in significant wildlife habitat and Areas of Natural and Scientific Interest, or in lands adjacent to any of the above if it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions for which the area is identified (ss.2.3.1 b), and 2.3.2);
- the diversity of natural features in an area, and the natural connections between them, should be maintained, and improved where possible (s.2.3.3); and,
- nothing in these policies is intended to limit the ability of agricultural uses to continue (s.2.3.4).

Interpretations of these policies by the Ontario Municipal Board, and the extent to which they are "regarded" and thus implemented through planning decisions, remain to be seen. Despite being weaker than the *Comprehensive Set of Policy Statements*, they are nonetheless more specific and broader than the few policies in place before the 1995 reforms. The 1995 version of the Implementation Guidelines does not now entirely match the 1996 policies, but it has yet to be replaced and thus stands as good planning advice. Land use planning that conserves biodiversity through a natural heritage system

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Protection Implementation Guideline (Toronto: Ministry of Municipal Affairs, 1995).

191 Ministry of Municipal Affairs and Housing, *Provincial Policy Statement* (Toronto: Queen's Printer for Ontario, 1996), approved by the Lieutenant Governor in Council as Order in Council No. 764-96.

is increasingly recognized as "good planning" by municipalities, and therefore may be achieved in practice despite less provincial government support and direction.

3. Niagara Escarpment and Other Provincial Planning

The previous section identified a provincial role in planning for private lands, but essentially focused on a system that is delivered through municipal decisions. The province has undertaken land use planning itself in several instances, primarily where there is a significant provincial interest extending in a corridor across several municipal jurisdictions. Such examples include the Niagara Escarpment, Parkway Belt, Oak Ridges Moraine, and Kawartha Lakes, among others. These mechanisms have afforded protection to sensitive and threatened features where coordinated and committed provincial leadership has been required, and other habitats or interests could be conserved in a similar fashion.

The Niagara Escarpment is a 725 km-long limestone ridge running from Niagara Falls to the tip of the Bruce Peninsula, and beyond. It encompasses many significant species and natural areas, and is recognized as a Biosphere Reserve by UNESCO (see the discussion in the Federal chapter). Planning on and surrounding the Escarpment is governed by the *Niagara Escarpment Planning and Development Act*, which has a visionary and powerful goal:

> The purpose of this Act is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment[192].

This goal is accomplished through a sophisticated land use plan, a coordinated parks system, and a development control and permit system administered by a specialized agency, the Niagara Escarpment Commission[193]. The Act establishes an elaborate process and criteria for developing, amending and reviewing the Niagara Escarpment Plan, and local municipal undertakings and by-laws must not be in conflict with this Plan[194]. The Act also prescribes that no person shall make any change in the use of any land, building or structure (ie. "development") within the development control

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192 *Niagara Escarpment Planning and Development Act*, R.S.O. 1990, c.N.2, s.2. Also see ss.8 and 9 for complementary objectives and plan contents.

193 See the *Niagara Escarpment Plan, which guides these mechanisms.* It was first approved by the Lieutenant Governor in Council in 1985, and was substantially reviewed and revised in 1994 after public hearings.

194 Ss. 7-17. The planning area is designated in Reg.827.

area unless a development permit is issued or the development is exempted by the regulations[195].

The Niagara Escarpment Commission has a strong mandate and has been controversial due to its growing effectiveness, particularly with the appointment of committed Commissioners. It has been severely affected by recent budget cuts and staff layoffs, and rumours persist that the Commission's functions will be delegated to the municipalities. Such a move would dismantle consolidated expertise and the efficiencies that this provides, as well as leave the fate of the escarpment with municipalities which may not have the financial abilities nor political will to ensure its conservation.

The Act has remained essentially the same since first enacted in 1973, with fine increases in 1989. Experience over the years suggests that it could be improved by expanding enforcement measures (including administrative order powers), permanently entrenching the Plan boundaries in the Act, recognizing the Bruce Trail and the Bruce Trail Association, improving development permit and Plan amendment and review procedures, and clarifying the operation of other sections[196]. However, such amendments are unlikely to be proposed in the near future, given other priorities of the government.

Complementing the regulatory aspects of the Act and Plan, the $25 million Niagara Escarpment Land Acquisition and Stewardship Program (NELASP) has provided funding over a ten-year period. This was directed primarily towards priority land purchases by provincial agencies, the regional conservation authorities, or the Bruce Trail Association, and also for landowner contact and information to support the Act's objectives. The funding of NELASP ended in 1995, but initial discussions suggest that a land trust of some form might assume some of these responsibilities in the future. The integration of techniques covering both private and public lands has proven to be largely successful in accomplishing the stated goal, despite the Escarpment being a prime source of aggregate (and thus controversy) and landowner frustration at close supervision of development.

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195 Section 24. See Reg. 826 for the extensive area within development control (almost matching the Plan area), and Reg.828 for permit requirements and exemptions. Over 90 percent of all developments are caught by these exemptions, leaving only a small number requiring permits and scrutiny by the Commission.

196 Kevin McNamee, "Preserving Ontario's Natural Legacy", p.311. Some of these potential changes are hinted in revisions to the similar *Ontario Planning and Development Act*, reenacted as Schedule A by s.1 of the *Planning and Municipal Statute Law Amendment Act, 1994*, S.O. 1994, c.23 (Bill 163).

Similar to the *Niagara Escarpment Planning and Development Act* and enacted at the same time, the *Parkway Belt Planning and Development Act* provided for the development of a provincial plan stretching out as a multi-purpose utility, urban separator and linked open space corridor from Toronto[197]. The Act has now been repealed, but the Parkway Belt West Plan it produced contains designations of "Public Open Space and Buffer Areas" and is deemed to be a plan under the *Ontario Planning and Development Act, 1994*[198]. This latter Act has not been extensively used since it was first enacted in 1973. In this same earlier era of provincial planning, the *North Georgian Bay Recreational Reserve Act* was passed to formalize a process for conservation and recreation planning on public lands from Parry Sound to Blind River, and inland to Sudbury and Lake Nipissing[199]. These Acts then provide additional examples of developing provincial plans for a prescribed area, with the *Ontario Planning and Development Act* requiring that municipal undertakings and by-laws must not be in conflict with its plans.

As noted earlier, there are a range of *Planning Act* powers for provincial planning. The Minister's zoning order is less procedurally prescribed than the Provincial Plans described above[200], and this authority has been used for lands near the waterfront in Etobicoke, including the determination of parkland. A 1978 Cabinet-approved set of 36 policies, the Kawartha Development Strategy, guides development to minimize the loss of recreational opportunities and the decline in water quality in those Kawartha lakes

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197 *Parkway Belt Planning and Development Act*, R.S.O. 1990, c.P.3. now repealed. See the resulting Parkway Belt West Plan (Toronto: Ministry of Treasury, Economics and Intergovernmental Affairs, 1978), approved by the Lieutenant Governor in Council as Order in Council 2188/78 on July 19 1978.

198 *Planning and Municipal Statute Law Amendment Act, 1994*, S.O. 1994, c.23 (Bill 163), s.1 and Schedule A (see s.22 for deeming the Parkway Belt West Plan a plan under this Act).

199 *Killarney Recreational Reserve Act, 1962-63*, S.O. 1962-63, c.68, amended by S.O. 1964, c.52 to become the *North Georgian Bay Recreational Reserve Act*. The Act is still in force, and a framework plan and later more detailed local plans and MNR District Land Use Guidelines were developed and adopted to implement the Act's objectives. See Department of Lands and Forests, *North Georgian Bay Recreational Reserve: A Summary Report* (Toronto: Department of Lands and Forests, 1971).

200 S.47(1). Note that, under the *Ontario Planning and Development Act, 1994*, s.18, the power to make such zoning orders remains even though a development plan is in effect under that Act.

within the Canada Ontario Rideau-Trent Severn Corridor area[201]. It precedes the authority to issue provincial policy statements and express provincial interests incorporated into the *Planning Act* in its 1983 reenactment, but continues to guide decisions affecting habitat in this region.

As another approach, an interim declaration of provincial interest through Guidelines has fostered conservation of the sensitive features of the Oak Ridges Moraine by controlling development pressures extending north from Toronto[202]. These Guidelines describe principles, evaluation criteria, information required and government procedures to assess planning and development applications. The draft Oak Ridges Moraine Strategy was subsequently developed after intensive study and public involvement[203], but after two years and internal governmental debate it languishes unapproved.

The Ministry of Natural Resources has pondered implementing the Strategy through local municipal planning rather than the Committee's recommendations for either a Provincial Policy Statement under the *Planning Act*, provincial plan under the *Ontario Planning and Development Act*, or provincial plan under new legislation (that might include land management as well as planning). Without provincial leadership and coordination to implement the Strategy, the unupdated Guidelines remain as the only provincial expression of interest in the Moraine. Such regional leadership and coordination, without regulatory authority, has been demonstrated elsewhere through a number of provincial agencies, including along the Lake Ontario waterfront by the Waterfront Regeneration Trust[204]. Either a similar Trust or Niagara Escarpment Commission body could integrate and enhance provincial efforts in the Moraine area.

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201 Ministry of Municipal Affairs, *Guideline Directory: A Listing of Provincial Policies and Guidelines Related to Land Development* (Toronto: Queen's Printer for Ontario, 1993), p.30. The Kawartha Development Strategy is administered by the Ministry of Environment and Energy.

202 Ministries of Natural Resources, Environment and Municipal Affairs, *Implementation Guidelines, Provincial Interest on the Oak Ridges Moraine Area of the Greater Toronto Area* (June 1991).

203 Oak Ridges Moraine Technical Working Committee, *The Oak Ridges Moraine Area Strategy for the Greater Toronto Area: An Ecological Approach to the Protection and Management of the Oak Ridges Moraine* (Draft for Public Discussion) (Maple, Ontario: Queen's Printer for Ontario, 1994).

204 *Waterfront Regeneration Trust Agency Act, 1992*, S.O. 1992, c.2.

4. Public Lands

The province is manager of extensive Crown and public land holdings. The former constitutes some 87 percent of the province's land area, and once assigned to the province under the *Constitution Act, 1867*, has never been conveyed from the government; the latter was once Crown then private land, but now has been reacquired by the province. The *Beds of Navigable Waters Act* provides that, with a few statutory exceptions, the beds of navigable watercourses have not been granted by the Crown and thus remain Crown land[205]. The Ministry of Natural Resources has lead responsibility for Crown and other public lands, and carries out its role through the *Public Lands Act*[206].

The *Public Lands Act* enables the Minister of Natural Resources to "establish classes of zones", define their purposes, designate them in maps or plans, and establish "restricted areas" where structures may be erected only under a permit[207]. Where public lands front on a body of water, all such lands to at least 25 percent of the frontage shall be reserved to an appropriate depth for "recreational and access purposes"[208]. Regulations may also be passed to set apart public lands for a variety of purposes, such as "public parks or gardens" or for "research in, and the management, utilization and administration of, the public lands and forests"[209]. The Act provides that no person shall carry on logging, mineral exploration, industrial activity, construction of buildings or structures, clearing of land, or dredging or filling shorelands without a work permit or exemption under regulations[210]. Contravening these provisions is an offence, and the Act contains powers to issue licences of occupation and to remove unauthorized persons and structures[211]. This is a substantial range of authority for planning and for reviewing and approving activities on public lands.

The Act contains numerous provisions for the sale, lease or other disposition of public lands and related procedures. Lands or partial interests may be acquired under the broad provisions of the *Ministry of Government Services Act*, and this authority is

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205 *Beds of Navigable Waters Act*, R.S.O. 1990, c.B.4.

206 *Public Lands Act*, R.S.O. 1990, c.P.43.

207 Ss.12 and 13.

208 S.3.

209 Ss. 10 and 11.

210 S.14.

211 Ss. 14, 20, 24, 26 and 28.

referenced in numerous other Acts as well[212]. Opportunities for conserving biodiversity and ensuring appropriate ownership and management can arise in such dispositions and acquisitions, and can be achieved through decisions concerning location, type of interest, reserved interests, time period and appropriate conditions, among other means[213]. This is applicable not only to dispositions of Crown lands, but also to those lands acquired by government Ministries and agencies and later declared surplus and turned over to the provincial Ontario Realty Corporation for disposal. Examples of this latter situation include the extensive provincial holdings in the former Agricultural Preserve in Pickering, originally acquired to support a federal airport, and government facilities now surplused by downsizing exercises. Policies could be developed to assess all significant surplus parcels for existing biodiversity values and potential for restoration or connection with other natural areas, and then to establish means for retaining interests, entering management agreements or favouring conservation buyers to protect these values and opportunities.

Other provisions in the *Public Lands Act* applicable for biodiversity purposes include those for written permission to deposit material on public lands, beach management agreements with municipalities, other agreements registered on title, regulations and fees for use or activities on public lands, and the government's reservation of interests in trees, roads and minerals when public land is disposed[214].

The *Public Lands Act* also provides an underlying scheme for other, more specific statutes, such as those for designating provincial parks, entering Crown forest management agreements and controlling forest fires[215]. Where provisions of these latter and other statutes are insufficient for the purposes required, the *Public Lands Act* provides additional authority for managing these lands. To ensure coordinated, integrated planning among many diverse programs, the Ministry of Natural Resources has been undertaking a review during the early 1990s of its Crown land management processes. Strategic Directions were released in 1993 with substantial recognition of environmental protection (especially integrity of sensitive sites and intrinsic values), improving the knowledge base, maintaining Crown title to these lands while enabling some economic

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212 *Public Lands Act*, s.46. See *Ministry of Government Services Act*, R.S.O. 1990, c.M.25.

213 See ss.15 to 21, among others.

214 Ss. 27, 44, 46, 47 and 58 (with numerous limitations for tree reservations), 60, 61, 64, 65 and 66.

215 See the discussion of the *Provincial Parks Act* (Protected Areas - Provincial Parks section) and *Crown Forest Sustainability Act* (Sustainable Use - Forestry section), below, and the *Forest Fires Prevention Act*, R.S.O. 1990, c.F.24.

development opportunities, and the resolution of Aboriginal issues, among others[216]. Other drafts of an MNR approach to planning have been developed since, but the current government is continuing to review objectives and "streamline" permitting and planning procedures on public lands.

Stewardship and Planning Recommendations:

1. **Amend the *Conservation Land Act* to enable other categories of "conservation land", such as for prairies, habitat of certain wildlife or species at risk, and certain woodlands which do not meet existing criteria, and develop and implement additional programs under this Act.**

2. **Ensure municipal accountability and good planning, effective sectoral agency and public involvement, and strong provincial oversight and policy implementation through monitoring and revising land use planning reforms, particularly to achieve natural heritage systems, protected area integrity, compact development and agricultural land retention.**

3. **Strengthen the *Niagara Escarpment Planning and Development Act* and the associated *Niagara Escarpment Plan*, and maintain provincial leadership through the Niagara Escarpment Commission.**

4. **Ensure that biodiversity objectives and opportunities are considered and realized in the disposition of public lands through the development of appropriate assessment procedures.**

E. PROTECTED AREAS

Ontario has a broad range of protected areas designations, anchored by the extensive provincial park system. Provincial parks account for some six per cent of the province, with fully one percent of the province protected through Polar Bear Provincial Park along Hudson's Bay. Private initiatives are gaining momentum by building upon long-standing ownership for conservation by the Long Point Company and the Federation of Ontario Naturalists (and associated clubs), among others, and adding active, newer players such as land trusts, the Bruce Trail Association, Ducks Unlimited (Canada) and

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216 Ministry of Natural Resources, *Strategic Direction for Management of Ontario Crown Land*, Policy LM.1.00.00 (Toronto: Ministry of Natural Resources, 1993).

the Nature Conservancy of Canada[217].

Provincial protected areas management is currently undergoing considerably transformation in Ontario. A new "business enterprise unit" called Ontario Parks has been formed to re-integrate the many components of provincial parks administration, and to provide an entrepreneurial model with revenue retention ability[218]. Recent government cutbacks have led to announcements and subsequent cancellations of park closures, while Conservation Authorities' mandates and funding mechanisms have been severely pared back.

1. Provincial Parks

Canada's first "provincial" park statute was passed in 1893 for Algonquin[219]. From this beginning and a number of system and individual park statutes, the *Provincial Parks Act* was consolidated in 1954 into its present form[220]. A few significant amendments were made over the following two decades to address park enforcement, classification, zoning and "master" plans, but since 1976 the only substantial change has been a maximum fine increase to $5000 (from $500) and soon revenue retention. Not surprisingly then, there have been many calls over the years to overhaul the Act, and

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217 The Nature Conservancy of Canada is pioneering new partnerships in Ontario, with acquisitions made and then leased to the national parks or provincial parks system, such as the recent Menzel Nature Reserve near Kingston.

218 Revenue retention is proposed in the *Ministry of Natural Resources Statute Law Amendment Act* (Bill 36), s.3(3), adding a new s.7.2 to the *Provincial Parks Act*. Revenues will come from fines, fees, rentals, agreements and from cost recoveries, and payments out are for a "purpose related to provincial parks" or for refunds.

219 *Algonquin National Park Act*, S.O. 1893, c.8; the *Niagara Falls Park Act* (S.O. 1885, c.21) established the park of the same name eight years earlier after the federal government had delayed too long in protecting this famous site. For a history of parks legislation in Canada, see Ian Attridge, "Canadian Parks Legislation: Past, Present and Prospects", presented at the Changing Parks Conference, Trent University, Peterborough, Ontario, April 22, 1994.

220 *Provincial Parks Act*, S.O. 1954, c. 75, now R.S.O. 1990, c.P.34.

after a few false starts the new provincial government may proceed to do so[221].

Currently, Ontario's 265 provincial parks are classified into six classes: wilderness, nature reserve, natural environment, waterway, historical and recreation[222]. Zoning within each park may be further broken down into wilderness, nature reserve, natural environment, historical, development and access categories, plus the recreation-utilization zone in Algonquin Park where logging is maintained. Management (formerly, and still legally, "master") plans may be prepared to provide detail for zoning, based upon the park's classification and features. The combination of classification, zoning and management planning helps the Ministry of Natural Resources administer the parks system to meet the Act's general purpose:

> All provincial parks are dedicated to the people of the Province of Ontario and others who may use them for their healthful enjoyment and education, and the provincial parks shall be maintained for the benefit of future generations in accordance with this Act and the regulations[223].

This section reflects a 1950s expression of the mandate for parks, but also the tension between use for recreation as one goal and protection as the other. This tension remains in the system's four policy objectives: protection, heritage appreciation, recreation and tourism. There is no determination of the priority between these two often complementary goals within the Act or associated policy, despite MNR's administrative commitment to protection. Initial responses to the new entrepreneurial model for Parks Ontario have again highlighted public concerns that recreation and tourism may

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221 See Paul F.J. Eagles, *A Study of the Ontario Provincial Parks Act* (Waterloo: University of Waterloo, Department of Recreation, 1984); John Swaigen, "Does Ontario Need a New Provincial Parks Act?", 14:1 *Environments* 57-59 (1982); Kevin McNamee, "Preserving Ontario's Natural Legacy", in David Estrin and John Swaigen (eds.), *Environment on Trial*, supra note 3; Anonymous, Natural Heritage Questionnaire, *Seasons*, Summer 1995, p.39, reporting a Progressive Conservative Party pre-election response that it will "review and amend" the Act to ensure it is "current, workable and protects the integrity of the provincial park system".

222 The names derive from the 1978 *Provincial Parks Policy* and the more specific 1992 *Ontario Provincial Parks: Planning and Management Policies*. The Act does not quite correspond, naming only five classes in s.5 as natural environmental, nature reserve, primitive, recreational, and wild river, although provision for an "other class" means that this mismatch is not a legal impediment.

223 Ibid, s.2.

predominate in the absence of clear priority for protecting the features upon which these other objectives depend.

The *National Parks Act* dedication clause is similar but contains the concept of leaving parks "unimpaired", and this is not made subject to the Act and regulations[224]. An older case has thus held that the Ontario dedication clause does not establish a "public trust" to protect a park from sand extraction, while a recent case demonstrates that the federal provision does carry legal weight[225].

"Ontario Parks" operates the Ontario Provincial Parks System. It is established as an administrative agency reporting to its CEO, the Deputy Minister of Natural Resources, and is governed by a Board of Directors. However, the organization does not carry the leadership responsibility for completing the park system (unlike Parks Canada in its new, otherwise similar role), for this is left with a few people in other parts of the Ministry. As discussed below, Ontario Parks also is not guided by the strong legislative mandate and mechanisms needed to ensure long-term management and priority for biodiversity purposes, especially given ongoing pressures to raise revenues.

Lands for provincial parks may be acquired not only through designation of Crown lands and fee simple purchase, but also through acquiring partial interests, such as a few leases from First Nations or the Nature Conservancy of Canada. Once an area has been regulated as a park, management plans may be prepared based upon the classification and zoning policies noted above. Detailed regulations control and direct visitor use in provincial parks, and provide the legal vehicle for implementing management plan decisions[226].

Management (formerly, and still legally "master") plans may be prepared for provincial parks. There are no deadlines, criteria or priorities set for management plans in the Act, unlike the mandate under the *National Parks Act* requiring production of a plan which gives first priority to "ecological integrity"[227]. Biodiversity is a necessary component of integrity, and this concept can be scientifically examined and

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224 *National Parks Act*, R.S.C. 1985, c.N-14, as amended by S.C. 1988, c.48.

225 Respectively, *Green v. Ontario* (1972), 34 D.L.R. (3d) 20 (Ont.H.C.J.); and *Canadian Parks and Wilderness Society v. Canada (Minister of Environment)* (1992), 55 F.T.R. 286 (F.C.T.D.).

226 *Provincial Park Regulations*, Regulation 952, R.R.O. 1990.

227 Ss.5(1.1) and 5(1.2).

defended[228]. Without a planning requirement and specified priorities, the result has been that only about one third of the parks have received the resources to complete management planning and thus move beyond initial, status quo "interim management statements". This contrasts with the requirements, and consequent resources, for preparation and regular review of forest management plans under the *Crown Forests Sustainability Act*.

The *Biodiversity Convention* requires states to "regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas ..." and "promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas" (paragraphs 8(c) and (e)). Despite a recognition of the need to pursue such efforts, this approach is in its infancy in Ontario and has little legal or policy support.

Provincial parks are legally extricated from the municipality for most purposes[229], and this supports a management philosophy and the frequent practical result that the park is an "island of green", managed in isolation from its surrounding landscape. This approach is now replicated in the separate agency structure of Ontario Parks, and outside of the Act in the *Provincial Policy Statement*. For land use planning purposes, there is no provision that development plans on lands adjacent to significant protected areas demonstrate no negative impacts on the areas' features and functions, even though this is required for lands adjacent to other provincially significant features[230]. Other approaches have been used for a few parks, but these are ad hoc and do not provide an effective suite of approaches available to enhance the entire parks system[231].

This internal orientation has been rationalized on the basis that to extend park managers' influence beyond the boundaries would interfere with other agencies' and interests' jurisdictions and would provoke a backlash against parks. However, adjacent lands considerations have been recognized as important to good land use planning, and there are many means by which such influences could be mandated and encouraged

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228 Nina-Marie Lister, Ph.D. candidate, Faculty of Environmental Studies, University of Waterloo, personal communication, May 8 1996.

229 Ibid, s.3(5).

230 See Policies 2.3.2 and 2.3.3 in the *Provincial Policy Statement*, discussed below.

231 Some of the methods used include the declaration of a watershed area of concern under the *Public Lands Act* around Quetico Provincial Park, and a restriction on cutting trees within 100 feet of the boundary of Algonquin Provincial Park established within the park's management plan.

without necessarily being imposed. The inclusion of the concept of the "greater park ecosystem" for national parks has led to identification of cross-boundary issues within management plans, and created the opportunity (and permission) for federal park managers to foster enhanced land management and organizational structures to meet their "ecological integrity" mandate.

While park consultation processes, management planning and other aspects of park administration may not be addressed in the Act or the Regulations, these along with designation decisions are subject to an exemption order under the *Environmental Assessment Act* which requires the MNR to follow its own policies[232]. This Exemption Order has been amended numerous times, and over the years the intent has been that this Order would be in place until a Class Environmental Assessment for Provincial Parks had been completed; to date, three times such a Class E.A. has been started and then shelved incomplete. Changes to provincial parks legislation or policies are also subject to the procedures in the *Environmental Bill of Rights*, including taking every reasonable step to consider the MNR's Statement of Environmental Values when making decisions affecting the environment[233].

2. Wilderness Areas, Conservation Reserves and Wildlife Areas

Without officially being "parks", conservation reserves nonetheless resemble natural environment provincial parks in usually allowing hunting and recreational access, and prohibiting industrial extraction activities. Conservation reserves are established by Ministerial order or regulation under the *Public Lands Act*, with complementary withdrawals from mining and forestry[234]. They provide a broader range of flexibility in establishing areas, particularly where hunters and recreational vehicle operators oppose parks as potential restrictions on their pursuits. Unlike parks, conservation reserves do not have the comprehensive policy and assigned administration to fully support and conserve them, and thus meet biodiversity conservation objectives.

This lack of program direction and clear administration is similar to the 34 wilderness areas designated under the *Wilderness Areas Act*[235]. First enacted in 1959,

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232 See Exemption Order MNR 61, under the *Environmental Assessment Act* R.S.O. 1990, c.E.18.

233 *Environmental Bill of Rights*, s.11.

234 *Public Lands Act*, R.S.O. 1990, c.P.43; see Reg. 805/95. Withdrawal from mining is made under the *Mining Act*, R.S.O. 1990, c.M.14, s.35, and from forestry under the *Crown Forest Sustainability Act*, S.O. 1994, c.25, s.34.

235 *Wilderness Areas Act*, R.S.O. 1990, c.W.8, and Reg. 1098.

this designation is similar to ecological reserves in other provinces, but with a nebulous mandate to preserve land "as nearly as may be in its natural state". Measures may be taken to protect wildlife, and regulations may be made to direct use and management. However, an integrated, directed program and policy has never emerged, and thus these areas are left essentially on their own. A wilderness area designation can be made as an overlay of protection in conjunction with other designations, and controls on development are limited to an area of one square mile (originally established to allow directional mineral drilling underneath such areas).

Given the weaknesses of the *Wilderness Areas Act* and the historical apprehensions by many resource users about park designations, the province has considered developing separate legislation for protecting the province's most representative and unique sites as ecological reserves. The Areas of Natural and Scientific Interest (ANSI) program has long identified such sites but, while this may lead to other recognition in municipal Official Plans or in public land management documents, an ANSI designation does not provide protection in and of itself. Legislation could designate and protect public and, by agreement, private lands as ecological reserves, either within a new Ecological Reserves Act or as a new part and classification in an overhauled *Provincial Parks Act*.

Provincial wildlife areas protect habitat and provide hunting opportunities at certain times of the year, with a few established on private lands by agreement[236]. Crown game preserves restrict access, hunting and trapping, but do not protect habitat[237]. Both Provincial wildlife areas and Crown game preserves provide for flexible biodiversity conservation, often in a manner that can complement more protective designations such as provincial parks.

Private fishing reserves and other more obscure designations are also provided under the *Game and Fish Act*, but are infrequently used[238]. Private forest reserves may be designated under the *Forestry Act*. Along with other fee simple properties, the Ontario Heritage Foundation protects some twelve natural heritage sites through use of heritage

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236 Provincial wildlife areas are established under the *Game and Fish Act*, s.92(1), para.33, on Crown lands, or where the Crown has acquired an interest or entered into an agreement with the landowner.

237 Ibid, s.92, paragraphs 29 to 32. There are currently twelve Crown game preserves in the province, established and managed under s.92(1), paras. 30-32.

238 Ibid, private fishing preserves, ss. 1, 92(28); "hinterland areas", s.92(34); and frog conservation areas, s.93(1)(3) and O.Reg. 529.

easements[239].

3. Conservation Authorities, Regional and Municipal Parks

Besides provincial parks and wildlife areas, Ontario has a wide selection of other protected areas. Two of the most important and extensive systems are conservation areas and regional park agency lands, but other province-wide systems and designations provide extensive contributions[240].

Substantial tracts of natural lands have been acquired and protected as conservation areas by conservation authorities, which were formed on the basis of shared membership and funding from the province and the municipalities of a watershed[241]. This innovative partnership was established in the mid-1940s to promote land stewardship and flood control, but the arrangement has been drastically altered by recent government decisions. The province's November 1995 Economic Statement announced large reductions in transfer payments to the conservation authorities, the withdrawal of provincial membership, and a focused mandate on flood control (rather than the long-time renewable resources conservation goal).

The Omnibus Bill 26 was introduced and passed shortly thereafter, and advanced this direction further[242]. It allowed dissolution of conservation authorities, removed the ability to, by right, levy municipalities for purposes unfunded by the province (ie. beyond flood control), allowed levies to be restricted by regulation, and permitted easier disposition of lands. The conservation authorities may well be forced to dispose of some of the conservation lands acquired over the last half century due to such reduced abilities to raise operating funds, coupled with ongoing and increasing land tax, insurance and maintenance costs.

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239 *Ontario Heritage Act*, R.S.O. 1990, c.O.18, ss.10 and 22.

240 For a discussion of these systems, see Paul F.J. Eagles, "Parks Legislation in Canada", Chapter 4, in: Philip Dearden and Rick Rollins (eds.), *Parks and Protected Areas in Canada: Planning and Management*, CPAWS Henderson Book Series No.22 (Don Mills, Ontario: Oxford University Press, 1993).

241 *Conservation Authorities Act*, R.S.O. 1990, c.C.27.

242 *Savings and Restructuring Act*, S.O. 1996, c.1, Sched. "M", Part III, concerning the *Conservation Authorities Act*.

It is this new pressure and ability to dispose of conservation lands that has been particularly controversial[243]. Many individuals and organizations have given funds or lands to conservation authorities with the knowledge that the governing Act did not allow authority dissolution nor land disposition without Cabinet approval. Bill 26 now allows for Ministerial approval of dispositions, but only where government funds helped purchase these lands. There is no provision for enabling other donors to have input in such decisions or to reclaim their funds or lands. The former provisions may have induced donor security, and thus mitigated keeping a formal paper trail that would have established a trust relationship with the funds or lands. Without provincial membership on authorities nor Cabinet approval of dispositions, there is less opportunity for donors to lobby provincially for suitable arrangements. Conservation authorities will likely endeavour to retain what lands they can and be reasonable in their approaches to and options for disposition. Nonetheless, Bill 26 and the province's economic decisions are creating the conditions for potential elimination of important components in Ontario's suite of protected areas.

As provincial agencies, the Niagara Parks Commission, the St. Clair Parkway Commission, and the St. Lawrence Parkway Commission all have substantial land holdings; many of these are scenic-, historic- or tourism-oriented, but they also provide natural habitat along waterway corridors[244]. The Waterfront Regeneration Trust has also played an important coordination and catalytic role along the Lake Ontario shoreline, helping knit together a waterfront trail, local planning and management efforts, and connections to and awareness of the watershed.

Similar to lands held by provincial agencies, municipal parks are usually directed towards recreation and intensively-manicured settings (although some tracts are very significant and provide extensive habitat). Municipal parks can be acquired and operated

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243 See Martin Mittelstaedt, "Bill Could Land Conservation areas on Endangered List", *The Globe and Mail*, January 13 1996, page A10. The Richard Ivey Foundation has given $1.6 million for conservation authority lands since 1972. The article quotes Richard Ivey as saying: "If private donors cannot trust government and its agencies to protect such lands for future generations, the private sector will be reluctant to support the government's conservation initiatives". Marion Taylor of the Federation of Ontario Naturalists is quoted in the article: "That's 50 years of history that's in danger of being wiped out."

244 *Niagara Parks Act*, R.S.O. 1990, c.N.3 and Reg.829; *St. Clair Parkway Commission Act* , R.S.O. 1990, c.S.23; and *St. Lawrence Parks Commission Act*, R.S.O. 1990, c.S.24. Under the latter Act, the Commission has revenue retention capacities and a mandate to maintain and operate parks for the use and enjoyment of the public.

either under the *Municipal Act*, or through a Board of Park Management with authority under the *Public Parks Act*[245]. Provincial grants to support parkland have been made available through the *Parks Assistance Act*[246]. The use of such municipal holdings for enhancing biodiversity is being promoted through increased naturalized management and restoration in these areas by the "Restoring Nature's Place" project of Ecological Outlook Consulting and the Ontario Parks Association.

4. Other Public and Private Protected Areas

A wide array of other lands are managed by public bodies for purposes that could and do include biodiversity conservation and sustainable use. These include the extensive grounds of the Royal Botanical Gardens in the Hamilton-Burlington area[247], the valleylands adjoining the McMichael Canadian Collection[248], the Ontario Agriculture Museum[249], cemeteries (at one time, important recreational areas and now sites of old trees and unploughed prairie)[250], and historical parks[251].

A number of biologically-rich sites have also been acquired or otherwise managed by private conservation organizations, as mentioned above in the Voluntary Stewardship and Habitat section[252]. Increasingly, system, management and financial plans are being developed for these private protected areas systems, more so than some of the described public systems.

With this kaleidoscope of designations, it has become confusing for not only the public but also protected area managers and conservation planners to determine what each designation means, how it relates to their own interests, and who is the operating

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245 *Municipal Act*, R.S.O. 1990, c.M.45, ss.191 and 207, paras.51-53; and *Public Parks Act*, R.S.O. 1990, c.P.46.

246 *Parks Assistance Act*, R.S.O. 1990, c.P.2.

247 *Royal Botanical Gardens Act*, S.O. 1989, c.Pr.22.

248 *McMichael Canadian Art Collection Act*, R.S.O. 1990, c.M.4.

249 *Ontario Agricultural Museum Act*, R.S.O. 1990, c.O.8.

250 *Cemeteries Act (Revised)*, R.S.O. 1990, c.4.

251 *Historical Parks Act*, R.S.O. 1990, c.H.9.

252 Along with some hunting clubs with choice wildlife habitat, an older example of a private sanctuary with legislative sanction, noted earlier, is the *Jack Miner Migratory Bird Foundation Act*, 1 Edw VIII (1936), c.36.

authority. What is apparent is that this approach is oriented towards the important goal of individual program securement of new patches on the landscape, each for particular purposes. However, with a few notable exceptions[253], there has been no coordinated approach that integrates interests and programs, reduces competition, identifies strategic locations, leverages funding and ensures that surrounding and inter-connecting lands are assembled into a system which meets the objectives of biodiversity conservation. In the 1970s, this used to be accomplished by the high profile Parks Integration Board, which could be reconstituted to develop and coordinate a protected areas plan for the province[254].

Explicit biodiversity conservation objectives, and for some designations a sustainable use direction, are needed for many of these pieces of legislation to bring their practice and intent into line with the *Biodiversity Convention*. The incorporation of a variety of regulatory and voluntary techniques within a statute with a clear, unequivocal purpose is necessary if the conservation achievements, such as along the Niagara Escarpment, are to be repeated elsewhere.

Protected Area Recommendations:

1. **Overhaul the *Provincial Parks Act* to: place first priority on protection; make completion of a system of representative and linked areas a goal; direct the preparation and contents of management plans; ensure ecological integrity within, and support it around, parks; provide for enhanced park management accountability, public participation and scrutiny; and enhance enforcement and administrative provisions.**

2. **Develop legislation for designating public and, by agreement, private lands as ecological reserves, either within a new Ecological Reserves Act or as a new part and classification in an overhauled *Provincial Parks Act.***

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253 Such as provincial parks, Niagara Escarpment areas, some conservation authorities' plans, and the cooperative Carolinian Canada program in southwestern Ontario.

254 The MNR began informal consultation on a Natural Heritage Areas Strategy document in 1992, and in 1996 continues to redraft it and seek Ministry approvals. It does not deal with the detailed level of planning necessary to identify areas on the ground, and this function has been assumed in part by the Wildlands League's mapping project (part of the Endangered Spaces project) and implementation of natural heritage systems through municipal planning.

3. **Place biodiversity conservation objectives in other statutes which establish protected areas, and apply these designations and creatively use partial interests to complement parks and ensure habitat is conserved and connected.**

4. **Foster coordinated planning amongst organizations for land acquisition, designation and management.**

5. **Remove legal barriers and provide incentives and support for private conservation efforts, such as the work of land trusts.**

F. RESTORATION

Ecosystem and species restoration and rehabilitation are identified as approaches to the conservation and sustainable use of biodiversity in Articles 8(f) and 10(d) of the *Convention on Biological Diversity*. Restoration involves replacement of and returning features or processes on a landscape, whereas rehabilitation means the removal of certain aspects in order to make an area safe or prepare for restoration efforts. Restoration should be practised at the community or system level with material from the local ecotype, for otherwise there is the risk of creating simply botanical gardens rather than functioning and self-perpetuating ecological communities[255]. Unfortunately, there is little law and policy which specifically encourages such activities, and much that has not contemplated or may actually impede them.

The removal of contaminants or other material present on a site is essential for most rehabilitation and remediation. Where there has been contamination by a pollutant, everyone who owns or had control of it has a duty to clean up and restore the environment, even without an order to do so[256]. A prosecution for various pollution offences may be conducted under the *Environmental Protection Act*, and upon conviction the judge may require the removal of the material and restoration[257]. Alternatively, the Ministry of Environment and Energy can make an administrative clean-up order against any person with some current or past management or control of the source of the contaminant[258], which may be quite comprehensive and expensive. Similarly, other statutes also provide for officials or orders to remove unwanted or unlawful materials,

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255 Mary Gartshore and Peter Carson, Pterophylla, personal communication, June 6 1996.

256 *Environmental Protection Act*, R.S.O. 1990, c.E.19, s.93.

257 Ibid, ss.183(2) and 188.

258 Ibid, section 7(1) and 17.

such as objects obstructing or polluting waterways, and unauthorized filling, construction or development[259].

A few statutes have restoration or rehabilitation as explicit objectives[260]. Other legislation or policies may require restoration or mitigation as a condition of obtaining permits, approvals, or being able to participate in certain programs[261]. As a procedural and supplementary statute, one of the *Environmental Bill of Rights* purposes is to "where reasonable, restore the integrity of the environment"; the Act also provides that decisions on government policy proposals and resolution of lawsuits for harm to a public resource can encompass mitigation measures and restoration plans[262].

For planning purposes, Provincial Planning Policy 2.3.3 states the general goal that the "diversity of natural features in an area, and the natural connections between them should be maintained, and improved where possible". Water quality and quantity are to be "protected or enhanced" under Policy 2.4.1. Policies 3.1.3 and 3.2 enable development on or adjacent to hazardous or contaminated sites only where appropriate rehabilitation or restoration is underway or completed, and where the hazards can be safely addressed or will not have adverse effects. Various other Policies require mitigation of non-agricultural uses and rehabilitation (especially for agriculture) of lands after mining or aggregate extraction[263].

The latter planning Policies reflect and are complemented by the requirements for rehabilitation plans and security payments to be submitted as part of a complete

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259 For example, the *Conservation Authorities Act*, R.S.O. 1990, c.C.27; *Lakes and Rivers Improvement Act*, R.S.O. 1990, c.L.3; *Niagara Escarpment Planning and Development Act*, R.S.O. 1990, c.N.2; *Planning Act*, R.S.O. 1990, c.P.13; *Public Lands Act*, R.S.O. 1990, c.P.43.

260 *Aggregates Resources Act*, R.S.O. 1990, c.A.8, s.2(c); *Conservation Authorities Act*, R.S.O. 1990, c.C.27; *Niagara Escarpment Planning and Development Act*, R.S.O. 1990, c.N.2.

261 For example, the *Topsoil Preservation Act*, R.S.O. 1990, c.T.12, and the reinstated *Managed Forest Tax Rebate Program.*

262 *Environmental Bill of Rights, 1993*, S.O. 1993, c.26, ss.20(1)5.i., and especially 93-98.

