PRESERVING BRITISH COLUMBIA'S COAST: A REGULATORY REVIEW

Background Report

by

West Coast Environmental Law

for the

BC Near Shore Habitat Loss Work Group

Puget Sound/Georgia Basin International Task Force

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Introduction

Like fish, birds and other wildlife, people concentrate in coastal areas. In British Columbia, over three-quarters of the population lives on or near the coast, which consists of 27,000 km of coastline and more than 6500 coastal islands. The province's population is concentrated in the coastal cities of Vancouver and Victoria and in the rapidly growing communities on the east coast of Vancouver Island. The Georgia Basin has grown from 1.2 million to 2.7 million people in the last 25 years, and population growth is not slowing down. Loss or degradation of coastal habitat has been identified as the chief threat to the health of the shared marine waters of British Columbia and Washington because the impacts are irreversible, the potential harm to the environment is great, and habitat losses are highly preventable. Scientists have urged governments to take immediate action to prevent coastal and estuarine habitat losses.

Habitat is the "physical and biological setting in which organisms live and in which the other components of the environment are encountered … [and there is]…" no disagreement in the ecological literature about one fundamental relationship: sufficient loss of habitat will lead to species extinction." In BC, diminishing populations of some species shows the negative effects of habitat loss. A number of stocks of salmon are at risk, in part due to habitat loss. There are 26 species of endangered and threatened freshwater fish in the province, including the Nooksack Dace and the Salish Sucker, both of which are threatened by habitat loss from urban development. Virtually all the COSEWIC listed plants in the Georgia Basin are threatened by urban development. Coastal dependent birds such as the Marbled murrelet are affected by habitat loss. Three species of marine mammal: the Northern Sea Lion, Killer Whale and Harbor Porpoise are affected by human disturbances and have been added to the province's list of species at risk.

Habitat can be lost and damaged in a number of ways, ranging from physical alteration of the shoreline itself to water quality degradation. Historically the primary causes of nearshore habitat loss were dyking and draining. A major review of coastal habitat loss in the Georgia Basin done in 1994 identified dredging, port and harbour development, log storage, and degradation from pollution such as dioxin contamination as prime causes of habitat loss.

Urban development has also been a major cause of wetland conversion in the Lower Mainland. About 30% of the natural lands that were developed from 1967 to 1982 were wetlands. Urban streams that enter into the Strait of Georgia are in sharp decline. About 120 streams in the Lower Fraser Valley have been lost due to paving, filling and culverting. A 1997 Department of Fisheries and Oceans report classified the remaining streams as follows: 61% are endangered, 24% are threatened and only 15% are listed as wild.

This report reviews the current regulatory system in place in BC to protect near shore habitat. It also describes the gaps in that system, and possible solutions to fill the regulatory gaps. It discusses the federal, provincial and municipal laws that apply to

control activities that harm near shore habitat as well as the laws that protect habitat. It also discusses other approaches that can be used to promote habitat protection such as conservation covenants and other legal tools to protect privately owned land. Though commonly thought of as non-regulatory approaches, this group of tools requires a statutory base.

Improvements can be made to our current regulatory framework to protect near shore habitat. Four potential changes are:

A new provincial policy to protect wetlands. The province relies on the federal fisheries habitat protection policy based on the principle of "no net loss", and has no policy of its own.

Strong new regulations under the *Fish Protection Act*. The province has passed a new *Fish Protection Act* to improve habitat protection in urban areas. Regulations developed under this *Act* could significantly increase coastal habitat protection in urban areas.

Creation of a Shoreline Reserve. Coastal development can alter the ecology of the coastal zone and functioning of coastal and ocean processes. Some ecologically sensitive estuaries and other areas of the coast should remain free from development. Creating a narrow exclusionary area adjacent to the ocean's edge in the Georgia Basin area in which building and other development is prohibited would improve the current regulatory scheme. This reserve could be created under provincial legislation similar to the laws which created the Agricultural Land Reserve and the Forest Land Reserve, or under integrated coastal management plans developed pursuant to the federal *Oceans Act*.

