

**BIODIVERSITY LAW AND POLICY
IN BRITISH COLUMBIA**

**Linda Nowlan
Staff Lawyer**

West Coast Environmental Law
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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 BC, 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 BC'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

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 the first country 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 for law

reform.

History Of Biodiversity Legislation And Policy In BC

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 BC: 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 BC 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, hot springs 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 BC'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

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. BC 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 BC'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 done 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 BC, 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 BC *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 BC'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.

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

BC's environmental community is very active. BC 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 BC Spaces for Nature (an affiliate of the World Wildlife Fund), Sierra Club of Canada, the Federation of BC 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 BC 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 BC 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 BC;
- 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 BC. The three themes of the Convention (biodiversity conservation, sustainable use and equitable sharing of benefits) should be reflected in BC statutes.

There are no clear guiding principles in legislation in the province requiring the government to maintain biodiversity.¹⁹ Under BC'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 BC *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 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. BC'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 BC.

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 Ontario, the Yukon, and the NWT have included the public trust 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 BC 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 BC *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.

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 BC 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 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.**

C. WILDLIFE AND ENDANGERED SPECIES PROTECTION

The chief law directly affecting species protection is the *Wildlife Act*. BC 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 BC *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

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, 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 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 BC. 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 BC 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 BC.⁴⁵ At that time, trafficking in bear parts was legal in BC. In response to the increase in poaching, and the perceived increase in trafficking in bear parts, in 1993 a regulation was passed banning the 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 BC 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 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 BC 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 BC, 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

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 BC *Wildlife Act*, they are included on the Red and Blue Lists of endangered and threatened species. Currently 634 plants are designated as rare in BC of which 124 are considered threatened or endangered.⁵⁶ The BC 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 BC's current discretionary approach to endangered species protection. The number of species assessed as endangered in BC 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 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 BC.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 BC 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 BC's *Ecological Reserve Act*⁶³ [discussed in the Protected Areas 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 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 BC, 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.

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 BC

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.

Introduction of exotic or alien species into BC'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 BC

BIODIVERSITY LAW AND POLICY IN BRITISH COLUMBIA continued

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 BC'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 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 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 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 Forester.⁸⁴

This regulation provides for the establishment of sensitive areas and objectives, also established by the District Manager. A sensitive area establishment 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, ferns 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

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 BC 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 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 the BC's *Forest Practices Code*.

The *Clayoquot Sound Scientific Panel Report* contains a site-specific and comprehensive approach to monitoring for biological diversity while practicing 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 BC'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 fulfill 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 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 BC 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 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 BC

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 BC, 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.

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 anthropogenic 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 BC, 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.

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 BC 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 BC *Park Act* and *Ecological Reserve Act*.

- 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 fulfill 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 BC. 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.

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 BC

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 preserving "hotspots" of species richness and habitat areas for rare and endangered species, since it is restricted to Crown Land; focuses on cultural heritage and recreational diversity as well as biodiversity; and 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 BC's main law for protected areas. ¹¹³ The provincial parks under the *Park Act* comprised 84.83% of BC'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 BC'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 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 traveling 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, 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 BC's network of protected areas. Marine ecosystems are particularly under represented as less than 2% of BC'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 BC'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 BC 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 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 BC 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 BC'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 BC'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 BC 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*.

The size of parks also affects their ecological integrity. Species loss in parks has been

documented in other areas outside BC, in large as well as smaller parks. One of the problems in terms of biodiversity conservation for protected areas in the province of BC 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 BC 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 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 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 BC 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 BC 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 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 BC'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.
- 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 BC.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 enforceable.¹³⁹

One possible precedent for amending the *Park Act* in BC 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 BC 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 BC 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 notice is given to the public that the Haida have an unresolved dispute with the government of Canada. Similar

provisions should be included in the provincial *Park Act*.¹⁴¹

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 BC is under the *Ecological Reserve Act*.¹⁴² Reserves are found in all of BC'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 program.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, 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 canceled 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 BC 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.

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

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
- *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.
- 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; and,
- Man and the Biosphere Program (allowing for creation of biosphere reserves) and the Western Hemisphere Shorebird Network Program.

3. Wetlands Protection

Wetlands in BC 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

BC 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 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 BC 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 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 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 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 BC *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 BC 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 BC 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 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 *Act* depending 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.¹⁶¹

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.

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 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:

- leave strip protection and provision
- erosion and sediment control and site development practice
- storm water management
- instream work controls
- fish passage and culverts maintenance

- 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 BC (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 regional 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

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

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 BC 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 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, 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 the 5% requirement. 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 BC 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 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 BC.¹⁷²

E. 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 BC 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 BC 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 BC, 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 BC 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
- 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 BC 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

F. 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

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 BC 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

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 BC, 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.

3. Fishing

Salmon are a vital part of BC'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 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.

G. MONITORING AND IMPACT ASSESSMENT

The BC *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.

H. 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 BC'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 BC'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 BC's environment is a crucial first step, as much remains to be learned about biodiversity in the province. The funding of biodiversity research by Forest Renewal BC 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 to ensure that BC's rich biodiversity legacy is preserved for future generations.

I. 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. (See Section D, 2)

2. Statutory recognition of the following doctrines is also required:

- public trust
- precautionary principle
- 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; and,
- 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 in BC

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*.

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 *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 *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 *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. 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 *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.