263 See Provincial Planning Policies 2.1.3, 2.2.2.3, 2.2.2.4, 2.2.3.5 and 2.2.3.6.

application for an aggregate licence under the *Aggregate Resources Act*[264]. Under this Act, a fund is established from a one cent levy on every tonne of aggregate extracted, and payments from the fund are then made available for rehabilitation once mining has been completed or of abandoned pits[265]. Enhanced provisions for rehabilitating mining lands, with fewer requirements for security deposits, have also been enacted[266].

As noted above, there are numerous provisions under the *Trees Act*, *Forestry Act*, *Woodlands Improvement Act*, *Game and Fish Act*, and the *Conservation Land Act* to encourage the acquisition of lands, the making of agreements and the growing and planting of trees. These programs can be applied towards restoration work. At a larger scale, the *Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem* also promotes the restoration of degraded areas (Goal 1), and is the foundation for Ontario involvement in Remedial Action Plans for numerous sites around the Great Lakes. Ontario also participates in the *North American Waterfowl Management Plan* and its efforts to acquire and restore wetlands. Both of these latter programs are discussed more fully in the restoration section of the Federal Jurisdiction chapter.

However, a number of barriers impede restoration activities. One of the techniques most often employed is to let natural seeding and vegetation succession take place. Pioneer species become established and are replaced over time, but the *Weed Control Act* requires landowners to destroy all provincially- or municipally- listed "noxious weeds", unless they are sufficiently distant from any agricultural or horticultural areas[267]. Municipal by-laws implement the Act, and unlike by-laws under the *Trees Act*, are not subject to provincial approval.

The agricultural rationale behind the Act was particularly relevant to pre-herbicide and pre-industrial farming practices. However, it is now often used to control urban

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264 *Aggregate Resources Act*, R.S.O. 1990, c.A.8, ss.8(1)(h), 8(1)(s), 8(2)(c), 8(5)(h), 8(5)(r), 9(1)(b), 25(2)(p), 26(g), 36(1)(b), 36(4)(f), and 47-52; and Regulation 15, R.R.O. 1990, ss. 23 and 24.

265 The *Aggregate and Petroleum Resources Statute Law Amendment Act, 1996* (Bill 52), s.4, introduced for First Reading on May 14, 1996, would establish an Aggregate Resources Trust to separately administer such funds for rehabilitation.

266 *Savings and Restructuring Act, 1996*, S.O. 1996, c.1, Sched.O, s.26, adding a new Part VII (Rehabilitation of Mining Lands) to the *Mining Act*, R.S.O. 1990, c.M.14.

267 *Weed Control Act*, R.S.O. 1990, c.W.5.

property standards and alleviate allergy conditions[268], yet essentially fails to recognize broader biodiversity objectives. The result has been that over-zealous municipal enforcement can frustrate restoration efforts, and even lead to the eradication of provincially rare species[269]. However, the Act does provide a means to control non-native and invasive plants that could otherwise compete with and eventually replace native plants in an area.

In a similar vein, letting lawns grow long or seed in and "naturalize" to enhance wildlife habitat (particularly on larger-scale institutional and park properties) may contravene municipal by-laws setting out lawn maintenance standards. Such by-laws reflect a manicured- and control-based aesthetic which is difficult to challenge and change[270]. The clearing out of agricultural drains may enhance the flow of water from agricultural fields, but it also may affect fish and aquatic plant habitat. Provisions in municipal by-laws thus need to recognize legitimate naturalization efforts, while drainage statutes could benefit from enhanced environmental assessment provisions to address biodiversity concerns (see discussion under Agriculture, below).

Restoration Recommendations:

1. **Clearly recognize restoration and naturalization objectives and incentive measures in land management and municipal statutes and by-laws.**

2. **Reform the *Weed Control Act* to include biodiversity objectives and support restoration and naturalization, while still reducing impacts on horticulture and agriculture.**

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268 Mary Gartshore and Peter Carson, supra note 255.

269 The milkweed genus *Asclepias* is listed in Regulation 1096, Schedule, Item 10, but a few species in this genus are rare in the province. A conference held at the University of Guelph in November 1994 brought together farmers and other interests to explore potential reforms to the *Weed Control Act*. The annual course for weed inspectors hosted by the Ontario Ministry of Agriculture, Food and Rural Affairs could provide an appropriate opportunity to raise awareness among inspectors of restoration practices and its benefits.

270 See for example the recent Sandy Bell case in Toronto, and Brett Rappaport, "As Natural Landscaping Takes Root We Must Weed Out the Bad Laws--How Natural Landscaping and Leopold's Land Ethic Collide With Unenlightened Weed Laws and What Must Be Done About It", 26 *J. Marshall L. Rev.* 865.

3. **Amend Regulation 1096 under the *Weed Control Act* to remove or exempt species at risk and provide for the use of pioneer species.**

G. SUSTAINABLE USE OF BIODIVERSITY

Ontario has substantial forestry, agriculture and fishing industries. The sustainable use of biodiversity in these commercial enterprises is thus essential to achieving the objectives of the *Biodiversity Convention* and to maintaining the wealth enjoyed in the province.

1. Forestry

The term "forestry" (or "timber management") is very broad, and includes a variety of approaches and scales. At one level, it relates to small scale operations on private lands, in part discussed above. However, large-scale industrial forestry on primarily public lands will be the focus in this section. Such forestry operations can have impacts upon biodiversity through a number of activities, including allocation, access to the forest, harvest, renewal (including tree planting), and maintenance.

In Ontario, the key forestry statute is the *Crown Forest Sustainability Act*[271] (CFSA), enacted in December 1994 and in force on April 1 1995. It replaces the *Crown Timber Act* and makes numerous amendments to related statutes, thereby creating a new legal regime for Crown land forestry in Ontario. The Act was developed partly in response to the release of the massive decision respecting *Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario*[272], culminating the longest and among the most bitterly fought environmental assessment hearings in the history of the province, and indeed the country.

The Act requires forest management plans to be prepared for all management units. The Minister shall not approve such a plan unless satisfied that:

> the plan provides for the sustainability of the Crown forest, having regard to the plant life, animal life, water, soil, air and social and economic values, including

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271 *Crown Forest Sustainability Act*, S.O. 1994, c.25; introduced as Bill 171.

272 Environmental Assessment Board, Reasons for Decision and Decision, File EA-87-02, April 20, 1994. This Class E.A. was first submitted by MNR on December 23, 1985, after several previous versions were reworked.

recreational values and heritage values, of the Crown forest[273].

Forest operation prescriptions must include descriptions of the current structure and condition of the forest, and activities to ensure that forest "will be renewed and maintained"[274]. Forest management plans and forest operation prescriptions must be certified by a professional forester as being in accordance with the Forest Management Planning Manual[275].

Obviously, the Forest Management Planning Manual is at the heart of ensuring sustainable use of the forests, and the CFSA sets out generalized contents for the Manual. These include "determinations" and indicators of the sustainability of Crown forests, and requirements that management objectives in forest management plans be compatible with forest sustainability and specifically address:

> Crown forest diversity objectives, including consideration for the conservation of natural landscape patterns, forest structure and composition, habitat for animal life and the abundance and distribution of forest ecosystems, ... provision of forest cover for those values dependent on the Crown forest, [and] silviculture objectives for the harvest, renewal and maintenance of the Crown forest[276].

The Manual will be entrenched in the regulations under the Act, thus becoming legally enforceable. Any development and amendment of the Manual, and of forest management plans, must include at least public advisory committees and review and comment[277]. Trust funds derived from royalties and fines have been legislatively established to guarantee reimbursement to licensees for regeneration expenses[278]. The Minister must report on the state of the Crown forests to Cabinet and the Legislative Assembly at least once every five years[279].

With objectives, principles and procedures in place, the *Crown Forest Sustainability Act* appears to represent a new era in forest management in Ontario, and

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273 CFSA, s.9(2).

274 Ibid, s.16(1).

275 Ibid, ss.8(3) and 16(2).

276 Ibid, ss.68(3) and (5).

277 Ibid, ss.13, 14 and 68(4).

278 Ibid, ss.48 to 51.

279 Ibid, s.22.

one which will meet the commitments in the *Biodiversity Convention.* While this may eventually prove true, nonetheless there are a number of strident criticisms of the Act made by environmental organizations with a long history with forestry issues and environmental law[280].

Although peppered with the word, the Act contains only a broad, ill-defined definition of "sustainability" ("long term Crown forest health"), and the definition of "sustained yield" that related the permissible annual cut to the forest's productive capacity was not retained from the former *Crown Timber Act.* While the CFSA contains broad biodiversity-oriented principles[281] and sustainability is to be given expression in the Forest Management Planning Manual, at this stage the implementing manuals are not sufficiently translating non-timber and broader biodiversity values into indicators, practices and standards that can be monitored and enforced. Forest management plans, and Ministerial approvals, need only "have regard for" plant and animal life, etc., which is thus vague and merely procedural, as has proved to be the practice under subsection 3(5) of the *Planning Act.* Plans must be certified by a professional forester. The Act and regulations contain no regeneration standards, even though new trust funds have been legislatively established to promote this key step in the forest management cycle.

Enforcement provisions in the Act are generally good, but could be bolstered with enforceable standards, the ability to go to court to enforce Ministry orders, and existing powers could be expanded to include restraining orders[282]. Regulations to enable appeals of forest management plan approvals and independent audits of compliance may not be put in place, in part due to the availability of appeal mechanisms under the *Environmental Bill of Rights* and the *Environmental Assessment Act.* Stumpage fees remain low compared to other jurisdictions[283].

While there are a number of concerns with the CFSA, participants in the manual and plan development processes have more opportunities in this Act to ensure

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280 The criticisms below are derived from Michelle Swenarchuk, "CELA Responds to the Crown Forest Sustainability Act", *Intervenor* Nov./Dec. 1994, pp.4-6. Also see the submissions on Bill 171 by the Wildlands League.

281 Section 2(3)1.: "large, healthy, diverse and productive crown forests and their associated ecological processes and biological diversity should be conserved". "Forest resources" are defined in s.3 to mean trees and other plant life prescribed in the Regulations.

282 Ibid.

283 Arlin Hackman, Endangered Spaces Coordinator, World Wildlife Fund (Canada), personal communication, June 3 1996.

sustainable use of the forest ecosystem. The outstanding question is how well will implementation reflect and protect non-timber values? As one commentator has put it, the CFSA "enables sustainability but does not guarantee it"[284].

While the CFSA is now the legal centrepiece of forestry in Ontario, other components still have a role. The *Class Environmental Assessment by the Ministry of Natural Resources for Timber* Management on Crown Lands in Ontario contains 115 Terms and Conditions that are legally binding upon the Ministry of Natural Resources under the *Environmental Assessment Act*[285]. These include numerous public notice and consultation, timber management planning, monitoring and reporting, and review directions, many of course being biodiversity-related. The Ministry had budgeted substantial funding and organized staff and external experts to help it meet these responsibilities, but now has reported that it will not be able to carry out all of these functions.

Forestry policy development has been active in recent years to complement the Timber Class EA and the CFSA. This has included the *Sustainable Forestry Policy Framework*, and policies on old-growth red and white pine. There is also now a new *Forest Production Policy*.

Forestry necessarily relates to other biodiversity issues. It is only permitted in one provincial park, Algonquin Provincial Park, and this is carried out by the Algonquin Forestry Authority. The Authority must conduct its operations to balance "recreation" and a flow of logs, and with "full regard ... for the aesthetics, ecology and all other qualities of the environment"[286]. Numerous individuals and groups have questioned the appropriateness of such activity within Ontario's flagship park, and the Wildlands League has for many years called for a phase-out of this activity.

Control of insect pests is governed by the *Forest Tree Pest Control Act*, which designates forest tree pests in the regulations. The Act allows an officer to inspect for pests, and then to "prevent, retard, suppress, eradicate and destroy an infestation" should the Minister believe that this is in the public interest[287]. While undoubtedly necessary for the purpose of forestry, this single purpose can nonetheless direct the loss

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284 Chris Lompart, Federation of Ontario Naturalists (FON), presentation at the FON's Provincial Issues Day, Peterborough, Ontario, May 26, 1995.

285 *Environmental Assessment Act*, R.S.O. 1990, c.E.18.

286 *Algonquin Forest Authority Act*, R.S.O. 1990, c.A.17, ss.11(1) and (3). Note that the balance is with recreation, not necessarily with biodiversity objectives.

287 *Forest Tree Pest Control Act*, R.S.O. 1990, c.F.25, ss.3 and 4.

of or impacts upon indigenous insect members of the forest ecosystem.

While forestry is focused on large scale production from primarily northern Crown lands, the CFSA and Timber Class E.A. do not address wood production on private lands. As noted earlier under the Plant and Habitat section, private forestry is not as heavily regulated. However, cutting might be restricted by municipal by-laws or planting and forest management encouraged under the *Forestry Act*, *Municipal Act*, *Trees Act* or *Woodlands Improvement Act*.

2. Agriculture

Farmers generally care for their land and know it well. Understandably, farmers and agricultural laws and policies are oriented towards food production, while society has additional expectations for the land base, including the maintenance of biodiversity. It is not surprising then that the agricultural community feels overwhelmed and prefers (and has essentially maintained) a voluntary compliance approach for reaching these wider goals, particularly when farm incomes are down, debt has been climbing, and the demands of the farm business take priority. Numerous economic incentives are in place to support the farm business, often encouraging high input farming as mentioned below in the Economic Incentives section.

Agricultural statutes have a long history and focus on production, and thus generally do not contemplate or incorporate biodiversity objectives. Where production attempts to minimize diversity in order to maximize efficiency and thus returns, this is in direct conflict with maximizing biodiversity at the genetic, species and ecosystem levels. The result need not be in conflict, but will take considerable discussion and creativity to integrate these frequently opposing perspectives.

The mandate and practical result of the *Drainage Act*[288] and related statutes has been of long-standing concern. Wetlands have been extensively drained and creeks channelized, all through the creation of agricultural drains to quickly remove excess water. Drains also facilitate the flow of non-point sources of agricultural runoff into watercourses, and when cleared of silt may destroy fish habitat. The Act was developed for a period when new agricultural land was being brought into production, but is now being used primarily for the maintenance of existing drains.

The *Drainage Act* has a number of biodiversity-related limitations. First, there are no explicit environmental or biodiversity-related goals for the Act, although an administrative environmental checklist may be considered. Second, substantial hurdles exist towards identifying and addressing biodiversity concerns. These include that notice of a petition drainage plan is only given to agencies and owners of lands petitioning for

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[288] *Drainage Act*, R.S.O. 1990, c.D.17.

drains (and not those downstream or all those within the affected watershed), appeal mechanisms are inadequate, and agencies or individuals who seek an environmental assessment of a drain, or municipalities or the Minister requesting a cost/benefit statement, are required to pay for such assessments themselves[289]. Third, the Act enables loans and also economic subsidization of drainage costs among impacted landowners, regardless of environmental impact or whether landowners broadly benefit from or wish to fund the drain[290]. While there are opportunities to work within the processes in the Act to conserve biodiversity, as has occurred in the Region of Haldimand-Norfolk, improvements in the Act could be made to address these limitations and remove a long-standing concern. A provincial review of drainage legislation was announced in 1992, but has not proceeded much further since then.

The *Farm Practices Protection Act* establishes a Farm Practices Protection Board which deals with noise, odour and dust complaints related to farm operations[291]. If the Board determines that a farming practice is "normal", then the complaint is dismissed. Accordingly, the Act can be seen as "right to farm" legislation. In February 1996, the province published a *Consultation Paper on the Role of the Farm Practices Protection Board* to greatly expand the powers of the Board and include protection of farmers against municipal by-laws[292]. The *Consultation Paper* also proposed giving the *Farm Practices Protection Act* wide-sweeping precedence over any land use control law, the *Environmental Protection Act*, the *Pesticides Act*, the *Health Protection and Promotion Act*, and the *Ontario Water Resources Act* (OWRA).

In a similar vein, the new *Provincial Planning Policy* 2.3.4 provides that "Nothing in policy 2.3 [concerning Natural Heritage] is intended to limit the ability of *agricultural uses* to continue" (emphasis as a defined term in the original). The agriculture sector thus appears to seek exemption from: all environmental, land use or health restrictions on their own properties, responsibilities for off-site pollution and other impacts, and the

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289 Ibid, sections 5-7, 9, 47-58, 98-100. Note also that municipal drainage works are otherwise specifically exempted from the Natural Heritage policies under the *Provincial Policy Statement*, and from the *Environmental Assessment Act* by Regulation 334.

290 Ibid, ss.4(1), 23(2), 30, and 60-61.

291 *Farm Practices Protection Act*, R.S.O. 1990, c.F.6.

292 Ontario Ministry of Agriculture, Food and Rural Affairs, *Consultation Paper on the Role of the Farm Practices Protection Board* (Toronto: Ontario Ministry of Agriculture, Food and Rural Affairs, 1996).

OWRA thereby achieving privatization of common property in groundwater[293]. This will then further the conflicts with biodiversity conservation and sustainable use which have arisen in the past, and eventually lead to public calls to address such impacts through further regulation of this sector.

Voluntary compliance with good farm practices is gaining momentum in Ontario through the award-winning Environmental Farm Plan process, developed by a coalition of agricultural organizations with federal funding and provincial technical support. Using a workbook with 250 questions on the farmstead, farming practices and the environment, individual plans are prepared by a landowner after undergoing a two half-day training course, and are reviewed by their peers. To date, over 5,000 farmers across the province have participated in the process, using $1.1 million of their own money and hours of their own labour to complement federal Green Plan funding for improvements[294]. An Environmental Farm Plan Award Contest and the distribution of Best Management Practices Manuals are new components of the program. However, endangered species education and stronger biodiversity components could be added to the program to incorporate wider public interest in these issues as they concern the agricultural sector.

3. Commercial Fishing

Commercial fishing is a major industry on the Great Lakes, and the province controls such fishing through the *Game and Fish Act*, in tandem with federal authority through the *Fisheries Act*, as described above in the Wildlife section and in the Federal chapter.

Sustainable Use Recommendations:

1. **Expand the application of biodiversity conservation criteria in the Forest Management Planning Manual.**

2. **Reform the *Drainage Act* to include specific biodiversity objectives, more accessible environmental assessment and appeal procedures, broader watershed consultation and integrated planning, and reorientation of financial incentives to avoid adverse impacts and enhance biodiversity.**

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293 Jan Rabantek, Researcher, Canadian Institute for Environmental Law and Policy, personal communication, June 3 1996.

294 Ontario Farm Environmental Coalition, *Our Farm Environmental Agenda* (April 1995), "What's Been Achieved" update.

3. **Do not amend the *Farm Practices Protection Act* to take precedence over environmental, land use and health legislation.**

H. ECONOMIC INCENTIVES FOR BIODIVERSITY

The *Biodiversity Convention*, Article 11, calls on parties to provide economic and social incentive measures to support biodiversity conservation and sustainable use. One of the key incentives in Ontario is the Conservation Land Tax Reduction Program (CLTRP) established under the *Conservation Land Act*. This provides a 100 per cent rebate of property taxes to owners of provincially significant wetlands, natural areas identified under the *Niagara Escarpment Plan*, MNR-designated Areas of Natural and Scientific Interest, and non-government organizations' lands contributing to provincial conservation objectives. Formerly, non-revenue producing conservation authority lands qualified for this program, but this has been eliminated, with some capital funding readjustments easing this transition. However, the program is limited legislatively to the noted categories of land, and other lands equally important to biodiversity fall through the cracks.

Similar to the CLTRP, the *Managed Forest Tax Rebate Program* provides a 75 percent rebate for woodlands larger than 10 hectares (or 4 ha or greater and designated as a significant woodland for municipal planning purposes) with over $250 in taxes[295]. A management plan must be prepared, and must have purposes for either providing wildlife habitat, flood and erosion control, protecting water supplies, recreation, or production of wood or wood products[296]. Management plans must be reviewed by a trained plan reviewer, and then approved by the MNR. The previous version of this program was more oriented towards production and eventually was cancelled in 1994. There was considerable protest and cutting of trees to pay for increased taxes, leading to the new government's February 1996 reinstatement of this revised and more environmentally-oriented program. The long-standing Farm Tax Rebate Program also provides rebates of up to 75 percent of property taxes for qualifying farms[297].

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295 Ministry of Natural Resources, *Guidelines for the 1996 Managed Forest Tax Rebate Program* (information sheet), (Toronto: Ministry of Natural Resources, 1996).

296 These purposes are derived from the authorizing statute, the *Forestry Act*, R.S.O. 1990, c.F.26. This Act uses older terminology, but is still broad enough to encompass current biodiversity and land management objectives.

297 This program is authorized as a grant program under the *Ministry of Agriculture and Food Act*, R.S.O. 1990, c.M.16, s.7.

There is widespread concern among many private landowners and conservation organizations that the CLTRP may be pared back or eliminated in the future. This is based upon the state of provincial finances, the expenditure reduction goals of the new provincial government, and the past elimination of qualified conservation authority lands and a similar program (now restored) for managed forests. Rebate programs do not address the fundamental issue that, since they do not qualify for preferential agricultural class treatment, lands held for conservation or restoration purposes are taxed at residential, commercial or industrial rates due to the structure of the property tax system under the *Assessment Act*[298]. This is out of all proportion to the services provided to these properties; no schooling, and little policing, fire and ambulance services are necessary. A rebate program is also very inefficient to operate. A new assessment category for forested, conservation and possibly other rural lands is thus needed under the *Assessment Act*[299]. This could be complemented by enabling local tax incentives or credits for low maintenance, restored or naturalized landscaping, particularly on commercial or industrial lands[300].

In addition to agricultural tax benefits, some religious, hospital, education and youth charities are exempted from paying such taxes, and golf courses are given tax freezes (with the Greater Toronto Area being host to one of the highest concentration of golf courses in the world, with their associated impacts upon biodiversity). Other incentives may include grants and reduced stock costs provided to encourage tree planting under the *Trees Act* or other legislation, although this may bump the lands into a higher tax assessment category. Grants provided under the *Ontario Heritage Act* and *Forestry Act* have also been valuable in promoting private conservation activity[301].

The Ministry of Natural Resources may also assist municipalities in acquiring parkland[302] or provide funds and some in-kind services for volunteer work through its Community Wildlife Involvement or Community Fisheries Involvement Programs.

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298 *Assessment Act*, R.S.O. 1990, c.A.31.

299 Such an approach has been advocated in conservation circles for many years, and was also recommended in the Urban Forest Working Group's *Sustainable Forests in Urban Ontario*, supra note 164, at page 15.

300 Nina-Marie Lister, supra note 228. A similar measure for designated properties was proposed for reforms to the *Ontario Heritage Act*, which have yet to be enacted. See for example ss.10.1 and 77 of Ministry of Culture, Tourism and Recreation, *A New Ontario Heritage Act: Working Draft*, July 29 1993.

301 *Ontario Heritage Act*; *Forestry Act*, s.2(3).

302 *Parks Assistance Act*, R.S.O. 1990, c.P.2.

Some programs act as economic disincentives for biodiversity. As noted above, the *Drainage Act* provides a simple means for farmers to get other property owners and the provincial government to fund drainage projects, with devastating results on wetlands and the conversion of marginal lands that once provided some wildlife cover. Crop insurance and gross revenue stabilization programs plus sales tax concessions for fertilizers and pesticides encourage high input production with associated environmental side effects[303]. Of a number of options available, the only effective strategy to address this situation is to remove input subsidies on purchased chemicals, introduce an income stabilization program based on realized farm income rather than the production of specific commodities, and incorporate cross-compliance through incentives to use lands for other (eg. wildlife) uses with benefitting groups making contributions towards the costs involved[304].

Programs under the Ministry of Transportation and the *Crown Forest Sustainability Act* encourage and subsidize road building, often for legitimate purposes, but with the result being fragmentation of natural areas, loss of interior-dwelling species habitat, barriers to wildlife migration, invasion of non-native species, and increased recreational access and pressures. Some of these problems may be addressed under environmental assessments, or over time as key statutes are made subject to the *Environmental Bill of Rights* and Ministries' Statements of Environmental Values, or forest operations comply with the new Forest Management Planning Manual.

Economic Incentive Recommendations:

1. **Amend the *Assessment Act* to provide for either a new assessment category of rural or conservation lands, or alternatively expand the *Conservation Land Act* and the Conservation Land Tax Reduction Program to include a wider scope, including all natural heritage lands designated in municipal planning documents.**

2. **Amend the *Drainage Act* to include biodiversity conservation objectives, and incorporate drainage plans into watershed and land use planning exercises which take a broader perspective on land use concerns.**

3. **Remove input subsidies on purchased chemicals, introduce an income stabilization program based on realized farm income rather than the production of specific commodities, and incorporate cross-compliance**

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303 John Girt and Associates, *The Environmental Impact of Farm Support Policies in Ontario*, Report to the Policy Committee (Toronto: Ontario Round Table on the Environment and Economy, 1992).

304 Ibid, at page 44.

through incentives to use lands for other (eg. wildlife) uses.

4. **Amend those statutes which support road building to include biodiversity conservation objectives, especially to minimize fragmentation and pest invasion.**

I. PROCESS AND GOVERNMENT ACCESS

A number of statutes are important for biodiversity conservation and sustainable use because they provide processes that lead to better access to information and decision-making. The treatment here is brief, and only serves to highlight a few key statutes[305].

Impact assessment and minimizing adverse impacts of projects are concerns addressed in Article 14 of the *Biodiversity Convention*. The *Environmental Assessment Act* is Ontario's leading statute on the subject, where broadly defined "undertakings" of provincial government Ministries, agencies, municipalities and prescribed others must undergo an environmental assessment that includes the undertaking's purpose, rationale, and description of the affected environment, and effects[306]. The environmental assessment (EA) must also consider actions necessary to prevent, mitigate or remedy such effects, and the "advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking". The EA or a generic Class EA document is reviewed by the Ministry of Environment and Energy, a hearing may or in some situations shall be held by the Environmental Assessment Board, with Cabinet making the final decision on approval of the undertaking[307]. The environmental assessment process has been the subject of review for several years, and the *Environmental Assessment and Consultation Improvement Act* (Bill 76) proposes to streamline this process[308].

To enhance decision-making through public participation, the *Intervenor Funding Project Act* was enacted to enable a process for funding by project proponents of citizen

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305 For a more elaborate discussion, see the relevant chapters in David Estrin and John Swaigen, *Environment on Trial*, supra note 3.

306 *Environmental Assessment Act*, R.S.). 1990, c.E.18, s.5(3).

307 Other approvals may be combined into a joint hearing under the *Consolidated Hearings Act*, R.S.O. 1990, c.C.29.

308 *Environmental Assessment and Consultation Improvement Act* (Bill 76), which has currently received Second Reading.

preparation, expert advice and participation[309]. While the Act required renewal in 1996 to continue functioning, the provincial government has chosen not to renew it, and thus a key factor in citizen participation in important hearings has been removed. Funding for certain law suits that have common issues between a number of plaintiffs may be addressed under the *Class Proceedings Act*[310].

Built on consensus among a broadly-based advisory committee, the *Environmental Bill of Rights* (EBR) was passed to codify and enhance public participation, and government accountability for decisions affecting the environment[311]. The purposes in subsection 2(2) include the "protection and conservation of biological, ecological and genetic diversity" and the "protection and conservation of natural resources, including plant life, animal life and ecological systems". Beyond broad purposes, the EBR provides for: Ministry "Statements of Environmental Values" (SEVs) to guide their decisions; an Environmental Registry of information on SEVs and government proposals for policies and legislation; an Environmental Commissioner to monitor and report on the Bill's operation; a request to review a significant environmental decision, policy, Act or regulation; a request to investigate a contravention of prescribed legislation; new rights to court access and removal of barriers to public nuisance suits; and protection of "whistleblowers" from reprisals by employers. These processes supplement procedures under other legislation where these do not fully provide for equivalent means to enhance environmental decision-making. Other Acts also enable the public to obtain information from government and have concerns investigated[312].

J. CONCLUSIONS

This chapter demonstrates that there is a variety of regulatory and enabling legislation in Ontario. However, the legal situation might be summed up as: we don't use the laws we have, and we don't have the laws we need; in some cases, we don't even need the laws we have. Most of the legislation was developed at a time when biodiversity conservation was of little concern, and mining of renewable resource products was predominant, rather than ensuring sustainable use over time. Thus, the statutes' objectives do not conform with these new community and global objectives.

Commercial and recreational uses of biodiversity have been of principal concern,

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309 *Intervenor Funding Project Act*, R.S.O. 1990, c.I.13.

310 *Class Proceedings Act*, S.O. 1992, c.C.6.

311 *Environmental Bill of Rights* Act, S.O. 1993, c.28.

312 For example, the *Ombudsman Act*, R.S.O. 1990, c.O.6; and *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c.F.31.

and have received the most research and financial support, while non-game and conservation programs have taken a back seat - often due to, and reflected in, the legislative regime. Conservation biology, landscape and restoration ecology, and voluntary private and cooperative mechanisms and incentives have all received intense study and enhanced public profile in recent years. Consequently, there are gaps in the legal web, areas which were never contemplated or which did not receive the same support two decades ago during the first wave of environmental law reforms. This is particularly true for non-commercial herbaceous plants.

Along with gaps, there are also barriers to be overcome and opportunities to be realized. The agricultural and conservation communities need to come to an understanding of how to integrate their mutual concerns. Voluntary mechanisms and incentives need to be given higher profile and awareness in order that they are used to their maximum benefit, with supportive legislative reforms where necessary. Some key legal initiatives have foundered without agricultural community support, such as reforms to the *Game and Fish Act* and *Endangered Species Act*. As noted, other related reforms affecting the agricultural sector are inching along. The lesson appears to be: discuss and get agricultural support before advancing such proposals.

Nonetheless, a number of key reforms have been completed in recent years. This has included the *Environmental Bill of Rights*, the *Crown Forest Sustainability Act* and controversial revisions to the *Planning Act,* and associated policies and administration. Expanded conservation covenant and easement authority under a new *Conservation Land Act* section has boosted private land conservation expectations in the province, and such voluntary approaches are likely to receive increased support. All four of these initiatives provide more opportunities for addressing biodiversity issues, but fundamentally rely upon a host of players and implementation documents for success.

The current provincial government has unfortunately taken numerous steps to unravel protections afforded to biodiversity, none of which were announced in their campaign platform document, the "Common Sense Revolution"[313]. The *Planning Act* and its Provincial Policy Statement have been substantially weakened from versions adopted by the previous government, although some advances remain. Permitting powers under the *Public Lands Act* and *Lakes and Rivers Improvement Act* have been curtailed. The ability to levy municipalities under the *Conservation Authorities Act* has been restricted, while disposition of conservation lands and dissolution of authorities is made easier. Institutions critical to biodiversity conservation, such as the conservation authorities, the Niagara Escarpment Commission, and the Ministries of Natural

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313 See Mark Winfield and Greg Jenish, *Ontario's Environment and the "Common Sense Revolution": A First Year Report*, and Canadian Environmental Law Association, *Cutting Ontario's Environment*, Special Report, supra note 51.

Resources and of Environment and Energy, have been severely hit with financial and program cuts, as have non-government organizations and community action programs.

On a more positive note, the Managed Forest Tax Rebate Program was reinstated with further tax reforms announced, a new fish and wildlife trust fund has been established, and legislative reforms have been proposed for game species and to support enhanced tax status of some charities. A key issue to support private land conservation and land trusts will be property tax reforms, a seemingly intractable area with sweeping implications for municipal and school board finance and restructuring, and provincial-municipal relations. An announcement of a panel to address these issues may result in more stable property tax incentives to retain lands in conservation use.

The *Canadian Biodiversity Strategy* provides a national template for implementing the *Biodiversity Convention*, but it lacks an action plan specific to Ontario. As part of the federal Strategy and contributing to international reporting under the Convention, Ontario must report on its progress towards implementing the Strategy by the end of 1996. Thus, the province must revive its Biodiversity Committee to develop such a plan, as begun in the *Wild Life Strategy* and elsewhere, and highlight the legal and non-legal actions necessary. New partnerships, creative approaches and financing, and the participation of all land interests will be required to set this course. Voluntary and enabling mechanisms must supplement and complement regulatory methods, particularly in southern Ontario where private ownership and a mix of land uses predominate.

But not just to plan -- again. Especially in settled southern Ontario, impacts on biodiversity are accumulating at a rapid rate. These actions thus need to be translated into reforms, building upon the recommendations here and elsewhere. Such actions may be challenging under MNR's leadership, with its dual use and protection mandate and its increasingly limited capacity. The new government appears willing to act decisively, if not environmentally, and has many partners willing to guide it towards improved biodiversity measures. A substantial agenda is evident: there needs to be core legislation and policy reviewed, revised, expanded and integrated, gaps identified and filled, conflicting mandates resolved, and new approaches and organizations enabled. This is in addition and complementary to the widening number of private sector initiatives.

Biodiversity is the foundation of Ontario's economic and social fabric, as well as its history. Its conservation and sustainable use is thus integral to the government's financial agenda, and prevents the expenditure of higher future costs to repair the damage from poor, narrowly-conceived decisions. Accordingly, leadership, experience, expertise, and innovation must be coalesced from the wealth of organizations and governments in the province to develop and implement an action plan. This will help harness and support the growing interests, energies and activities of citizens, and ensure alignment of provincial initiatives. It is through such collective and diffuse efforts that the directions and commitments in the Convention and Strategy will become fully realized in Ontario.

LA PROTECTION DE LA BIODIVERSITE AU QUEBEC

Karel Mayrand et Julie Pelletier*

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A. INTRODUCTION

La biodiversité constitue de plus en plus une priorité d'action dans l'agenda environnemental de nos gouvernements. Ce document fait état des principales réalisations (loi, règlement, politique, stratégie, plan, etc.) qui existent à l'heure actuelle au Québec en cette matière. Bien qu'il reste encore beaucoup à faire, les autorités québécoises semblent sensibilisées à cet aspect fondamental de la protection de l'environnement et cherchent à améliorer toujours davantage leur performance.

En toute première partie, ce texte présente un bref historique des initiatives prises afin de protéger certaines parties du territoire québécois, illustrant ainsi l'évolution des priorités au fil des années. Ce n'est que récemment que le concept de biodiversité s'est implanté comme une composante à part entière, beaucoup plus large que la protection des territoires, et qui nécessite des efforts spécifiques et précis.

Par la suite, le texte dresse un bilan général de la situation et passe en revue les différents outils disponibles selon différentes composantes de la biodiversité; Protection de la faune et de la flore; Espaces protégés; Restauration des habitats; Utilisation durable des ressources

biologiques; et finalement tout autre question liée à la biodiversité. En dernière partie, nous faisons état de nos recommandations pour l'ensemble des thèmes énumérés.

1. Historique

Depuis la fin du 19e siècle, la protection de la biodiversité s'effectue au Québec notamment par l'entremise de la conservation des espaces naturels. Cette conservation consistait, jusqu'à tout récemment, en la mise en réserve de terres publiques en vue de la création de parcs, réserves forestières et réserves de chasse et de pêche. En 1895, les Parcs des Laurentides et de la Montagne Tremblante étaient créés et en 1906, c'était au tour du Parc de la Gaspésie. Malgré le titre de " parc ", on permettait l'exploitation forestière et, de surcroît, l'exploitation minière en ce qui concerne le Parc de la Gaspésie. En 1938, le gouvernement du Québec créait le Parc du Mont Orford où l'exploitation forestière était aussi permise. Au cours des trois décennies suivantes, le gouvernement québécois s'est limité à la création de réserves de chasse et de pêche sans interdire l'exploitation commerciale des ressources naturelles.

Ainsi, jusqu'en 1974, la philosophie conservationniste centrée sur l'utilisation commerciale des ressources naturelles et leur conservation oriente la gestion des parcs et autres espaces protégés au Québec, reléguant la protection de la faune et de la flore au deuxième plan. En 1974, le gouvernement du Québec adopte la *Loi sur les réserves écologiques* (L.R.Q., c. R-26.1) et en 1977 la *Loi sur les parcs* (L.R.Q., c. P-9). La philosophie introduite par ces deux lois est préservationniste, c'est-à-dire qu'elle préconise la protection stricte des ressources contenues dans les territoires mis en réserve. Dès lors, toute forme d'exploitation des ressources est interdite dans les réserves écologiques et les parcs, à l'exception de la pêche pour ces derniers.

De 1986 à 1991, un moratoire a été fixé sur la création de nouveaux parcs afin de consolider le réseau existant. Il faut toutefois noter qu'en 1990, les gouvernements du Canada et du Québec entérinaient un accord sur la création et la gestion d'un parc marin au confluent de la rivière Saguenay et du fleuve St-Laurent, lequel ne s'est toujours pas concrétisé. Ce moratoire a pris fin avec le dépôt du plan d'action sur les parcs (1992-1997) et la création, en juin 1994, du Parc du Mont-Mégantic. À mentionner aussi, l'établissement, entre 1989 et le début de 1995, de 29 nouvelles réserves écologiques pour permettre la protection de certains écosystèmes terrestres représentatifs, de milieux humides et de sites exceptionnels.

On souligne toutefois que la création de ces parcs et réserves écologiques n'a pas empêché la disparition de certaines espèces fauniques ou floristiques au cours du 19e et du 20 siècles.

2. Contexte politique

La constitution canadienne qui répartit entre les deux niveaux de gouvernement les compétences en matière d'environnement et de gestion des ressources naturelles (faune, forêt, agriculture, etc.), n'est pas sans causer quelques problèmes. Bien que les provinces canadiennes bénéficient de la majorité des pouvoirs d'agir en ces matières, certaines provinces, dont le Québec revendiquent une autonomie plus étendue. Malgré tout, le gouvernement québécois exerce un rôle majeur par son contrôle sur l'ensemble des sites protégés sur son territoire (exception faites des parcs nationaux et autres sites protégés fédéraux). Cette dualité d'intervention mène à certaines tensions avec le gouvernement fédéral qui cherche quelquefois à étendre la portée de ses interventions.

Ce contexte politique pourrait affecter la mise en application, au Québec, de certaines dispositions de la *Convention sur la diversité biologique.* Dans un décret daté du 25 novembre 1992, le Québec a adhéré aux principes et objectifs de la *Convention sur la diversité biologique* et s'y est déclaré lié. La province soutient que cette Convention " relève, par son contenu, de [sa] compétence constitutionnelle ". En conséquence, le Québec affirmait dans ce décret " sa responsabilité quant à la mise en oeuvre sur son territoire de cette Convention et qu'en conséquence, en tenant compte de ses compétences, il définit ses propres politiques, stratégies et programmes ". Il affirmait aussi " son intention de procéder conformément aux priorités et à l'échéancier qui lui sont propres ".

Conséquemment à cette position, le Québec s'oppose à l'initiative fédérale visant à créer un cadre ou une législation nationale en matière de protection des espèces menacées, affirmant que le Québec possède déjà tous les outils législatifs (par exemple, la *Loi sur les espèces menacées ou vulnérables*) et autres nécessaires pour assurer une telle protection et que toute action du gouvernement fédéral dans ce domaine ne ferait que créer des dédoublements. Québec revendique la compétence exclusive en cette matière et demande plutôt au gouvernement fédéral d'orienter de manière prioritaire son action vers la réglementation du commerce international et interprovincial des espèces menacées. Malgré ces revendications, la province a accepté de participer à la préparation d'une stratégie nationale regroupant les provinces, les territoires et le gouvernement fédéral, dans le cadre du Conseil canadien des ministres de l'environnement (CCME).