Integrated Coastal Management administered by a Coastal Commission. As conflicts between coastal land and water uses increase, the need for integrated coastal management (ICM) is greater. Conflicts are on the rise, between fisheries and agriculture; aquaculture and protected areas; industrial development and environmental protection. Rather than creating a new process each time a coastal conflict arises, an integrated coastal management strategy administered by a multi-agency Coastal Commission would improve habitat protection in British Columbia. This Commission would also be the vehicle for the public process to determine how much estuarine and nearshore habitat should be preserved that the Marine Science Panel recommended.

Background

A BC/Washington Environmental Cooperation Council (the "Council") was established in 1992 by the Premier of BC and the Governor of Washington to address transboundary environmental issues. The Council in turn created a number of task forces, including the Puget Sound/Georgia Basin International Task Force (the "Task Force").

To identify the state of scientific knowledge about the shared marine waters of BC and Washington, the Council convened a Marine Science Panel (the "Panel") in 1993. Three Canadian and three U.S. scientists reported on the current condition of and trends in the marine waters shared by BC and Washington.

The Task Force responded to the recommendations for action of the Panel by asking the Council to support and direct Priority Actions for each of the Panel's recommendations. In relation to minimization of estuarine wetland habitat losses, the Task Force said that Priority Actions should be:

1. Initiating a public process to identify special areas for protection in each coastal community;

2. Avoiding further losses of all habitat types if at all possible in estuaries with more than 30% of the area already degraded;

3. Applying the principle of no net loss to fish and wildlife habitats and special areas in estuaries where less than 30% of the areas are degraded;

4. Monitoring the success of habitat enhancement and restoration projects required as compensation for losses to development and providing for alternative methods should these projects fail; and

5. Fostering the development of a standardized coastal/shoreline habitat classification system and research on key ecosystem functions.

Work groups were established to address the recommendations of the Panel and are now working on action plans. The BC Habitat Loss Working Group is one of these work groups. A Draft Action Plan is being prepared by the BC Habitat Loss Working Group to address the problem of coastal habitat loss. This report is a background report for the Working Group on the regulatory system now in place to protect nearshore habitat, gaps in that system, and options for improvement to the regulatory system.

Nearshore habitat is typically considered to encompass the strip of shallow water along the shoreline and the lands immediately adjacent to it. The inherent interrelated nature of ecological systems means that activities affecting nearshore habitat may be located a considerable distance away from the immediate shoreline area. The Working Group has chosen to divide the "nearshore" into three zones:

1. Primary Zone– All of the marine waters of the Georgia Basin (Striat of Georgia and contiguous marine waters) and inland 100 metres from the ordinary high water mark.

2. Secondary Zone – Inland of the primary zone to the approximate 150 metre elevation contour.

3. Tertiary Zone – Inland from the 150 metre contour to the height of land where practical.

This report focuses primarily on those laws which have a direct impact on the primary zone, and in less detail on the laws which have an indirect impact on the primary zone.

It is limited to the regulatory regime governing coastal resources, and does not address the many non-regulatory actions that can be taken to protect habitat such as public education, stewardship approaches, co-operative agreements, streamkeeper and community group involvement. The Action Plan to be developed by the Habitat Loss Working Group will tackle these issues.

Evaluation of Current System for Managing and Protecting Coastal Habitat in BC

This report evaluates the regulatory framework for habitat protection. Unlike Washington State, which has a *Shoreline Management Act* to coordinate planning and protect the public interest in shorelines, British Columbia does not have one specific law devoted to near shore habitat. Instead, there are different laws at the federal, provincial and municipal levels which may play a role in habitat protection. Each case of habitat protection may involve one or more levels of government, and one or more laws and policies.