16. The *Park Act* should be amended to accommodate the needs of the First Nations' land claims process.

17. The *Ecological Reserve Act* should explicitly prohibit human uses in ecological reserves other than strictly regulated research.

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.

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 *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.

FURTHER READING

Environment Canada, *Biodiversity in British Columbia*, Canadian Wildlife Service, 1994.

R. Edward Grumbine, *Ghost Bears: Exploring the Biodiversity Crisis* (Washington, DC: Island Press, 1994).

barbara findlay and Ann Hillyer, *Here Today Here Tomorrow: Legal Tools for the Voluntary Protection of Private Land in BC*, (Vancouver: West Coast Environmental Law Research Foundation, 1994).

Mark Haddock, *Forests on the Line - Comparing the Rules for Logging in British Columbia and Washington State*, Sierra Legal Defence Fund and NRDC, 1995.

David Loukidelis, "Wilderness Preservation" in Canadian Bar Association, *Law Reform for Sustainable Development*, 1990.

Colin Rankin & Michael M'Gonigle, *Legislation for Biological Diversity: A Review and Proposal for British Columbia* (1991) U.BC L. Rev. 277.

Calvin Sandborn, "Endangered Species & Biological Diversity" in Canadian Bar Association, *Law Reform for Sustainable Development*, 1990.

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BIODIVERSITY LAW AND POLICY IN BRITISH COLUMBIA continued

ENDNOTES

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* (Island Press, 1994) at 20.
3. R. Edward Grumbine, "What is Ecosystem Management?" (1994) 8 *Conservation Biol.* 27, cited in Tracey Cook, "Implementing Ecosystem 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.
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 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.

[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.

[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.

[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.

[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.

[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.

[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.

[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 document was prepared by the provincial, territorial and federal government departments responsible for wildlife management for discussion purposes.

[38.](#) Cited in Donald Robinson, "Wildlife and the Law" in *Our Wildlife Heritage – 100 Years of Wildlife Management*, Centennial Wildlife Society, Victoria, B.C., 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.

[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*, 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.

[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.

[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.

[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.

[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, Torn & Harte, *In Our Own Hands - A Strategy for Conserving California's Biodiversity*, U. 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.

[64.](#) Doremus, *supra*, note 62 at 322-3.

[65.](#) *Vancouver Sun* (1 April 1 1996) B1.

[66.](#) Australian Statutes, No. 194 of 1992, s. 4.

[67.](#) Jensen, *et al.*, *supra*, note 62 at 241.

[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.

[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.

[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*, part 8, s.176.

[81.](#) Preamble and section 2(1), *Forest Practices Code*, (Bill 40, *Forest Practices Code of British Columbia Act*, 3d Sess., 35th Parl., B.C., 1994).

[82.](#) *Strategic Planning Regulation*, B.C. Reg. 180/95, s.10.

[83.](#) *Biodiversity Guidebook*, *supra*, note 78 at 53.

[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 hydriparian zone and drainage system. The Panel made a series of site-specific prescriptions for hydriparian reserves in the area they were reviewing. *Clayoquot Scientific Panel Report 5*, s.7.4, p.175-185.

[86.](#) Personal Communication, Dr. G.G.E. Scudder, Department of Zoology, U.B.C., 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."

[89.](#) Preface to Guidebooks, Ministry of Forests 1995.

[90.](#) Ross, *supra*, note 79 at 345.

- [91.](#) *Biodiversity Guidebook*, *supra*, note 78 at 9.
- [92.](#) Mark Haddock, *Forests on the Line – Comparing the Rules for Logging in British Columbia and Washington State*, Sierra Legal Defence Fund and NRDC, 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.
- [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.
- [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.).
- [102.](#) (1995) 17 C.E.L.R. (N.S.) 265 (B.C.A.A.).
- [103.](#) R.S.B.C. 1979, c.140.
- [104.](#) Morrison & Turner, *supra*, note 14 at 358-360.
- [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.
- [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. This chapter does not discuss the federal framework.

[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.

[111.](#) *Ibid.*

[112.](#) Geoffrey Scudder, "Biodiversity Conservation in British Columbia" (1995) 2 *Cordillera* 2.

[113.](#) R.S.B.C. 1979, c.309.

[114.](#) Morrison & 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.

[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.

[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.

[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.

[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."

[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.

[134.](#) Report of the Cypress Park Special Planning Commission, August 1995, Recommendation number 24 at 39.

[135.](#) Ministry of Lands, Parks and Housing, *Park Master Plans*, 1986.

[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.

[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) .

[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.

[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.

[147.](#) *Park (Regional) Act*, R.S.B.C. 1979, c. 310, s.4.

[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, 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.

[154.](#) *State of the Environment Report for British Columbia*, 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.

[157.](#) Elder, supra, note 155 at 131-2.

[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.

[160.](#) *A.G. Canada v. Aluminum Co. of Canada Ltd.*, (1980) 115 D.L.R. (3d) 495 (B.C.S.C.) (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.

[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.

[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.

[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.

[170.](#) Department of Fisheries and Oceans, Fraser River Action Plan, *Protection of Aquatic and Riparian Habitat by Local Governments*, 1995, A-6.

[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 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).

[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.
- [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.
- [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.
- [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.
- [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.
- [189.](#) *Western Canada Wilderness Committee v. B.C. (Ministry of Environment)* (1991), 48 F.T.R. 236 (FCTD).