Tel qu'annoncé dans le décret de novembre 1992, le Québec a entamé ses actions en vue d'assumer ses responsabilités découlant de la Convention. En effet, en mai 1995, un comité regroupant sept ministères et organismes a publié un projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* au Québec. Nous ferons amplement référence à ce document dans les pages suivantes. Le projet de stratégie a été soumis à une consultation publique en 1995. Il comprend 31 objectifs menant à 202 mesures concrètes visant la mise en application de la Convention. Le décret de 1992 prévoit l'entrée en vigueur de la *Stratégie de mise en vigueur au Québec de la Convention sur la diversité biologique* et du *Plan d'action québécois sur la diversité biologique 1996-2000* pour le mois d'avril 1996 mais cela sera plutôt pour le mois de juin 1996. Le *Plan d'action* comprendra notamment quelques 482 actions et un

échéancier précis pour l'atteinte des objectifs visés par le projet de stratégie.

3. Organisation gouvernementale et expertise des organismes non-gouvernementaux

Les efforts déployés par les instances gouvernementales pour le développement d'outils de gestion des territoires, d'utilisation des ressources et de conservation de la biodiversité nécessite le travail et l'apport de nombreux organismes non-gouvernementaux et autres intervenants. Les ministères, agences ou organismes suivants ne sont qu'une partie des intervenants qui contribuent à l'élaboration, dans leur champ de compétence respective, de ces outils de protection, de gestion et de restauration.

En 1994, le ministère de l'Environnement du Québec et le ministère du Loisir, de la Chasse et de la Pêche du Québec ont été regroupés au sein du nouveau ministère de l'Environnement et de la Faune du Québec (MEF), lequel constitue le principal maître d'oeuvre en matière de biodiversité. Ce regroupement facilite la gestion environnementale et faunique en ce qui a trait à la protection de la diversité biologique, notamment au niveau de la protection des espèces menacées qui incombait auparavant aux deux ministères. Cela devrait aussi permettre une approche plus intégrée pour le parachèvement du réseau des sites protégés au Québec.

Bien que le MEF occupe une place importante pour la protection de la biodiversité au Québec, les activités de d'autres ministères ont des répercussions dans ce domaine. Mentionnons, entre autres, le ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) et le ministère des Ressources Naturelles du Québec.

Plusieurs associations professionnelles, organismes non gouvernementaux, ainsi que le milieu universitaire, travaillent à la protection de la diversité biologique québécoise et leur expertise unique est essentielle à la réalisation de cet important travail. À titre d'exemple, mentionnons *l'Association des biologistes du Québec* qui a créé en 1978 le *Comité pour la sauvegarde des espèces menacées au Québec*, comité qui a publié six rapports sur la situation d'espèces végétales et animales menacées entre 1984 et 1986. Cette initiative découle de la Politique gouvernementale sur la désignation des espèces menacées. Dans le même ordre d'idées, les chercheurs de *l'Institut botanique de l'Université de Montréal* et du *Jardin botanique de Montréal* ont produit en 1983 une liste de 408 plantes rares au Québec.

D'autres organismes ont une présence importante dans ce domaine et collaborent activement avec le gouvernement québécois. C'est le cas du *Centre québécois du droit de l'environnement* (CQDE) qui termine l'élaboration d'une proposition de projet de loi sur les servitudes de conservation. Cette technique est appelée à être utilisée afin de protéger les caractéristiques patrimoniales de certains sites naturels privés, ce qui apportera une contribution certaine au maintien de la biodiversité. Cette proposition de projet de loi devrait se concrétiser dès l'automne 1996.

Un *Centre de données sur le patrimoine naturel du Québec* a été mis sur pied en

collaboration avec la *Société canadienne pour la conservation de la nature* et un groupe américain, *The Nature Conservancy*. Un laboratoire de cytologie environnementale et des ressources phytogénétiques a été créé en 1989 en collaboration avec *l'Université Laval*. Des comités aviseurs chargés de conseiller le ministre sur les espèces à désigner ont été formés. D'autres initiatives proviennent notamment de la *Fondation pour la sauvegarde des espèces menacées* (FOSEM), de la *Fondation de la faune du Québec,* du *Fonds mondial pour la nature* (WWF), de l'*Institut national d'écotoxicologie du Saint-Laurent* et de *l'Union québécoise pour la conservation de la nature*

B. PROTECTION DE LA FAUNE ET DE LA FLORE

Le territoire québécois comprend une grande diversité biologique. On y a identifié 43 régions naturelles et on estime à environ 9 074 le nombre d'espèces vasculaires et invasculaires au Québec, à plus de 650 le nombre d'espèces animales et à au-delà de 25 000 le nombre d'espèces d'insectes. (Voir tableau 1 en annexe)

1. La Loi sur les espèces menacées ou vulnérables et la Politique québécoise sur les espèces menacées ou vulnérables

Le gouvernement du Québec a adopté en 1989 la *Loi sur les espèces menacées ou vulnérables* (L.R.Q., c. E-12.01). Cette loi vise plusieurs objectifs :

- Empêcher la disparition d'espèces vivant au Québec;
- Éviter une diminution de l'effectif des espèces fauniques ou floristiques désignées menacées ou vulnérables;
- Assurer la conservation des habitats des espèces désignées menacées ou vulnérables;
- Rétablir les populations et les habitats des espèces désignées menacées ou vulnérables; et
- Éviter que toute espèce ne devienne menacée ou vulnérable.

La loi s'applique à toutes les espèces vivant au Québec, qu'elles soient microscopiques ou macroscopiques, introduites ou indigènes, sauvages, cultivées ou domestiques. Elle établit l'ensemble des dispositions relatives à la protection et à la gestion des espèces floristiques désignées menacées ou vulnérables ou de leurs habitats. Cette loi précise également que les espèces fauniques désignées comme menacées ou vulnérables ainsi que leurs habitats sont régis par la *Loi sur la conservation et la mise en valeur de la faune* (L.R.Q., c. C-61.1).

Concernant les espèces floristiques désignées, la *Loi sur les espèces menacées ou vulnérables* contient plusieurs interdictions visant leur protection ainsi que celle de leurs habitats. La loi spécifie que nul ne peut posséder hors de son milieu naturel, récolter, exploiter, mutiler, détruire, acquérir, céder, offrir de céder ou manipuler génétiquement tout spécimen d'une espèce

floristique désignée ou l'une de ses parties, y compris celles provenant de sa reproduction. Au niveau des habitats, la loi spécifie que nul ne peut, dans l'habitat d'une espèce floristique désignée, exercer une activité susceptible de modifier le processus écologique en place, la diversité biologique présente et les composantes chimiques ou physiques propres à cet habitat.

La loi prévoit aussi que le MEF entreprenne des recherches, études et analyses à l'égard d'espèces qui semblent nécessiter une protection et qu'il établisse des programmes de survie des espèces désignées ou susceptibles d'être désignées menacées ou vulnérables. À cet effet, un comité faune et un comité flore ont été créés afin d'identifier les espèces susceptibles d'être désignées. Le comité faune a identifié 73 espèces animales et le comité flore identifiait 374 variétés d'espèces floristiques dont 9 (incluant l'ail des bois) font maintenant l'objet d'une protection.

Des inventaires ont été effectués sur plusieurs espèces animales dont la tortue des bois, la tortue géographique, la rainette faux-grillon, la grenouille des marais, le cougar et le carcajou, lesquelles espèces sont susceptibles d'être désignées. Des inventaires visant la localisation des plantes susceptibles d'être désignées menacées ont aussi été faits dans plusieurs régions. Aussi, la loi requiert la protection et l'aménagement des habitats existants, le rétablissement des habitats détériorés et la création de nouveaux habitats.

À titre d'information, le MEF a jusqu'ici répondu à plus d'un millier de demandes d'information concernant les espèces menacées depuis l'adoption de la *Loi sur les espèces menacées ou vulnérables*.

a. La désignation des espèces menacées et de leurs habitats

La *Loi sur les espèces menacées ou vulnérables* accorde au ministre de l'Environnement et de la Faune le pouvoir de déterminer, par arrêté, une liste des espèces susceptibles d'être désignées menacées ou vulnérables. Le gouvernement désigne ensuite par règlement, sur recommandation du ministre, les espèces menacées ou vulnérables et détermine leurs habitats.

Le gouvernement du Québec a publié un premier volet de politique sur les espèces menacées ou vulnérables en 1992. Ce volet de politique détermine le processus menant à la désignation d'espèces comme menacées ou vulnérables. On entend par *espèce menacée* toute espèce dont la disparition est appréhendée et par *espèce vulnérable* toute espèce dont la survie est précaire même si sa disparition n'est pas appréhendée.

En premier lieu, le MEF publie une liste officielle comprenant l'ensemble des espèces de la faune et de la flore du Québec dont la survie semble compromise. La sélection s'appuie sur les connaissances disponibles en fonction des critères suivants :

- répartition restreinte;
- faible abondance;

- déclin de population;
- statut reconnu par d'autres organismes compétents:
  - Comité sur le statut des espèces menacées de disparition au Canada
  - Musée canadien de la nature
  - autres organismes;
- vulnérabilité à la récolte; et
- autres critères.

Cette liste a été publiée en 1993 et elle contenait 73 espèces fauniques et 374 espèces floristiques considérées comme susceptibles d'être désignées en vertu de la *Loi sur les espèces menacées ou vulnérables*. La sélection de ces espèces peut être mise à jour aussi souvent que l'état des connaissances le justifie. Les espèces sélectionnées dans cette liste font l'objet d'une attention particulière à des fins d'études d'impact, de recherche et de programmes de protection des espèces et habitats.

À partir de cette liste, le MEF peut identifier les espèces devant être désignées comme menacées ainsi que leurs habitats. Cette désignation est effectuée par décret gouvernemental à la suite d'une procédure en plusieurs étapes et impliquant des études scientifiques et une consultation publique. En mars 1995, le gouvernement du Québec a désigné, pour la première fois, huit espèces menacées et une espèce vulnérable (D. 201 & 202-95, G.O.Q. 1995.II.736).

Une fois le règlement de désignation adopté, le MEF est responsable de la gestion des espèces menacées et de leurs habitats. Cette gestion porte en premier lieu sur la surveillance du respect des interdictions mais elle porte aussi sur la mise en place de programmes de rétablissement des espèces ou de leurs habitats.

La politique prévoit aussi une participation des autres ministères concernés, du public et de d'autres intervenants canadiens et internationaux ainsi que des activités de communication visant la sensibilisation du public et des principaux intervenants dans le domaine.

Bien que cette loi permet une protection efficace de plusieurs espèces, nous ne pouvons nous empêcher de constater que depuis son adoption, en 1989, très peu d'espèces ont été désignées et qu'aucune de celles désignées ne concernait la faune. Toutefois, l'article 7 de la *Loi sur les espèces menacées ou vulnérables* permettrait au ministre de l'Environnement et de la Faune de prendre diverses mesures (études, recherches, programmes, ententes, etc.) " à l'égard des espèces qui semblent nécessiter une protection " ou " des espèces menacées ou vulnérables désignées ou susceptibles d'être ainsi désignées ".

b. La gestion des espèces menacées et de leurs habitats

Un deuxième volet de politique concernant la gestion des espèces menacées ou vulnérables et de leurs habitats devrait venir compléter ce premier projet dans un avenir rapproché. Aucun échéancier n'est toutefois fixé.

2. La Loi sur la conservation et la mise en valeur de la faune

La *Loi sur la conservation et la mise en valeur de la faune* donne des responsabilités au ministre de l'Environnement et de la Faune concernant la gestion de la faune. Cette loi détermine les conditions générales de conservation et de gestion de la faune et de son habitat (incluant la chasse, la pêche et le piégeage). Concernant les habitats fauniques protégés, la loi stipule qu'il est interdit de " faire dans un habitat faunique une activité susceptible de modifier un élément biologique, physique ou chimique propre à l'habitat de l'animal ou du poisson visé par cet habitat " (Article 128.6). Il est toutefois utile de préciser que l'expression " habitat faunique " fait référence à un statut particulier qui ne peut être obtenu que si l'on rencontre les conditions imposées par le *Règlement sur les habitats fauniques* (c. C-61.1, r.0.1.5). Ainsi, sont des habitats fauniques les habitats situés sur les terres du domaine public, identifiés par un plan dressé par le MEF. Les sites identifiés par le ministre comme habitat faunique sont compris à l'extérieur de l'une ou l'autre des catégories suivantes :

- une aire de concentration d'oiseaux aquatiques;
- une aire de confinement du cerf de Virginie;
- une aire de fréquentation du caribou au sud du 52e parallèle;
- une aire de mise bas du caribou au nord du 52e parallèle;
- une falaise habitée par une colonie d'oiseaux;
- un habitat d'une espèce faunique menacée ou vulnérable;
- un habitat du rat musqué;
- une héronnière;
- une île ou une presqu'île habitée par une colonie d'oiseaux; et
- une vasière.

À ces responsabilités s'ajoutent maintenant des pouvoirs spécifiques en matière de protection et de gestion des espèces fauniques menacées ou vulnérables et de leurs habitats. En ce qui concerne les espèces désignées, la *Loi sur les espèces menacées ou vulnérables* a modifié la *Loi sur la conservation et la mise en valeur de la faune* pour y inclure des interdictions semblables à celles concernant les espèces floristiques mentionnées ci-haut. Des pouvoirs additionnels sont aussi donnés au ministre en ce qui concerne la protection des espèces désignées, notamment au niveau de la recherche, de la sensibilisation et de l'information.

3. La Loi sur les droits de chasse et de pêche dans les territoires de la Baie James et du Nouveau-Québec

Dans le nord du Québec, sur une grande partie du territoire québécois (au nord du 50e parallèle), les dispositions relatives aux espèces menacées ou vulnérables s'appliquent sous réserve de la *Loi sur les droits de chasse et de pêche dans les territoires de la Baie James et du Nouveau Québec* (L.R.Q., c. D-13.1). Cette loi donne des droits exclusifs de chasse, de pêche et de piégeage aux autochtones du territoire sur certaines terres et réserves pour certains mammifères

et poissons à leur usage exclusif. En cas d'incompatibilité, la *Loi sur les espèces menacées ou vulnérables* lui cède le pas.

Le régime de chasse, de pêche et de piégeage est toutefois assujetti au principe de conservation, c'est-à-dire à la " recherche de la productivité naturelle optimale de toutes les ressources vivantes et la protection des écosystèmes du territoire dans le but de protéger les espèces menacées et d'assurer, principalement, la perpétuation des activités traditionnelles des autochtones et, en second lieu, la satisfaction des besoins des non-autochtones en matière de chasse et de pêche sportive " (Article 2).

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* a comme objectif de " développer ou maintenir des programmes et autres mesures en milieu nordique visant la conservation et l'utilisation durable des éléments constitutifs de la diversité biologique ". Des mesures de sensibilisation et de collaboration avec les autochtones sont envisagées.

4. Autres législations

En ce qui concerne les autres lois qui s'appliquent à la protection de la faune et de la flore, mentionnons simplement que la *Loi sur les terres du domaine public* (L.R.Q., c. T-8.1) et la *Loi sur l'aménagement et l'urbanisme* (L.R.Q., c. A-19.1) nécessitent toutes deux la prise en compte des espèces dans l'aménagement du territoire. Pour la *Loi sur les terres du domaine public*, c'est par l'entremise du *Plan d'affectation des terres* que le gouvernement peut protéger les espèces et leurs habitats. Quant à la *Loi sur l'aménagement et l'urbanisme*, elle oblige les municipalités régionales de comté à tenir compte des sites ayant une importance écologique particulière dans leurs plans d'aménagement du territoire.

5. Le projet de Stratégie de mise en oeuvre au Québec de la Convention sur la diversité biologique

Le projet de stratégie comprend plusieurs objectifs visant la protection de la faune, de la flore et de leurs habitats ainsi que leur utilisation au Québec. Un objectif important est " [d']améliorer la compréhension et la gestion de la diversité biologique par une approche axée sur les écosystèmes ". À ce sujet, le projet de stratégie définit plusieurs orientations:

- Poursuivre l'évaluation du portrait de la diversité biologique;
- Poursuivre le développement de la gestion intégrée des ressources;
- Développer des méthodes de suivi de la diversité biologique; et
- Viser l'utilisation d'un cadre territorial de référence à plusieurs niveaux de perception afin d'améliorer la connaissance des écosystèmes et de leur gestion.

Plusieurs mesures concrètes sont prévues à ce sujet. Le projet de stratégie détermine aussi l'objectif " [d']adopter et [de] prendre des mesures appropriées pour préserver les espèces et les écosystèmes à l'extérieur des aires protégées ". L'orientation privilégiée dans ce sens est

" [d']intégrer la diversité biologique dans l'application de processus d'évaluation et d'examen des impacts sur l'environnement ".

À un autre niveau, le projet de stratégie a comme objectif de " conserver *ex situ* des éléments vulnérables ou menacés de la diversité biologique naturelle ". On parle à ce sujet de développer des programmes de conservation *ex situ* puisqu'il est important de protéger un échantillon de cette diversité.

Recommandations pour la protection de la faune et de la flore

1. **Désigner d'autres espèces menacées ou vulnérables afin de leur assurer une meilleure protection légale conformément à la *Loi sur les espèces menacées ou vulnérables* et au premier volet de la *Politique Québécoise sur la conservation des espèces menacées ou vulnérables.***
2. **Produire un deuxième volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la gestion des espèces désignées et de leurs habitats.**
3. **Poursuivre les recherches et effectuer des inventaires sur les espèces en situation précaire.**
4. **Développer des incitations fiscales adaptées à la conservation privée.**
5. **Voir à la sensibilisation du public à l'égard de la protection de la faune et de la flore.**

C. ESPACES PROTÉGÉS

1. Lois et politiques provinciales

On dénombre au moins 17 dénominations d'aires protégées au Québec. Les plus souvent citées sont: les réserves écologiques (*Loi sur les réserves écologiques*) et les parcs provinciaux (*Loi sur les parcs*). Dans les deux cas, toute exploitation des ressources est interdite, bien que la pêche sportive soit permise dans les parcs. Il existe aussi plusieurs autres types d'espaces naturels bénéficiant d'un statut offrant une protection incomplète, notamment les réserves et habitats fauniques.

Dans le but de bien comprendre le niveau exact de conservation des aires protégées et de faciliter la comparaison avec les autres provinces et pays, il y aurait lieu de procéder à une classification de ces nombreuses superficies selon les six catégories de l'UICN.

a. Les parcs

Il existe deux types de parcs provinciaux : les parcs de conservation et les parcs de récréation. Les premiers doivent assurer la protection permanente de territoires représentatifs des

régions naturelles du Québec ou de sites naturels à caractère exceptionnel tout en les rendant accessibles au public pour fins d'éducation et de récréation. Les seconds visent prioritairement à favoriser la pratique d'une variété d'activités récréatives de plein air.

Il y a 17 parcs provinciaux au Québec couvrant une superficie totale de 4 248,5 km2, ce qui représente 0,27% du territoire québécois. Les parcs de conservation occupent une superficie totale de 2 500 km2 alors que les parcs de récréation s'étendent sur 1748,5 km2. Dix-huit sites ont été mis en réserve au nord du 50e parallèle à des fins de parcs. Ces sites couvrent 57 720 km2 et la création de parcs sur ces sites en réserve porterait à 4,2% la proportion de territoires protégés au Québec.

Le cadre de planification du réseau québécois de parcs est basé sur la délimitation de 43 régions naturelles réalisées à cette fin, regroupées selon leur appartenance aux grandes régions que sont les Appalaches, le Bouclier canadien et les Basses terres du St-Laurent. De ces 43 régions, le *Fonds mondial pour la nature* (WWF) estime que deux seulement sont représentées de façon complète, trois de façon modérée et que dix le sont partiellement.

Mentionnons finalement l'existence de trois parcs nationaux, c'est-à-dire relevant du gouvernement fédéral, sur le territoire de la province (Forillon, Mingan et Mauricie) qui totalisent 885,7 km2 (Voir tableau 2 en annexe).

b. Les réserves écologiques

Le but principal du réseau des réserves écologiques au Québec demeure, dans un objectif de développement durable, la conservation intégrale et permanente d'échantillons de milieux représentant la diversité de la richesse écologique et génétique de notre patrimoine naturel. En plus de garantir la protection de milieux naturels, les réserves écologiques visent des objectifs de recherche scientifique, d'éducation et de sauvegarde des espèces menacées ou vulnérables de la flore et de la faune.

L'accès aux réserves écologiques est limité aux activités de gestion, de recherche ou d'éducation et doit faire l'objet d'autorisations spéciales qui visent à assurer l'intégrité écologique de ces sites.

Les réserves écologiques sont au nombre de 54 et couvrent un territoire de 673,37 km2. En plus d'accorder les pouvoirs relatifs à la constitution des réserves écologiques, la *Loi sur les réserves écologiques*, modifiée en juin 1993, permet de mettre en réserve un territoire en vue de la constituer en réserve écologique. Ce statut territorial de protection transitoire limite les activités pouvant être exercées sur ces sites.

Une programmation quinquennale (1996-2001) devrait être officiellement adoptée en mai 1996. Elle prévoit la création de 13 nouvelles réserves écologiques axées sur la protection d'écosystèmes représentatifs et fixe un objectif de 20 sites mis en réserve pour la création de réserves écologiques. Entre 1989 et le début de 1995, 29 nouvelles réserves écologiques ont été

établies pour permettre la protection de certains écosystèmes terrestres représentatifs, de milieux humides et de sites exceptionnels.

c. Espaces bénéficiant d'une protection incomplète

Certains espaces sont toujours protégés selon la philosophie conservationniste. C'est le cas des réserves et des refuges fauniques ainsi que de plusieurs autres sites bénéficiant de protection à des degrés divers et où l'exploitation des ressources est toujours permise. Ces sites couvrent une superficie totale de 171 253 km2. Les réserves fauniques qui occupent une superficie de 68 513 km2 et les refuges fauniques une étendue de 42 703 km2, sont les deux principaux types d'espaces partiellement protégés. Tel que mentionné précédemment, les dix-huit sites mis en réserve au nord du 50e parallèle en vue de la création de parcs bénéficient aussi d'une protection incomplète et occupent quant à eux une surface totalisant 57 720 km2.

d. Autres types de protection

La *Loi sur les espèces menacées ou vulnérables* permet la protection d'espaces naturels pour les espèces en péril, entre autres au moyen de boisés. Il existe actuellement deux exemples de ces types de boisés au Québec: le Boisé Papineau situé à Ville de Laval et celui de l'Île Hash.

La *Loi sur la protection du territoire agricole* (L.R.Q., c. P-41.1), adoptée en 1978, est un instrument important de maintien des zones rurales puisqu'elle permet d'exercer un contrôle sur les activités non agricoles et le lotissement en milieu agricole. Cette loi vise à réserver à l'agriculture certaines terres dont les caractéristiques géophysiques et climatiques sont propices à l'activité agricole. Ce faisant, elle contribue à limiter l'étalement urbain.

La *Loi sur la qualité de l'environnement* (L.R.Q., c. Q-2) offre une protection générale aux espaces naturels du Québec. En effet, l'article 22 de la Loi sur la qualité de l'environnement stipule que:

> " Nul ne peut ériger ou modifier une construction, entreprendre l'exploitation d'une industrie quelconque, l'exercice d'une activité ou l'utilisation d'un procédé industriel ni augmenter la production d'un bien ou d'un service s'il est susceptible d'en résulter une émission, un dépôt, un dégagement ou un rejet de contaminants dans l'environnement ou une modification de la qualité de l'environnement à moins d'obtenir préalablement du ministre un certificat d'autorisation ".

Cette règle souffre toutefois d'exceptions qui sont énoncées au *Règlement relatif à l'application de la Loi sur la qualité de l'environnement* (D. 1529-93, 125 *G.O.Q.* II, 7766), certaines d'entre elles touchant spécifiquement les travaux d'aménagement faunique.

Concernant les terres publiques, le *Plan d'affectation des terres publiques* assure une certaine protection en réglementant l'utilisation et la gestion de ces terres. Mentionnons finalement la *Politique sur les rives, les plaines inondables et le littoral* qui vise la protection des zones humides par l'ensemble des intervenants sur le territoire du Québec.

2. Le projet de Stratégie de mise en oeuvre au Québec de la Convention sur la Diversité Biologique

Le projet de stratégie a comme objectif " [d']établir et [de] maintenir un réseau intégré et représentatif d'aires protégées nécessaire à la conservation de la diversité biologique ". À cette fin, le projet de stratégie définit plusieurs orientations dont les suivantes :

- Poursuite de la consolidation et du développement du réseau de parcs québécois; et
- Poursuite de la consolidation et du développement du réseau de réserves écologiques.

Dans le même ordre d'idées, le projet de stratégie détermine l'objectif " [d']accroître la connaissance écologique nécessaire à l'établissement d'un réseau d'aires protégées et à la sauvegarde des éléments vulnérables ou menacés de la diversité biologique naturelle ". Tel que mentionné précédemment, on prévoit l'adoption officielle d'une programmation quinquennale sur les réserves écologiques (1996-2001) pour d'avril 1996, laquelle mettra l'accent sur la représentativité des réserves écologiques par rapport à un cadre écologique de référence à l'échelle du Québec. On annonce aussi la venue d'un nouveau plan d'action pour les parcs pour la période 1998-2002.

3. Protection municipale

La *Loi sur l'aménagement et l'urbanisme* (L.R.Q., c. A-19.1) oblige les municipalités régionales de comté (MRC) à adopter, appliquer et réviser leurs schémas d'aménagement en tenant compte des aires qui présentent un intérêt d'ordre écologique. Concrètement, la loi oblige les MRC à identifier les projets d'arrondissements, les réserves écologiques, les habitats d'espèces désignées menacées ou vulnérables, les parcs et les autres sites ayant un statut particulier tout comme les zones d'inondation et les autres zones fragiles sur le plan environnemental. En effet, les pouvoirs des municipalités en matière de protection des rives, du littoral et des plaines inondables ainsi que toutes les dispositions qui prennent en compte la proximité d'un cours d'eau leur confèrent une importance non négligeable dans la protection des habitats fauniques. Cette obligation de la loi n'est toutefois pas complétée par une obligation pour les MRC de formuler des orientations ou des directives à l'égard des espaces identifiés.

La loi prévoit aussi la possibilité pour une municipalité de créer un fonds spécial qui servira à réaliser l'établissement ou l'agrandissement de parcs et de terrains de jeu ou le maintien d'espaces naturels. Ce fonds spécial est constitué par l'adoption d'un règlement de zonage approprié.

La *Loi sur l'aménagement et l'urbanisme* a été amendée en 1993 afin de permettre aux MRC de créer des parcs régionaux. Cet amendement donne aux municipalités le pouvoir d'établir des règles pour protéger et conserver le milieu naturel dans des zones n'excédant pas 10 km2. Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* prévoit l'appui aux MRC et aux communautés urbaines dans le développement de ces parcs régionaux. Toutefois, la vocation récréo-touristique, les contraintes sur la superficie et les directives d'utilisation du territoire limitent la contribution de ces espaces à la protection des milieux naturels au Québec.

Le MEF peut aussi, par protocole d'entente, confier à une communauté urbaine, à une MRC ou à une municipalité locale l'exercice de certains pouvoirs relatifs aux habitats fauniques. En vertu d'une telle délégation de pouvoirs, c'est la municipalité qui autorise certaines activités dans un habitat faunique.

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* a aussi comme objectif de " préserver et mettre en valeur la diversité biologique en milieu urbain et périurbain ". Quelques mesures concrètes sont prévues à cet effet et seraient susceptibles de venir compléter le cadre de protection actuel.

4. Protection privée

Moins de 10% du territoire québécois est sous propriété privée. Néanmoins, la concentration des terres privées dans le sud du Québec rend leur prise en compte indispensable à la protection des espaces naturels dans les régions les plus fortement peuplées de la province. Il existe plusieurs sites privés contribuant à la protection d'espaces naturels. Ces sites recouvrent une superficie de 136 km2.

La protection sur terre privée peut être faite de diverses façons. Ainsi, un particulier peut s'engager moralement à conserver les caractéristiques naturelles de sa propriété. Des ententes ayant une force juridique pourraient aussi être utilisées (ex. : contrat d'aménagement faunique ou floristique, servitude de conservation, bail, donation, etc.). Il existe à ce sujet un programme appelé *Intendance privée des terres* au Québec.

De plus en plus d'organismes non gouvernementaux s'impliquent pour la protection des espaces naturels. Certains d'entre eux sont réunis au Québec au sein du *Regroupement des organismes propriétaires de milieux naturels protégés* (RMN). Ces organisations, parfois appelées " fiducies foncières " ou " sociétés de protection foncière ", constituent une forme de protection privée des espaces naturels. Il en existe actuellement une dizaine au Québec. Les fiducies foncières sont des associations à but non lucratif, sous charte fédérale ou provinciale, et qui ont souvent le statut d'organisation charitable. Elles administrent les terres qui leur sont données ou léguées ou celles sous servitudes selon leur caractère rural ou forestier et les utilisent à des fins éducatives ou récréatives tout en protégeant le milieu naturel.

Le développement de telles fiducies est ralenti par l'absence de mesures incitatives appropriées, notamment au niveau de la fiscalité, bien que des assouplissements aient été apportés récemment tant au niveau du Québec (mai 1994) que du fédéral (février 1995 et 1996). En effet, il est maintenant possible pour un individu qui fait le don d'une terre ou d'une servitude qui a une " valeur écologique indéniable " (Québec) ou d'une terre " vulnérable sur le plan environnemental " (fédéral) de recevoir un traitement fiscal bonifié à condition que tel don soit effectué en faveur d'une municipalité québécoise, à un organisme mandataire d'une telle municipalité ou encore à un organisme de bienfaisance enregistré dont la mission au Québec, au moment du don, consiste en la conservation du patrimoine écologique. Un visa doit être obtenu du MEF pour que le don puisse bénéficier du traitement fiscal bonifié. Au fédéral, le détail des procédures n'est pas encore connu. Il y a actuellement des pourparlers entre les deux niveaux de gouvernement en vue d'unifier ces procédures.

Finalement, le manque d'accessibilité de la servitude perpétuelle ralentit le développement de fiducies foncières. La participation du public à la protection de la biodiversité doit être encouragée par l'État par la mise en place d'un cadre juridique adapté. Nous pensons notamment à l'adoption d'une loi qui autoriserait l'établissement de véritables servitudes de conservation du type de celles utilisées aux États-Unis ou d'une exonération de responsabilité pour les propriétaires fonciers qui destinent une partie de leurs terres à des fins de conservation tout en autorisant l'accès au public à des fins d'éducation, de recherche scientifique et de récréation. À cet effet, le CQDE a préparé une proposition de projet de loi sur les servitudes de conservation afin de protéger les caractéristiques patrimoniales de certains sites naturels privés. Cette proposition pourrait devenir loi dès l'automne 1996.

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* tente de remédier à ces problèmes en établissant l'orientation de " développer des mesures incitatives, techniques et financières afin d'encourager la conservation des sites naturels par le secteur privé " dans le cadre de l'objectif d'établir un réseau intégré et représentatif d'aires protégées.

5. Réalisations

Une proportion de 4,2% du territoire québécois bénéficie actuellement d'une protection adéquate à des fins d'aires protégées. Toutefois, cette proportion se situe en-dessous de la moyenne canadienne qui est de 5,2%. De plus, on note l'absence d'une planification intégrée visant à créer un réseau d'aires protégées représentatif de toutes les régions naturelles du Québec. Le gouvernement du Québec limite surtout son action aux terres publiques et ses interventions actuelles ne permettent pas d'atteindre une représentation qui soit conforme à ses engagements de 1992. En effet, le gouvernement du Québec ne respecte pas son engagement d'établissement d'un réseau intégré de sites protégés qui assurerait une représentation adéquate de toutes les régions naturelles du Québec d'ici l'an 2000.

Malgré tout, des progrès sont réalisés en matière de protection des espaces naturels. Au cours des dernières années, six nouvelles réserves écologiques ont été créées couvrant près de 229 km2 et un nouveau parc provincial (parc Mégantic) de 54,7 km2 a vu le jour. C'est en 1992, que

dix-huit sites ont été mis en réserve au nord du 50e parallèle en vue de la création de parcs. De plus, plusieurs programmes ont été mis sur pied ces dernières années dont le *Plan conjoint des habitats de l'est*, le *Plan d'action sur les parcs*, le *Plan d'action Saint-Laurent* (programme conjoint), le *Plan Saint-Laurent Vision 2000,* le *Programme d'aide à l'aménagement des ravages de cerfs de Virginie* (programme conjoint) et le *Programme de constitution des réserves écologiques.*

Il faut aussi mentionner diverses ententes qui sont actuellement en cours pour la protection et la gestion de certaines espèces menacées ou vulnérables et de leurs habitats. Ces ententes incluent des ententes interministérielles entre le MEF et les ministères des Ressources Naturelles (secteurs Forêts et Terres), du Transport et de l'Agriculture ainsi qu'avec la Communauté urbaine de Montréal. Elles prévoient, entre autres, l'identification, la protection, l'inspection, la gestion, le transfert de terres etc. en ce qui concerne certaines espèces menacées ou vulnérables et leurs habitats. Il existe aussi des projets d'intendance privée avec le MEF qui seront utilisés afin de voir au partage des tâches et des coûts relatifs à la gestion et à la protection des espèces menacées ou vulnérables, de mener des études pour mettre en évidence les problèmes reliés à ces espèces, etc.

Recommandations pour les espaces protégés

1. **Compléter le réseau des parcs provinciaux et de réserves écologiques de manière à le rendre représentatif des écosystèmes québécois, fixer rapidement un échéancier à ce sujet et inciter divers organismes gouvernementaux à travailler conjointement à la conception d'un plan intégré pour compléter ce réseau de sites protégés représentatif.**
2. **Compléter le projet de parc marin du Saguenay afin de protéger au moins un site naturel marin au Québec.**
3. **Hausser le statut légal de protection dans certains sites, tels que les réserves fauniques, et accorder une attention particulière à la gestion de ces sites pour que les activités humaines qui s'y déroulent n'en compromettent pas l'intégrité écologique.**
4. **Élaborer des initiatives favorisant la protection des terres privées (mesures incitatives de nature fiscale et légale) dont l'adoption d'une loi sur les servitudes de conservation afin de donner aux ONG le moyen de protéger efficacement les sites qu'ils ne peuvent acquérir.**
5. **Procéder à une classification des nombreuses dénominations d'aires protégées selon les six catégories de l'UICN (1994a et b).**
6. **Utiliser la *Loi sur les espèces menacées ou vulnérables* comme moyen additionnel de protéger certains habitats naturels.**
7. **Voir à l'implication accrue des MRC et des communautés urbaines dans la protection des parcs régionaux et autres sites protégés.**

8. **Concilier les intérêts des Premières nations quant à la protection des habitats fauniques avec les projets du MEF et Parcs Canada, et voir au respect des conventions existantes (Convention de la Baie James et du Nord du Québec).**
9. **Voir à la sensibilisation du public à l'égard des espaces protégés.**

D. RESTAURATION DES HABITATS

1. Lois et politiques

La *Loi sur les espèces menacées ou vulnérables* ne s'applique pas aux espèces disparues. Cependant, le premier volet de la *Politique québécoise sur les espèces menacées ou vulnérables* mentionne que le gouvernement peut considérer la réintroduction d'espèces disparues dans le cadre d'un autre volet de cette politique. Cette politique prévoit donc le développement de mesures et de plans visant la restauration des habitats et des espèces. En 1994, le MEF participait à un atelier pour la mise en place sur son territoire d'un programme similaire à celui du EPIC (Endangered Plants and Invertebrates in Canada) pour la protection et le rétablissement des plantes et des invertébrés.

2. Réalisations

Le MEF collabore depuis plusieurs années avec le *Comité sur le rétablissement des espèces canadiennes en péril* (RESCAPÉ), un organisme para-gouvernemental fédéral, pour l'élaboration et la mise en place de plans de rétablissement d'espèces fauniques. Jusqu'à présent, deux plans de rétablissement ont été réalisés avec succès au Québec par le RESCAPÉ: les plans du caribou de la Gaspésie et du faucon pèlerin. Des plans ont aussi été entrepris ou sont prévus pour le pluvier siffleur, le carcajou et le suceur cuivré. Le Québec a également contribué au *Plan nord-américain de gestion de la sauvagine* qui vise à rétablir d'ici l'an 2000 les populations de sauvagine à leur niveau des années 70.

Un plan de rétablissement du béluga a aussi été élaboré par des experts indépendants en vertu d'une initiative du *Fonds mondial pour la nature* (WWF) et de Pêches et Océans Canada. Il s'agit du premier plan en ce genre concernant une espèce marine au Canada.

Le MEF finance aussi des projets de restauration régionaux comme celui de la rivière Boyer, jadis un des principaux sites de frai de l'éperlan arc-en-ciel, qui devrait être restauré en amont au cours des prochaines années. On vise par ce projet à renverser les effets de l'agriculture sur la rivière en reboisant ses rives.

Recommandations pour la restauration des habitats

1. **Développer un volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la restauration des habitats et des espèces et fixer des échéanciers.**
2. **Poursuivre les projets de restauration régionale et les projets en collaboration avec le RESCAPÉ.**
3. **Poursuivre la mise en application du plan de rétablissement du béluga du Saint-Laurent.**

E. UTILISATION DURABLE DES RESSOURCES NATURELLES

L'utilisation durable des ressources naturelles est présente dans le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique*. Celui-ci a en effet défini l'objectif de " tenir compte de la diversité biologique dans l'ensemble des actions de développement économique ". Plusieurs orientations découlent de cet objectif dont :

- Intégrer la conservation et l'utilisation durable de la diversité biologique dans les processus d'évaluation; et
- Procéder à la mise en oeuvre d'instruments économiques comportant des incitations à la conservation de la diversité biologique et à l'utilisation durable des ressources.

En ce qui concerne la deuxième orientation, on songe à répertorier les instruments économiques existants et à assujettir les programmes d'aide gouvernementale à l'obligation de maintenir la diversité biologique. Le projet de stratégie ouvre donc la porte à toute une panoplie de mesures visant l'utilisation durable des ressources biologiques, mesures qui restent toutefois à être définies par un plan d'action.

1. Les forêts

Le Québec est recouvert de forêts sur 47% de son territoire et l'exploitation commerciale se fait principalement au sud de la province. C'est pourquoi la politique forestière québécoise a une importance particulière en regard de la protection des espaces naturels, de la protection des espèces et de l'utilisation durable des ressources biologiques.

Le régime forestier québécois poursuit plusieurs objectifs :

- Assurer le maintien et la reconstitution du couvert forestier suite aux activités de récolte de matière ligneuse;

- Assurer la protection des ressources du milieu et le respect de la vocation des sites qui méritent une protection particulière comme les parcs, les réserves écologiques, les habitats fauniques essentiels, les sites culturels etc.; et
- Rendre le gouvernement responsable de la remise en production des territoires perturbés avant l'entrée en vigueur du régime et aménager les territoires qui ne feront pas l'objet d'un contrat avec l'industrie.

La *Loi sur les forêts* (L.R.Q., c. F-3.1.1) vise le maintien d'un rendement soutenu de la ressource forestière et définit les obligations relatives à la gestion des forêts publiques. Elle soumet toute intervention sur les terres forestières du domaine public à des normes d'intervention forestière prescrites par règlement. Ces normes portent notamment sur la superficie et la localisation des aires de coupe, la protection des rives, des lacs et des cours d'eau, la protection de la qualité de l'eau et l'application de traitements sylvicoles appropriés, et ce, spécialement aux abords de refuges et sites fauniques déterminés par le MEF. Les exploitants forestiers doivent en vertu de cette loi produire différents plans d'aménagement tenant compte de ces normes. Ces plans, produits par environ 35 000 producteurs forestiers depuis 1986, donnent droit à des compensations financières pour certains types d'aménagement.