This part of the report is divided into four sections.

First, it discusses jurisdiction. Second, it discusses the laws, regulations, and policies that apply to activities in the primary coastal zone which have an impact on habitat. Third, it identifies gaps in the current regulatory regime to protect coastal habitat.Fourth, it identifies and evaluates specific changes to laws that would provide improved protection for coastal habitat.

Jurisdiction

Most of the land (about 93%) in BC is Crown land. The province of BC holds the legal title to the foreshore of tidal waters, the area between the high and low water line which is exposed at low tide. The province also owns the beds of bodies of water "within the jaws of the land", such as the Strait of Georgia, the Strait of Juan de Fuca and Johnstone Strait. The fact that these inland seas come under provincial jurisdiction is not widely known. National harbours, national parks and defence land is owned by the federal government. First Nations have aboriginal title to many areas of BC, and the ongoing land claims and treaty process will likely alter the regulation of First Nations land. Coastal areas above the high water line in the Georgia Basin are often privately owned.

Both the province and the federal government can make laws because of their land ownership. In addition to this proprietary jurisdiction based on property ownership, each level of government also has legislative or law-making jurisdiction. The three levels of government (federal, provincial and municipal) each have different constitutional powers to enact laws over different subject areas.

The federal government has the constitutional authority to make laws regarding fisheries. The federal *Fisheries Act* is probably the most important legal tool for protecting wetlands and other near shore habitat. There is no comparable provincial habitat protection law. Other important federal laws for the protection of nearshore habitat include: the *Canada Oceans Act, Canadian Environmental Protection Act* (CEPA)*, Canadian Environmental Assessment Act (*CEAA), *National Parks Act*, *Navigable Waters Protection Act*, *Canada Wildlife Act* and the *Canada Shipping Act*.

Most environmental laws are provincial. The provincial government has constitutional jurisdiction to make environmental laws based on their authority to control natural resources; property in the province; sale and management of public lands; and all matters of a local nature. There is no specific provincial coastal protection law. Important provincial laws for the protection of nearshore habitat include the:

- *Land Act,*
- *Wildlife Act,*
- *Islands Trust Act,*
- *Park Act,*
- *Ecological Reserve Act,*
- *Waste Management Act,*
- *Water Act,*
- *Environmental Assessment Act.*

Municipal governments also have wide powers to regulate habitat through land use and zoning decisions; and bylaws concerning riparian setbacks, tree removal, watercourse protection and other subjects. Municipalities and other forms of local or regional government have only the powers that are delegated to them by other levels of government. The *Municipal Act* is the law which regulates what municipalities can do in BC.

Laws Applicable to Coastal Habitat

The laws and policies governing coastal habitat have been strengthened over the past twenty years. A comprehensive review of the regulatory regime governing coastal resources in BC was done in 1978. Since that date, new additions to the regulatory regime include:

- *Canada Oceans Act,*
- BC Coastal Zone Position Paper,
- *Forest Practices Code of BC Act,*
- The as yet unimplemented provincial *Fish Protection Act,*
- Creation of provincial Ministry of Fish,
- Environmental assessment laws at both the federal and provincial levels,
- The federal *Policy for the Management of Fish Habitat,*
- The *Land Development Guidelines for the Protection of Aquatic Habitat, and*
- The *Federal Wetland Conservation Policy*.

The complex laws governing coastal resources can be described based on the activities they regulate, called the "sectoral" approach or based on the processes used to manage the resources, called the "processes" approach.

The main activities affecting coastal habitat are land use, land development, land conservation, water use, pollution, renewable and non-renewable resource extraction. The main processes affecting coastal habitat are: environmental assessment, referral systems, intergovernmental agreements, and planning and growth management.