En 1991, un *Projet de stratégie de protection des forêts*, impliquant plusieurs ministères, a été déposé par le gouvernement du Québec. Celui-ci poursuivait trois objectifs, soit le maintien des rendements forestiers et des activités socio-économiques existantes, le respect des composantes biophysiques du milieu, et finalement la réduction ou l'élimination de l'utilisation des pesticides en milieu forestier.

Le gouvernement québécois a créé le *Programme de connaissance de la ressource forestière* qui est un programme de surveillance de plusieurs composantes de la diversité biologique. Ce programme vise à améliorer les connaissances relatives aux écosystèmes forestiers afin de favoriser une exploitation durable de la ressource forestière.

Un *Programme d'amélioration génétique des arbres* a aussi été créé. Dans le cadre de ce programme, on tente d'identifier les éléments constitutifs de la diversité biologique qui sont importants en regard de l'utilisation durable des arbres. De plus, un *Programme conjoint de surveillance des écosystèmes forestiers* a été développé. Il s'agit d'un réseau de mesures des polluants atmosphériques et de stress environnemental.

En ce qui a trait à la forêt privée, celle-ci n'est réglementée que par les lois générales sur l'environnement telle que la *Loi sur la qualité de l'environnement.* On constate que l'exploitation forestière dépasse les limites soutenables dans les terres privées dans plusieurs régions québécoises. D'ailleurs, certains parlent déjà de la possibilité d'établir un cadre juridique relatif aux interventions forestières sur terres privées. Le ministère des Forêts subventionne toutefois les travaux d'aménagement en forêt privée dans le cadre du *Programme d'aide à l'aménagement des ravages* afin de protéger certains habitats.

Dans son *Projet de stratégie de mise en oeuvre de la Convention sur la diversité biologique*, le gouvernement du Québec s'est fixé certains objectifs concernant l'utilisation durable des ressources forestières. En premier lieu, l'objectif de " favoriser la gestion et l'aménagement du milieu forestier en fonction d'objectifs d'utilisation durable des écosystèmes, de gestion intégrée des ressources, et, selon des mesures appropriées, de protection du milieu lors des interventions en forêt " est avancé. Un autre objectif est celui " [d']associer les industriels et les autres partenaires du milieu forestier à l'atteinte des objectifs d'utilisation durable de la diversité biologique ". Il est à souhaiter que la traduction de ces objectifs en mesures concrètes favorisera l'utilisation durable des ressources biologiques forestières.

Le ministère des Ressources Naturelles du Québec est à préparer un document intitulé *Bilan et engagement sur la biodiversité en milieu forestier* qui sera bientôt rendu public, en vue d'assurer la représentativité des écosystèmes forestiers québécois au sein du réseau des sites protégés.

2. L'agriculture

Les terres agricoles n'occupent que 2% du territoire québécois. Elles sont toutefois fortement concentrées dans le sud de la province, ce qui rend leur importance plus grande que ce que cette statistique laisse entrevoir. Certains agriculteurs ont su préserver les caractéristiques naturelles de leur propriété et, du même coup, ont contribué au maintien de la diversité biologique. Toutefois, plusieurs entreprises agricoles sont une source de pollution importante en raison des engrais et pesticides qu'elles utilisent et des fumiers et résidus qu'elles génèrent. Cette situation est d'autant plus alarmante que nombre de terres vouées à l'agriculture longent les berges du Saint-Laurent ou d'un des cours d'eau qui sillonnent la province.

La *Politique de conservation du sol et de l'eau* définie par le ministère de l'Agriculture, des Pêcheries et de l'Alimentation vise l'atteinte de sept grands objectifs :

- Produire des denrées alimentaires en quantité suffisante et de bonne qualité sans détériorer les ressources: sol et eau;
- Maintenir ou améliorer la qualité et l'attrait du milieu rural;
- Limiter et, si possible, éliminer la pollution et favoriser la restitution des résidus de culture;
- Augmenter et transmettre les connaissances par la recherche, l'enseignement et la vulgarisation;
- Exploiter le domaine agricole en respectant le principe d'une gestion engagée vis-à-vis la pérennité des processus écologiques, des bassins d'alimentation et des sols;
- Aider les autres secteurs à utiliser efficacement et judicieusement, du point de vue écologique, les biens et services procurés par l'agriculture; et
- Minimiser les effets nuisibles des activités de l'homme sur le milieu agricole.

Un *Plan de développement en agriculture biologique* a aussi été élaboré. Celui-ci fait la promotion de techniques de production favorisant la diversité biologique et l'utilisation durable des terres agricoles.

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* a explicitement défini comme objectif " [d']assurer une utilisation durable des ressources agricoles ". Parmi les orientations découlant de cet objectif , soulignons :

- Maintenir l'intégrité de la zone agricole; et
- Coopérer avec les intervenants du milieu et les producteurs agricoles pour les assister ou les conscientiser à la conservation et au développement durable.

La traduction de ces orientations en mesures concrètes déterminera le succès ou l'échec de cet objectif.

3. Les pêches

Le MEF fixe les différentes modalités de la pêche commerciale en eaux douces et saumâtres. Ainsi, la détermination des plans d'eau où la pêche commerciale est permise, les engins autorisés, les espèces et les contingents, de même que les saisons de pêche, sont établis annuellement par le comité scientifique de la *Direction de la faune et des habitats* du MEF. De plus, l'élaboration annuelle d'un plan de gestion de la pêche revient à ce ministère. Ces responsabilités donnent un pouvoir considérable au MEF en vue de favoriser l'utilisation durable des ressources biologiques dans le secteur de la pêche. Il n'existe cependant aucun plan global d'utilisation durable des ressources dans ce secteur.

La *Loi sur les pêcheries et l'aquaculture commerciale* (L.R.Q., c. P-9.01) donne au ministre de l'Agriculture, des Pêcheries et de l'Alimentation le pouvoir de concéder des droits de pêche commerciale dans les eaux sans marée du domaine public et de délivrer des permis aux fins d'exploitation d'établissements piscicoles. Le ministre a également la responsabilité d'élaborer " chaque année, un programme favorisant le développement des pêcheries commerciales et le commerce des produits aquatiques pêchés dans les eaux sans marée du domaine public ". Ce programme est connu sous le nom de *Plan de gestion de la pêche commerciale en eaux intérieures* et il indique " le nombre maximum de concessions qui... peuvent être octroyées... et la quantité maximale de produits aquatiques de chaque espèce qui peuvent y être pêchés ".

Le Québec a pris certaines mesures visant une utilisation plus durable des ressources dans le secteur des pêches. En premier lieu, le *Programme de rachat des permis de pêche commerciale au saumon et à l'anguille* a été instauré afin de diminuer l'exploitation de ces espèces. Le gouvernement du Québec a aussi établi des sanctuaires de pêche où cette activité est interdite. Par ailleurs, le *Plan de développement économique du saumon atlantique*, un programme conjoint, a été développé en vue de protéger cette espèce. Mentionnons finalement qu'une entente administrative Canada-Québec autorise le gouvernement du Québec à assurer la gestion du saumon

et de l'anguille en vertu de la *Loi sur les pêches.*

Recommandations pour l'utilisation durable des ressources biologiques

1. **Modifier les pratiques gouvernementales qui supportent financièrement l'exploitation agricole,**
2. **Développer un système de compensations pour les exploitants agricoles et forestiers qui modifient leurs pratiques en vue de favoriser la conservation.**
3. **Développer des incitations fiscales à la conservation dans les secteurs agricole, forestier et le secteur des pêcheries.**

F. AUTRES QUESTIONS LIÉES À LA CONSERVATION DE LA BIODIVERSITÉ

1. Biosécurité

Le ministère de l'Agriculture, des Pêcheries et de l'Alimentation est chargé de l'exécution de la *Loi sur la protection des plantes* (L.R.Q., c. P-39) qui vise à protéger les plantes du Québec de maladies et d'insectes dévastateurs. Outre le pouvoir de " droit d'entrée " qui permet d'autoriser ou d'interdire l'introduction d'une espèce au Québec, cette loi accorde au ministre responsable le pouvoir de mise en quarantaine, au cours de laquelle seront entrepris les travaux de destruction ou d'éradication requis. Aucune consultation du public n'est cependant prévue par la loi lorsque vient le temps de prendre des décisions sur la prohibition d'une espèce ou son autorisation.

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* a défini l'objectif de " favoriser l'élaboration et l'utilisation sécuritaire de produits biotechnologiques ". Dans cette stratégie, le Québec entend " inciter les centres de recherche et les industries à appliquer les règles de biosécurité ".

2. Développement de la gestion environnementale intégrée

Afin de promouvoir une gestion environnementale intégrée impliquant les ministères concernés dans une collaboration plus étroite, plusieurs mesures ont été prises au cours des dernières années. Un projet expérimental de gestion intégrée des ressources avec une vision interministérielle a été lancé par le gouvernement du Québec en 1991. On prévoyait la fin pour 1993 mais le déroulement de cette initiative a passablement été modifié par rapport à l'orientation de départ. Le projet devrait toutefois aboutir par l'élaboration d'un guide.

Le gouvernement québécois a aussi formé un Comité interministériel sur le développement durable qui s'intéresse à la biodiversité dans le cadre de son mandat général. Un comité interministériel portant spécifiquement sur la diversité biologique a aussi été formé suite à l'adoption de la *Convention sur la diversité biologique*. Finalement, deux tables rondes québécoises sur l'environnement et l'économie ont été créées dans le but d'intégrer la protection de la diversité biologique et le développement durable dans la gestion économique, mais n'ont donné aucun résultat puisqu'elles ont été dissoutes sans avoir réalisé leur mandat.

3. Évaluations environnementales

La *Loi sur la qualité de l'environnement* oblige l'élaboration d'évaluations environnementales dans les cas prévus par règlement. Le *Règlement sur l'évaluation et l'examen des impacts sur l'environnement* (R.R.Q., 1981, c. Q-2, r.9) assujettit certains projets à la procédure d'évaluation. Dans certaines régions, des procédures différentes s'appliquent et sont régies par le *Règlement sur l'évaluation et l'examen des impacts sur l'environnement dans une partie du nord-est québécois* ou par le *Règlement sur l'évaluation et l'examen des impacts sur l'environnement et le milieu social dans le territoire de la Baie James et du Nord québécois.* Rappelons aussi que la *Loi sur les espèces menacées ou vulnérables* requiert la prise en compte des espèces désignées menacées ou vulnérables lors de la réalisation d'évaluations environnementales.

Le gouvernement du Québec a adopté le 21 juin 1995, la *Loi modifiant la Loi sur la qualité de l'environnement* et approuvé, le 24 janvier 1996, le *Règlement modifiant le Règlement sur l'évaluation et l'exament des impacts sur l'environnement* de manière à assujettir les projets industriels et miniers, de même que les projets de construction de gazoducs à la procédure actuelle d'évaluation et d'exament des impacts sur l'environnement.

D'autre part, le gouvernement du Québec a déposé, en mai 1995, un projet de loi modifiant la *Loi sur la qualité de l'environnement* qui devrait remplacer l'actuelle procédure d'évaluation environnementale. Une consultation à caractère privé s'est tenue sur ce projet et elle a permis de recueillir de nombreux commentaires. Le MEF présentera une version modifiée du projet de loi suite à la consultation tenue et la nouvelle ébauche ainsi que les règlements d'application devraient être présentés à l'automne 1996.

4. Éducation et sensibilisation de la population

Le gouvernement québécois a entrepris diverses actions afin de favoriser l'éducation et la sensibilisation du public aux questions reliées à la biodiversité. Ces actions incluent la création d'un Comité interministériel sur l'éducation relative à l'environnement, le programme de sensibilisation de la population dans le cadre de la semaine de l'arbre et de la forêt et le mois de l'environnement.

Le projet de stratégie de mise en oeuvre de la *Convention sur la diversité biologique* définit plusieurs objectifs visant l'éducation et la sensibilisation de la population à la biodiversité:

- Sensibiliser l'ensemble de la population à la conservation et à l'utilisation durable des éléments constitutifs de la diversité biologique;
- Responsabiliser l'individu à l'égard du maintien de la diversité biologique et le rendre apte à intervenir dans la réalisation de projets qui s'y rattachent; et
- Susciter et soutenir la participation des différentes clientèles (individus et organismes) à l'élaboration et à la mise en oeuvre de projets liés à la conservation et à l'utilisation durable de la diversité biologique.

Plusieurs mesures visant l'éducation primaire, secondaire, collégiale et universitaire, la diffusion d'information et la participation du public sont prévues à ce chapitre.

5. Tendances démographiques et mouvements de population

On prévoit au Québec, une augmentation sensible de la population au cours des prochaines années. Le problème le plus important créé par cet état de fait demeure la concentration de la population dans les centres urbains au détriment des régions. Cela aura comme conséquence d'imposer des pressions supplémentaires sur les écosystèmes urbains. En contrepartie, vouloir diminuer la densité d'occupation des centres urbains aurait comme conséquence d'encourager le phénomène d'étalement qui pour sa part afflige les écosystèmes périurbains, ruraux et forestiers. Cette problématique constitue indéniablement l'un des plus grands défis qu'aura à relever le Québec s'il veut mener à bien son *Projet de Stratégie de mise en oeuvre de la Convention sur la diversité biologique.*

Ce dernier a établi l'objectif de " prévoir l'impact des tendances démographiques sur la diversité biologique et [d']en réduire les effets ". Par " tendances démographiques ", on entend augmentation ou diminution ainsi que déplacement des populations. L'orientation découlant de cet objectif est " [d']amorcer une réflexion publique concernant la démographie et ses répercussions sur la diversité biologique ".

6. Incitations financières et autres

À ce jour, peu d'incitations financières existent pour favoriser la protection de la biodiversité. Bien au contraire, un manque criant est constaté à cet égard et des demandes de modifications du système fiscal sont faites par l'ensemble des ONG qui oeuvrent dans le secteur de la conservation. Certaines mesures incitatives particulières existent cependant.

Il est possible, en vertu de la *Loi sur la fiscalité municipale* (L.R.Q., c. F-2.1), d'obtenir, pour une association à but non lucratif, l'exonération du paiement des taxes foncières pour les sites dont elle est propriétaire. Des conditions sont toutefois rattachées à cette exemption. On les retrouve énumérés à l'article 204 (10) de la *Loi sur la fiscalité municipale.* Mentionnons notamment que le site doit être à l'usage du public, ce qui, selon l'interprétation qu'en donne

la *Commission municipale du Québec*, nécessite une fréquentation de l'endroit et son aménagement. Les sites voués à une conservation stricte, en raison de leur faible capacité de support ou de la rareté des espèces qu'ils recèlent, risquent alors de ne pas obtenir de telles exemptions.

Une autre mesure fiscale mentionnée plus tôt est le traitement fiscal bonifié lors du don d'une terre ou d'une servitude ayant une " valeur écologique indéniable " (Québec) ou " vulnérable au plan environnemental " (fédéral). Cette mesure constitue une incitation financière additionnelle.

Finalement, certains programmes de subventions sont accessibles pour ceux qui veulent protéger un espace naturel ou l'aménager. Les types de subventions sont nombreux et visent la conservation d'habitats et d'espèces variés. On peut en connaître les détails en consultant:

1) Le guide *Faune et habitats - Répertoire des programmes d'aide*, publié annuellement par la *Fondation de la faune du Québec*, le *Service canadien de la faune* et le MEF;

2) Le *Guide des programmes de financement (environnement)*, publié par Environnement Canada.

Autres questions et recommandations reliées à la protection de la biodiversité

1. **Augmenter la sensibilisation du public aux enjeux de la protection de la diversité biologique et aux moyens qui sont à leur disposition pour contribuer à cette protection.**
2. **Créer un Fonds pour la sauvegarde des espèces et des espaces, en suivant l'exemple des États-Unis.**

G. CONCLUSION ET RECOMMANDATIONS

Le Québec possède de multiples instruments législatifs pour la protection de la diversité biologique. Que ce soit en matière de protection de la faune et de la flore, de protection des espaces naturels, de restauration et d'utilisation durable des ressources biologiques, le Québec a adopté plusieurs législations et a entrepris plusieurs initiatives. Cependant, beaucoup reste à faire pour assurer la mise en application effective de ces lois et règlements en vue de concrétiser la *Convention sur la diversité biologique*. Voici une liste de recommandations qui visent cette concrétisation.

Protection de la faune et de la flore

1. **Désigner d'autres espèces menacées ou vulnérables afin de leur assurer une meilleure protection légale conformément à la *Loi sur les espèces menacées ou vulnérables* et au premier volet de la *Politique Québécoise sur la conservation des espèces menacées ou vulnérables.***
2. **Produire un deuxième volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la gestion des espèces désignées et de leurs habitats.**
3. **Poursuivre les recherches et effectuer des inventaires sur les espèces en situation précaire.**
4. **Développer des incitations fiscales adaptées à la conservation privée.**
5. **Voir à la sensibilisation du public à l'égard de la protection de la faune et de la flore.**

Espaces protégés

1. **Compléter le réseau des parcs provinciaux et de réserves écologiques de manière à le rendre représentatif des écosystèmes québécois, fixer rapidement un échéancier à ce sujet et inciter divers organismes gouvernementaux à travailler conjointement à la conception d'un plan intégré pour compléter ce réseau de sites protégés représentatif.**
2. **Compléter le projet de parc marin du Saguenay afin de protéger au moins un site naturel marin au Québec.**
3. **Hausser le statut légal de protection dans certains sites, tels que les réserves fauniques, et accorder une attention particulière à la gestion de ces sites pour que les activités humaines qui s'y déroulent n'en compromettent pas l'intégrité écologique.**
4. **Élaborer des initiatives favorisant la protection des terres privées (mesures incitatives de nature fiscale et légale) dont l'adoption d'une loi sur les servitudes de conservation afin de donner aux ONG le moyen de protéger efficacement les sites qu'ils ne peuvent acquérir.**
5. **Procéder à une classification des nombreuses dénominations d'aires protégées selon les six catégories de l'UICN (1994a et b).**
6. **Utiliser la *Loi sur les espèces menacées ou vulnérables* comme moyen additionnel de protéger certains habitats naturels.**
7. **Voir à l'implication accrue des MRC et des communautés urbaines dans la protection des parcs régionaux et autres sites protégés.**
8. **Concilier les intérêts des Premières nations quant à la protection des habitats fauniques avec les projets du MEF et Parcs Canada, et voir au respect des conventions existantes (Convention de la Baie James et du Nord du Québec).**
9. **Voir à la sensibilisation du public à l'égard des espaces protégés.**

Restauration des habitats

1. **Développer un volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la restauration des habitats et des espèces et fixer des échéanciers.**
2. **Poursuivre les projets de restauration régionale et les projets en collaboration avec le RESCAPÉ.**
3. **Poursuivre la mise en application du plan de rétablissement du béluga du Saint-Laurent.**

Utilisation durable des ressources biologiques

1. **Modifier les pratiques gouvernementales qui supportent financièrement l'exploitation agricole.**
2. **Développer un système de compensations pour les exploitants agricoles et forestiers qui modifient leurs pratiques en vue de favoriser la conservation.**
3. **Développer des incitations fiscales à la conservation dans les secteurs agricole, forestier et le secteur des pêcheries.**

Autres questions reliées à la protection de la biodiversité

1. **Augmenter la sensibilisation du public aux enjeux de la protection de la diversité biologique et aux moyens qui sont à leur disposition pour contribuer à cette protection.**
2. **Créer un Fonds pour la sauvegarde des espèces et des espaces, en suivant l'exemple des États-Unis.**

Recommandations pour le gouvernement fédéral

1. **Développer et maintenir la concertation avec les provinces et les territoires pour la gestion et la protection de la biodiversité.**
2. **Augmenter les ressources mises à la disposition des pays en développement pour leur permettre de rencontrer leurs obligations conformément à la Convention.**
3. **Définir un cadre permettant le partage des bénéfices et le transfert des technologies reliées à l'exploitation de la diversité biologique dans les pays en développement.**

ANNEXE

Tableau 1 : Éléments de la diversité des espèces au Québec

Principaux groupes taxinomiques	Nombre d'espèces connues au Québec
Vertébrés	
Reptiles	16
Amphibiens	21
Poissons	199
Mammifères	91
Oiseaux	326
Invertébrés	
Insectes	25 400
Autres invertébrés (Mollusques, crustacés, vers, etc.)	Indéterminé
Végétaux vasculaires	
Angiospermes monocotylédones	711
Gymnospermes	15
Ptéridophytes	88
Angiospermes dicotylédones	1 729
Végétaux invasculaires	
Bryophytes (mousses et hépatiques)	800
Algues marines benthiques	195
Champignons supérieurs	1 500
Lichens	650
Autres algues	Indéterminé

Tableau 2 : Espaces naturels protégés au Québec

Type d'espace	Superficie
Parcs de conservation (11)	**2 500 km2**
Aiguebelle	241,7
Bic	33,2
Gaspésie	801,7
Grands-Jardins	310,0
Île Bonaventure et Rocher Percé	5,8
Jacques Cartier	670,6
Miguasha	0,6
Mont-Mégantic	54,7
Mont-Saint-Bruno	5,9
Pointe-Taillon	92,2
Saguenay	283,6
Parcs de récréation (6)	**1 748,5 km2**
Frontenac	155,3
Îles-de-Boucherville	8,2
Mont-Orford	58,4
Mont-Tremblant	1 490,0
Oka	23,7
Yamaska	12,9
Parcs nationaux (3)	**885,7 km2**
Archipel de Mingan	97,0
Forillon	244,8
Mauricie	543,9
Réserves écologiques (54)	**673,37 km2**
Autres sites (liste non exhaustive)	**535,7 km2**
Sites sur terres privées (43)	136,0
Parc Gatineau et autres sites (7)	376,0
Sites avec un statut offrant une protection incomplète	68 198 km2
Réserves fauniques (20)	57 720,0
Projets de parcs au nord du 50e parallèle (18)	
Projet du parc marin du Saguenay (parc provincial/fédéral)	1 138,0 34 265,2
Habitats fauniques (496)	55,5
Réserves nationales de faune (8)	498
Refuges d'oiseaux migrateurs (32)	3,6
Refuges fauniques (2)	248,5
Gorges et chutes (12)	377,4
Iles, parcs locaux et régionaux, domaines et boisés (37)	66 ha
Habitats d'espèces menacées ou vulnérables	

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SUMMARY:
QUEBEC BIODIVERSITY LAW AND POLICY
April 1996

Centre québécois du droit de l'environnement /
Quebec Environmental Law Centre

On November 25th 1992, the Quebec government, by an Order-in-council, committed itself to applying the principles and objectives of the *Biodiversity Convention* signed in Rio in 1992. The Order-in-council expressly states that the Convention is under the constitutional authority of the province so that policies, strategies and programs for the implementation of the Convention in Quebec, must be undertaken by the Quebec Government.

To follow on its commitment, the Quebec government concretely began, in May 1995, its actions for the application of the Convention in its territory, by the release of a project for a strategy which includes 31 objectives leading to more than 202 implementation measures. The Strategy and an action plan should be released in June 1996.

The Quebec Ministry of Environment and Wildlife is responsible for the application of most laws and regulations pertaining to the protection of the biodiversity. Perhaps the main statute for the protection of the biodiversity in the province, is the *Act Respecting Threatened or Vulnerable Species*. Its main objectives are to prevent the extinction or decrease in population of living species; to ensure the conservation of habitats of those species; and to reintroduce species or rehabilitation of their habitats of origin. The Act specifies that the affected species and their habitats are also regulated by the *Act Respecting the Conservation and Development of Wildlife.*

The *Act Respecting the Conservation and Development of Wildlife* determines the general conditions for the conservation and management of wildlife and habitats, including hunting and fisheries. More specific powers apply to endangered or vulnerable species and their habitats.

The *Act Respecting Threatened or Vulnerable Species* gives the ministry of Environment and Wildlife, the power to create a list of species susceptible to be designated as threatened or vulnerable. In 1992, a policy was published which establishes the process for the designation of threatened or vulnerable species. In 1993, a first list, of more than 450 of species, was published by the Quebec government. It is based on this list that the ministry of Environment and Wildlife can designate threatened species and their habitats. In March 1995, 9 species were designated as such. All of these are flora species.

In Quebec, the two most important categories of protected areas with full protection are: ecological reserves (réserves écologiques) and provincial parks. According to the World Wildlife Fund, 4,2% of Quebec's territory is adequately protected. There are also several types of natural areas which only have partial protection: " réserves et habitats fauniques ".

The 1978 *Act Respecting Land Use Planning and Development* is an important tool for the protection of agricultural lands. The *Environmental Quality Act* also gives a general protection to Quebec natural areas requiring the issuance of a certificate of approval for the undertaking of modification of any activity which could result in the alteration or modification of the quality of the environment. Municipalities have important powers and obligations in this field specifically for the identification and protection of natural areas and wildlife on their territory.

Several land conservation organisations have been created by concerned citizens for the protection of private lands. Protection of private lands remains difficult as there is little tax incentive for owners to move in this direction.

The sustainable use of biological resources, such as forests, agricultural lands, and fisheries, is often done through policies or programs. Such programs exist for forests and agricultural lands but not for fisheries. Those policies and programs establish general objectives for sustainable use. Also, some legislation has been enacted to more specifically control human activities.

Quebec Environmental Law Centre's recommendations are (please refer to the main document for more complete recommendations):

- to improve the level of enforcement of Quebec laws and regulations pertaining the protection of endangered species and natural areas;
- to better study the phenomena and to establish inventories of vulnerable species;
- to complete the network of provincial parks and wildlife areas (réserves fauniques) in order to effectively represents all types of Quebec natural areas;
- to develop economic instruments for better private conservation and for more respectful agricultural techniques;
- to continue restoration programs and develop new ones; and
- to better educate the public on the necessity to protect biodiversity and on the means available to do so.

NEW BRUNSWICK

Kathryn Heckman*

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A. INTRODUCTION

There appears to be three general themes applicable in varying degrees to each of the Atlantic provinces. Firstly, there has not been any historical focus on biodiversity issues in most of the legislation that is reviewed here. We are now trying to adapt legislation designed for other purposes to deal with problems surrounding biodiversity. Secondly, the legislative context has focussed on terrestrial matters. Although some attention has been directed towards wetlands and other inland water bodies there has been no framework for coastal, estuarine or offshore marine matters. Thirdly, there has been no legislation providing mechanisms for stewardship initiatives supporting biodiversity on privately-owned land until very recently.

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B. WILDLIFE

The *Endangered Species Act*[1] and the *Fish and Wildlife Act*[2] are the two key wildlife statutes. New Brunswick is the only province in Atlantic Canada with specific endangered species legislation. There are problems with the adequacy of the *Endangered Species Act.*

The list of protected species in the *Endangered Species Act* is not adequate because it is not complete. It is recommended that the list be updated. The argument that species should only be listed if they are endangered at the national level, as opposed to the sub-national or regional level, does not properly consider the restoration and rehabilitation values as described in the *Convention of Biological Diversity*[3] or in the discussion document, *A National Approach to Endangered Species in Canada*[4]. Endangered species legislation which aims at protecting species endangered at the regional level would also help to achieve the restoration and rehabilitation goals because this would be a remedial action to encourage a resurgence of that species. Another flaw in the existing *Endangered Species Act* is that it provides habitat protection for plants only and not for animals. This should be broadened to provide protection for animals. Further, this statute does not adequately provide for marine species.

The *Fish and Wildlife Act* focusses on game and fur-bearing animals. For example, the definitions refer to exotic fish, exotic wildlife, fur-bearing animals, gallinaceous birds, game birds, green hides and pelts. This emphasis is further illustrated by considering the narrow focus of the definition of "wildlife" which is restricted to vertebrate animals or birds:

> Wildlife means
> (a) any vertebrate animal or bird, excluding fish, amphibians and reptiles, that is wild by nature in the Province; and
> (b) any exotic wildlife that has been introduced into the wild in the Province, and includes any part of such animal or bird.

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1 *Endangered Species Act*, R.S.N.B. 1973, c. E-9.1, recently replaced by a new Act, S.N.B. 1996, c.E-9.101 (unreviewed here).

2 *Fish and Wildlife Act*, S.N.B. 1980, c. F-14.1.

3 United Nations Environment Program, *Convention on Biological Diversity*, 1992.

4 Joint Intergovernmental Committee (Canadian Wildlife Services and provincial Departments of Natural Resources), *A National Approach to Endangered Species in Canada: A Discussion Paper*, 1995 at p.14.

If this statute is intended to address biodiversity concerns, its scope must be broadened to include all plants and animals (including invertebrates).

Even if the definition of wildlife was broadened, this alone would not be sufficient. The general intent of this statute is the regulation of hunting and fishing. It describes the powers of guides and wardens to seize firearms and outlines offences and penalties pertaining to hunting and fishing. There are specific sections that could be interpreted, or perhaps its more accurate to say - twisted - to provide species protection. Section 90(1)(b) allows the Minister to issue a licence to take, capture, or kill any wildlife for presentation as specimens of national history or for scientific investigation. There is no reference to other means of preservation than to "take, capture, or kill", however, it is possible that this section could be amended to provide for preservation for scientific investigation beyond taxidermy purposes. More importantly, Section 118(1) provides a regulation-making power respecting:

(c) the protection, management, and scientific study of any fish or wildlife
(d) setting apart and designating as wildlife refuges or wildlife management areas
(e) ... proper management of wildlife refuges and wildlife management areas
(f) ... pheasant reserves ...
(g) ... the regulation of Crown waters and the fishing rights ...
(h) ... prevention of the destruction of fish

This appears to provide potential mechanisms to support biodiversity as this regulation-making power could protect wildlife (assuming a new, broader definition) and also Crown waters. However, there are some concerns. There is no clear definition of "refuges" or "management areas" but if they are similar to the definition for "pheasant reserve" they are not appropriate because the pheasant reserve does not protect the pheasant for any purpose except to be hunted.

As mentioned above, the *Fish and Wildlife Act* does not include plants in its definition of wildlife and therefore plants are not protected by the provisions of this legislation. However, Section 14 of the *Parks Act*[5] explicitly provides the ability (not the requirement) to protect flora in any provincial park, so within that limited setting some protection may be provided.

Many of these issues are being addressed in the *National Approach to Endangered Species Conservation in Canada*, which is proposing (1) expanding the definitions to include all wild plants and animals; (2) the realization that these measures must somehow be applied federally and provincially to be effective; (3) the recognition

[5] *Parks Act*, S.N.B. 1982, c.P-21.

of the validity of listing regionally endangered species (not just nationally significant ones); and (4) many other valuable proposals. However, there is still concern as this approach proposes a mandatory listing process of endangered species (and various other categories) but there is no requirement for any minimum mandatory response action to be taken. Although there may be justification for recognizing varying abilities between jurisdictions that would permit one jurisdiction to exceed a minimum required response action, it is recommended that there must be some uniform minimum standard for response actions.

Some of the following response actions should be included in provincial endangered species legislation:

- prohibit killing, possessing, trafficking or damaging the specified plant or animal;
- prohibit any activity that adversely affects the habitat of the specified plant or animal on Crown and private land;
- provide authority to define land uses through zoning that are compatible with the specified plant or animals' needs; and
- provide adequate penalties and incentives to follow for those who contravene provisions of the legislation.

An Endangered Species Act which did not require any of the measures listed would not be an improvement on the present situation.

C. PROTECTED AREAS AND HABITAT

New Brunswick has not released its *Provincial Parks System Plan* so no framework has yet been established for the management or establishment of parks. Also, the *National Areas System Plan* has not been released which is supposed to contain a priority list of proposed study areas recommended for interim protection under the *Crown Lands Forest Act.* It is recommended that the following World Wildlife Fund Canada recommendations should be acted upon:

1) release the *Provincial Parks System Plan*;
2) release a draft strategic plan for the proposed *National Areas System Plan*; and
3) prepare a priority list of study areas representative of New Brunswick's ecodistricts and give them interim protection under the *Crown Lands and Forest Act.*

All of the measures discussed in this section deal with the protection of terrestrial areas. An ecologically-based natural region framework for marine protected areas as recommended in the *Endangered Spaces Progress Report* is needed (this is discussed later under the heading "Sustainable Use of Biological Resources).

The *Ecological Reserves Act*[6] is intended to provide New Brunswick with a protected area network. Under the *Ecological Reserves Act* the approach used is to establish the absolute protection of a territory in a natural state "through wholly protected ecological reserves". According to Section 3, areas selected are those that:

(a) are suitable for scientific research;
(b) are representative of natural ecosystems;
(c) are examples respecting the recovery of a modified ecosystem;
(d) contain rare or endangered native plants and animals; and
(e) contain unique and rare examples of plants and animals.

Section 6 states that the following activities are prohibited in these areas: hunting, fishing, trapping, forestry, agriculture, mining operations, mining exploration or boring, prospecting, construction, and generally anything that may alter or disturb the terrain, vegetation, fauna or flora.

Section 7(1) allows the Minister to acquire private lands for these areas which means that ecological reserves can be established on private lands only if they are acquired by the Crown through a lease, agreement or exchange.

There are many positive aspects in this legislation. It provides some guidelines for site selection, a modest approach to protected areas on private lands, and an extensive list of prohibited activities.

However, there is no minimum size criteria provided and consequently relatively tiny areas have been selected. It is generally accepted that small areas can not preserve ecological integrity, especially without providing connecting corridors which are not referred to in this legislation. Further, not many areas have actually been designated under this statute.

This statute does not provide any means to provide protected areas on private land such as private nature trusts, and easements or covenants administered by private agencies or individuals. In New Brunswick there is no private nature trust legislation. The New Brunswick Community Land Trust is an organization that has been established to promote conservation and stewardship on private land. Private land stewardship legislation is needed to support the goals of these types of organizations.

In the *Parks Act*, the definition of a provincial park illustrates that this statute was not originally designed to protect biodiversity. In Section 1(a) "provincial park" is defined as "any area of land established ... as a recreational park, campground park, beach park, wildlife part, picnic ground park, resource park, park reserve or any combination thereof"

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[6] *Ecological Reserves Act*, S.N.B. 1975, c.E-1.1.

(it should be noted that "park reserve" is not intended to be interpreted as an ecological reserve, but as an area to be reserved as a park in the future).

However, the Act has the potential to be amended to provide for protected areas. It is recognized that in its current version this potential is largely permissive and not mandatory. Sections 15 and 16 discuss that activities such as mining, hunting, fishing, cutting trees, erecting buildings, etc. may (emphasis added) be prohibited:

> S.15(1) ... [A]ll provincial parks are reserved by the Crown from prospecting, staking, mining and quarrying except as otherwise provided (emphasis added) by the regulations.
>
> S.16(1) ... [T]he Lieutenant Governor in Council may (emphasis added) make regulations
> (a) prohibiting or regulating hunting, fishing and trapping in a provincial park, and respecting the setting aside of areas for hunting, fishing, or trapping within a provincial park.

Section 16(2) also provides regulation making power but does not require the making of any regulations respecting:

(a) the preservation and management of provincial parks;
(b) mining exploration and mining;
(c) the occupation of land;
(d) the use of lands within parks;
(e) the erection of buildings;
(o) cutting/removal of forest products; and
(q) activity on a prescribed shore area.

Section 3(2) may be contrary to the intent of protected areas legislation because it allows the Minister to terminate the status of any provincial park whereas it is more appropriate that protected areas should be established in perpetuity.

Further caution is added about the ease of amending the *Provincial Parks Act* to support biodiversity because the *Parks Act Regulations*[7] show that although resource activities are curtailed, there are parks intended to provide human recreation and not to protect biodiversity. Sections 3, 4, 14, 16, 16 and a stronger version of Sections 17, 18 and 19 could be used to support biodiversity, but when combined with Sections 5, 6, 7, 8, 9, 10 and 20-26, it is clear that the intent here is to regulate human recreation.

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[7] *Parks Act Regulations*, Reg. 85-104.

The *Crown Lands and Forest Act*[8] provides a framework for the regulatory and administrative requirements regarding the management of Crown lands. It has not traditionally been used to preserve biodiversity goals. It provides broad powers to influence activities on Crown lands, including at Section 3(1)(c), the provision of habitat for the maintenance of fish and wildlife populations (wildlife is not defined).

Section 35(1) also allows the Minister to withdraw portions of Crown lands licences for ecological reserves, areas of unique wildlife habitat, parks, etc. Apart from this ability to withdraw portions of land, there is also a general prohibition on cutting timber on Crown lands described in Section 67. However, in practice leases and agreements dilute this prohibition considerably. Further the prohibition of one resource activity is not sufficient to create a protected area. Therefore, the practical scope of these sections suggests they are not adequate to provide a legislative framework to support protected areas on Crown lands.

Beyond these individual sections, the statute generally deals with forest management practices on Crown lands, focussing on Crown timber sub-licences, Crown timber permits, Royalty and Crown charges, the use of timber from Crown lands, etc.

The Premier's Round Table on Environment and Economy produced a sustainable development strategy, *Towards Sustainable Development in New Brunswick: A Plan for Action*. Recommendation 16 of that document states that:

> By 1995, [New Brunswick should] establish a system of protected areas based on the National Ecological Land Classification System and representing the important natural features of all of the province's biogeographic regions. The system should include ecological areas, national parks, wilderness parks, and smaller "pocket" wilderness sections.[9]

This recommendation should be implemented. It has been reinforced by the World Wildlife recommendations referred to earlier, and it emphasizes the need for a comprehensive plan including setting goals and establishing a broad based network of various types of levels of protected areas.

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[8] *Crown Lands and Forest Act*, S.N.B. 1980, c.C-38.1.

[9] The Round Table on Environment and Economy, *Towards Sustainable Development in New Brunswick: A Plan for Action*, at p.17.

D. RESTORATION AND REHABILITATION

There is no single piece of legislation that fully addresses restoration and rehabilitation, however, some statutes touch upon this issue.

The goals of the *Endangered Species Act* provides for the restoration and rehabilitation of certain endangered species. The *Ecological Reserves Act* lists one of its criteria for site selection of ecological reserves as areas that "serve as examples of ecosystems that have been modified by man and that offer an opportunity to study the recovery of the natural ecosystem from such modification" under Section 3(c).

The *Crown Lands and Forest Act* empowers the Minister with the responsibility for rehabilitation of Crown lands under Section 3(1)(e).

E. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

Before reviewing relevant legislation on this topic, it should be mentioned that New Brunswick has a sustainable development strategy which contains 38 recommendations, plus additional recommendations in the background report, *Sustainable Development in New Brunswick: Because We Want to Stay*[10]. Many of the recommendations pertain to the sustainable use of biological resources in various sectors of the economy including agriculture, fishing and forestry. Some of the most pertinent recommendations for our purposes are summarized as follows:

- establish a code of practice for all forest land covering the size of clearcuts, dimensions of setback zones and public reporting on pesticide/herbicide use and the size of single species plantations (#14);
- establish a system of protected areas (#16);
- develop appropriate legislation so good agricultural land can be preserved (#17);
- develop land-use plans for coastal areas and marine ecosystems (#24); and
- focus tourism on eco-tourism and heritage (#29).

There has not been much success with the implementation of these recommendations. Implementation of these recommendations should be given a higher priority by government departments.

It is anticipated that an Agricultural Land Act may soon be tabled dealing with recommendation #17, the preservation of good agricultural land. The conservation of biodiversity should be explicitly included in this legislation.

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[10] The Round Table on Environment and Economy, *Sustainable Development in New Brunswick: Because We Want to Stay.*

Although the *Ecological Reserves Act* is intended to focus on protected areas issues, Section 17(c)(e) provides that the Minister may do wildlife and wildlife habitat research to assess the forestry and wildlife interface and to assess the impacts of land use activities on wildlife and wildlife habitat. This provision appears to extend beyond what is happening within the protected area boundaries and look at the impacts that development outside the protected area has on the protected area itself. This has the potential to beneficially affect the sustainable use of biological resources.

Section 3(2) of the *Parks Act* provides for the sustainable development of the parks themselves in its reference to maintaining the provincial parks "for the benefit of future generations". It is questionable whether the scope of parks presently offered can in fact support this stated goal and suggests a need for legislation requiring more protected areas and more sustainable development adjacent to and within existing parks and ecological reserves.

As already mentioned the *Crown Lands and Forest Act* deals extensively with forest management on Crown lands. Under Section 27(4) every timber licensee must enter into a forest management agreement with the Crown. Under Section 29(4) the contents of the management plan are specified and some of the headings are broad enough to support biodiversity - eg. forest protection, fish and wildlife protection, watershed protection. The Crown could potentially use this power to influence practices on private land by requiring that companies making leases institute appropriate practices on the Crown land and the private land as a term of the lease.

Under the heading "protection of Forests", Section 73 and 74 allow the Minister to "protect" forests on Crown land or private land from fire, insects and disease by aerial spraying of pesticides. It is questionable whether this power contributes to the sustainable use of biological resources.

F. OTHER ISSUES

1. Human Population and Settlement

The *Community Planning Act*[11] and the *Municipalities Act*[12] transfer authority locally to implement provincial policies respecting land use. There are too many municipal and land use planning policies, regulations and statutes that impact on biodiversity to discuss here. The following is intended to provide an example of the need for more extensive integration of biodiversity goals in the land use planning process.

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[11] *Community Planning Act*, R.S.N.B. 1973, c.C-12.

[12] *Municipalities Act*, R.S.N.B. 1973, c.M-22.

In the *Community Planning Act Regulations for New Maryland*[13], Section 7 establishes a policy to preserve the natural environment. In the proposals that flow from this policy there is no reference to species protection, habitat protection or sustainable use of resources. In fact, exemptions are provided for activities that cause serious harm to the environment under Section 8. Also, under Section 34 a policy respecting preservation of historic sites and interests appears to have been interpreted to refer only to the built environment, not the natural environment.

However, it should be noted that in the more recent "Bill 26, *An Act to Amend the Municipal Heritage Preservation Act*", Section 8 makes explicit reference to natural (emphasis added) or cultural preservation. All legislation dealing with land use planning should attempt to promote biodiversity when addressing environmental matters.

2. Marine Protection

There is a lack of federal and provincial legislation for marine biodiversity. Although the *Parks Act* refers to beach parks and the regulation-making power allows for regulating activities on a prescribed shore area, this alone is totally inadequate. The New Brunswick sustainable development strategy, recommendation 24, explicitly recommends land use plans for coastal zones and marine ecosystems. This is badly needed if species diversity in coastal, marine and estuarine areas is to be protected. Issues discussed earlier relating to restoration and rehabilitation are important fisheries concerns. The collapse of some ground fish species has raised concerns about the ability of species to recover. Obviously, marine biodiversity conservation should be covered by express intent in federal legislation such as the proposed Oceans Act or the *Fisheries Act*[14] but there should also be a framework for coastal zone management and marine protected areas. In addition, the *Endangered Species Act* should consider coastal and marine species.

Wetland legislation is needed and it must be effectively applied. The *Watercourse Alteration Regulations*[15] under the *Clean Water Act*[16] provide for the management of salt and freshwater riparian areas so they provide a potential tool to support biodiversity in these areas. The wetlands policy of "no net loss" is not "zero loss" so the level of protection offered is not the best, however, from a practical point of view the more serious concern is that this legislation is not being applied to protect wetlands.

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[13] *Community Planning Act Regulations for New Maryland*, Reg. 90-94.

[14] *Fisheries Act*, R.S.C. 1985, c.F-14.

[15] *Watercourse Alteration Regulations*, Reg. 90-80; 98-158.

[16] *Clean Water Act*, S.N.B. 1989, c.C-6.1.

G. GENERAL RECOMMENDATIONS

1. **Amend existing legislation or draft a new statute to adequately protect species and spaces. Sustainable development issues should be addressed in this legislation and also separately from the species and spaces legislation.**

H. SPECIFIC RECOMMENDATIONS

1. **Define "wildlife" to include all plants and animals and update the list of provincially endangered species under the *Endangered Species Act* focussing on species at the regional level.**

2. **Develop in legislation a mandatory listing process for endangered species and a mandatory set of minimum response actions.**

3. **The following World Wildlife Fund Canada recommendations should be acted upon:**
   a) **release the *Provincial Parks System Plan*;**
   b) **release a draft strategic plan for the proposed *National Areas System Plan*; and**
   c) **prepare a priority list of study areas representative of New Brunswick's ecodistricts and give them interim protection under the *Crown Lands and Forest Act*.**

4. **Implement Recommendation 16 of *Towards Sustainable Development in New Brunswick: A Plan for Action*. Provide a legislative mechanism to provide for a terrestrial and marine protected areas network on private land and Crown land, or in the alternative add rigorous criteria respecting size, connecting corridors, management plans, etc. to the *Ecological Reserves Act*, so that appropriate protected areas can be established under this statute.**

5. **Develop private nature trust legislation to provide for stewardship options on private land including conservation easements or covenants.**

6. **Develop a higher profile for the implementation of existing measures dealing with restoration and rehabilitation measures.**

7. **To encourage sustainable use of biological resources, implement recommendations 14, 16, 17, 24 and 29 of *Towards Sustainable Development in New Brunswick: A Plan for Action*.**

8. **Explicitly include biodiversity in agricultural protection legislation.**

9. **Promote biodiversity when addressing environmental matters in land use planning legislation.**

10. **Provide a framework for coastal zone management and marine protected areas and the protection of aquatic plants and animals.**

11. **Develop and apply legislation to protect wetlands.**

NOVA SCOTIA

Kathryn Heckman*

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A. INTRODUCTION

As is the case in most provinces, there is no legislation or department in Nova Scotia specially addressing "bio-diversity". Instead there is a patchwork of sectoral statutes, usually drafted for regulatory purposes other than biodiversity and various departments involved in administering their statutes. Read broadly and in light of the new *Environment* Act in Nova Scotia some protection of bio-diversity can be constructed. However, in each case the multiple purposes of the laws as well as departmental mandates may operate counter to an ecosystem approach. Legislation that has been identified in Nova Scotia as relevant to bio-diversity are as follows:

Wildlife Act, Department of Lands and Forests
Weed Control Act, Department of Agriculture and Marketing

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Special Places Protection Act, Department of Education
Provincial Parks Act, Department of Lands and Forests
Crowns Lands Act, Department of Lands and Forests
Conservation Easement Act, Department of Natural Resources
Environment Act, Department of the Environment
Beaches Act, Department of Lands and Forests
Planning Act, Department of Municipal Affairs

In addition and perhaps more importantly, the new *Environment Act* was passed in 1995. This Act, administered by the Department of Environment is omnibus in form in that it regulates waste, air, land, etc. concerns and contains a long Preamble setting out the underlying purposes. These are:

> (...) to support and promote the protection, enhancement and prudent use of the environment while recognizing the following goals:
>
> (a) maintaining environmental protection as essential to the integrity of ecosystems, human health and the socio-economic well-being of society;
>
> (b) maintaining the principles of sustainable development, including
>
> (i) the principle of ecological value, ensuring the maintenance and restoration of essential ecological processes and the preservation and prevention of loss of biological diversity.

Significantly it reflects an eco-system approach to the environment in its definition of of the environment which reads as follows:

> "environment" means the components of the earth and includes
>
> (i) air, land and water,
> (ii) the layers of the atmosphere,
> (iii) organic and inorganic matter and living organisms,
> (iv) the interacting natural systems that include components referred to in subclauses (i) to (iii), and
> (v) for the purposes of Part IV, the socio-economic, environmental health, cultural and other items referred to in the definition of environmental effect.

Ideally this Act and the Department of Environment should more clearly have included bio-diversity concerns combined with a policy directive giving this legislation an "override" relative to other resource use concerns. Unfortunately this is not clarified in the Act, and as noted protection of animal life is regulated under hunting legislation, and habitat is dependent essentially on development and exploitation oriented legislation

such as planning laws, fisheries laws and the like, or marketing/species laws e.g. Blueberry Act, Nova Scotia Ducktrolling, retrieving (dog of Nova Scotia).

The following chapter will consider these laws in terms of their sectional impact and include specific commentary as well as recommendations. However, the primary recommendation here is that the *Environment Act* be amended to include specific recognition of bio-diversity as a fundamental mandate of the Department of the Environment. This should include direction regarding the relationship between this concern and the natural resources management and development mandate of other government departments.

The next section considers the existing legislation in terms of Species and Habitat concerns. It is recognized that this division has somewhat antithetical to bio-diversity concerns. However, it serves to accurately reflect the existing coverage and gaps in the law in Nova Scotia.

B. WILDLIFE

Although Nova Scotia does not have a statute specifically directed to endangered species concerns regarding endangered species are reflected in several Acts. For example,the *Wildlife Act*[1] has many provisions typically found in legislation dealing with the protection of endangered or threatened species. In fact the long title of the statute supports this legislative intent - *An Act to Provide for the Protection, Management and Conservation of Wildlife and Wildlife Habitats.* In Section 2 the purpose clause refers to maintaining the diversity of species. The ministerial powers outlined in Section 6(2) include the power to protect threatened or endangered wildlife. Section 19 defines "endangered" as a species of wildlife threatened with imminent extinction. It also defines "threatened" as a species of wildlife likely to become endangered. Under Section 12 a habitat conservation fund is established to fund programs for the protection and enhancement of wildlife and wildlife habitats. Also, Sections 14, 15 and 16 provide for wildlife sanctuaries, wildlife management areas, and wildlife parks. There are also prohibitions specified against killing, possessing, selling, keeping in captivity, or exporting protected wildlife in Sections 50, 51, 62 and 63. The regulation-making powers in Section 113 also provide many opportunities to protect wildlife including endangered species.

All of the above measures contribute substantially to the protection of wildlife. However, it must be recognized that historically this legislation has been used to manage wildlife for hunting, not for protection. Further, if the statute is to be adapted to these new purposes the definition of wildlife should be expanded so that protection can be

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[1] *Wildlife Act*, R.S.N.S. 1989, c.504.

provided for all plants and animals. Currently, the statute restricts the definition of "wildlife" to vertebrate animals - "... any species of vertebrate which is wild by nature and hence not normally dependant on man to directly provide for its food, shelter or water"[2].

The present focus of the statute must be broadened beyond the traditional wildlife references such as exotic wildlife, fur-bearing animals, gallinaceous birds, game, game birds, green hides and pelts. The present list of "protected wildlife" specified in Section 50 - eagles, osprey, falcons, hawks, owls and any wildlife declared by regulation to be protected - is obviously an inadequate list. It is recommended that the province should develop and release an updated provincial endangered species list.

The protection of species at risk frequently involves the protection of their habitats. An amended *Wildlife Act* should include the prohibition of any activity that adversely affects the habitat of a protected species. This approach would be consistent with one of the purposes listed in Section 2 of the statute, however, it goes much further:

> ... integrate appropriate protective measures into policies for use on Crown lands and in guidelines for forest management and other programs on privately owned land to ensure adequate habitat for established populations of wildlife.

Presently, on private lands the statute appears to provide only for guidelines which are not enforceable and only directs the prohibitions to specified activities. The approach being suggested may present problems respecting the rights of private landowners that will need to be addressed, if these prohibitions restrict the activities of the landowner. It may be more appropriate to address this in the *Planning Act* by defining land uses through zoning that are compatible with the needs of endangered species.

Section 28 may directly conflict with wildlife protection as it allows for a landowner to kill wildlife that causes damage to the crops of the private property of the owner.

Under the authority of the *Wildlife Act*, Nova Scotia has a wildlife policy[3] (not regulations) which describes the goal, policies and strategies for wildlife management on private and Crown lands. There are many policies related to identifying and implementing mechanisms for encouraging private landowners to conserve wildlife habitat which obviously can be used to support biodiversity. These voluntary guidelines

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[2] The *Weed Control Act*, R.S.N.S. 1989, c.501 deals with some plants, however, it provides more of an impediment than an incentive to protection of biodiversity.

[3] Department of Lands and Forest, *Wildlife, A New Policy for Nova Scotia*, 1987.

could be more effective if they were enforceable and therefore as the policy itself recommends new wildlife regulations should be enacted.

Many of these issues are being addressed in the *National Approach to Endangered Species Conservation in Canada*, which is proposing (1) expanding the definitions to include all wild plants and animals; (2) the realization that these measures must somehow be applied federally and provincially to be effective; (3) the recognition of the validity of listing regionally endangered species (not just nationally significant ones); and (4) many other valuable proposals[4]. However, there is still concern as this approach proposes a mandatory listing process of endangered species (and various other categories) but there is no requirement for any minimum mandatory response action to be taken. Although there may be justification for recognizing varying abilities between jurisdictions that would permit one jurisdiction to exceed a minimum required response action, it is recommended that there must be some uniform minimum standard for response actions.

Some of the following response actions should be included in provincial endangered species legislation:

- prohibit, killing, possessing, trafficking or damaging the specified plant or animal;
- prohibit any activity that adversely affects the habitat of the specified plant or animal on Crown and private land;
- provide authority to define land uses through zoning that are compatible with the specified plant or animals need; and
- provide adequate penalties for those who contravene provisions of the legislation.

An Endangered Species Act which did not require any of the measures listed above would not be an improvement on the present situation.

In summation, the *Wildlife Act* can only effectively regulate endangered species which qualify as wildlife (wild vertebrates). Legislation is required to cover plants, invertebrates, and other biological entities. It is likely that overhauling the *Wildlife Act* to achieve species-at-risk protection will require as much effort as creating a new *Act*. Therefore, it is recommended that legislation should be enacted to protect endangered species,[5] and that legislation should require certain minimum response actions.

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[4] The province is currently working on new endangered species legislation in conjunction with this national framework.

[5] This is a reiteration of Recommendation 3.1 of the Nova Scotia *Sustainable Development Strategy*.

C. PROTECTED AREAS AND HABITAT

Although Nova Scotia does not have an umbrella statute respecting protected areas, there are several relevant statutes that should be reviewed here. In addition to the statutes, a *_Systems Plan for Parks and Protected Areas in Nova Scotia*[6] has been adopted by the government after a public review process was completed. The proposed plan included 31 candidate sites for protection, encompassing 19 percent of all Crown land in Nova Scotia. The *Endangered Spaces Progress Report*[7] recommendation that the proposed plan be approved has been met, and now it needs to be implemented. Earlier, the Nova Scotia Round Table for Environment and Economy in its *Sustainable Development Strategy* also recommended developing a network of protected areas.[8]

The *Special Places Protection Act*[9] is explicitly intended to designate ecological sites for preservation and study. There is no need to contort or adapt its purposes as there can be no doubt that the purpose of this statute outlined in Section 2(b) is clearly intended to support biodiversity:

> ... provide for the preservation, protection, regulation, acquisition and study of ecological sites which are considered important parts of the national heritage of the Province and ... preserve, regulate, acquire and study those ecological sites that
>
> (i) are suitable for scientific research and educational purposes,
>
> (ii) are representative examples of national ecosystems within the Province,
>
> (iii) serve as examples of ecosystems that have been modified by man and offer an opportunity to study the national recovery of ecosystems from such modification,
>
> (iv) contain rare or endangered native plants or animals in their natural habitats,
>
> (v) provide educational or research field areas for the long-term study of natural changes and balancing forces in undisturbed ecosystems.

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[6] Nova Scotia Department of Natural Resources, *Systems Plan for Parks and Protected Areas*, 1996.

[7] World Wildlife Fund Canada, *Endangered Spaces Progress Report*, 1995 at p.40.

[8] Nova Scotia Round Table on Environment and Economy, *Sustainable Development Strategy*, Recommendation 3.3.

[9] *Special Places Protection Act*, R.S.N.S.1989, c.438.

The usual concerns about application to non-traditional wildlife, private land, and water have all been addressed. Section 2(b)(v) lists one of the site selection criteria as "contain[ing] rare or endangered native plants". Section 14 provides for the designation of sites on private land (with the consent of the owner) and also provides for the designation of sites on land covered with water. However, if this statute were to serve the purpose of promoting biodiversity through protected areas, then regulations and policies are needed to set selection criteria (including size), establish a classification system, develop a list of prohibited activities and provide for on-going management standards.

In practice, very few ecological reserves have been designated because the designation process is slow and cumbersome[10]. There is a backlog of approximately 100 candidate ecological reserves. Until 1994 both the archeological reserves and the ecological reserves were administered together. In an effort to address the backlog and the cumbersome nature of the designation process, the administration of these 2 components was separated. In its *Endangered Spaces Report*, the World Wildlife Fund Canada recommended that a process should be designed and implemented to address the backlogged 100 candidate ecological reserves by 2000. This recommendation should be acted upon.

The issue of the permanency of protection is raised in Section 14A(1) where provision is made to terminate the designation of an ecological site where it is no longer considered appropriate. This may be used to circumvent the apparent goal of permanent protection.

The focus of the *Provincial Parks Act*[11] is divided between an appreciation of Nova Scotia's natural and cultural heritage for recreational purposes and biodiversity issues. The primary purpose of the statute is the management of Crown land for recreation, not protection. Some aspects of the legislation that support biodiversity include:

1) Section 2(1)(b) of the purpose clause provides for the preservation of unique, rare, representative or otherwise significant elements of the natural environment.
2) Section 2(2) dedicates parks in perpetuity.
3) In Section 3 "wildlife" is defined as a wild animal, and where appropriate, includes wild plants.

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[10] For additional discussion of this issue and others, see Ian C. Whan Tong, "A Special Policy for Special Places? An Evaluation of the Nova Scotia Special Places Protection Act", 35(4) *Canadian Public Administration* 549-557.

[11] *Provincial Parks Act*, R.S.N.S. 1989, c.367. Note that a provincial park is not defined except as land designated as a provincial park (Section 3).

4) Section 7 establishes a trust fund for the establishment and operation of provincial parks.
5) The ability to develop a classification system under Section 10A could be used for the establishment of ecological reserves and protected areas.
6) Powers under Sections 11, 12, and 13 allow for some of the powers and provisions needed in protected areas such as scientific research, education, protection of flora and fauna, the preparation of management plans, and the prohibition or regulation of cutting and removal of forest products.
7) The prohibitions and regulation-making powers delineated in Sections 23, 24, 33 and 37 respecting hunting, fishing, trapping, firearms, deposition or transport of waste, destruction of trees and other natural resources, regulating shore activities, removal of earth, stone etc., agricultural purposes, management of areas adjacent to provincial parks, and the classification and zoning of parks, have the potential to support biodiversity.
8) There are also aspects of the provincial parks policy[12] (a precursor to this statute), such as beach protection, use of Crown land and the reference to tax incentives for the donation or contribution of land, which are supportive of biodiversity.

However, there are other provisions that weaken or contradict these. For example:

1) The *Provincial Park Act* is restricted as it only applies to Crown land. Under Section 5 the Minister may exchange Crown land for private land to set up a park, however, the statute offers no protection opportunities for privately owned land.
2) In contrast to the Section 2 dedication in perpetuity, Section 8 gives the Governor in Council power to terminate the status of a provincial park.
3) Section 21 allows for road construction, which is generally not permitted in protected areas.

These powers should be removed if the statute is to be applied to protected areas, as opposed to recreational parks.

Similarly, arguments could be advanced that Crown lands can be protected under the *Crown Lands Act*[13], by removing some offensive provisions and strengthening others that have the potential to be applied for these purposes. However, it is clear that the statute's primary purpose is the provision of a regulation and administrative framework for forest management practices on Crown Land.

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[12] Department of Lands and Forests, *Parks: A New Policy for Nova Scotia*, 1988.

[13] *Crown Lands Act*, S.N.S. 1987, c.5. See also Department of Lands and Forests, *Forestry: A New Policy for Nova Scotia*, 1986.

Sections 24 and 25 allow the Minister to set aside special areas to maintain and manage forests, protect wildlife and wildlife habitats and provide for the maintenance of long-term productivity, diversity and stability of the forest ecosystem. Reference is also made to taking protective measures in forest management planning to respect the integrity of watersheds, wildlife habitats, special places, ecological reserves, etc. Also, the purpose and powers provisions in Sections 2 and 5 refer to wildlife habitat protection.

The potential benefits of using these provisions to adapt the statute as an appropriate vehicle for the explicit protection of biodiversity seems unrealistic. Sections 26, 27, 29 and the regulation-making powers under Section 51 clarify the true purpose of the statute by permitting forest access roads, authorizing timber and other resource removal and describing requirements for forest management practices which are not conducive to protected areas.

The *Trails Act*[14] establishes trails on Crown lands, over watercourses and on privately owned lands (with the consent of the owner). Under Section 9 a special management zone is described which could be enlarged and adapted to provide corridors or connections between protected areas:

> To enhance the physical appearance of the forests along a trail, to promote the long-term diversity and stability of forest ecosystems and to provide suitable habitat for wildlife, the Minister may develop special management zones on Crown land adjacent to a trail and establish similar guidelines to be developed and integrated into on-going forest management programs to be recommended for use on privately owned lands which adjoin a trail.

In Nova Scotia nearly three-quarters of the land is privately owned. Many important natural areas exist on these lands, so the protection of private land must be incorporated as an integral part of the provincial protected areas system. Government should encourage private land stewardship adjacent to Crown core protected areas. Recommendation 3.2 of the *Sustainable Development Strategy* states the need to ...

> develop a flexible and integrated system that permits and encourages the conservation of species and habitats on private lands through such mechanisms as voluntary designation, conservation easements, and the trade of lands with government.

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[14] *Trails Act*, R.S.N.S. 1989, c.332.

The *Conservation Easement Act*[15] has been established to provide for the use of easements as a voluntary mechanism to encourage biodiversity conservation by private land owners. Section 3 lists the criteria for land to be considered a natural area.[16] If the section 3 criteria are met then under Section 4 an easement or a covenant may be entered into with the owner of the natural area. Under Section 4, the implementation of this statute is the responsibility of the Minister or a designated conservation organization. The Nova Scotia Nature Trust is a designated organization which has been established for this purpose, as was recommended in the *Sustainable Development Strategy*.[17] It is recommended that the provincial government support the initiatives of the Nature Trust so that this statute is better able to achieve its objectives.

Other voluntary measures, such as incentives (eg. differential or favoured status for provincial property assessments, tax rebates) and land trades should be encouraged.

Currently, provincial property assessment and municipal tax rates do not provide any "breaks" or incentives to encourage voluntary private stewardship initiatives. The provincial and municipal governments should ensure that property tax and assessment systems are not a deterrent to biodiversity conservation on private lands. Mechanisms should be explored to provide financial incentives, such as tax relief, to private landowners for the conservation of biodiversity. The province is still reviewing a draft *Stewardship Strategy* towards this end.

Similarly, federal taxation policies should serve as an incentive, rather than a disincentive, to biodiversity conservation on private land. Recent amendments to the *Income Tax Act* provide assistance to ensure that the retention of ecologically sensitive areas is encouraged, by eliminating the 20% net income rate respecting such land

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[15] *Conservation Easement Act*, S.N.S. 1992, c.2.

[16] The Governor in Council may, with the consent of the owner, by order, designate that land as a natural area if the land
- (a) contains natural ecosystems or constitutes the habitat of rare, threatened or endangered plant or animal species;
- (b) contains outstanding botanical, zoological, geological, morphological or paleontological features;
- (c) exhibits exceptional and diversified scenery;
- (d) provides a haven for concentrations of birds and animals;
- (e) provides opportunities for scientific or educational programs in aspects of the national environment; and
- (f) is representative of the ecosystems, landforms or landscapes of the Province.

[17] Recommendation 3.11: Establish a Nova Scotia Nature Trust to acquire and possibly manage protected areas, especially those on private land.

donated to the Crown, municipalities or designated conservation organizations. However, there are still changes needed so that the capital gains tax is not a penalty by assessing fair market value at disposition, not at the time the property was donated.

To go beyond voluntary protection measures on private land presents difficulties and may require compensation to be paid to the landowner. A detailed assessment of this issue is beyond the scope of a review of existing legislation but it should be addressed. For example, a system of biodiversity related criteria needs to be developed for private land so it can be evaluated for its biodiversity values and sites can be prioritized for action. Also, mechanisms are needed to identify threats to high biodiversity values on private lands and processes to avoid or remove these threats.

In summation, it is likely that the existing legislation could provide a piece meal approach for protection of Crown land and perhaps voluntary protection of privately-owned land. However, many amendments and new regulations would be required and there would still be no sense of comprehensiveness. Therefore, it is recommended that a new piece of legislation be developed with the explicit intention of providing a comprehensive framework for protected areas.

D. RESTORATION AND REHABILITATION

There does not appear to be specific legislation which deals directly with the rehabilitation and restoration of ecosystems through plans and management strategies or by providing support for local remedial action in degraded areas. One exception is in Section 2 in the *Special Places Protection Act* where there is specific provision to provide for ecological sites that serve as examples of ecosystems that have been modified by man and offer an opportunity to study the natural recovery of ecosystems from this modification.

The Environmental Trust Fund established under the *Environment Act*[18] could direct its private sector donations to fund research or education projects related to restoration or rehabilitation of species or ecosystems. In fact two of the purposes of the *Act* refer to restoration and rehabilitation. Section 2(b)(ii) explicitly refers to the "restoration of ecological processes" and Section 2(d) provides for "taking remedial action and providing fore rehabilitation to restore an adversely affected area to a beneficial use". In the broader context, any site degraded because of a spill, the improper use of dangerous goods or pesticides, or because it is considered contaminated must be remediated or cleaned up, under the *Environment Act*.

Wildlife management is defined under the *Wildlife Act* to include the maintenance of wildlife populations or habitats. This could include taking measures to restore

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[18] *Environment Act*, S.N.S. 1994-95, c.1.

threatened or endangered species or to rehabilitate the damaged habitats. In the past, wildlife sanctuaries have been established to restore and protect particular species, but they have not been successful where resource exploitation was allowed to continue to damage their habitat.

To the extent that a species or ecosystem that is in need of restoration or rehabilitation provides an opportunity for scientific or educational programs, it may qualify for designation under the *Conservation Easement Act*, but there does not appear to be any provision to implement any restoration or rehabilitation response action.

E. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

Nova Scotia's *Sustainable Development Strategy* made many recommendations pertaining to the sustainable use of biological resources in various sectors of the economy as well as devoting a chapter exclusively to biological diversity. It is not possible to review all of these recommendations and comment on whether they have been effectively implemented. Generally, it is recommended that to encourage sustainable use of biological resources the Sustainable Development Strategy recommendations should be implemented. Specifically, the recommendations in the biological diversity chapter that pertain to sustainable use of biological resources - recommendations 3.4 and 3.8 should be implemented (support of recommendations 3.1, 3.2 and 3.11 has already been discussed earlier).

Recommendation 3.4 focusses on the need to set aside land beyond protected areas as special management areas, including wildlife corridors. Recommendation 3.8 refers to the need for planning strategies that maximize the protection of habitats outside protected areas. These recommendations emphasize that the effectiveness of any protected areas network is increased dramatically when the land outside the protected area is managed to encourage the sustainable use of biological resources.

Some of the statutes discussed throughout this chapter refer to sustainability issues. One of the purposes of the *Provincial Parks Act* is to assemble a land base "to meet the present and future needs" of Nova Scotians for outdoor recreation and heritage resource protection. The *Wildlife Act* intends to provide for the "continuing renewal of the resource". The *Beaches Act*[19] has the ability to dedicate beaches in perpetuity for "the benefit of present and future generations". The *Environment Act* makes many references to sustainable development throughout the *Act* and makes explicit and detailed reference to sustainable development in Section 2, the purpose clause. Section 2 refers to sustainable development as an umbrella principle which includes many principles within it. One subsidiary principle mentioned is the principle of ecological

[19] *Beaches Act*, S.N.S. 1975, am. 1988, c.44.

value, "ensuring the maintenance and restoration of essential ecological processes and the preservation and prevention of loss of biological diversity".

F. OTHER ISSUES

1. Population and/or Human Settlement

The *Planning Act*[20], which is currently being revised, provides authority for activities promoting the sustainable use of resources, if they are chosen to be used for these purposes by those who administer the *Act*. Land use policies (s.7), municipal planning strategies [s.38(2)], studies [s.42(1)], land use bylaws (s.53), acquisition of land (s.46), prohibition of activities (Ss54) and development agreements (s.74) all make provision for environmental considerations that could be used to promote the sustainable use of biological resources. In practice the effectiveness of these provisions varies from one municipality to another. Government should ensure that biodiversity conservation criteria form part of, and areas contributing to biodiversity conservation receive recognition in, provincial and municipal planning requirements and environmental assessments.

2. Marine Protection

The *Beaches Act* may provide a mechanism for dealing with part of this topic - protecting beach areas. The Parks policy referred to earlier states that Nova Scotians' strong association with the sea demands that public access to beaches must be maintained and beaches must be protected so they will be conserved as part of the heritage. However, the on-going dispute surrounding Kingsburg Beach suggests that the ability of the statute to deliver this protection is not without question. As with other pieces of legislation the purposes of the *Beaches Act* may be somewhat contradictory in that it attempts to both protect beaches and dunes as significant and sensitive environmental resources for future generations and also to regulate them as recreational resources without necessarily recognizing their inherent value.

It is important that valid legislation exists to designate certain beaches as protected, thereby prohibiting or regulating development on these beaches. The issue of the rights and responsibilities of a private landowner in this situation needs to be addressed, as has arisen in the Kingsburg Beach case where designation procedures and the right to limit development has been subject to court challenge[21]. As part of a

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[20] *Planning Act*, R.S.N.S. 1989, c.346.

[21] In this case, the judge stayed his own decision for a period of time that allowed government to properly review and affirm its designation.

coastal zone management framework of a marine protected areas system, this issue must be resolved in favour of protection of the beaches.

Respecting wetlands, no provincial wetland policy has been developed. Also, no regulations have been enacted under Section 110 of the *Environment Act* to prevent the infilling or alteration of wetlands. It is recommended that wetland policy and regulations be developed.

Some statutes provide restrictions on activities which can be used to provide water or marine protection. Section 54 of the *Planning Act* provides for the prohibition of development near a watercourse. Section 67 of the *Environment Act* makes it an offence to release a substance into the environment (including the water) that causes a significant adverse effect.

More importantly, Section 105 of the *Environment Act* requires the Minister to develop a water-resource management strategy for the Province. As part of this strategy the Minister may prohibit the alteration of watercourses, adopt water-quality standards, develop sensitivity indices, approve watershed-protection strategies, promote water-resource management and do many other things. It is recommended that such a strategy be implemented because it should represent a significant step toward the sustainable use of water.

Nova Scotia has participated in the Gulf of Maine Council and its development of a coastal planning document, *Coastal 2000*[22], which outlines for discussion a sustainable resource management plan and references marine protected areas although no system plan or site-level action has occurred. Following the World Wildlife Canada recommendation, it is recommended that a strategy be developed for protecting marine protected areas.

In summation, there is a lack of legislation dealing with marine biodiversity. Recommendation 7.2 of the Sustainable Development Strategy points to the need to develop a comprehensive coastal zone management plan. *Coastal 2000* has reinforced this recommendation. It is recommended that the federal-provincial jurisdictional issues be resolved and a framework for coastal zone management, including marine protected areas and the protection of aquatic species, be developed.

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[22] Nova Scotia Department of Fisheries and Nova Scotia Department of the Environment, *Coastal 2000, A Consultation Paper*, 1994.

G. GENERAL RECOMMENDATIONS

1. **Amend existing legislation or draft a new statute to adequately protect species and spaces. Sustainable development issues should be addressed in this legislation and also separately from the species and spaces legislation.**

H. SPECIFIC RECOMMENDATIONS

1. **Expand the definition of "wildlife" in the *Wildlife Act* to include all plants and animals and update the list of provincially endangered species.**

2. **Under the *Wildlife Act*, upgrade the Wildlife Guidelines to Wildlife regulations.**

3. **Add to the *Planning Act* or the *Wildlife Act*, the power to prohibit activities that are incompatible with the needs of endangered species.**

4. **Develop in legislation a mandatory listing process for endangered species and a mandatory set of minimum response actions.**

5. **Act on the recommendations in the *Endangered Spaces Progress Report*, including:**

   - **implement the *Systems Plan for Parks and Protected Areas*;**
   - **implement a process to address the 100 backlogged ecological reserves; and**
   - **develop a strategy for addressing marine protected areas.**

6. **Support the initiatives of the Nova Scotia Nature Trust under the *Conservation Easement Act.***

7. **Provide financial incentives, such as tax relief and economic incentives to private landowners engaging in conservation of biodiversity.**

8. **Develop a higher profile for the implementation of existing measures dealing with restoration and rehabilitation measures.**

9. **Implement the recommendations of the Sustainable Development Strategy, including 3.1, 3.2, 3.3, 3.4, 3.8 and 3.11.**

10. **Promote biodiversity when addressing environmental matters in land use planning legislation.**

11. **Develop and apply regulations and policies to protect wetlands.**

12. **Develop and implement a water-resource management strategy.**

13. **Provide a framework for coastal zone management including marine protected areas, beach protection and the protection of aquatic species.**

PRINCE EDWARD ISLAND

Nathalie Bernard*

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Prince Edward Island has a long history of farming and settlement, with a landscape that now contains only pockets of remnant natural areas. Although numerous measures are present in PEI environmental legislation, various pieces and elements of legislation fundamental to conserve and protect biodiversity are absent. For instance the province has not enacted a *Biodiversity Conservation Act*, an *Endangered Species Act*, a *Migratory Birds Act*, a *Wetland Protection Act*, a *Marine Areas Protection Act*. The *Beaches Protection Act* as well as the *Provincial Parks Act* were repealed and beaches and provincial parks are now regulated under the *Recreation and Development Act*.

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A. WILDLIFE

1. Animals

P.E.I. has enacted the *Fish and Game Protection Act*[1] for the conservation and management of fish and wildlife[2]. The Act is administered by the Fish and Wildlife Division which is responsible for issuing licenses and permits and for administering programs of land use with respect to the preservation, maintenance and restoration of fish and wildlife habitat[3]. "Fish" is defined as any species of fish protected by regulations issued under this Act[4], and "wildlife" as all animals and birds mentioned in this Act or designated in the regulations[5]. Few regulations have been enacted therefore few species are protected. It is recommended that regulations be updated regularly in order to protect as many species as possible.

The Act provides for specific powers to make regulations prescribing the terms and conditions of licenses and permits, governing the keeping of wildlife in captivity, respecting the taking or capturing of native wildlife for educational, scientific, display, falconry, fur farming or pet purposes, and protecting the habitat and nesting areas of colonial nesting birds and birds of prey[6].

One means of protection of fish, animals and birds described in regulations is the general requirement of a license to hunt, fish or trap[7]. So far, regulations protect fish eggs, salmon, Atlantic salmon and trout. In the case of migratory birds, section 7(4) provides that the provisions of the *Migratory Birds Convention Act* apply. Furthermore, public fishing preserves, public shooting preserves and wildlife management areas may be designated by regulation and be maintained for the management and conservation of wildlife and fish[8]. However, fishing preserves and shooting preserves are maintained

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1 *Fish and Game Protection Act*, R.S.P.E.I. 1988, c. F-12.

2 *Ibid.*, s.2(2)(b).

3 *Ibid.*, s.2(2)(c),(d).

4 *Ibid.*, s.1 (k).

5 *Ibid.*, s.1(hh).

6 *Ibid.*, s.7(2).

7 *Ibid.*, s.21(1).

8 *Ibid.*, ss.26, 28, and 31.

for the primary purpose of angling and hunting[9]. Thus, protection of wildlife and fish appears secondary to the regulation of angling and hunting and suggests that this statute was originally designed to promote wilderness recreation. It is recommended that the *Fish and Game Protection Act* be amended to add protection of fish and wildlife as a purpose as important as angling and hunting for the creation of fishing preserves and shooting preserves[10].

Finally, the *Fish and Game Protection Act* prohibits any person from putting or permitting the escape of any lime, chemical substance, drug, poison, dead fish or animals, mill rubbish, sawdust, clay, sand, silt, oil, residue from washing gravel, or other deleterious substances into inland water frequented by trout or salmon[11]. This section contributes to biodiversity conservation since pollutants are an important threat to biodiversity.

The *Provincial Parks Regulations*[12] adopted pursuant to the *Recreation Development Act*[13] constitute another piece of legislation providing direct protection to wildlife and fish. According to its section 11, no person shall hunt, shoot, snare, kill, poison or harm in any way a bird, fowl, mammal, amphibian, reptile, fish without permission in a provincial park.

2. Plants

As for the protection of plants, the *Plant Health Act*[14] allows the enactment of regulations for eradicating, preventing or controlling the spread of regulated diseases, controlling the entry into the province of crop seed that may contain a regulated disease, and regulating the production and propagation of any crop seed within the province so

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[9] *Ibid.*, ss.26, 28.

[10] The Act is under review, with revisions slated for the 1997 session of the Legislature. The new "Wildlife Act" is intended to address wildlife in its broadest sense, including endangered species. Kate MacQuarrie, Executive Director, Island Nature Trust, personal communication, April 9 1996; and Christine MacKinnon, PEI Department of Natural Resources, personal communication, May 28 1996.

[11] *Ibid.*, s.40.

[12] *Provincial Parks Regulations*, P.E.I. EC1134/66.

[13] *Recreation Development Act*, R.S.P.E.I. 1988, c. R-8.

[14] *Plant Health Act*, R.S.P.E.I. 1988, c. P-9.1.

as to prevent the spread of any regulated disease[15]. So far, the only regulated crop is the potato and the regulated diseases are those associated with potatoes.

The *Weed Control Act*[16] also aims at protecting plants. Section 2 provides that upon recommendation of the Advisory Committee, the Lieutenant Governor in Council, may declare any plant, its seeds or its spores to be a noxious weed and every owner of land shall take measures to destroy any noxious weed on the owner's property in accordance with the regulations[17]. So far, the only noxious weed regulated is the purple loosestrife, which invades then dominates wetlands and must be destroyed by removal and burning[18].

Aside from the protection offered by the destruction of a few dangerous plant species in the first two statutes above mentioned, plants and flora in general are protected in provincial parks and designated natural areas, through restrictive covenants on private lands, and on scenic heritage roads[19]. Section 2 of the *Provincial Parks Regulations* prohibits the removal of any flower, shrub or plant[20] and the commission of acts causing injury to a tree, shrub, flower or grass in a provincial park without permission. While useful measures, these are not sufficient to achieve full protection of plant species as it does not constitute a comprehensive framework. It is recommended that a *Protection of Flora Act* be enacted to provide for the protection of various species throughout the province and not only in specific protected spaces.

Many of these issues are being addressed in the *National Approach to Endangered Species Conservation in Canada*. However, there is still some concern as this approach proposes a mandatory listing process of endangered species (and various other categories) but there is no requirements for any minimum mandatory response action to be taken. Although there may be justification for recognizing varying abilities between jurisdictions that would permit one jurisdiction to exceed a minimum required response action, it is recommended that there must be some uniform minimum standard for response actions. An Endangered Species Act which did not require any of the 10

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[15] *Ibid.*, s.6(1).

[16] *Weed Control Act*, R.S.P.E.I. 1988, c. W-2.1.

[17] *Ibid.*, s.2,3.

[18] *Purple Loosestrife Control Regulations*, P.E.I. EC629/91, s.2.

[19] See the discussion of these designations in the Protected Areas and Habitat section, which follows.

[20] See also s.3(a) of *Scenic Heritage Roads Regulations*, P.E.I. EC608/87, adopted under the *Planning Act*, R.S.P.E.I. 1988, c. P-8.

measures listed in the document would not be an improvement on the present situation.