Land Use

Nearshore land use activities with the potential to either harm or protect habitat are regulated by all three levels of government, and by intergovernmental programs and processes. Any physical alteration of land which qualifies as fish habitat is subject to the federal *Fisheries Act*, which prohibits harmful alteration, destruction of or damage to fish habitat . This *Act* will be discussed in detail in the section of this report on "habitat conservation –fish". Local governments also regulate nearshore land use through their zoning and land use or development approval processes, which will be discussed in more detail in the sections on land development and planning and growth management. However, the provincial government is the primary regulator of land use activities in the nearshore zone due to its ownership of the land.

The provincial law used to regulate and manage the use and disposition of all Crown land, including Crown nearshore land, is the *Land Act* . This *Act* provides that, except by

order of the Lt. Governor in Council, Crown land below the natural boundary of a body of water must not be disposed of by Crown grant. There is no separate policy for Crown shorelines or coastal areas. Additional protection for nearshore habitat comes from the requirement to obtain approval from Crown Lands before building on the nearshore.

The *Land Act* gives the province wide discretion to dispose of Crown land through sales, licences to occupy, easements, or leases. Foreshore leases are used for activities such as finfish aquaculture; shellfish harvesting; aquatic plant harvesting; marinas; docks and other structures and log handling and storage. These activities are also subject to other regulatory controls to minimize their impact on habitat. For example, shellfish and aquatic plant harvesting require licences from the Department of Fisheries and Oceans. DFO has developed guidelines for dredging, marina development and boat painting. Log handling and storage are the subject of a host of regulatory controls. Despite the other regulatory controls, the initial decision on whether to allow any new or continuing activity on nearshore land is significant, and so the *Land Act* procedures are a key component of the regulatory framework for coastal habitat.

The *Land Act* Tenure Administration System (TAS) is a data base on Crown land leases from 1996 to date. Each type of tenure, and the purpose for which it was issued, is recorded in the TAS. This database provides a means of determining the rate of habitat use and changes in habitat use along the foreshore. It provides a snapshot of the number of existing leases as of the date the review is conducted. As of December 1996, the number of leases and the amount of area allocated to each were as follows:

Type of lease	Number of active leases	Amount of area (HA)
1. Finfish	18	119
2. Plants	0	0
3. Shellfish	320	1,714
4. Marinas	137	205
5. Log handling/storage	247	2,457
6. Fish & wildlife management	21	7,752

One study analyzed the TAS data on foreshore leases of the Strait of Georgia to see if habitat losses and gains could be calculated over a period of time. The thesis was that leases with certain subpurposes, such as finfish, plants and aquaculture; marinas; and log handling/storage represented habitat losses and subpurposes related to fish and

wildlife management would represent habitat gains. It was difficult to determine changes in habitat use as a result of this foreshore lease analysis, because the database does not allow calculation of data based on renewal of leases.

A referral process, the Land Disposition Referral Procedure, is used to determine whether other government agencies or other parties have concerns about the proposed disposition of lands. The regional Lands managers decide who should be consulted with any particular proposed disposition of Crown land. For example, foreshore area proposals are forwarded to DFO, and wildlife habitat areas are sent to MELP's Fish and Wildlife Branch for review. There are concerns that this referral procedure may not always result in the identification of important ecological features of land proposed for disposition. In some areas, this information is provided to the Lands Branch by MELP staff. In other areas, MELP does not have the resources to prepare detailed ecological inventories.

Land Development

Conversion of undeveloped nearshore habitat to residential or industrial use is a prime cause of habitat loss in the Georgia Basin. Urban areas are expanding as the population grows.

Urban development, one of the chief threats to coastal habitat in the Georgia Basin area, is regulated by a variety of laws and guidelines, from all three levels of government:

- the federal *Fisheries Act* prohibits harmful alteration, damage or destruction to fish habitat;

- permits from provincial agencies are required for water use or diversion under the *Water Act* or for waste emissions or redevelopment of contaminated land under the *Waste Management Act*;

- local government rules for land development contained in Guidelines, bylaws, zoning, and project approvals; and

- intergovernmental regulatory processes, such as the urban development preferral process or the Fraser Estuary Environmental Review Process.

A number of non-binding guidelines now exist or are being developed to control land development that affects coastal habitat. To address the need for riparian protection standards when land development occurs, 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; and
- prevention of deleterious substance discharges.

While the *Land Development Guidelines* have no legal force unless they are incorporated directly into a bylaw, they may be of use in deciding whether there has been a breach of the standard of care required of developers in a prosecution for alteration or destruction of fish habitat under the *Fisheries Act*. The G*uidelines* also help the Minister of Fisheries and Oceans to decide whether development should be allowed where there is the possibility of a net loss of fish habitat under federal control.

Foreshore Development Guidelines are being prepared as a complement to the *Land Development Guidelines*. The objective of these Guidelines is the development of fish habitat protection standards, including shoreline setbacks, vegetation management requirements and shoreline alteration provisions. This may be based on ecological functions, habitat productivity, uniqueness and sensitivity, or on a general marine sensitive zone similar to the fishery sensitive zone in the *Land Development Guidelines*.

Among the methods of preserving coastal habitat during the land development process, an important provision is the *Land Title Act* requirement to dedicate a specified amount of public access to the water when waterfront land is being subdivided.

Land Conservation

Nearshore habitat may be conserved through a variety of legal mechanisms. The provincial *Land Act* and *Wildlife Act* are frequently used for conservation. The federal *Fisheries Act* is currently an important conservation tool, and the federal *Oceans Act* will likely develop into another important tool. There are also a number of laws which may be used to create protected areas, for land and marine areas, such as the *Parks Act,* the *National Park Act*, the *Canada Wildlife Act* and the *Ecological Reserves Act*.

In addition, legal tools to protect privately owned land are an increasingly critical piece of the regulatory structure for habitat conservation. Many ecologically significant coastal habitat areas in the Georgia Basin are privately owned, and as government

funding to acquire and manage these lands continues to decline, private land conservation will increase in importance.

Habitat Conservation — Fish

Historically there has been more emphasis in British Columbia on protecting fish rather than wildlife habitat. The federal *Fisheries Act* and the provincial *Fish Protection Act* are the two main laws for the protection of fish habitat in the province. The federal *Act* has been in use for a number of years and is supplemented by Guidelines, regulations and policies. The provincial *Act* is new, and the key regulations which will bring it into force have not yet been developed.

The federal *Fisheries Act* is the key legislative instrument for the protection of fish habitat in BC. Fish habitat is defined broadly as "spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carryout their life processes."

Section 35(1) of the Act prohibits "any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat." However, harmful alteration, disruption and destruction (HADD) is permitted by means or conditions authorized by the Minister of Fisheries and Oceans or under regulations.

Prevention of HADD and aiming for No Net Loss (NNL) of fish habitat are the keystones of the *Fisheries Act* protection system. The principle of "no net loss" has a long history in the Pacific coastal region. This principle was used to design a stop/caution/go colour coding system to indicate which areas were open for development, first used in harbour management plan for the North Fraser Harbour Commission, and now applied to the entire Fraser River Estuary. No Net Loss is also a key goal in the *Policy for the Management of Fish Habitat*, a policy document used by the Department of Fisheries and Oceans.

Section 36(3) of the *Act*, a general anti-pollution section, prohibits the deposit of a deleterious substance in any water frequented by fish. The definition of deleterious is related to the substance being deleterious to fish.

The Minister of Fisheries and Oceans has the power to require plans and specifications to assess a project that results or is likely to result in interference with fish or fish habitat. If a plan or specification is required, the Minister may make an Order (subject to regulations or, if there are no regulations, with the approval of Cabinet) to require modifications to the plans or restrict or close the work or undertaking. In practice, these orders are rarely used.