Wildlife Recommendations:

1. **Some of the following response actions should be included in provincial endangered species legislation:**
   - **prohibit the killing, possessing, trafficking or damaging the specified plant or animal;**
   - **prohibit any activity that adversely affects the habitat of the specified plant or animal on Crown private land;**
   - **provide authority to define land uses through zoning that are compatible with the specified plants' or animals' needs; and,**
   - **provide adequate penalties for those who contravene provisions of the legislation.**

B. PROTECTED AREAS AND HABITAT

In 1991, the Significant Environmental Areas Plan was approved by the Executive Council of P.E.I. In June 1994, the Executive Council approved the inclusion of two additional categories of natural areas, namely coastal cliffs and marine areas[21]. Generally, P.E.I. has made substantial progress. The co-operative nature of the Endangered Spaces Campaign, involving the P.E.I. government and the non-government Island Nature Trust, has enabled progress to occur in a province where 90% of the land is privately owned. The Government has committed to protecting 7 percent of the Island's landscape, with key sites identified in the 1991 *Significant Environmental Areas Plan*[22].

The province of P.E.I. has enacted a number of statutes and regulations establishing protected areas and habitat. The *Natural Areas Protection Act*[23], for instance, aims at preserving natural areas in the province to conserve for posterity the aesthetic, scenic and natural character and condition of ecosystems, and to prevent their exploitation for commercial purposes[24]. A natural area means a parcel of land designated by the Minister that

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[21] *Endangered Spaces Progress Report 1994-1995*, no.5. Several cliff but no marine candidate sites have been identified.

[22] Kate MacQuarrie, supra note 10.

[23] *Natural Areas Protection Act*, R.S.P.E.I. 1988, c. N-2.

[24] *Ibid.*, s.2, and *Natural Areas Protection Regulations*, EC 54/89, s. 2.

i) contains natural ecosystems or constitutes the habitat of rare, endangered or uncommon plant or animal species;

ii) contains unusual botanical, zoological, geological, morphological or palaeontological features;

iii) exhibits exceptional and diversified scenery;

iv) provides haven for seasonal concentrations of birds and animals; or

v) provides opportunities for scientific and educational programs in aspects of the natural environment[25].

This designation applies to Crown land, to land concerning which the Minister has entered into an agreement with a private landowner for the purchase, lease or acquisition of the land, or to land concerning which a private landowner has registered a restrictive covenant affecting the land[26].

Section 3 of the *Natural Areas Protection Regulations*[27] lists the activities prohibited in a natural area, including cutting, destroying or removing trees, shrubs or other vegetation, and planting or otherwise introducing non-native plant or animal species. The restrictions of section 3 on the use of natural areas are in addition to any restrictions established in any restrictive covenants, easements, leases, licences or other documents or agreements[28]. Section 4 of the Act provides that criteria for management or system plans shall be set out in private agreements in the case of designation of natural areas on private land.

The *Natural Areas Protection Act* and *Regulations* lack provisions involving the public in the process. Provisions to ensure ecological integrity around such protected areas as suggested in Article 8(e) of the *Convention on Biodiversity*[29], such as connection corridors, are not required. No minimum size criteria have been established for protected areas. While this would help protect large wilderness areas, PEI does not have any large wilderness tracts ore extensive public lands where this could occur, only pockets of natural areas left after a long period of settlement and farming. Finally, the

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[25] *The Act, Ibid.*, s.1(b).

[26] *Ibid.*, s.3.

[27] *Natural Areas Protection Regulations*, P.E.I. EC54/89.

[28] *Ibid.*, s.9.

[29] United Nations Environment Program, *Convention on Biological Diversity*, 1992.

designation of natural areas is limited to land and excludes marine areas, although the Department of Natural Resources is developing such designations[30]. It is recommended that provisions ensuring ecological integrity around protected areas and establishing minimum size criteria at an appropriate scale for PEI be added to the *Natural Areas Protection Act.*

The *Planning Act*[31] also permits the establishment of protected areas and habitat. Two of the objects of the Act are to protect the unique environment of the province and to provide the opportunity for public participation in the planning process[32]. Provincial land use development policies and regulations may be made with respect to land use zones establishing and regulating areas as conservation zones for the purpose of preserving objects of beauty, fossil remains, other animate and inanimate objects, of aesthetic, education or scientific interest, or for the purpose of preserving any unusual combination of elements of the natural environment having educational, historic or scientific interest[33]. Environmentally sensitive areas as well as scenic heritage roads may also be established in order to preserve and enhance their aesthetic and environmental qualities[34] . Also, regulations may be enacted to establish special planning areas and regulate their development[35].

The *Planning Act General Regulations*[36] designate the Morell River Zone as a conservation zone to maintain its recreational value and to retain its unspoiled state for the use and enjoyment of present and future generations[37]. No person shall undertake development in a conservation zone without a permit[38]. Furthermore, the *General Regulations* designate Bunbury Island and Borden Region as special planning areas to preserve the fragile lands and vegetation, and protect them from encroachment of

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[30] Christine MacKinnon, supra note 10.

[31] *Planning Act*, R.S.P.E.I. 1988, c. P-8.

[32] *Ibid.*, s.2(c),(e).

[33] *Ibid.*, ss.7 and 8 (c)(iii).

[34] *Ibid.*, s.8(c)(iv),(i).

[35] *Ibid.*, s.8.1, as amended by S.P.E.I. 1991, c.30.

[36] *Planning General Regulations*, P.E.I. EC601/77.

[37] *Ibid.*, s.81(1).

[38] *Ibid.*, s.81(4).

undesirable and incompatible land uses[39]. Similarly, no person shall undertake development in any special planning area without the prior approval of the Minister[40].

The *Coastal Area Regulations*[41] adopted under the *Planning Act* also establish protected areas and habitat. For instance, in the Princetown Point-Stanley Bridge area, an environmentally sensitive zone has been designated where no buildings or land shall be used for purposes other than resource uses, recreation uses, conservation related activities, recreational fishing, hunting, harvesting of wild berries and nature study[42]. Moreover, these regulations aim at protecting beaches and wetlands in the province by requiring wetland and shoreline buffers[43], imposing minimum distances to beaches and wetlands for construction of buildings or structures[44] and prohibiting construction of buildings or structures on any primary or secondary sand dune[45]. Construction is prohibited on any sand dune where a sand dune area is naturally vegetated with spruce, fir, pine cedar or larch tree species and the coverage of those species exceeds 75% of that area. These requirements demonstrate concerns for the protection of wildlife and flora habitats, the destruction of which constitutes a major threat to biodiversity conservation, and also for some protection for coastal areas.

Pursuant to the *Recreation Development Act,*[46] protected areas, protected beaches and provincial parks may be established. This Act is primarily aimed at promoting orderly development of recreation facilities and recreation services rather than promoting biodiversity conservation[47]. However, in encouraging the creation of protected areas and habitat it contributes to biodiversity protection. *Provincial Parks Regulations* have been enacted pursuant to the *Recreation Development Act* and

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[39] *Ibid.*, s.78(1).

[40] *Ibid.*, s.78(5).

[41] *Coastal Areas Regulations*, P.E.I. EC159/92.

[42] *Ibid.*, s.2.9.

[43] *Ibid.*, s.10, 11.

[44] *Ibid.*, s.30, 32, 33.

[45] *Ibid.*, s.28. See also *Off-Shore Islands Regulations*, s.2(b).

[46] *Recreation Development Act*, R.S.P.E.I. 1988, c. R-8, s.6.

[47] Ibid., s.2.

prohibit removing and injuring flower, shrub, plant, tree, grass[48] as well as the hunting, shooting snaring, killing, poisoning or harming of bird, fowl, mammal, amphibian, reptile, or fish[49]. In contrast, no regulations have been enacted to regulate protected beaches. The *Recreation Development Act* simply prohibits the wilful taking or removal of any sand, gravel or stone from a protected beach or the deposit of refuse, cans or other material on it[50]. Even though the *Environmental Protection Act*[51] and the *Sand Removal from Beaches Regulations*[52] prohibit the operation of motor vehicles on dunes, the interference with the natural supply or movement of sand and the removal of sand from beaches and sand dunes, the regime regulating beaches is not comprehensive and this constitutes an important gap in the legislation which negatively impacts on biodiversity conservation. It is recommended that a *Beaches Protection Act* be enacted and states as a primary goal biodiversity conservation.

In addition to the *Natural Areas Protection Act*, recent amendments to the *Fish and Game Protection Act*[53] have established means to privately protect wildlife habitat through conservation covenants and easements. Pursuant to s.32.1, the Minister may enter into an agreement with a private landowner which imposes conservation covenants and easements. The *Museum Act*[54] provides for the use of such conservation covenants and easements to preserve and protect the natural heritage of P.E.I. Although, the P.E.I. Museum and Heritage Foundation has negotiated many restrictive covenants for cultural protection, so far, there are none for nature protection purposes[55]. Finally, the proposed *Heritage Places Protection Act*[56] provides for the creation of a conservation organization for the purpose of acquiring easements or placing restrictive covenants in respect of heritage places. A Heritage Place includes or comprises an historic resource, the latter being any work of nature or of man that is primarily of value for its palaeontological, archaeological, prehistoric, historic, cultural, natural, scientific

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[48] *Provincial Parks Regulations*, P.E.I. EC1134/66, s.2.

[49] *Ibid.*, s.11.

[50] *Recreation Development Act*, R.S.P.E.I. 1988, c. R-8, s.11.

[51] *Environmental Protection Act*, R.S.P.E.I. 1988, c. E-9, s.22.

[52] *Sand Removal from Beaches Regulations*, P.E.I. EC323/90.

[53] *Fish and Game Protection Act*, R.S.P.E.I. 1988, c. F-12.

[54] *Museum Act*, R.S.P.E.I. 1988, c. M-14.

[55] Diane Griffin, formerly of the Island Nature Trust, personal communication.

[56] *Heritage Places Protection Act*, S.P.E.I. 1992, c. 31, s.10.

or aesthetic interest.

In sum, there is no comprehensive and well articulated network of protected areas in P.E.I. Several pieces of legislation create protected areas, however, each has its own objectives as to what will be protected (animal, fish, plants etc.), why it will be protected (recreational value, tourism value etc.) and how it will be protected (conservation covenants and easements, prohibited activities etc.).

C. RESTORATION AND REHABILITATION

Generally, legislation in P.E.I. does not contain provisions for the rehabilitation and restoration of degraded ecosystems and endangered species except for the *Environmental Protection Act*[57]. Section 7 (as amended) of the *Environmental Protection Act*, provides for ministerial orders directing a natural person or corporation to clean, repair and restore the area affected by a contaminant. Also, section 21 imposes an obligation on every person who discharged a contaminant into the environment to take such remedial measures as the Minister may direct. Clearly, a tremendous gap exists in the legislation as to the obligation to restore and rehabilitate degraded ecosystems and endangered species.

D. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

The *Forest Management Act*[58] addresses forest management on Crown lands but also on private forest lands. Generally, the Minister is responsible for the conservation, utilization, protection and integrated management of Crown forest lands including (a) harvesting, regeneration and improvement of the timber resource; (b) utilization of Crown timber resources for the best end use; (c) protection of timber resources from fire, insect and disease; (d) conservation and or enhancement of wildlife resources utilizing Crown forest lands; (e) protection of representative areas of the forest as forested natural areas[59]. The Minister must also prepare a Forest Policy as well as a Crown Forest Land Management Plan[60] which shall identify the protection needs of the forest, identify biological, physical and legal constraints on the development of the forest, and specify management priorities for the Crown forest land.

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[57] *Environmental Protection Act*, R.S.P.E.I. 1988, c. E-9.

[58] *Forest Management Act*, R.S.P.E.I. 1988, c. F-14.

[59] *Ibid.*, s.9(1).

[60] *Ibid.*, s.9(3).

Crown land may be acquired by the Minister for conserving representative forested natural areas, for establishing parks or acquiring lands for wildlife conservation[61]. On Crown forest land, a forest product sales permit may be granted by the Minister to cut, harvest or remove such quantities of timber and other forest products as he/she considers to be sustainable based on the Crown Forest Land Management Plan[62]. The management of private forest lands for the sustained production of forest products in a manner consistent with the Forest Policy and provincial conservation objectives must be encouraged. This obligation may be implemented through programs or agreements entered into by private forest landowners[63]. The provincial government adopted the document *Stewardship and Sustainability: A Renewed Conservation Strategy for Prince Edward Island* in April 1994 to guide such efforts[64].

In the agricultural land protection field, the *Land Identification Regulations*[65], adopted pursuant to the *Planning Act*, create a land identification program to preserve agricultural land for agricultural uses and to prevent development of land identified for non-development use[66]. Non-development use means use for purposes, including forestry, wildlife, agriculture, recreation, permanent or seasonal residence, that do not involve commercial or industrial development[67]. The signature of an identification agreement is one way for land to be identified under the program and contains a covenant by the purchaser to use the land for non-development use. This appears to be a means to privately protect areas[68] to ensure the sustainable use of agricultural land.

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[61] *Ibid.*, s.10(1).

[62] *Ibid.*, s.11(1).

[63] *Ibid.*, s.8.

[64] Christine MacKinnon, supra note 10.

[65] *Land Identification Regulations*, P.E.I. EC710/77.

[66] *Ibid.*, s.3.

[67] *Ibid.*, s.1.

[68] *Ibid.*, s.5(1).

E. GENERAL RECOMMENDATIONS

1. **Amend existing legislation or draft two new statutes to adequately protect species and spaces. Sustainable development issues should be addressed separately from the species and spaces legislation.**

F. SPECIFIC RECOMMENDATIONS

1. **Ensure that the regulations adopted pursuant to the *Fish and Game Protection Act* designating fish and wildlife to be protected is updated regularly in order to protect as many species as possible.**

2. **Add protection of fish and wildlife as a purpose as important as angling and hunting for the creation of fishing preserves and shooting preserves in the *Fish and Game Protection Act.***

3. **A *Protection of Flora Act* should be enacted to provide for the protection of various species throughout the province and not only in certain protected spaces.**

4. **Amend the *Natural Areas Protection Act* to add provisions ensuring ecological integrity around protected areas, as well as provisions establishing appropriate minimum size criteria.**

5. **Enact a *Beaches Protection Act* which will have as primary goal biodiversity conservation.**

6. **Provide a legislative mechanism to provide for a terrestrial and marine protected areas network on private land and Crown land.**

7. **Include restoration and rehabilitation provisions in P.E.I. legislation.**

NEWFOUNDLAND/LABRADOR

Nathalie Bernard*

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A. INTRODUCTION

Numerous statutes fundamental to conserve and protect biodiversity are absent from Newfoundland legislation. For instance, the province has not enacted a *Biodiversity Conservation Act*, an *Endangered Species Act*, *Wetland Protection Act*, or a *Marine Areas Protection Act*. However, Newfoundland has embarked on a project to extensively amend its existing environmental legislation. Indeed, Newfoundland is looking at consolidating our several pieces of environmental legislation into one omnibus Act but this initiative has not been completed and it is not clear when it will be.[1]

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[1] John Pratt, Barrister and Solicitor, White Ottenheimer & Baker, personal communication, April 1996.

B. WILDLIFE

In the absence of an *Endangered Species Act*, the *Wild Life Act*[2] remains the main statute affording some protection to wild life and fish in the province. "Wild life" is defined as any wild animal or bird to which this Act or regulations apply and includes furs, skins, parts and eggs[3]. "Fish" means freshwater fish and fish which run up from the sea into inland water[4]. If this Act is to protect biodiversity, it is recommended that the definition of wild life be amended to include all plants.

This Act is not very detailed when addressing the issue of wild life conservation other than that the Minister shall have the management and control of measures for the protection, preservation and propagation of wild life[5]. The Minister also has the power to make regulations to prohibit hunting, taking or killing wild life, to set aside reserves in which wild life may not be hunted or may be hunted subject to conditions, to prevent the disturbance of wild life in reserved areas, in wild life parks or other specified places, to prevent obstruction or pollution of non-tidal water frequented by fish, and to protect, preserve, propagate wild life and control shooting and hunting[6].

The balance of the Act, the *Wild Life Regulations*[7] and the *Wild Life Parks Regulations*[8] focus on regulating the hunting, catching, importing and exporting of wild life through the use of licences, permits, search and seizures. Nevertheless, it is worth mentioning section 64 of the *Wild Life Regulations* which states that with respect to any wild life species that is not named in the annual hunting or trapping orders, there is no open season. This is an application of the precautionary principle in that hunting or trapping activities of wild life species that have not been regulated, for lack of data or for other reasons, are prohibited until the impact of such activities can be assessed.

As for plants, the *Wild Life (Reserve) Regulations*[9], prohibits the cutting or

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2 *Wild Life Act*, R.S.Nfld 1990, c. W-8.

3 *Ibid.*, s.2(q).

4 *Ibid.*, s.2(b).

5 *Ibid.*, s.5.

6 *Ibid.*, s.7(a),(g),(j),(k),(ee).

7 *Wild Life Regulations*, Nfld. 17/84.

8 *Wild Life Parks Regulations*, Nfld. 276/80.

9 *Wild Life (Reserve) Regulations*, Nfld. 128/90.

removal of live trees, the picking of wild flowers or removal of shrubs or plants, the removal of sand, stone and gravel, without permission. However, the statute clearly exempts private land owners from the obligations imposed by these regulations.

The other relevant piece of legislation is the *Plant Protection Act*[10] which does not seem to have been enacted with biodiversity conservation in mind but does have the effect of protecting plants. "Plant" is defined as a member of the plant kingdom and a part or product of it where the part or product is held or used for reproductive purposes[11]. Section 3 prohibits the bringing into the province, the transporting within the province, the exchanging , selling or disposing of a plant, container, soil, machinery, equipment, vehicle that is infected or infested with a pest. The scope of protection under this Act covers only the situation where contaminated plants, containers, soils, etc... may endangered healthy plants in the province. It is recommended that the protection be extended to activities of humans that although they do not involve infested plants have a detrimental effect on the survival of plants in the province.

Many of these wildlife issues are being addressed in the *National Approach to Endangered Species Conservation in Canada*. However, there is still some concern as this approach proposes a mandatory listing process of endangered species (and various other categories) but there is no requirement for any minimum mandatory response action to be taken. Although there may be justification for recognizing varying abilities between jurisdictions that would permit one jurisdiction to exceed a minimum required response action, it is recommended that there must be some uniform minimum standard for response actions. Some of the following response actions should be included in provincial endangered species legislation:

- prohibit the killing, possessing, trafficking or damaging the specified plant or animal;
- prohibit any activity that adversely affects the habitat of the specified plant or animal on Crown private land;
- provide authority to define land uses through zoning that are compatible with the specified plant or animals needs; and
- provide adequate penalties for those who contravene provisions of the legislation.

An Endangered Species Act which did not require any of the 10 measures listed

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[10] *Plant Protection Act*, R.S.Nfld 1990, c. P-16.

[11] *Ibid.*, s.2(h).

would not be an improvement on the present situation.

C. PROTECTED AREAS AND HABITAT

The province's Task Force on Parks and Reserves strongly recommended that an official systems plan to guide the province's conservation work be promptly adopted and be in action by the fall of 1995[12]. Until that time, the key statute for protection of natural areas is the *Wilderness and Ecological Reserves Act*[13]. Furthermore, this Act indirectly contributes to conserve biodiversity through protection of land. The scope of this legislation is potentially broad: it may apply to all land, including water[14], in the province, notwithstanding another Act or law in the province permitting the use or disposition of or access to land[15]. In the event private land is included in the area designated as a reserve, the Minister may make an agreement with the owner of such land or expropriate the land[16]. This, in fact, constitutes a means to conserve biodiversity on private land since such agreements would most likely include easements or restrictive covenants.

Areas of the province that are subject to no or little human activity may be set aside as wilderness reserves for four purposes:

> (a) to provide for the continued existence of those areas as large wilderness areas to which people may come to hunt, fish, travel and experience and appreciate a natural environment;
>
> (b) to allow within those areas undisturbed interactions of living things and their environment;
>
> (c) to preserve those large areas that may be necessary for the continued survival of a particular species; or
>
> (d) to protect areas with primitive or extraordinary characteristics[17].

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[12] Endangered Spaces Progress Report 94-95, no.5.

[13] *Wilderness and Ecological Reserves Act*, R.S. Nfld. 1990 c. W-9.

[14] *Ibid.*, s.19 which provides that Bird sanctuaries listed in a Schedule to the Act are considered reserves and include water around the sanctuaries.

[15] *Ibid.*, s.13.

[16] *Ibid.*, s.23.

[17] *Ibid.*, s.4.

Areas of the province that contain a representative or unique ecosystem, species or natural phenomena may be set aside as ecological reserves for seven purposes:

(a) to provide for scientific research and educational purposes in aspects of the natural environment;

(b) to preserve the habitat of an animal or plant species that is rare or endangered;

(c) to provide standards against which the effects of development in other areas may be measured;

(d) to provide an opportunity for study of the recovery of ecosystems from the effects of modification by human beings;

(e) to preserve rare botanical, zoological, geological or geographical characteristics;

(f) to preserve representatives of distinct ecosystems in the province; or

(g) to preserve organisms in their natural habitat to ensure the preservation of their gene pools[18].

It is recommended that the *Wilderness and Ecological Reserves Act* be amended to impose an obligation on the Minister to exercise his/her powers.

The power of the Minister to order that an endangered area be established as an emergency reserve could be a very effective tool to **prevent** the destruction of biodiversity as long as this power is exercised by the Minister[19].

Numerous activities are prohibited in wilderness reserves, including construction, cutting or logging trees, agriculture, mining, prospecting or claims staking, altering the course of water, using motorized vehicles, landing aircraft, and conducting a spraying program unless approved[20]. In ecological reserves, the same activities are prohibited along with fishing, hunting, trapping, removing or destroying a plant, animal, fossil, and introducing a plant or animal species[21].

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[18] *Ibid.*, s.5.

[19] *Ibid.*, s.22.

[20] *Ibid.*, s.24(1),(2).

[21] *Ibid.*, s.24(3).

Another significant feature of this Act is the holding of public hearings to consider submissions, representations and objections respecting the establishment of a reserve[22]. Despite the many positive aspects of this Act, it is lacking minimum size criteria as to the creation of protected areas, therefore allowing for small areas to be selected. It is recommended that provisions imposing minimum size criteria be included in the Act. Further, it is recommended that more reserves be established under this Act[23].

The *Wild Life (Reserve) Regulations*[24] also provide for the establishment of protected areas (wilderness area, bird sanctuary, game sanctuary, game reserve) in which wild life may not be hunted, killed, taken, disturbed except in accordance with these regulations and within which camping and travelling shall not be permitted except in accordance with these regulations[25]. Other prohibited acts are the pollution and obstruction of streams or other bodies of water, the removal of bark or rind from any live tree, the cutting or removal of live trees, the picking of wild flowers, the removal of shrubs or plants, and, the removal of sand, stone and gravel. Again, this statute protects biodiversity indirectly through land protection. Furthermore, the activities above referred to are only prohibited on public lands: private landowners within a reserve may use and enjoy their land in the same manner as if these regulations had not been passed[26]. Biodiversity conservation through land protection cannot be fully achieved unless all lands are protected. It is recommended that steps be taken to address the void caused by exempting private landowners. So far, only two wild life reserves have been created; more should be established.

The *Lands Act*[27] provides for the establishment of "special management areas". However, there are no provisions as to the purpose for the establishment of those areas and as to selection criteria. It is recommended that such provisions be added to the Act. Certain activities are prohibited through regulations in those special management areas even on private lands[28]. More importantly, restoration orders may be issued against

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[22] *Ibid.*, s.16.

[23] So far, only 2 wilderness reserves and 6 ecological reserves have been established.

[24] *Wild Life (Reserve) Regulations*, Nfld. 128/90.

[25] *Ibid.*, s.3.

[26] *Ibid.*, s.13.

[27] *Lands Act*, S.Nfld 1991, c.36., s.56-57.

[28] *Ibid.*, s.59.

a contravener[29]. This Act could be useful if used to protect **natural** areas for biodiversity conservation purposes. So far, the only special management area established is Marble Mountain which is the responsibility of the Minister of Tourism and Culture[30]. A number of activities are prohibited in the area[31], however, this area is not protected for biodiversity conservation concerns, but for tourism and recreation concerns. It is recommended that more special management areas be established.

Finally, two other statutes provide for the establishment of some type of protected area. Under the *Provincial Parks Act*[32], an area may be designated as a provincial park and made available for the public for use as a recreational and picnic site[33], and under the *Urban and Rural Planning Act*[34], an area of natural beauty or amenity may be designated as a protected area[35]. However, these statutes do not create "protected areas" within the true sense of the definition and cannot be viewed as promoting biodiversity conservation. They are based on recreation, aesthetic and convenience concerns.

D. RESTORATION AND REHABILITATION

The restoration and rehabilitation of degraded ecosystems and species issue is clearly not systematically addressed in the province's legislation. Very few statutes contain restoration and rehabilitation provisions. One of them is the *Wilderness and Ecological Reserves Act*[36] which provides that a person convicted for an offence involving damage to land included in a reserve, may be ordered to restore that land[37].

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[29] *Ibid.*, s.62(3).

[30] *Marble Mountain Special Management Area Regulations*, 139/93, s.2.

[31] *Ibid.*, s.5.

[32] *Provincial Parks Act*, R.S.Nfld 1990, c. P-32.

[33] *Ibid.*, s.4.

[34] *Urban and Rural Planning Act*, R.S.Nfld 1990, c. U-7.

[35] *Ibid.*, s.58.

[36] *Wilderness and Ecological Reserves Act*, R.S.Nfld 1990, c. W-9.

[37] *Ibid.*, s. 26(2).

Under the *Department of Environment and Lands Act*[38], the Minister may issue orders to protect the environment[39] from a condition that is causing or is likely to cause pollution, and to prevent, restrict, or prohibit any activity, and may make an order stopping works or operations[40]. This section should include remediation, rehabilitation and clean up orders. Pursuant to section 33(1)(k), the Lieutenant Governor in Council **may** make regulations requiring a person who has caused a body of water or soil to become polluted or unwholesome, to cleanse, disinfect or purify it at her/his own cost and expense. This section is too narrow; it only protects water and soil. It should include air, wild life, and plants. Subsection 33(1)(y) enables the Lieutenant Governor in Council to make regulations[41] providing for the issuance by the Minister of orders designed to prevent or remedy the pollution or rendering unwholesome of the air, soil, or body of water. This section does not include wild life and plants. It is recommended that the *Department of Environment and Lands Act* be amended to empower the Minister, directly in the Act, to issue restoration and rehabilitation orders.

Finally, under the *Environmental Assessment Act*[42], where approval for an undertaking has been given to a proponent, the Minister may require the proponent to carry out environmental monitoring and rehabilitation studies and programs in order to determine the effectiveness of mitigation measures and to restore the affected environment to ecologically and socially acceptable levels[43].

This statute extends to all projects with potential environmental impacts in Newfoundland and, thus, differs significantly from other environmental assessment legislation in Canada which is applied selectively. The Newfounland Environmental Asessment Act is currently under review and the contemplated changes to the statutes

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[38] *Department of Environment and Lands Act*, R.S.Nfld 1990, c. D-11.

[39] Strangely, the Act does not define "environment". It is recommended that such a definition be added to the Act and include components of biodiversity.

[40] *Department of Environment and Lands Act*, R.S.Nfld 1990, c. D-11, s. 28.

[41] So far, two sets of regulations enable the Minister to issue restoration and rehabilitation orders: Air Pollution Control Regulations 26/81 and Storage and Handling of Gasoline and Associated Products Regulations 258/82.

[42] *Environmental Assessment Act*, R.S.Nfld 1990, c. E-14.

[43] *Ibid.*, s. 34.

are included in a Government of Newfoundland and Labrador White Paper.[44] There are serious concerns about the proposed changes in that they appear to take many of the strengths out of the existing legislation without enhancing its ability to protect the environment.[45]

E. SUSTAINABLE USE OF BIOLOGICAL RESOURCES

Two main resources, forests and water, attract attention in the province's legislation. The *Forest Protection Act*[46] aims at establishing an association - Newfoundland and Labrador Forest Protection Association - of companies and persons owning or interested in forest land. The object of the association is to develop and maintain forest conservation and programs of education and publicity designed to improve and perpetuate the forests of the province[47]. This Act aims at protecting the forest resource and provides a way to protect forests on private lands.

The *Forestry Act*[48] deals extensively with forest management on Crown lands. Every five years the Minister shall prepare a timber resource analysis and a forest management strategy for the province[49]. The Minister may proclaim areas of forest lands as forest management districts for which a forest management plan shall be prepared[50] and an annual allowable cut shall be determined[51]. Timber production forests shall be designated within a forest management district and shall be managed

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[44] *A White Paper on Proposed Reforms to the Environmental Assessment Process*, Government of Newfoundland and Labrador, Department of Environment, Honourable Kevin Aylward, Minister, October 1995.

[45] John Pratt, supra note 1. See also, *Environmental Assessment Reformation, Response of Environmentla Organizations to Proposed Reforms to the Newfoundland and Labrador Environmental Assessment Process*, Prepared by Shelly Bryant on behalf of member groups of the *Newfoundland and Labrador Legislation Caucus*, January 1996.

[46] *Forest Protection Act*, R.S.Nfld 1990, c. F-22.

[47] *Ibid.*, s.2.

[48] *Forestry Act*, R.S.Nfld 1990, c. F-23.

[49] *Ibid.*, s. 6.

[50] *Ibid.*, s. 7.

[51] *Ibid.*, s. 9.

in accordance with the principles of sustained yield forest management[52]. A Crown timber licence may be issued to a person who has entered into a forest management agreement with the Minister providing that the area of Crown land will be managed in accordance with the principles of sustained yield forest management[53]. Also, the Minister may issue a cutting permit to cut timber on Crown lands or public lands which **may** contain provisions respecting the safeguarding and protection of the environment[54].

Part V of the Act entitled "Forest Protection" aims at the protection of the forest on Crown lands, public lands or privately owned lands[55]. To achieve this goal, the Minister **may** restrict travel in an area of forest land to reduce the probability of wild fire[56], and may authorize the use of pesticide or methods of biological control in measures to protect or manage forests[57]. It is questionable whether the use of pesticide contributes to the sustainable use of biological resources. The Act also imposes the obligation to obtain a permit to burn during forest fire season and absolutely prohibits the burning and lighting of fires in forest land[58].

In sum, the primary goal of the *Forestry Act* is the protection of the forest and the sustainable use of this resource. The emphasis is on commercially significant elements at the expense of non-commercially significant elements. For instance, the *Forestry Act* does not consider the impact of timber harvesting, fire or pesticides on wild life. It is recommended that biodiversity conservation provisions be added to the *Forestry Act.*

As for water resources, pursuant to the *Department of Environment and Lands Act*[59], the Minister has the supervision, control and direction of matters relating to

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[52] *Ibid.*, s. 8. The Act defines "sustained yield forest management" as a policy, method or management plan to provide for an optimum continuous supply of timber in a manner consistent with other resource management objectives, sound environmental practices and sustainable development.

[53] *Ibid.*, s. 15, 17, 18.

[54] *Ibid.*, s. 27,28.

[55] *Ibid.*, s. 88.

[56] *Ibid.*, s.93.

[57] *Ibid.*, s.90.

[58] *Ibid.*, s.98,99.

[59] *Department of Environment and Lands Act*, R.S.Nfld 1990, c. D-11.

conservation, development, control, improvement and proper utilization of the water resources of the province[60]. In particular, the Minister **may** order studies of bodies of water assembling the fullest possible information respecting matters the Minister considers advisable in the interest of the **present or future conservation**, development, control, improvement or proper utilization[61]. Thus, the Minister possesses important powers to promote the sustainable use of water but this is not sufficient. It is recommended that the Minister be responsible for ensuring the sustainable use of water but also of other resources.

Finally, section 3 of the *Environmental Assessment Act*[62] states that the purpose of the Act is to facilitate the **wise** management of the natural resources of the province. "Wise" may mean economically wise or environmentally wise. Therefore, this section should be amended to replace "wise" with "sustainable".

F. OTHER ISSUES

1. Human Population and Settlement

The *Urban and Rural Planning Act*[63] demonstrates no concerns for environmental and biodiversity conservation aspects of development. For instance, section 5 states that the provincial planning Board shall conduct studies with respect to the physical, economic and social aspects of development. In addition, section 14 provides that a municipal plan prepared by a council shall be prepared on the basis of surveys and studies of land use, population growth, the economic base of the municipality, its present and future transportation and communication needs, public services, social services and other factors that are relevant to the preparation of such municipal plan. Moreover, a municipal plan shall contain proposals for the general development of the municipal planning area so as to achieve the common well-being of the community and to conserve the financial and material resources of the municipal planning area[64]. "Common well-being" might be interpreted to encompass environmental protection for the benefit of humans. It is questionable whether it could include environmental protection for the benefit of the environment itself and for conservation of biodiversity. Also, the section addresses the conservation of financial

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[60] *Ibid.*, s.6.

[61] *Ibid.*, s.20.

[62] *Environmental Assessment Act*, R.S.Nfld 1990, c. E-14.

[63] *Urban and Rural Planning Act*, R.S.Nfld 1990, c. U-7.

[64] *Ibid.*, s.14(2).

and material resources; natural and biological resources should be added to that list. It is recommended that the *Urban and Rural Planning Act* be amended to include environmental and biodiversity conservation concerns in its development planning aspects.

Pursuant to the *Historic Resources Act*[65], the Minister is responsible for the protection and preservation of historic resources in the province[66]. "Historic resource" means a work of **nature** or of humans that is primarily of value for its archaeological, prehistoric, historic, cultural, **natural**, scientific or aesthetic interest including an archaeological, prehistoric, historic or **natural site**, structure or object[67]. The Minister may order that a person carries out an assessment if an undertaking or operation is likely to result in the alteration, damage or destruction or adversely affect historic resources, and to undertake those preservative or protective measures that the Minister considers necessary[68]. Section 30 provides for entering into easements or restrictive covenants to protect historical resources. In theory, the *Historic Resources Act* could protect biodiversity in that it aims at protecting a work of nature or a natural site that is of value for natural interest. However, the Act seems to focus on the built environment. It is recommended that the *Historic Resource Act* be amended to clearly state biodiversity conservation purposes.

G. GENERAL RECOMMENDATIONS

1. **Amend legislation or draft two new statutes to adequately protect species and spaces. Sustainable development issues should be addressed separately from the species and spaces legislation.**

H. SPECIFIC RECOMMENDATIONS

1. **Include all plants in the definition of "wild life" in the *Wild Life Act*.**

2. **With respect to the *Wild Life (Reserve) Regulations*, steps must be taken to address the void caused by exempting private land owners from the obligations imposed by these regulations.**

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[65] *Historic Resources Act*, R.S.Nfld 1990, c. H-4.

[66] *Ibid.*, s.4.

[67] *Ibid.*, s.2.

[68] *Ibid.*, s.13.

3. With respect to the *Plant Protection Act*, broaden its scope to activities of humans which have a detrimental effect on plants in the province.

4. With respect to the *National Approach to Endangered Species Conservation in Canada*, ensure that minimum response actions are rendered mandatory.

5. With respect to the *Wilderness and Ecological Reserves Act*, amend the Act so that the Minister shall exercise the powers given to him/her.

6. With respect to the *Wilderness and Ecological Reserves Act*, include provisions imposing minimum size criteria concerning the creation of protected areas.

7. With respect to the *Wilderness and Ecological Reserves Act*, create more reserves.

8. With respect to the *Wild Life (Reserve) Regulations*, create more reserves.

9. With respect to the *Lands Act*, add a purpose section for the establishment of "special management areas" providing for biodiversity conservation objectives and create special management areas for biodiversity conservation purposes.

10. Amend the *Department of Environment and Lands Act* to empower the Minister, directly in the Act, to issue restoration and rehabilitation orders.

11. Define the term "Environment" in the *Department of Environment and Lands Act* and ensure that the definition includes components of biodiversity.

12. Add biodiversity conservation provisions to the *Forestry Act*.

13. With respect to the *Department of Environment and Lands Act*, impose on the Minister the obligation to ensure the sustainable use of the province's resources (not only water).

14. Define "wise" management in the *Environmental Assessment Act* to include sustainable use of resources.

15. Amend the *Urban and Rural Planning Act* to include environmental and biodiversity conservation concerns in its development planning aspects.

16. Amend the *Historic Resource Act* to clearly state biodiversity conservation purposes.

CONCLUSIONS AND MUSINGS

Ian Attridge*

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C. FINAL THOUGHTS 478

Biodiversity law and policy in Canada is a very broad and complex subject. The *Canadian Biodiversity Strategy*, Strategic Direction 4.7, calls upon all jurisdictions in Canada to examine and take steps to improve legislation in support of biodiversity. Rising to this challenge, the chapters presented in this report provide a strong initial treatment of the subject. In Canada, such a focused compilation and analysis has not been drawn together before, although the Canadian Bar Association's 1990 *Sustainable Development in Canada: Options for Law Reform* did canvass some of the topic before the *Biodiversity Convention* was drafted[1]. Only a few provinces have previously benefitted from substantial reviews of the subject[2]. Consequently, much more work and

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1 Canadian Bar Association, *Sustainable Development in Canada: Options for Law Reform* (Ottawa: Canadian Bar Association, 1990).

2 Key British Columbia and Ontario examples include: Calvin Sandborn (ed.), *Law Reform for Sustainable Development in British Columbia* (Vancouver: Canadian Bar Association, British Columbia Branch, Sustainable Development Committee, 1990); Colin Rankin and Michael M'Gonigle, "Legislation for Biological Diversity: A Review and Proposal for British Columbia", 25 *University of British Columbia Law Review* 277 (1991); and David Estrin and John Swaigen (eds.), *Environment on Trial* (Toronto: Emond Montgomery and the Canadian Institute for Environmental Law and Policy, 1993).

discussion is needed to move such suggestions into a comprehensive and effective system governing human interactions with biodiversity across Canada.

A. THEMES AND CONCLUSIONS

Due to its broad scope, the report necessarily only begins to elaborate the legal and policy issues involved with the three goals of the *Convention on Biological Diversity*: biodiversity conservation, sustainable use and equitable sharing. Nonetheless, certain themes and conclusions can be discerned, which further point towards some institutional issues.

The first point to be emphasized is that Canada is far from achieving the objectives of the *Biodiversity Convention*. Biodiversity conservation, sustainable use and equitable sharing remain strong concerns across the country, both in terms of continuing negative impacts and with respect to public interests and efforts. Gaps and weaknesses in Canada's delivery upon legal and policy matters set forth in the Convention point to the need for further work and progress on this front, and the policy-relevant scientific research and support for such decision-making. To meet commitments in the Convention, Canada in particular needs:

- federal and some provincial legislation and policies on species at risk;
- strengthening of environmental assessment procedures;
- comprehensive and environment- and health-oriented legislation relating to biotechnology;
- comprehensive law and policy for wild, especially non-commercial, plant species conservation, both *in situ* and *ex situ*;
- comprehensive analysis and development of law and policy on ownership, access, use and conservation of genetic resources, as well as further biosafety measures; and
- mechanisms to ensure the integrity within and surrounding protected areas.

Numerous other legal and policy needs are highlighted in the individual chapters, and compiled into a Summary of Recommendations in Appendix B.

> On its way towards sustainable development, Canada faces three challenges: difficulties in translating the concept into practical changes in economic decisions and practices and in economic signals; consumption and production patterns, which are often intensive in their use of natural resources; and increased concerns regarding the economy, employment and public deficits, which tend to reduce the prominence of environmental

matters.[3]

While such concerns may overshadow efforts to address biodiversity concerns, a recent study reported that Canada ranked high in Civil Institutions, and that "environmental laws allow business to remain competitive"[4]. Thus, development of more a more comprehensive legal and policy package in Canada need not be seen to be in conflict with economic and business objectives.

1. Constitutional Considerations

From a constitutional standpoint, Canada operates under a framework ill-suited and outdated for biodiversity purposes. Jurisdiction is fragmented. In some cases, such as agriculture and fish, this leaves significant overlaps which result either in a complex, duplicative and often inefficient regulatory regime, or in excuses for not assuming authority and dealing with substantial issues. Laurie Henderson identifies this as a key factor in weak habitat protection in her chapter on the Territories. Fisheries is a notorious example, where upland activities are within provincial jurisdiction but affected fish within the rivers are federal matters[5]. In other situations, gaps are apparent in our constitutional division of powers, such as for genetic diversity, which then have been only partly addressed under other heads of authority.

Given this web of authority, cooperative and coordinated federal-provincial relations are obviously critical. Québec's push towards separation from the country has created a difficult dynamic: national unity takes centre stage and the federal government devolves many powers to all the provinces and thereby attempts to placate Québec's demands. The jurisdictional battles for power and constitutional gridlock have consistently undermined, weakened and delayed any new initiatives (eg. the *Canadian*

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[3] Organization for Economic Cooperation and Development, *Environmental Performance Reviews: Canada* (Paris: OECD, 1995), at p.201.

[4] David Crane, "Canada Edges Ahead in Competition Report", *Toronto Star*, May 31 1996, pp.E1 and E3, citing the World Economic Forum's "Global Competitiveness Report".

[5] The Supreme Court of Canada in *Fowler* v. *R.*, [1980] 2 S.C.R. 213 held that a section of the federal *Fisheries Act* could not prohibit forestry operations which might affect fish. During an election campaign, British Columbia's Premier Clark announced the province's willingness to take on responsibilities for protecting fish habitat, claiming the federal government has been unable to do so. CBC Radio national news, May 9 1996.

Biodiversity Strategy and new endangered species legislation), and continues to seriously affect innovation and creativity in approaches to conserving biodiversity[6]. This is particularly true when facing the greatest threat to biodiversity, the loss of habitat, which regularly gets caught between primary provincial responsibility and federal programs that are dependent upon it.

Beyond jurisdictional entanglement, there is no explicit principle declared within Canada's constitution which establishes a direct conservation, sustainable use and equitable sharing touchstone for the nation. Nonetheless, there are a few indirect references with potential for affecting biodiversity. First, the *Charter of Rights and Freedom*'s section 7 provides everyone with the constitutional "right to life, liberty and security of person", and it could be argued that this includes a right to environmental quality, including biodiversity and resulting ecological security[7]. Second, certain wildlife and protected areas provisions and principles within land claims agreements can assume constitutional status through recognition under section 35 of the *Constitution Act, 1982.* Third, the "peace, order and good government" power and the "national concern" test give rise to general federal authority, as discussed in the Introduction.

From a biodiversity perspective, the Charlottetown Accord proposed for the Constitution a realigned division of powers, a Senate veto on natural resource taxation, and the constitutional entrenchment of a non-justiciable statement on "sustainable and equitable development" and "protecting, preserving and sustaining the integrity of the environment for present and future generations". These words would have been consistent with the *Biodiversity Convention* and its objectives, but would have had no legal effect. Together, the many items in the package were subjected to a national referendum in 1992. However, the Accord was soundly defeated and a general political chill on constitutional reform has been in place ever since.

Canada needs to publicly sort out its constitutional paralysis, without falling into the traps of abdication of responsibility nor harmonization to the most minimum of standards. A more contemporary and imperative biodiversity principle should be entrenched into Canada's constitution, as other countries and some U.S. states have

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[6] Ann Dale, Senior Associate, Sustainable Development Research Institute at the University of British Columbia, and the Canadian Biodiversity Institute, personal communication, May 10 1996.

[7] See *Operation Dismantle* v. *Canada* (1985), [1985] 1 S.C.R. 441, 18 D.L.R. (4th) 481; and *Energy Probe* v. *Canada (A.G.)* (1994), 17 O.R. (3d) 717, 2 C.E.L.R.(N.S.) 304 (Ont.H.C.).

done for conservation or related purposes[8]. However politically, compared with the current national unity crisis, growing provincial demands and an ongoing need to address Aboriginal questions, reforms for biodiversity will be left as a low priority. Given provincial demands, this may be just as well in order to sustain a strong federal presence. Yet opportunities may arise to weave biodiversity concerns into proposals in these other areas. British Columbia's *Land Use Charter* may provide a model for incorporating biodiversity as a principle, perhaps with concurrent federal and provincial jurisdiction[9].

2. Wildlife

As reiterated throughout these chapters, Canada's wildlife laws have arisen from, and in most part remain oriented towards, the extractive use or taking of animal wildlife as a resource: hunting, trapping and fishing. This long history has resulted in an often complex regulatory scheme for game species. Unfortunately, the implementation and enforcement of this scheme has in some cases been inadequate to conserve some species, especially those subject to illicit commercial trade, such as bears, falcons and butterflies.

In contrast are the few provisions and programs for non-game species. These have a relatively unelaborate structure and minor penalties and enforcement mechanisms. This again leads to poor implementation of the scheme, beyond any other deficiencies that might exist. Gaps also exist for certain classes of species, whether through lack of strong endangered species legislation, or an incomplete recognition of the full range of species which could and should benefit from the legislation. While a species-by-species approach is necessary in some cases, increasingly commentators are calling for more emphasis on the "ecosystem approach", and thereby to deal with concerns and opportunities for all species in an integrated fashion over the landscape.

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[8] Cyrille de Klemm, *Area-Based Conservation and the Law* (draft) (Bonn, Germany: The World Conservation Union, Environmental Law Centre, 1992), pp.46-47. For example, Brazil and some of its States have identified protected areas within their constitutions, as New York State has done for keeping the Adirondack State Park "forever wild"; Switzerland's 1987 constitutional amendment requires protection for marshlands of national interest; apparently, many modern constitutions now provide for the conservation of the natural environment.

[9] Calvin Sandborn, Barrister and Solicitor, personal communication, May 8 1996. B.C.'s *Land Use Charter* was developed through its Commission on Resources and Environment (CORE) and public consultation, and has been adopted as Cabinet policy to guide land use.

What is clear from the various jurisdictional chapters is that the law and policy for the conservation of non-commercial and especially non-woody plants is essentially non-existent. Restoration by tree planting may be encouraged or habitat (ie. primarily plants) retained for animal species, but few provisions exist to directly conserve wildflowers and other herbaceous plants. Weed control statutes will require eradication of some "noxious" plants, often non-indigenous, invasive (and abundant) species, but may unintentionally include native wild plants or hinder restoration efforts. Vegetation clearing, wild edible collecting, rare plants and the like may give rise to some concerns, and thus the development of approaches to plant conservation deserves more treatment[10].

The general lack of plant conservation legislation is directly attributable to the common law concept that plants growing out of the soil are the property of the landowner. Governments then are wary about regulating this aspect of biodiversity and affecting rights to private property. Consequently, stewardship and voluntary methods need to be further refined and supported by our legal system to complement regulatory means and allow citizens and organizations to expand their private efforts on this front. Law and policy can assist by enabling creative long-term agreements (eg. conservation covenants, easements and servitudes), guiding government dispositions, and providing financial incentives (eg. property and income tax measures).

On a more philosophical note, the concept of conserving animal and plant species for their own sakes, rather than for human consumption or appreciation, is referenced in the *Convention*'s Preamble, *Canadian Biodiversity Strategy* and B.C.'s *Land Use Charter*, and is gaining increasing currency. While much of the discussion of the concept has remained at the philosophical level, the notion -- or the attitude of humility -- can take on practical policy and legal form in some instances. For example, the concept could be entrenched as a principle, either in the preamble as in the Convention, or as a more clearly interpretive section or dedication statement[11]. A number of means to operationalize the concept might also be included, perhaps adapting concepts of privacy, non-human representation through an advocate or voice[12], long-term planning horizons

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[10] For a U.S. perspective, see Faith Campbell, "Legal Protection of Plants in the United States", 6 *Pace Environmental Law Review* 1 (1988).

[11] Such dedication statements are found in numerous park statutes, such as section 4 of the *National Parks Act*, R.S.C. 1985, c.N-14. These statements often make reference to "future generations", and this could be clarified to include future generations of all species.

[12] See Christopher Stone's classic "Should Trees Could Have Standing? Toward Legal Rights for Natural Objects", 45 *S. Calif. L. Rev.* 450 (1972); and also Starhawk's recent book, *The Fifth Sacred Thing* (New York: Bantam Books, 1993), whereby the four sacred elements of earth, wind, water and fire are given

(for example, the seven generations consideration traditional in some Aboriginal cultures), or other such means.

3. Protected Areas

On the protected areas front, Canada has developed a world-renowned system of national and provincial areas. While substantial policy guides many of these systems, little of this is reflected in the guiding statutes. Thus protected area management is largely a discretionary exercise by governments. Such wide discretion has been predominant for a long time, and contrasts to the more detailed standards and procedures found within other fields of Canadian law or in equivalent U.S. statutes.

Park statutes are oriented towards visitor use, and contain few if any enforceable principles prescribing their biodiversity conservation role. Besides setting out classes of areas and perhaps a general indication of the purpose of such classes, almost none of the park statutes squarely address the concept of a system plan to achieve representation and conservation of a system of related places. Rarely do these laws deal with Aboriginal concerns and the *Convention*'s equitable sharing notion, nor its concept of relationship to surrounding land uses to ensure the ecological integrity of what are often mere postage stamp "islands of green".

Besides parks and ecological reserves, other protected areas generally have minimal legal authorization and even less direction, thus leading to *ad hoc* area establishment, planning and management. How such areas fit within a larger biodiversity conservation strategy, and relate to other protected sites and management authorities, have traditionally been unasked and certainly unanswered questions.

But this is changing. The World Wildlife Fund (Canada)'s Endangered Spaces Campaign has nudged governments into committing to complete representative protected areas systems by the year 2000. This has produced numerous governmental reviews, as well as site, system, policy and legal proposals to update the institutional frameworks for the range of protected areas found within a particular jurisdiction. Unfortunately, some of these jurisdictions are wavering from implementing such proposals, thus continuing to fall short of Canada's commitments under the *Convention*.

4. Sustainable Use

Similar to constitutional, protected areas and wildlife issues, the legal scheme for the sustainable use of biodiversity is complex, particularly in the fisheries, forestry and agricultural sectors. The various schemes have been primarily oriented towards ensuring

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voice by humans assuming the role of their animal representatives at the city council.

production and the generation of a strong economy, while biodiversity conservation and sustainable use have been relegated to lower and often implied priority. With the collapse of the cod fishery on the east coast, and the demands of the huge European market that forest and fur products be produced in a certified and sustainable manner, the folly of not ensuring sustainable use becomes only too apparent -- and economically destructive.

Resource management science based upon integrated, interdisciplinary, ecosystem-based and applied research is needed and necessary, along with traditional disciplinary approaches. An agenda and practice of policy-relevant science is essential to illuminate and inform policy options. A national biodiversity monitoring program, as exists in the U.S., and information sharing would enable scientists to determine trends and thereby lead others to respond to these early warnings and thus prevent costly damage to biodiversity[13]. Such scientific research should then lead to an open public collaboration on biodiversity values and drives the policy and planning process[14].

Yet science can only take us so far, and the integration of such diverse and often conflicting demands is often elusive. What is needed, then, are a codification of the lessons and principles learned over the years, and then the application of these to resource management questions. Some of these principles were articulated in the chapters, and include:

- anticipate and prevent harm or damage;
- take a precautionary approach to decisions with those proposing potentially harmful activities having the onus of proving that the activity is safe, and where there is an appropriate weight of evidence do not let the lack of full scientific certainty postpone measures to prevent environmental degradation (as endorsed in Principle 15 of the *Rio Declaration*);
- recognize scientific uncertainty and the limits of predictive science, and thus establish means for adaptive planning;
- ensure full-cost accounting, whereby market prices reflect external costs such as impacts upon biodiversity;
- prefer quality over quantity, resulting in more efficient and durable products at reduced economic and environmental costs;
- environmental impact assessment;
- live off the surplus, not the resource capital, so that populations and landscapes are sustained;

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[13] Ole Hendrickson, Natural Resources Canada, personal communication, April 10 1996.

[14] Nina-Marie Lister, Ph.D. candidate, Faculty of Environmental Studies, University of Waterloo (Ontario), personal communication, May 8 1996.

- establish cross-compliance between biodiversity and other socially-desirable objectives;
- consult and collaborate with and ensure participation of those people affected and involved with the resource, leading to fully informed decision making;
- respect nature and the rights of future generations (of other species as well as of humans).

A personal responsibility to limit demands on the earth's resources and take actions to reduce human populations can also be added to this list[15]. Such principles have been iterated in B.C.'s *Land Use Charter*, by various roundtables on the environment and the economy, in government or non-government conservation strategies or briefs, and supported and substantiated at length in numerous publications[16]. Most have become codified into B.C.'s *Land Use Charter*. To truly implement them is very challenging, but utterly necessary, due to our Western consumption-based lifestyle. As a society, genes, species and the very fabric in which this web of life exists are commodified and consumed; and we inflict this voracious appetite not only upon other species, but also upon our own. That there are limits to growth is conceptually simple and has been recognized in various forms for years and generations, but curbing our consumptive society and transforming it towards "sustainable use" or "sustainable development" will take a profound reordering of attitudes as well as perspectives, preferences, priorities, policies, politics, and production.

Such principles and lessons can help us along this path, but principles in themselves are not enough. They must be transcribed into procedures and substantive rights and responsibilities. These will take different forms within different sectors, and this report has only scratched the surface of this fundamental subject. Such legal mechanisms must ensure that the private and human interest, albeit worthwhile and important, does not overwhelm or further degrade the broader essentials to maintain the richness of life -- human and non-human -- on this planet.

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[15] Ted Mosquin, Ecospherics International Inc., personal communication, March 31 1996.

[16] For a further sampling of some of these principles, see *The Canadian Environmental Protection Act: An Agenda For Reform*, Submission to the Standing Committee on Environment and Sustainable Development on Behalf of Non-governmental Groups [many from the Canadian Environmental Network], November 1994, p.3; Jon Grant, "ORTEE: what has happened?", *RoundTable Talk: Communicating Sustainability in Ontario*, vol.2(1) Spring 1995, p.14; and Prince Edward Island Department of Natural Resources, *Conservation Strategy*, (Charlottetown: Department of Natural Resources, 1995).

Forestry has been an economic keystone in Canada from time immemorial. Shelters, watercraft, and medicines have long been derived by Aboriginal peoples from various species. Similarly, the British Navy once selected the tallest pines for its shipbuilding off of the east coast, followed by timber then smaller sawmill harvesting, and now focused primarily upon pulp operations throughout the boreal forest arcing across the nation. The increasingly small nature of the trees available to harvest is indicative of how unsustainable our practices have been. Biodiversity conservation should be an explicit goal of forestry management, policy and law, through such principles as sustainability of ecosystems, sustainability of the forest economy, participatory decision-making processes, shared stewardship, and an integrated approach to resource use and management[17]. Driven by changing values and their impacts upon both domestic and international markets, moves towards sustainable forestry practice, policy and law are progressing in British Columbia, Ontario, Québec and elsewhere.

In the agricultural sector, biodiversity and production objectives often diverge, although in many instances this need not be the case. Highlighted in the Federal chapter, a range of economic and other incentives have shifted agricultural production towards intensive cultivation and away from compatible biodiversity goals. These are being, and must be, fundamentally transformed in order to meet both sets of objectives. Enhanced government and private support for sustainable agriculture, the continued efforts of agriculture organizations, and enabling and non-legal measures all need to be part of a transition package. But this should be carried out with sensitivity to individual farmers and at a pace that recognizes their often long-standing connection with the land, their weakened economic stability, global trading forces, and the social patterns which ground and also depend upon this industry. To do otherwise would be to ensure strong and influential resistance to reform, resulting in ineffective implementation at best.

As we are constantly reminded through the media, the fishery is an industry in deep trouble. There is the loss of livelihoods along the east coast, miscalculations and near overharvesting on the west coast, and recent articles analyzing the subject in a number of leading environmental magazines. In some cases, Canada's conservation measures have been better than our neighbours', leading to a conservation subsidy to support this industry. Nearby, Alaska salmon runs are stronger than B.C.'s, but the U.S. Fish and Wildlife Service is considering listing the coho salmon as threatened along the California to Washington coast[18].

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[17] Monique M. Ross, *Forest Management in Canada* (Calgary: Canadian Institute of Resources Law, 1995), at page 315. The identification and monitoring of indicator species is another important component, using the U.S. *National Forest Management Act* as an example. Monique Ross, Research Associate, Canadian Institute of Resources Law, personal communication, April 2 1996.

[18] CBC Radio News, July 20, 1995.

Biodiversity conservation in Canada's marine areas is limited and not well developed, a point raised by several of the report's authors. These fishery failures draw attention to the need for protected areas and an organized system plan to establish areas, and provide special management measures for aquatic species, especially those at risk. This must be done in the context of integrated coastal zone management, and there remains the need to further develop the tools to achieve conservation and sustainable use along our shores.

Protected areas are important, large-scale means of conserving ecosystems, as well as serving as benchmarks to assess activities beyond their borders. While a few species may be protected within a park over a certain period, neither ourselves nor animals such as grizzly bears or wolves seem content with these boundaries. Climate change may make many of them ecologically irrelevant anyway. We all must travel through that surrounding landscape, and such special areas need to be linked to make such excursions easier. The long-term survival of populations and species is dependent upon the environmental resiliency and genetic interchange that results.

Neither protected areas nor species-specific programs will ensure the conservation of biodiversity in the long haul; it will be the full complement of measures and approaches, particularly where they can be integrated and coordinated over the wide landscape and include private lands. Ultimately, sustainable use is key to the survival of biodiversity. This will necessarily involve rules and regulations, but voluntary measures and economic incentives have a strong role to play, and their use is beginning to see a resurgence. Corporations are familiar with responding to incentives and opportunities, and community-based organizations such as land trusts are using such approaches to their great advantage, and are rapidly making headway on land conservation initiatives.

And where sustainable use has not occurred, then restoration and rehabilitation will be expected. We are learning more and gaining experience with naturalizing school yards, cleaning up contaminated sites, and restoring ecological health where we once degraded it. Our perspectives and legal and policy regime will then have to adapt to this new willingness and expertise in order that such efforts may flourish, and yet avoid needless harm to affected parties, such as agriculture. We need to adopt a landscape-level analysis to foster this integration.

B. THE PRACTICE OF BIODIVERSITY LAW AND POLICY

"Environmental law" has been in existence for many centuries, indeed millennia, but has only become a discrete body within Canadian statutory law since the beginning of the 1970s. Despite these early developments, the environmental practice of law has only received significant recognition in the legal profession during the last decade. This practice must be examined in order that the legal and policy analysis communities can make a more substantial contribution towards biodiversity than in the past.

While "environmental law" has developed into a coherent and well-recognized discipline, the scope of its practice has primarily focused upon pollution, waste management and environmental assessment[19]. There has been little recognition of the diversity of interests within the discipline, which is understandable given the large majority of lawyers whose practices deal principally with waste management and related environmental assessment issues. However, a closer examination of the scope of environmental law reveals that there are, at least, four major sub-divisions of the practice, only one of which is directly concerned with pollution and waste management. The other three consist of land use planning, natural resources, and biodiversity conservation law. The classification of any subject matter is always somewhat artificial, and these four sub-divisions of environmental law necessarily overlap and interrelate with each other, and other legal disciplines.

The reviews in the preceding chapters reveal the general, often unfocused, discretionary, frequently dated and sometimes outmoded approaches to biodiversity conservation law and policy across Canada. This stands in contrast to the law and policy within the related fields of natural resources and waste management, and certainly in other disciplines beyond "environmental law". It is useful to ponder why this may be so:

- is it related to public perception, where there is a longer, less immediate, and more complex chain of connection between conservation losses, its benefits and an individuals' perceived interests; does this mitigate the creation of "sound bites", and thus less political interest and support?
- coupled with rigorous enforcement policies and penalties in some jurisdictions, pollution offences may be seen as more significant (ie. health risks, damage done, and potential fines); are they thus contested more by experienced counsel on both sides, leading to more cases and decisions which further develop the law and create a dynamic of reform?
- are there less immediate and more diffuse financial benefits from conservation, thus less economic and legal interest?
- with less economic and legal interest, more longer-term and diffuse benefits, and Crown ownership of lands and wildlife, does law and policy in this area lie primarily within the hands of governments and various departments, with consequent fewer financial and public rewards?
- are conservation and biodiversity just more recently defined issues, and thus the public and the professions are less aware and educated about their implications?

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[19] One need only attend environmental law seminars or review the contents of environmental law texts and statute compendia to learn that indeed this is usually the case.

- are we still more interested in managed and accessible landscapes (eg. lawns, fields and tree farms) and managed wildlife (ie. zoos); is conservation and its philosophical base in human humility is too much of a challenge to our Western aesthetic, notions of nature as exotic, and desires to predict and control?
- is conservation seen as simply a constraint to the principal focus on growth, rather than having independent merit as a positive aspect of communities and their resources, and thus it receives less recognition and treatment?
- or are nature and conservation still seen as more intertwined and connected, more "feminine" or passive, and thus of less interest to the still male-dominated and individualistic legal and political professions?

It is certainly true that few biologists and ecologists become politicians, journalists and lawyers[20], and too many avoid the public and political aspects of conservation issues and decline to make their values explicit[21]. Consequently, their important observations, insights and concerns are less frequently brought into these public arenas. In contrast, many non-scientists expect scientific certainty and perfect linearity of cause and consequence - a Newtonian vision of a clockwork universe - and thus overlook the quantum and ecosystem realities that science continues to reveal.

Regardless of the reasons for the differences, biodiversity law and policy can benefit from the longer and more successful history of other related fields. Those of us working closely with the subject can examine the framework established for other concerns, and invite those persons familiar with such other fields to consider how biodiversity law and policy relates to them. While this discussion needs to occur across diverse legal and policy domains, biodiversity law and policy must be grounded within an understanding of ecological functions and principles, and be well aware of its social and economic context.

Some of the lessons which can be gleaned from an enhanced legal, science, social and economic interchange can include: concepts of conservation biology and landscape ecology (such as the need for connections between a system of large habitat areas); systems and thermodynamic theory informing an ecosystems approach and research agenda; how to mix federal, provincial, territorial and Aboriginal jurisdictions, and draw appropriate lines and establish efficient institutions to deal with this interplay; effective enforcement approaches, particularly separating advisory and enforcement

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[20] Although many patent lawyers need and appear to have strong scientific credentials, I suspect few have ecology training or experience.

[21] Nina-Marie Lister, supra note 14: Like medicine, conservation ecology is a normative practice.

officials, cross-compliance[22], offence and disposition record keeping, enforcement and sentencing powers[23], and preventive and undercover operations; voluntary, enabling and public education measures to bolster programs; ecological economics; and licensing, fund raising and administrative innovations[24].

Other lessons might be those focused upon the structure and support of the practice of biodiversity law and policy in Canada. Currently, there is very little teaching or training in the subject, especially at law schools. This must change, and "integrating themes and messages about biodiversity conservation and sustainable use of biological resources into the formal educational curriculum" will be important[25]. But opportunities for education must go beyond the "formal educational curriculum" to embrace on-going professional development and awareness for a broad range of interests[26]. Few Canadian legal materials and no law journal or reporter deal specifically with this field, although there may be occasional or peripheral treatment in more general environmental law and policy publications. Funding and development of such a periodical, scholarships, essay prizes, research fellowships, conferences and a speakers' roster could support awareness, interest and elaboration of this area as it gains more prominence.

C. FINAL THOUGHTS

Law and policy so often reflect society's larger values and structures. To shape these values and institutions, then, reforms can only lead and be ahead of such values and structures to a limited degree. There is a growing public interest in and concern for the conservation and sustainable use of biodiversity. Yet, the respective law and policy regime has only begun to respond to this change within society. The current capacity of our institutions of governance to effect significant change remains weak because of the

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[22] "Cross-compliance" links the requirements, benefits and penalties in one area with those in another.

[23] For example, recent federal wildlife legislation has built upon enforcement, sentencing and penalty powers available under pollution and waste management statutes.

[24] As an example, the land trust community is quickly turning to the social services sector for inspiration concerning management of charities, fundraising and tax incentives.

[25] *Canadian Biodiversity Strategy*, Strategic Direction 3.1(b).

[26] In another context, engineers might take ecology courses and thereby mitigate impacts of their projects on biodiversity in advance.

dominant organizational structures and decision-making modes[27]. Government decision-making is still opaque, often inaccessible and based on a positivist expert-driven rational model. Control-oriented management has led to increasingly brittle, rigid and separate structures, resulting in fragmentation and isolation of processes, economically perverse and ecologically damaging incentive patterns, and conflicts between the promotion of growth and the needs of human health, the environment and social justice[28].

As this review has demonstrated, the result is a complex yet incomplete web of biodiversity law and policy across Canada. Within this patchwork, there are still many gaps, weaknesses, compromises, oversights, outdated concepts, ineffective corners and limited implementation. Much of this array has developed independently, at different times and for diverse, often conflicting, purposes. Given this situation and in order to fully meet our country's commitments under the *Convention*, each jurisdiction will need to assess and address its legal and policy package as a whole and its linkages with other jurisdictions.

Collectively, Canadians through their governments have set a general agenda through the *Canadian Biodiversity Strategy*, although the more definite directions will emerge through the necessary development of implementation plans for each jurisdiction. These plans will clearly need to address law and policy, using these chapters as a strong foundation. Taking this step seriously, ensuring a strong federal role, and involving a wide spectrum of society will be essential.

Certain other institutions and actions can be suggested. In the legal profession, law reports and journals[29], Bar Association and Law Society education events and materials, and corporate policy development and compliance analysis need to incorporate biodiversity concerns. Within governments, inter-departmental analysis and cooperation, *Canadian Biodiversity Strategy* implementation strategies and action plans, federal sustainable development plans, and the like need to be advanced. In the private sector, organizations and individuals need to be more fully aware of their responsibilities for, and the opportunities and tools to conserve and wisely use, biodiversity.

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[27] Ann Dale, supra note 6, from a forthcoming book.

[28] Ibid.

[29] The Canadian Environmental Law Reports has been a mainstay for many years, but could incorporate more biodiversity-related material. Two excellent U.S. journals specific to biodiversity topics include *The Back Forty* (land trusts and conservation techniques), based at the Hastings College of Law in San Francisco, California, and the *Wildlife Law Quarterly*, produced by the Centre for Wildlife Law, University of New Mexico, Albequerque, New Mexico.

But the plans, and more importantly their implementation, must not be left as generalities, open-ended timelines and cosy, consensual statements. If Canada is ever to achieve a sustainable "ecological footprint" on this northern patch of the planet we have been entrusted to steward, implementation must lead towards a transformation in our society's patterns of resource consumption and modes of production. There is the need to galvanize popular concern and incorporate the knowledge of a wider circle of communities, especially local and indigenous people. This will require enhanced organizational capacity, support and the abilities to draw on the wide array of committed citizens, existing organizations and their actions. Research, education, discussion, debate, experimentation and the practical application of legal and non-legal approaches to biodiversity issues all must play their parts. Recognizing and respecting Traditional Ecological Knowledge as well as addressing the longstanding concerns of Aboriginal peoples in Canada must be part of these solutions[30].

In the long run, what is required is a profound examination and reorientation of our societal institutions, including law and policy. But only such strong and "radical" (ie. rooted) action will stem the loss and degradation of biodiversity now occurring across this country and along its coastlines. Our survival, and that of our companion co-inhabitors, depends upon such changes. As one celebrated Canadian has commented in relation to *ex situ* conservation and the effects of urbanization:

> They took all the trees
> and put 'em in a tree museum
> And they charged all the people
> a dollar and a half just to see 'em.
>
> Don't it always seem to go
> That you don't know what you've got 'til it's gone
> They paved paradise
> and put up a parking lot.
>
> - Joni Mitchell, "Big Yellow Taxi", 1970

[30] The steps Canada needs to take to address both Aboriginal and biodiversity issues were presented in the Assembly of First Nations' submission to the Royal Commission on Aboriginal Peoples, titled "Reclaiming Our Nationhood". Keith Conn, Health/Environment Director, Assembly of First Nations, personal communication, May 3 1996.

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APPENDIX B - SUMMARY OF RECOMMENDATIONS

BIODIVERSITY AND ABORIGINAL PEOPLES

A. Summary

Taken together, the relevant provisions of the Convention require that the Federal and Provincial governments of Canada:

1. Take steps to ensure that Aboriginal peoples can continue to utilize the living resources on which they customarily relied for their livelihood.

2. Take steps to ensure that traditional knowledge is taught to succeeding generations of Aboriginal people, and shared with non-Aboriginal people only in ways that are approved by, and benefit, the traditional holders of this knowledge.

3. Include Aboriginal peoples directly in impact assessment, and bear the burden of justifying the conservational necessity of any infringement of Aboriginal peoples' use of resources.

4. Approve and help finance Aboriginal communities' initiatives in the field of environmental rehabilitation.

B. Recommendations

To achieve compliance with the relevant terms of the *Biodiversity Convention*, Canada should, at a minimum:

1. Recognize Traditional Ecological Knowledge in national intellectual property legislation.

2. Establish a program of financial aid, technical support, and legal recognition to scientific and educational institutions launched by Aboriginal peoples and communities.

3. Make a commitment to protect Aboriginal peoples' traditional harvesting of resources through Federal and Provincial legislation, as well as recognition of the jurisdiction of Aboriginal authorities.

4. Legislatively recognize the right of Aboriginal peoples to be directly represented in impact assessment procedures, to have adequate resources to conduct their own research on proposed projects affecting their traditional territories, and to exercise informed consent before the commencement of any project that will affect them directly.

5. Establish a program of financial aid and technical support to initiatives aimed at restoring the productivity of the ecosystems on which Aboriginal communities depend for subsistence and medicine.

FEDERAL JURISDICTION AND BIODIVERSITY

A. Wildlife and Wild Plants

1. Enact a new *Oceans Act* and *Fisheries Act*, while maintaining strong federal habitat conservation measures and developing associated regulations under the latter.

2. Better coordinate, staff and more rigorously conduct wildlife enforcement, especially given the extensive new authority granted in recent wildlife statutes.

3. Adopt further regulations under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) to include non-CITES species, designate wildlife traffic ports of entry, and create a reverse onus for products labelled as containing listed species.

4. Designate the Canadian Wildlife Service as the enforcement authority under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA).

5. Enact federal endangered species legislation, which includes protection for habitat and comprehensive implementation.

6. Pursue ratification of the 1979 *Convention on the Conservation of Migratory Species of Wild Animals*, and the 1940 *Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere*, and continue Canadian involvement and leadership in international biodiversity initiatives.

7. Utilize, adapt and coordinate the *Health of Animals Act*, *Plant Protection Act*, WAPPRIITA and other legislation to better control exotic species introductions.

B. Protected Areas

8. Creatively use the suite of designations to help complete Canada's protected areas system.

9. Enact new and more program-oriented National Marine Conservation Areas legislation within the proposed *Oceans Act*.

C. Restoration and Rehabilitation

10. Make restoration and rehabilitation among the explicit goals and purposes of all wildlife legislation.

D. Sustainable Use

11. Maintain cooperative federal and provincial forest agreements.

12. Develop codes and standards for conserving biodiversity on the federal government's extensive land holdings.

13. Complete a review of and pass relevant legislation, and then ratify and implement the United Nations *Convention on the Law of the Sea* and the *Agreement on Straddling and Highly Migratory Fish Stocks*, as promised in the 1996 Throne Speech.

14. Legislate sustainable use and precautionary principles into the *Fisheries Act*.

15. Maintain a strong federal presence and national standards concerning inland fisheries.

16. Enhance market access and development for sustainable agriculture and infrastructure within the organic sector, remove technical problems and economic barriers to transitions, and analyze long-term policy issues.

E. Assessment, Trade and Pollution

17. Strengthen the *Canadian Environmental Assessment Act* to allow for independent assessments, and ensure that statutory triggers for other legislation remain in place.

18. Bring environmental and biodiversity issues to the forefront and include meaningful public participation in any new trade (eg. GATT) negotiations, and ensure that biodiversity concerns are addressed and expertise available in the resolution of relevant trade disputes.

19. Implement the environmental group and Parliamentary Standing Committee recommendations for reforming, broadening and strengthening the *Canadian Environmental Protection Act*.

F. Genetic Diversity, Patents and Biotechnology

20. Adapt and expand measures and provide resources to conserve wild genetic resources in particular, as well as heritage agricultural varieties of plants and animals.

21. Implement comprehensive, detailed and effective CEPA regulations and the Biotechnology Framework for the regulation of biotechnology.

22. Amend statutes within the Biotechnology Framework to ensure clear public participation, the full assessment of environmental (including biodiversity) and human health impacts, civil liability for harm resulting from products, enhanced penalties and enforcement measures, powers to regulate transboundary product movement, and equitable sharing of technology, knowledge and revenue with indigenous source communities.

G. Economic Incentives

23. Implement the Task Force on Economic Instruments and Disincentives' recommendations for a long-term analysis of barriers to sound environmental practices, particularly those relating to agriculture and taxation.

24. Implement and assess agriculture-related incentive programs with biodiversity concerns in mind.

BIODIVERSITY LAW AND POLICY IN THE YUKON AND NORTHWEST TERRITORIES

In light of new opportunities through settlement of land claims and devolution of federal powers to the Territorial governments, the following recommendations are put forward for consideration:

1. Outstanding jurisdictional issues respecting wildlife and habitat management and protection should be addressed by the three governments operative in the North (i.e. federal, territorial and indigenous) to remove institutional barriers to effective protection of biodiversity.

2. Until these issues can be resolved by legislative amendment to the *Yukon Act* and *Northwest Territories Act*, administrative agreements should be negotiated and implemented to ensure that development activities are assessed and permitted and, subsequently, inspected and monitored to ensure sustainable development and complete ecosystem protection.

3. The *Wildlife Act* of both the Yukon and the Northwest Territories should be amended to reflect existing understanding of biodiversity protection and to more fully address management of all species, both game and non-game species. Either through these statutes or through new statutes, legal tools should be developed to address and ensure plant and habitat protection.

4. The *Territorial Parks Act* of the Northwest Territories and the *Parks Act* of the Yukon should be amended to establish biodiversity protection as a goal underlying the establishment of territorial parks and protected areas. In this respect, guidelines for the selection, establishment and management of parks and protected areas should reflect the need for biodiversity protection in addition to public use and enjoyment.

5. Regulations should be developed under the Yukon *Environment Act* to enable designation of wilderness areas and these areas should be integrated in a biodiversity strategy for the Yukon.

6. Land claim agreements should be implemented in such a way as to ensure adherence to the goals of plant and animal conservation. Governments at all three levels should be encouraged to account for their actions in relation to the stated goals of conservation in each of the agreements.

7. Parks and protected area designations called for under the land claims agreements should be made expeditiously and efforts should be advanced to consider designation of new areas, pursuant to special management area provisions contained in each of the agreements.

BIODIVERSITY LAW AND POLICY IN BRITISH COLUMBIA

A. Summary of Recommendations

1. An explicit statutory commitment to protect biodiversity as a priority for all land and resource use decisions is required. This commitment could be made in *BCEPA*, revised land use planning laws and in a consolidated protected areas law.

2. Statutory recognition of the following doctrines is also required:
   - public trust;
   - precautionary principle; and
   - pollution prevention

3. A new Endangered Species Law is needed, which would:

   - provide a centralized registry of information about endangered species;
   - list species at risk through a COSEWIC-like, independent, arms-length scientific process;
   - prohibit harming, killing, trafficking or disturbing of the species;
   - identify the critical habitat needs of the species;
   - prohibit destruction of or modification to that habitat;
   - require preparation of recovery plans for the species;
   - bind the government to ensure that actions it authorizes, funds or carries out do not jeopardize the continued existence of any endangered, threatened or vulnerable species;
   - allow and encourage multiple species planning; and
   - prevent unauthorized introduction of exotic species into B.C.

4. The effects of the existing provisions of the *Forests Practices Code*, Regulations and Guidebooks should be closely monitored to see if they are adequately protecting biodiversity in forests. If revisions are required, documentation on the impact the *Code* is having on wildlife habitat, for example, should be obtained with a view to eventual revision of the *Code*.

5. Information on incorporation of conservation biology principles, such as the use of increased monitoring procedures and the use of management indicator species, should be gathered and analyzed for possible future amendments to the *Code*.

6. Timber harvesting must be done in a sustainable manner, and amendments to the *Forest Act* may be required to ensure this occurs.

7. Regulations under the *Forest Act* should prohibit uses of wilderness areas inconsistent with wilderness preservation.

8. The *Park Act* should be amended to accord with the Protected Areas Strategy. It should prohibit extractive resource uses in all parks. It should include a statutory goal of preserving a full range of representative ecosystems.

9. The *Park Act* should be amended to require the government to maintain the ecological integrity of parks, and to report on the state of the parks to the public and the Legislature, including progress in establishing new parks.

10. The *Park Act* should be amended to provide more security of designation of parks.

11. The *Park Act* should be amended to provide criteria for awarding park use permits and place limits on the discretion of park managers in issuing these permits. A policy should also be developed regulating commercial operators in parks.

12. Amendments to the *Park Act* should formalize the Master Plan policy. The requirements for master plans, including maintenance of ecological integrity as the first priority, should be set out in the statute. As exists in the *National Parks Act*, the statute should require:
    - management plans with objectives for resource protection, zoning, and visitor use;
    - time limits for preparing plans after a park has been declared and a requirement to present the plans to the Legislative Assembly; and,
    - public participation in the preparation and review of the plans.

13. The *Park Act* should be amended to provide for co-management with local communities.

14. The *Park Act* should be amended to establish a Protected Areas Council which could make recommendations concerning co-management of parks.

15. The *Park Act* should be amended requiring parks to be protected as a public trust.

16. The *Park Act* should be amended to accommodate the needs of the First Nations' land claims process.

17. The *Ecological Reserves Act* should explicitly prohibit human uses in ecological reserves other than strictly regulated research.

18. More large reserves should be established under the *Ecological Reserves Act.*

19. The *Ecological Reserves Act* should be amended to allow reserves to be established on private land.

20. It should be possible to cancel an ecological reserve only by an *Act* of the legislature after sufficiently advertising the intention to cancel and using only specified criteria.

21. Enforcement and penalties in the *Ecological Reserves Act* must be revised.

22. A specific wetlands protection policy should be based in law requiring:
    - classification of wetlands;
    - ranking of wetlands according to ecological significance;
    - local governments to address wetlands protection in planning; and,
    - a statutory goal of "no net loss of wetlands functions."

23. The *Water Act* needs revision to provide better protection for instream conservation uses, to address historical over-allocation problems and to provide better tools for water conservation.

24. A *Crown Land Use Planning Act* should be developed and passed.

25. The new growth management legislation should require, at a minimum, the Greater Vancouver Regional District and the Capital Regional District, to embark on the growth planning process.

26. The *Municipal Act* should be amended to clarify the scope of municipal powers to protect the environment.

27. Sustainable use of biological resources should be statutorily required.

28. The federal *Fisheries Act* should be amended or new legislation passed requiring that conservation of all remaining populations should be the first priority in all fisheries management planning and administration.

PRAIRIE PROVINCES

A. Recommendations

1. Legislation and policies should require identification and monitoring of biological diversity and encourage the involvement of grassroots non-governmental organizations.

2. As set forth in Section IV of this report, if governments are to carry out these duties, they must review and modify legislation and policies which do not focus directly on flora, fauna and protected area protection, in particular, agriculture and resource use and development legislation.

3. There should be effective endangered species legislation in all prairie provinces (not only Manitoba) covering plants, ecosystems and biodiversity.

4. In addition to endangered species legislation covering plants there should be legislation to protect native plant species not yet at risk.