Other ways that the *Fisheries Act* can be used to protect fish habitat include the power for a fisheries inspector to make directions:

- requiring fishways and canals;

- prohibiting the obstruction of the main channel of a river or stream; and

- authorizing the placement or maintenance of barrier screens or other obstructions in streams to prevent the escape of fish held for fish breeding purposes.

The *Fish Protection Act,* passed in 1997, will increase the provincial government's ability to protect fish habitat. Since the province owns and manages provincial Crown land, all freshwater in the province as well as the beds of the water bodies in the province, provincial environment officials identified a need for a provincial legal tool specifically designed to protect fish habitat. The *Fish Protection Act* is limited to fish habitat, and applies only to new or redeveloped industrial, commercial and residential development that takes place beside streams. It does not apply to agriculture, mining, hydroelectric facilities or forestry activities as the government has decided that "these land uses will be subject to other streamside protection measures or voluntary guidelines."

The *Act* has four major objectives: ensuring sufficient water for fish; protecting and restoring fish habitat; improved riparian protection and enhancement; and stronger local government powers in environmental planning.

The main features of the *Act* for coastal habitat protection are:

- No new bank to bank dams on a list of 15 rivers — The *Act* prohibits new dams on named protected rivers. This part of the *Act* is in force.

- Inclusion of fish and fish habitat needs in water licensing decisions – Section 5 codifies the existing policy in which water managers *may* (but do not have to) consider fish and fish habitat needs when making decisions about licences for water use or approvals for works in or about a stream under the *Water Act*.

- Water Management Plans — Sections 10 and 11 allow the minister to designate an area as a water management area, and require the preparation of a water management plan for the area. These areas may be created to address conflicts between water users, including but not limited to concerns relating to fish or fish habitat. These areas may include coastal areas.

- Provincial Directive, Streamside Protection — Section 12. This is a key part of the *Act* for habitat protection, requiring regulations before it comes into force. It allows the government, by regulation, to establish "policy directives" for protecting and enhancing riparian areas the government considers are subject to residential, commercial or industrial development. This could include marine areas. The directives may establish minimum setbacks for riparian protection. The directives may be different for different parts of BC. If a directive is established, a local government must include in its zoning and rural land use by-laws riparian area protection provisions in accordance with the directive or ensure that its by-laws provide a level of protection that is comparable to or exceeds that established by the directive.

Habitat Conservation — Wildlife

Coastal and estuarine areas provide habitat for many species of wildlife. The laws primarily used to protect coastal wildlife habitat are the provincial *Land Act*, *Wildlife Act* , *Park Act* and *Ecological Reserve Act* and the federal *Canada Wildlife Act* and *Migratory Birds Convention Act*.

Land for habitat may be acquired directly under programs such as the Pacific Estuary Conservation Program; may have title transferred from another provincial Crown agency or a tenure agreement entered into pursuant to the *Land Act* or may have management control transferred, as in the creation of a Wildlife Management Area under the *Wildlife Act*. Land for habitat may be acquired through purchase, lease, donation, expropriation or land transfer. The Ministry of Environment, Lands and Parks (MELP) purchases land for wildlife protection, often with other agencies, such as the Canadian Wildlife Service, a municipality, or a nongovernmental organization such as the Nature Trust of BC, Nature Conservancy of Canada or Ducks Unlimited Canada. The Crown Land Account and the Habitat Conservation Trust Fund are two sources of funds used to pay for acquiring this land.

MELP habitat managers primarily use three sections of the *Land Act* for habitat protection. Each of these procedures is initiated by the Fish and Wildlife Branch of MELP. The initiation will depend on whether the land has a government champion, MELP's capability to manage the land, and the priority accorded to the proposed land use by the government:

- Section 15 allows the Lt. Governor in Council to reserve Crown land from disposition under this *Act* "for any purpose advisable in the public interest". The reservation can only be cancelled or amended by a further Order-in-Council, and so provides long term security for the land being reserved. These Order-in-Council Reserves are used where the land is of key or critical significance in a regional or provincial setting; or where it is in the public interest to protect land and maintain long-term options. These reserves are made for a term of 5 years or longer. They are rarely used and constitute only 0.8% of the total Crown land used for fish and wildlife. One example of an Order-in-Council reserve is for Roberts Bank.