5. Laws and policies need to focus more on ecosystems and biodiversity and not just on individual species, whether they be plants or wildlife.

6. Laws and policies must move towards being based on non-anthropocentric premises and not primary on the premise that wildlife, ecosystems or even biodiversity should be maintained and restored for their value to humans.

7. Since substantial habitat, connecting habitat and buffer areas are on private lands, there is a need for effective conservation easement legislation to facilitate private landowners who want to preserve interests in private land in perpetuity.

8. Meet the need for development of tools to effect ecosystem management in multijurisdictional areas, meaning an ecosystem area covering various kinds of public lands (federal, provincial, municipal), private land, and private interests in public or private land, such as grazing leases, oil and gas interests, timber dispositions, rights of way, and so on.

9. Meet the need for education, communication, cooperation and consistency of goals between different resource agencies in governments to meet biodiversity-related objectives.

10. Develop effective public participation processes in resource legislation to better ensure that public interest in protecting, restoring and maintaining biodiversity is substantively recognized in resource decisionmaking.

ONTARIO

A. Wild Animal Recommendations

1. Reform the *Game and Fish Act* to identify biodiversity conservation and sustainable use as objectives, and to address wildlife in captivity issues such as dog trialing and game farming, by building upon Bill 162 proposals.

2. Reform the *Endangered Species Act* to implement the Task Force recommendations, similar to proposals made in Bill 174.

3. Review the adequacy of existing wildlife and habitat legislation for conservation and sustainable use purposes.

4. Develop, approve and implement a comprehensive Ontario wild life policy.

5. Negotiate and fairly settle Aboriginal wildlife management concerns.

B. Wild Plant Recommendations

6. Create legislation dealing with wild plant species (eg. take, trade and habitat) and enhance provisions as they affect plant species at risk.

7. Encourage and pass municipal tree-cutting by-laws.

8. Develop measures to support plant genetic conservation, both through existing and new protected area designations and through *ex situ* methods.

C. Stewardship and Planning Recommendations

9. Amend the *Conservation Land Act* to enable other categories of "conservation land", such as for prairies, habitat of certain wildlife or species at risk, and certain woodlands which do not meet existing criteria, and develop and implement additional programs under this Act.

10. Ensure municipal accountability and good planning, effective sectoral agency and public involvement, and strong provincial oversight and policy implementation through monitoring and revising land use planning reforms, particularly to achieve natural heritage systems, protected area integrity, compact development and agricultural land retention.

11. Strengthen the *Niagara Escarpment Planning and Development Act* and the associated *Niagara Escarpment Plan*, and maintain provincial leadership through the Niagara Escarpment Commission.

12. Ensure that biodiversity objectives and opportunities are considered and realized in the disposition of public lands through the development of appropriate assessment procedures.

D. Protected Area Recommendations

13. Overhaul the *Provincial Parks Act* to: place first priority on protection; make completion of a system of representative and linked areas a goal; direct the preparation and contents of management plans; ensure ecological integrity within, and support it around, parks; provide for enhanced park management accountability, public participation and scrutiny; and enhance enforcement and administrative provisions.

14. Develop legislation for designating public and, by agreement, private lands as ecological reserves, either within a new Ecological Reserves Act or as a new part and classification in an overhauled *Provincial Parks Act*.

15. Place biodiversity conservation objectives in other statutes which establish protected areas, and apply these designations and creatively use partial interests to complement parks and ensure habitat is conserved and connected.

16. Foster coordinated planning amongst organizations for land acquisition, designation and management.

17. Remove legal barriers and provide incentives and support for private conservation efforts, such as the work of land trusts.

E. Restoration Recommendations

18. Clearly recognize restoration and naturalization objectives and incentive measures in land management and municipal statutes and by-laws.

19. Reform the *Weed Control Act* to include biodiversity objectives and support restoration and naturalization, while still reducing impacts on horticulture and agriculture.

20. Amend Regulation 1096 under the *Weed Control Act* to remove or exempt species at risk and provide for the use of pioneer species.

F. Sustainable Use Recommendations

21. Expand the application of biodiversity conservation criteria in the Forest Management Planning Manual.

22. Reform the *Drainage Act* to include specific biodiversity objectives, more accessible environmental assessment and appeal procedures, broader watershed consultation and integrated planning, and reorientation of financial incentives to avoid adverse impacts and enhance biodiversity.

23. Do not amend the *Farm Practices Protection Act* to take precedence over environmental, land use and health legislation.

G. Economic Incentive Recommendations

24. Amend the *Assessment Act* to provide for either a new assessment category of rural or conservation lands, or alternatively expand the *Conservation Land Act* and the Conservation Land Tax Reduction Program to include a wider scope, including all natural heritage lands designated in municipal planning documents.

25. Amend the *Drainage Act* to include biodiversity conservation objectives, and incorporate drainage plans into watershed and land use planning exercises which take a broader perspective on land use concerns.

26. Remove input subsidies on purchased chemicals, introduce an income stabilization program based on realized farm income rather than the production of specific commodities, and incorporate cross-compliance through incentives to use lands for other (eg. wildlife) uses.

27. Amend those statutes which support road building to include biodiversity conservation objectives, especially to minimize fragmentation and pest invasion.

QUEBEC

A. Protection de la faune et de la flore

1. Désigner d'autres espèces menacées ou vulnérables afin de leur assurer une meilleure protection légale conformément à la *Loi sur les espèces menacées ou vulnérables* et au premier volet de la *Politique Québécoise sur la conservation des espèces menacées ou vulnérables.*

2. Produire un deuxième volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la gestion des espèces désignées et de leurs habitats.

3. Poursuivre les recherches et effectuer des inventaires sur les espèces en situation précaire.

4. Développer des incitations fiscales adaptées à la conservation privée.

5. Voir à la sensibilisation du public à l'égard de la protection de la faune et de la flore.

B. Espaces protégés

6. Compléter le réseau des parcs provinciaux et de réserves écologiques de manière à le rendre représentatif des écosystèmes québécois, fixer rapidement un échéancier à ce sujet et inciter divers organismes gouvernementaux à travailler conjointement à la conception d'un plan intégré pour compléter ce réseau de sites protégés représentatif.

7. Compléter le projet de parc marin du Saguenay afin de protéger au moins un site naturel marin au Québec.

8. Hausser le statut légal de protection dans certains sites, tels que les réserves fauniques, et accorder une attention particulière à la gestion de ces sites pour que les activités humaines qui s'y déroulent n'en compromettent pas l'intégrité écologique.

9. Élaborer des initiatives favorisant la protection des terres privées (mesures incitatives de nature fiscale et légale) dont l'adoption d'une loi sur les servitudes de conservation afin de donner aux ONG le moyen de protéger efficacement les sites qu'ils ne peuvent acquérir.

10. Procéder à une classification des nombreuses dénominations d'aires protégées selon les six catégories de l'UICN (1994a et b).

11. Utiliser la *Loi sur les espèces menacées ou vulnérables* comme moyen additionnel de protéger certains habitats naturels.

12. Voir à l'implication accrue des MRC et des communautés urbaines dans la protection des parcs régionaux et autres sites protégés.

13. Concilier les intérêts des Premières nations quant à la protection des habitats fauniques avec les projets du MEF et Parcs Canada, et voir au respect des conventions existantes (Convention de la Baie James et du Nord du Québec).

14. Voir à la sensibilisation du public à l'égard des espaces protégés.

C. Restauration des habitats

15. Développer un volet de la *Politique québécoise sur les espèces menacées ou vulnérables* concernant la restauration des habitats et des espèces et fixer des échéanciers.

16. Poursuivre les projets de restauration régionale et les projets en collaboration avec le RESCAPÉ.

17. Poursuivre la mise en application du plan de rétablissement du béluga du Saint-Laurent.

D. Utilisation durable des ressources biologiques

18. Modifier les pratiques gouvernementales qui supportent financièrement l'exploitation agricole.

19. Développer un système de compensations pour les exploitants agricoles et forestiers qui modifient leurs pratiques en vue de favoriser la conservation.

20. Développer des incitations fiscales à la conservation dans les secteurs agricole, forestier et le secteur des pêcheries.

E. Autres questions reliées à la protection de la biodiversité

21. Augmenter la sensibilisation du public aux enjeux de la protection de la diversité biologique et aux moyens qui sont à leur disposition pour contribuer à cette protection.

22. Créer un Fonds pour la sauvegarde des espèces et des espaces, en suivant l'exemple des États-Unis.

F. Recommandations pour le gouvernement fédéral

23. Développer et maintenir la concertation avec les provinces et les territoires pour la gestion et la protection de la biodiversité.

24. Augmenter les ressources mises à la disposition des pays en développement pour leur permettre de rencontrer leurs obligations conformément à la Convention.

25. Définir un cadre permettant le partage des bénéfices et le transfert des technologies reliées à l'exploitation de la diversité biologique dans les pays en développement.

NEW BRUNSWICK

A. General Recommendations

1. Amend existing legislation or draft a new statute to adequately protect species and spaces. Sustainable development issues should be addressed in this legislation and also separately from the species and spaces legislation.

B. Specific Recommendations

2. Define "wildlife" to include all plants and animals and update the list of provincially endangered species under the *Endangered Species Act* focussing on species at the regional level.

3. Develop in legislation a mandatory listing process for endangered species and a mandatory set of minimum response actions.

4. The following World Wildlife Fund Canada recommendations should be acted upon:
   a) release the *Provincial Parks System Plan*;
   b) release a draft strategic plan for the proposed *National Areas System Plan*; and
   c) prepare a priority list of study areas representative of New Brunswick's ecodistricts and give them interim protection under the *Crown Lands and Forest Act*.

5. Implement Recommendation 16 of *Towards Sustainable Development in New Brunswick: A Plan for Action*. Provide a legislative mechanism to provide for a terrestrial and marine protected areas network on private land and Crown land, or in the alternative add rigorous criteria respecting size, connecting corridors, management plans, etc. to the *Ecological Reserves Act*, so that appropriate protected areas can be established under this statute.

6. Develop private nature trust legislation to provide for stewardship options on private land including conservation easements or covenants.

7. Develop a higher profile for the implementation of existing measures dealing with restoration and rehabilitation measures.

8. To encourage sustainable use of biological resources, implement recommendations 14, 16, 17, 24 and 29 of *Towards Sustainable Development in New Brunswick: A Plan for Action*.

9. Explicitly include biodiversity in agricultural protection legislation.

10. Promote biodiversity when addressing environmental matters in land use planning legislation.

11. Provide a framework for coastal zone management and marine protected areas and the protection of aquatic plants and animals.

12. Develop and apply legislation to protect wetlands.

NOVA SCOTIA

A. General Recommendations

1. Amend existing legislation or draft a new statute to adequately protect species and spaces. Sustainable development issues should be addressed in this legislation and also separately from the species and spaces legislation.

B. Specific Recommendations

2. Expand the definition of "wildlife" in the *Wildlife Act* to include all plants and animals and update the list of provincially endangered species.

3. Under the *Wildlife Act*, upgrade the Wildlife Guidelines to Wildlife regulations.

4. Add to the *Planning Act* or the *Wildlife Act*, the power to prohibit activities that are incompatible with the needs of endangered species.

5. Develop in legislation a mandatory listing process for endangered species and a mandatory set of minimum response actions.

6. Act on the recommendations in the *Endangered Spaces Progress Report*, including:

   - implement the *Systems Plan for Parks and Protected Areas*;
   - implement a process to address the 100 backlogged ecological reserves; and
   - develop a strategy for addressing marine protected areas.

7. Support the initiatives of the Nova Scotia Nature Trust under the *Conservation Easement Act*.

8. Provide financial incentives, such as tax relief and economic incentives to private landowners engaging in conservation of biodiversity.

9. Develop a higher profile for the implementation of existing measures dealing with restoration and rehabilitation measures.

10. Implement the recommendations of the Sustainable Development Strategy, including 3.1, 3.2, 3.3, 3.4, 3.8 and 3.11.

11. Promote biodiversity when addressing environmental matters in land use planning legislation.

12. Develop and apply regulations and policies to protect wetlands.

13. Develop and implement a water-resource management strategy.

14. Provide a framework for coastal zone management including marine protected areas, beach protection and the protection of aquatic species.

PRINCE EDWARD ISLAND

A. General Recommendations

1. Amend existing legislation or draft two new statutes to adequately protect species and spaces. Sustainable development issues should be addressed separately from the species and spaces legislation.

B. Specific Recommendations

2. Ensure that the regulations adopted pursuant to the *Fish and Game Protection Act* designating fish and wildlife to be protected is updated regularly in order to protect as many species as possible.

3. Add protection of fish and wildlife as a purpose as important as angling and hunting for the creation of fishing preserves and shooting preserves in the *Fish and Game Protection Act.*

4. A *Protection of Flora Act* should be enacted to provide for the protection of various species throughout the province and not only in certain protected spaces.

5. Amend the *Natural Areas Protection Act* to add provisions ensuring ecological integrity around protected areas, as well as provisions establishing appropriate minimum size criteria.

6. Enact a *Beaches Protection Act* which will have as primary goal biodiversity conservation.

7. Provide a legislative mechanism to provide for a terrestrial and marine protected areas network on private land and Crown land.

8. Include restoration and rehabilitation provisions in P.E.I. legislation.

NEWFOUNDLAND/LABRADOR

A. General Recommendations

1. Amend legislation or draft two new statutes to adequately protect species and spaces. Sustainable development issues should be addressed separately from the species and spaces legislation.

B. Specific Recommendations

2. Include all plants in the definition of "wild life" in the *Wild Life Act*.

3. With respect to the *Wild Life (Reserve) Regulations*, steps must be taken to address the void caused by exempting private land owners from the obligations imposed by these regulations.

4. With respect to the *Plant Protection Act*, broaden its scope to activities of humans which have a detrimental effect on plants in the province.

5. With respect to the *National Approach to Endangered Species Conservation in Canada*, ensure that minimum response actions are rendered mandatory.

6. With respect to the *Wilderness and Ecological Reserves Act*, amend the Act so that the Minister **shall** exercise the powers given to him/her.

7. With respect to the *Wilderness and Ecological Reserves Act*, include provisions imposing minimum size criteria concerning the creation of protected areas.

8. With respect to the *Wilderness and Ecological Reserves Act*, create more reserves.

9. With respect to the *Wild Life (Reserve) Regulations*, create more reserves.

10. With respect to the *Lands Act*, add a purpose section for the establishment of "special management areas" providing for biodiversity conservation objectives and create special management areas for biodiversity conservation purposes.

11. Amend the *Department of Environment and Lands Act* to empower the Minister, directly in the Act, to issue restoration and rehabilitation orders.

12. Define the term "Environment" in the *Department of Environment and Lands Act* and ensure that the definition includes components of biodiversity.

13. Add biodiversity conservation provisions to the *Forestry Act*.

14. With respect to the *Department of Environment and Lands Act*, impose on the Minister the obligation to ensure the sustainable use of the province's resources (not only water).

15. Define "wise" management in the *Environmental Assessment Act* to include sustainable use of resources.

16. Amend the *Urban and Rural Planning Act* to include environmental and biodiversity conservation concerns in its development planning aspects.

17. Amend the *Historic Resource Act* to clearly state biodiversity conservation purposes.

APPENDIX C: NOTE ON CITATIONS

References in this report have adopted the standard legal style for giving legal citations. Thus, references to statutes are given by noting the Act name, what year it was passed or most recently consolidated, which chapter it appears in the statute books, and sometimes a mention of the appropriate section(s) or subsection(s). Cases list the parties, the date it was decided, the volume and abbreviated name of the law reports where it is published, the page number where the case begins in the reports, and abbreviations indicating the court level which decided the case. Some further notes may be included in the case reference, showing whether an appeal court agreed with or reversed a lower court's decision.

When looking at the law, it is important to ensure that you have the most recent updates of an Act or case. This can be done for Acts by looking in a statute citator, which lists changes to statutes over the years since the last consolidation, or by checking the indices at the back of the most recent statute books. Cases which decide the appeal of the case of interest, or which deal with similar points of law and might change the law for particular situations, can be checked out through the *Cases Judicially Considered* or *Canadian Current Law* in the *Canadian Abridgement* series, the indices for case report series, or an automated legal research tool available on computer. If any amendments have been noted in these sources, you should look these up as well to determine whether these have changed the law.

A statute or case reference can be looked up in specialized libraries, particularly those at law schools or firms, courts, county law associations, and universities or colleges. Some government offices and public libraries will have recent statute books available.

The following are examples and explanations of legal references:

Fisheries Act, R.S.C. 1985, c.F-14, s.36

> The Fisheries Act had all the current provisions consolidated into the Revised Statutes of Canada, 1985 version, and is included in these Revised Statutes as chapter F-14. Section 36 contains the relevant law, as discussed in the text.

Canadian Wildlife Federation v. Canada (Minister of the Environment) (1990), 6 C.E.L.R. (N.S.) 89 (F.C.A.).

> The Canadian Wildlife Federation sued the federal Minister of the Environment. In 1990, as reported in the sixth volume of the *Canadian Environmental Law Reports (New Series)* beginning on page 89, the Federal Court of Appeal decided the case.

APPENDIX D:

CONVENTION ON BIOLOGICAL DIVERSITY

5 JUNE 1992

CONVENTION ON BIOLOGICAL DIVERSITY

5 JUNE 1992

CONVENTION ON BIOLOGICAL DIVERSITY

Preamble

The Contracting Parties,

Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components,

Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere,

Affirming that the conservation of biological diversity is a common concern of humankind,

Reaffirming that States have sovereign rights over their own biological resources,

Reaffirming also that States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner,

Concerned that biological diversity is being significantly reduced by certain human activities,

Aware of the general lack of information and knowledge regarding biological diversity and of the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures,

Noting that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source,

Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat,

Noting further that the fundamental requirement for the conservation of biological diversity is the *in-situ* conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings,

Noting further that *ex-situ* measures, preferably in the country of origin, also have an important role to play,

Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components,

Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation,

Stressing the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components,

Acknowledging that the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity,

Acknowledging further that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies,

Noting in this regard the special conditions of the least developed countries and small island States,

Acknowledging that substantial investments are required to conserve biological diversity and that there is the expectation of a broad range of environmental, economic and social benefits from those investments,

Recognizing that economic and social development and poverty eradication are the first and overriding priorities of developing countries,

Aware that conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential,

Noting that, ultimately, the conservation and sustainable use of biological diversity will strengthen friendly relations among States and contribute to peace for humankind,

Desiring to enhance and complement existing international arrangements for the conservation of biological diversity and sustainable use of its components, and

Determined to conserve and sustainably use biological diversity for the benefit of present and future generations,

Have agreed as follows:

Article 1. Objectives

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Article 2. Use of Terms

For the purposes of this Convention:

"*Biological diversity*" means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

"*Biological resources*" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

"*Biotechnology*" means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use.

"*Country of origin of genetic resources*" means the country which possesses those genetic resources in *in-situ* conditions.

"*Country providing genetic resources*" means the country supplying genetic resources collected from *in-situ* sources, including populations of both wild and domesticated species, or taken from *ex-situ* sources, which may or may not have originated in that country.

"*Domesticated or cultivated species*" means species in which the evolutionary process has been influenced by humans to meet their needs.

"*Ecosystem*" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

"*Ex-situ conservation*" means the conservation of components of biological diversity outside their natural habitats.

"*Genetic material*" means any material of plant, animal, microbial or other origin containing functional units of heredity.

"*Genetic resources*" means genetic material of actual or potential value.

"*Habitat*" means the place or type of site where an organism or population naturally occurs.

"*In-situ conditions*" means conditions where genetic resources exist within ecosystems and natural habitats, and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

"*In-situ conservation*" means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

"*Protected area*" means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

"*Regional economic integration organization*" means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it.

"*Sustainable use*" means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

"*Technology*" includes biotechnology.

Article 3. Principle

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the

responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Article 4. Jurisdictional Scope

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

(a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction; and

(b) In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.

Article 5. Cooperation

Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

Article 6. General Measures for Conservation and Sustainable Use

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

(a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and

(b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

Article 7. Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

(a) Identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I;

(b) Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;

(c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and

(d) Maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a), (b) and (c) above.

Article 8. In-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate:

(a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;

(b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;

(c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;

(d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;

(e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

(f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies;

(g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;

(h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;

(i) Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components;

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;

(k) Develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations;

(l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities; and

(m) Cooperate in providing financial and other support for *in-situ* conservation outlined in subparagraphs (a) to (l) above, particularly to developing countries.

Article 9. Ex-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing *in-situ* measures:

(a) Adopt measures for the *ex-situ* conservation of components of biological diversity, preferably in the country of origin of such components;

(b) Establish and maintain facilities for *ex-situ* conservation of and research on plants, animals and micro-organisms, preferably in the country of origin of genetic resources;

(c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions;

(d) Regulate and manage collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species, except where special temporary *ex-situ* measures are required under subparagraph (c) above; and

(e) Cooperate in providing financial and other support for *ex-situ* conservation outlined in subparagraphs (a) to (d) above and in the establishment and maintenance of *ex-situ* conservation facilities in developing countries.

Article 10. Sustainable Use of Components of Biological Diversity

Each Contracting Party shall, as far as possible and as appropriate:

(a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;

(b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;

(c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

(d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and

(e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

Article 11. Incentive Measures

Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.

Article 12. Research and Training

The Contracting Parties, taking into account the special needs of developing countries, shall:

(a) Establish and maintain programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide

support for such education and training for the specific needs of developing countries;

(b) Promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries, *inter alia*, in accordance with decisions of the Conference of the Parties taken in consequence of recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice; and

(c) In keeping with the provisions of Articles 16, 18 and 20, promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources.

Article 13. Public Education and Awareness

The Contracting Parties shall:

(a) Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes; and

(b) Cooperate, as appropriate, with other States and international organizations in developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity.

Article 14. Impact Assessment and Minimizing Adverse Impacts

1. Each Contracting Party, as far as possible and as appropriate, shall:

(a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures;

(b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;

(c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate;

(d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and

(e) Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the States or regional economic integration organizations concerned, to establish joint contingency plans.

2. The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter.

Article 15. Access to Genetic Resources

1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.

2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.

3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.

4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.

5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.

6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.

7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

Article 16. Access to and Transfer of Technology

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.

2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such

access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.

3. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.

4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.

5. The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

Article 17. Exchange of Information

1. The Contracting Parties shall facilitate the exchange of information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries.

2. Such exchange of information shall include exchange of results of technical, scientific and socio-economic research, as well as information on training and surveying programmes, specialized knowledge, indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16, paragraph 1. It shall also, where feasible, include repatriation of information.

Article 18. Technical and Scientific Cooperation

1. The Contracting Parties shall promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions.

2. Each Contracting Party shall promote technical and scientific cooperation with other Contracting Parties, in particular developing countries, in implementing this Convention, *inter alia*, through the development and implementation of national policies. In promoting such cooperation, special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building.

3. The Conference of the Parties, at its first meeting, shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation.

4. The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.

5. The Contracting Parties shall, subject to mutual agreement, promote the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of this Convention.

Article 19. Handling of Biotechnology and Distribution of its Benefits

1. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties.

2. Each Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties. Such access shall be on mutually agreed terms.

3. The Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.

4. Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.

Article 20. Financial Resources

1. Each Contracting Party undertakes to provide, in accordance with its capabilities, financial support and incentives in respect of those national activities which are intended to achieve the objectives of this Convention, in accordance with its national plans, priorities and programmes.

2. The developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article 21, in accordance with policy, strategy, programme priorities and eligibility criteria and an indicative list of incremental costs established by the Conference of the Parties. Other Parties, including countries undergoing the process of transition to a market economy, may voluntarily assume the obligations of the developed country Parties. For the purpose of this Article, the Conference of the Parties, shall at its first meeting establish a list of developed country Parties and other Parties which voluntarily assume the obligations of the developed country Parties. The Conference of the Parties shall periodically review and if necessary amend the list. Contributions from other countries

and sources on a voluntary basis would also be encouraged. The implementation of these commitments shall take into account the need for adequacy, predictability and timely flow of funds and the importance of burden-sharing among the contributing Parties included in the list.

3. The developed country Parties may also provide, and developing country Parties avail themselves of, financial resources related to the implementation of this Convention through bilateral, regional and other multilateral channels.

4. The extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.

5. The Parties shall take full account of the specific needs and special situation of least developed countries in their actions with regard to funding and transfer of technology.

6. The Contracting Parties shall also take into consideration the special conditions resulting from the dependence on, distribution and location of, biological diversity within developing country Parties, in particular small island States.

7. Consideration shall also be given to the special situation of developing countries, including those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous areas.

Article 21. Financial Mechanism

1. There shall be a mechanism for the provision of financial resources to developing country Parties for purposes of this Convention on a grant or concessional basis the essential elements of which are described in this Article. The mechanism shall function under the authority and guidance of, and be accountable to, the Conference of the Parties for purposes of this Convention. The operations of the mechanism shall be carried out by such institutional structure as may be decided upon by the Conference of the Parties at its first meeting. For purposes of this Convention, the Conference of the Parties shall determine the policy, strategy, programme priorities and eligibility criteria relating to the access to and utilization of such resources. The contributions shall be such as to take into account the need for predictability, adequacy and timely flow of funds referred to in Article 20 in accordance with the amount of resources needed to be decided periodically by the Conference of the Parties and the importance of burden-sharing among the contributing Parties included in the list referred to in Article 20, paragraph 2. Voluntary contributions may also be made by the developed country Parties and by other countries and sources. The mechanism shall operate within a democratic and transparent system of governance.

2. Pursuant to the objectives of this Convention, the Conference of the Parties shall at its first meeting determine the policy, strategy and programme priorities, as well as detailed criteria and guidelines for eligibility for access to and utilization of the financial resources including monitoring and evaluation on a regular basis of such utilization. The Conference of the Parties shall decide on the arrangements to give effect to paragraph 1 above after consultation with the institutional structure entrusted with the operation of the financial mechanism.

3. The Conference of the Parties shall review the effectiveness of the mechanism established under this Article, including the criteria and guidelines referred to in paragraph 2 above, not less than two years after the entry into force of this Convention and thereafter on a regular basis. Based on such review, it shall take appropriate action to improve the effectiveness of the mechanism if necessary.

4. The Contracting Parties shall consider strengthening existing financial institutions to provide financial resources for the conservation and sustainable use of biological diversity.

Article 22. Relationship with Other International Conventions

1. The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.

2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.

Article 23. Conference of the Parties

1. A Conference of the Parties is hereby established. The first meeting of the Conference of the Parties shall be convened by the Executive Director of the United Nations Environment Programme not later than one year after the entry into force of this Convention. Thereafter, ordinary meetings of the Conference of the Parties shall be held at regular intervals to be determined by the Conference at its first meeting.

2. Extraordinary meetings of the Conference of the Parties shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party, provided that, within six months of the request being communicated to them by the Secretariat, it is supported by at least one third of the Parties.

3. The Conference of the Parties shall by consensus agree upon and adopt rules of procedure for itself and for any subsidiary body it may establish, as well as financial rules governing the funding of the Secretariat. At each ordinary meeting, it shall adopt a budget for the financial period until the next ordinary meeting.

4. The Conference of the Parties shall keep under review the implementation of this Convention, and, for this purpose, shall:

(a) Establish the form and the intervals for transmitting the information to be submitted in accordance with Article 26 and consider such information as well as reports submitted by any subsidiary body;

(b) Review scientific, technical and technological advice on biological diversity provided in accordance with Article 25;

(c) Consider and adopt, as required, protocols in accordance with Article 28;

(d) Consider and adopt, as required, in accordance with Articles 29 and 30, amendments to this Convention and its annexes;

(e) Consider amendments to any protocol, as well as to any annexes thereto, and, if so decided, recommend their adoption to the parties to the protocol concerned;

(f) Consider and adopt, as required, in accordance with Article 30, additional annexes to this Convention;

(g) Establish such subsidiary bodies, particularly to provide scientific and technical advice, as are deemed necessary for the implementation of this Convention;

(h) Contact, through the Secretariat, the executive bodies of conventions dealing with matters covered by this Convention with a view to establishing appropriate forms of cooperation with them; and

(i) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention in the light of experience gained in its operation.

5. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not Party to this Convention, may be represented as observers at meetings of the Conference of the Parties. Any other body or agency, whether governmental or non-governmental, qualified in fields relating to conservation and sustainable use of biological diversity, which has informed the Secretariat of its wish to be represented as an observer at a meeting of the Conference of the Parties, may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.

Article 24. Secretariat

1. A secretariat is hereby established. Its functions shall be:

(a) To arrange for and service meetings of the Conference of the Parties provided for in Article 23;

(b) To perform the functions assigned to it by any protocol;

(c) To prepare reports on the execution of its functions under this Convention and present them to the Conference of the Parties;

(d) To coordinate with other relevant international bodies and, in particular to enter into such administrative and contractual arrangements as may be required for the effective discharge of its functions; and

(e) To perform such other functions as may be determined by the Conference of the Parties.

2. At its first ordinary meeting, the Conference of the Parties shall designate the secretariat from amongst those existing competent international organizations which have signified their willingness to carry out the secretariat functions under this Convention.

Article 25. Subsidiary Body on Scientific, Technical and Technological Advice

1. A subsidiary body for the provision of scientific, technical and technological advice is hereby established to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely advice relating to the implementation of this Convention. This body shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.

2. Under the authority of and in accordance with guidelines laid down by the Conference of the Parties, and upon its request, this body shall:

(a) Provide scientific and technical assessments of the status of biological diversity;

(b) Prepare scientific and technical assessments of the effects of types of measures taken in accordance with the provisions of this Convention;

(c) Identify innovative, efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity and advise on the ways and means of promoting development and/or transferring such technologies;

(d) Provide advice on scientific programmes and international cooperation in research and development related to conservation and sustainable use of biological diversity; and

(e) Respond to scientific, technical, technological and methodological questions that the Conference of the Parties and its subsidiary bodies may put to the body.

3. The functions, terms of reference, organization and operation of this body may be further elaborated by the Conference of the Parties.

Article 26. Reports

Each Contracting Party shall, at intervals to be determined by the Conference of the Parties, present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

Article 27. Settlement of Disputes

1. In the event of a dispute between Contracting Parties concerning the interpretation or application of this Convention, the parties concerned shall seek solution by negotiation.

2. If the parties concerned cannot reach agreement by negotiation, they may jointly seek the good offices of, or request mediation by, a third party.

3. When ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a State or regional economic integration organization may declare in writing to the Depositary that for a dispute not resolved in accordance with paragraph 1 or paragraph 2 above, it accepts one or both of the following means of dispute settlement as compulsory:

(a) Arbitration in accordance with the procedure laid down in Part 1 of Annex II;

(b) Submission of the dispute to the International Court of Justice.

4. If the parties to the dispute have not, in accordance with paragraph 3 above, accepted the same or any procedure, the dispute shall be submitted to conciliation in accordance with Part 2 of Annex II unless the parties otherwise agree.

5. The provisions of this Article shall apply with respect to any protocol except as otherwise provided in the protocol concerned.

Article 28. Adoption of Protocols

1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention.

2. Protocols shall be adopted at a meeting of the Conference of the Parties.

3. The text of any proposed protocol shall be communicated to the Contracting Parties by the Secretariat at least six months before such a meeting.

Article 29. Amendment of the Convention or Protocols

1. Amendments to this Convention may be proposed by any Contracting Party. Amendments to any protocol may be proposed by any Party to that protocol.

2. Amendments to this Convention shall be adopted at a meeting of the Conference of the Parties. Amendments to any protocol shall be adopted at a meeting of the Parties to the Protocol in question. The text of any proposed amendment to this Convention or to any protocol, except as may otherwise be provided in such protocol, shall be communicated to the Parties to the instrument in question by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate proposed amendments to the signatories to this Convention for information.

3. The Parties shall make every effort to reach agreement on any proposed amendment to this Convention or to any protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a two-third majority vote of the Parties to the instrument in question present and voting at the meeting, and shall be submitted by the Depositary to all Parties for ratification, acceptance or approval.

4. Ratification, acceptance or approval of amendments shall be notified to the Depositary in writing. Amendments adopted in accordance with paragraph 3 above shall enter into force among Parties having accepted them on the ninetieth day after the deposit of instruments of ratification, acceptance or approval by at least two thirds of the Contracting Parties to this Convention or of the Parties to the protocol concerned, except as may otherwise be provided in such protocol. Thereafter the amendments shall enter into force for any other Party on the ninetieth day after that Party deposits its instrument of ratification, acceptance or approval of the amendments.

5. For the purposes of this Article, "Parties present and voting" means Parties present and casting an affirmative or negative vote.

Article 30. Adoption and Amendment of Annexes

1. The annexes to this Convention or to any protocol shall form an integral part of the Convention or of such protocol, as the case may be, and, unless expressly provided otherwise, a reference to this Convention or its protocols constitutes at the same time a reference to any annexes thereto. Such annexes shall be restricted to procedural, scientific, technical and administrative matters.

2. Except as may be otherwise provided in any protocol with respect to its annexes, the following procedure shall apply to the proposal, adoption and entry into force of additional annexes to this Convention or of annexes to any protocol:

(a) Annexes to this Convention or to any protocol shall be proposed and adopted according to the procedure laid down in Article 29;

(b) Any Party that is unable to approve an additional annex to this Convention or an annex to any protocol to which it is Party shall so notify the Depositary, in writing, within one year from the date of the communication of the adoption by the Depositary. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time withdraw a previous declaration of objection and the annexes shall thereupon enter into force for that Party subject to subparagraph (c) below;

(c) On the expiry of one year from the date of the communication of the adoption by the Depositary, the annex shall enter into force for all Parties to this Convention or to any protocol concerned which have not submitted a notification in accordance with the provisions of subparagraph (b) above.

3. The proposal, adoption and entry into force of amendments to annexes to this Convention or to any protocol shall be subject to the same procedure as for the proposal, adoption and entry into force of annexes to the Convention or annexes to any protocol.

4. If an additional annex or an amendment to an annex is related to an amendment to this Convention or to any protocol, the additional annex or amendment shall not enter into force until such time as the amendment to the Convention or to the protocol concerned enters into force.

Article 31. Right to Vote

1. Except as provided for in paragraph 2 below, each Contracting Party to this Convention or to any protocol shall have one vote.

2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Contracting Parties to this Convention or the relevant protocol. Such organizations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

Article 32. Relationship between this Convention and Its Protocols

1. A State or a regional economic integration organization may not become a Party to a protocol unless it is, or becomes at the same time, a Contracting Party to this Convention.

2. Decisions under any protocol shall be taken only by the Parties to the protocol concerned. Any Contracting Party that has not ratified, accepted or approved a protocol may participate as an observer in any meeting of the parties to that protocol.

Article 33. Signature

This Convention shall be open for signature at Rio de Janeiro by all States and any regional economic integration organization from 5 June 1992 until 14 June 1992, and at the United Nations Headquarters in New York from 15 June 1992 to 4 June 1993.

Article 34. Ratification, Acceptance or Approval

1. This Convention and any protocol shall be subject to ratification, acceptance or approval by States and by regional economic integration organizations. Instruments of ratification, acceptance or approval shall be deposited with the Depositary.

2. Any organization referred to in paragraph 1 above which becomes a Contracting Party to this Convention or any protocol without any of its member States being a Contracting Party shall be bound by all the obligations under the Convention or the protocol, as the case may be. In the case of such organizations, one or more of whose member States is a Contracting Party to this Convention or relevant protocol, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention or protocol, as the case may be. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention or relevant protocol concurrently.

3. In their instruments of ratification, acceptance or approval, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.

Article 35. Accession

1. This Convention and any protocol shall be open for accession by States and by regional economic integration organizations from the date on which the Convention or the protocol concerned is closed for signature. The instruments of accession shall be deposited with the Depositary.

2. In their instruments of accession, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.

3. The provisions of Article 34, paragraph 2, shall apply to regional economic integration organizations which accede to this Convention or any protocol.

Article 36. Entry Into Force

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the thirtieth instrument of ratification, acceptance, approval or accession.

2. Any protocol shall enter into force on the ninetieth day after the date of deposit of the number of instruments of ratification, acceptance, approval or accession, specified in that protocol, has been deposited.

3. For each Contracting Party which ratifies, accepts or approves this Convention or accedes thereto after the deposit of the thirtieth instrument of ratification, acceptance, approval or accession, it shall enter into force on the ninetieth day after the date of deposit by such Contracting Party of its instrument of ratification, acceptance, approval or accession.

4. Any protocol, except as otherwise provided in such protocol, shall enter into force for a Contracting Party that ratifies, accepts or approves that protocol or accedes thereto after its entry into force pursuant to paragraph 2 above, on the ninetieth day after the date on which that

Contracting Party deposits its instrument of ratification, acceptance, approval or accession, or on the date on which this Convention enters into force for that Contracting Party, whichever shall be the later.

5. For the purposes of paragraphs 1 and 2 above, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.

Article 37. Reservations

No reservations may be made to this Convention.

Article 38. Withdrawals

1. At any time after two years from the date on which this Convention has entered into force for a Contracting Party, that Contracting Party may withdraw from the Convention by giving written notification to the Depositary.

2. Any such withdrawal shall take place upon expiry of one year after the date of its receipt by the Depositary, or on such later date as may be specified in the notification of the withdrawal.

3. Any Contracting Party which withdraws from this Convention shall be considered as also having withdrawn from any protocol to which it is party.

Article 39. Financial Interim Arrangements

Provided that it has been fully restructured in accordance with the requirements of Article 21, the Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development shall be the institutional structure referred to in Article 21 on an interim basis, for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties or until the Conference of the Parties decides which institutional structure will be designated in accordance with Article 21.

Article 40. Secretariat Interim Arrangements

The secretariat to be provided by the Executive Director of the United Nations Environment Programme shall be the secretariat referred to in Article 24, paragraph 2, on an interim basis for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties.

Article 41. Depositary

The Secretary-General of the United Nations shall assume the functions of Depositary of this Convention and any protocols.

Article 42. Authentic Texts

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have signed this Convention.

Done at Rio de Janeiro on this fifth day of June, one thousand nine hundred and ninety-two.

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Annex I

IDENTIFICATION AND MONITORING

1. Ecosystems and habitats: containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural or scientific importance; or, which are representative, unique or associated with key evolutionary or other biological processes;

2. Species and communities which are: threatened; wild relatives of domesticated or cultivated species; of medicinal, agricultural or other economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and

3. Described genomes and genes of social, scientific or economic importance.

based. It shall contain the names of the members who have participated and the date of the final decision. Any member of the tribunal may attach a separate or dissenting opinion to the final decision.

Article 16

The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.

Article 17

Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the final decision may be submitted by either party for decision to the arbitral tribunal which rendered it.

Part 2

CONCILIATION

Article 1

A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall, unless the parties otherwise agree, be composed of five members, two appointed by each Party concerned and a President chosen jointly by those members.

Article 2

In disputes between more than two parties, parties in the same interest shall appoint their members of the commission jointly by agreement. Where two or more parties have separate interests or there is a disagreement as to whether they are of the same interest, they shall appoint their members separately.

Article 3

If any appointments by the parties are not made within two months of the date of the request to create a conciliation commission, the Secretary-General of the United Nations shall, if asked to do so by the party that made the request, make those appointments within a further two-month period.

Article 4

If a President of the conciliation commission has not been chosen within two months of the last of the members of the commission being appointed, the Secretary-General of the United Nations shall, if asked to do so by a party, designate a President within a further two-month period.

Article 5

The conciliation commission shall take its decisions by majority vote of its members. It shall, unless the parties to the dispute otherwise agree, determine its own procedure. It shall render a proposal for resolution of the dispute, which the parties shall consider in good faith.

Article 6

A disagreement as to whether the conciliation commission has competence shall be decided by the commission.