- Section 16 allows the Minister, rather than the Lt. Governor in Council to temporarily withdraw Crown land from disposition. Also known as Map Reserves, these types of reserves are used to support Crown land planning project designations for management by another agency or for market development by the Ministry. These temporary reserve decisions are in practice made by regional managers. They make up 13.3% of the total Crown land used for fish and wildlife.

- Section 17 allows the Minister to designate a portion of Crown land "for a particular use or for the conservation of natural or heritage resources." Conditional withdrawals, also known as *Land Act* designations, are used to

prevent Crown land from disposition unless the disposition is for a purpose which is compatible with the purpose for which it has been designated. This section is used to record Wildlife Management Areas that have been designated under the *Wildlife Act*. These decisions are also made by Regional Directors, Lands. This is the most common designation used for Crown fish and wildlife land at 84.7% of the total.

The Ministry may also decide to prohibit uses of the land, through an Order in Council procedure, used for example to prohibit the use of All Terrain Vehicles (ATVs) in sensitive habitat areas. The *Land Act* also permits MELP to manage land owned by the Nature Trust of BC under long term leases.

The *Wildlife Act* has important provisions for habitat protection, including the power to:

- acquire land for habitat;

- manage land for wildlife protection through designation as a Wildlife Management Area (WMA). The land must be under the Minister's administration and not be in a park or recreation area. There are currently 19 WMAs in the province with a total area of about 109,000 hectares. These areas fit within a larger land use framework of land use plans, protected areas and forest management. While WMAs are not considered by most to be true protected areas, even though they meet some of the criteria set by the IUCN, they are still very useful designations for setting aside marine and intertidal areas of high ecological value that would not otherwise be protected. Activities are often permitted in a WMA that would not be allowed in a protected area, as long as they do not impair wildlife in the area. WMAs may also be upgraded to protected areas status as a result of land use planning processes. They can also be used as buffer zones between parks and more developed areas or to provide wildlife corridors or links between core habitat areas. No use that contravenes the *Wildlife Act* will be permitted in a WMA, unless a permit has first been obtained allowing that use. Permits will be granted where the proposed land use is compatible with the values being protected in the management plans, or with the land values of the area secured.

- designate and manage land for wildlife protection of Crown land in a Wildlife Management Area as a Critical Wildlife Area (CWA) to protect the critical habitat of an endangered or threatened species. This provision has been used only once. Land in a WMA can also be designated as a wildlife sanctuary but this provision has never been used.

- protect endangered and threatened species. Listing a species as threatened or endangered does not offer any additional protection for the species, unless its habitat is protected as described above. Since 1980, only 4 species have been legally listed as endangered in BC under the *Wildlife Act*, though hundreds more have been listed by the Committee on the Status of Endangered Wildllife in Canada (COSEWIC).

The *Canada Wildlife Act*, while infrequently used, is another law for wildlife habitat protection. This federal law authorizes the creation of National Wildlife Areas (NWAs), which are designated on the basis of national and international criteria of significance. The Alaksen National Wildlife Area in Delta isa world renowned migratory bird habitat area and one example of the NWA designation. In the Georgia Basin area, the law could potentially be used to designate NWAs on coastal lands owned by the federal government such as Department of National Defence or Ministry of Transport sites or the federally owned harbours, One administrative difficulty is that this law requires that Environment Canada have administrative control of the lands being designated, and there is currently a proposal to amend the *Canada Wildlife Act* to delegate administrative control to other federal land owning Ministries, removing the need for the cumbersome transfer of these lands to Environment Canada.

Protected Areas

The strongest degree of legal protection for habitat comes from designation as a park, ecological reserve, or other protected area. The province's Protected Areas Strategy (PAS) has the goal of doubling BC's protected area space to twelve per cent of the province's land mass by 2001. One of the Strategy's goals is to preserve a target amount of 12% of the area of each of BC's biogeoclimatic zones.

There is a wide range of legislation under which protected areas can be created. The main statutes are the *Park Act* and the *Ecological Reserves Act*. Protection of habitat is not the primary management consideration in provincial parks created under the *Park Act*, but is a primary goal of the *Ecological Reserve Act*. Reserves are found in all of BC's 14 biogeoclimactic zones. Seabird colonies have been protected in 20 ecological reserves. Other wildlife protected in reserves includes eagles, falcons, sandhill cranes, sea otters and killer whales. The average size of an ecological reserve is 1,212 hectares, though reserves range in size from 0.6 to 48,560 hectares. Larger areas are often required to preserve viable populations of rare species, particularly those with wide ranges.

The amount of coastal habitat that is secured as a protected area is insufficient, despite the significant additions that have been made in recent years. Though some targets for certain biogeoclimatic zones, such as the Coastal Douglas Fir zone, have not been met, the overall 12% goal of the PAS has been achieved for the Georgia Basin area as part of the Vancouver Island Protected Areas Strategy and Land Use Plan. Private land conservation efforts, such as those now underway by the Islands Trust Fund, an agency established by the provincial government to secure ecologically significant property in the Gulf Islands, as well as many nongovernmental organizations, will be necessary to secure additional key coastal habitat areas in the region.

Marine protected areas (MPAs) also protect wildlife and coastal habitat. These areas may be created under a variety of laws, both provincial and federal. The federal *Oceans Act* and *National Marine Conservation Areas Act* authorize the creation of a national system of marine protected areas .The provincial and federal governments have developed a proposed marine protected areas strategy for the Pacific Coast, and have

proposed four new pilot sites as MPAs, two of which involve nearshore habitat protection: Race Rocks Ecological Reserve on the southwest coast of Vancouver Island; and Gabriola Passage in the southern Gulf Islands. Most activities potentially harmful to habitat are prohibited within these protected areas, although recreational and interpretative facilities do exist in some marine protected areas, such as Pacific Rim National Park, for example. Minimum protection standards for all MPAs are being developed, and will prohibit ocean dumping, dredging, and exploration and development of non-renewable resources. Other activities which environmentalists have proposed restricting, at a minimum, in MPAs include bottom trawling, open net fish farming, and introduction of alien species. The *Oceans Act*, unlike other protected areas laws, does contain the power to close fisheries in MPAs. Currently, only two MPAs are "no-take" areas in which all marine life harvesting is prohibited. These areas comprise less than one-tenth of 1% of coastal and marine areas in British Columbia. Research has shown that marine species such as abalone and lingcod have improved in both size and abundance in areas in which harvesting is prohibited.

There are now 106 MPAs in the province. The province has created a Marine Ecological Clasification system which classifies marine areas into 12 ecosections based on their biophysical characteristics. The use of this classification system shows that 1.25% of B.C.'s marine area is protected by federal or provincial protected areas laws, and that some marine ecosections are underrepresented. This analysis reveals that 14.36% of B.C.'s shoreline is protected, with the most protected shoreline areas located in the Haida Gwaii/Queen Charlotte Island area. The Strait of Georgia is relatively unprotected at 6.11%, and the authors of the classification system note that not only is the Strait of Georgia "…underrepresented in comparison to other ecosections, but has global significance as habitat for migratory birds and many other species…and supports one of the most rapidly growing populations in the developed world."

A new federal law provides authority for the creation of another category of MPAs. The *Marine Conservation Areas Act* allows Marine Conservation Areas to be established to protect and conserve representative marine areas and for the benefit, education and enjoyment of the people of Canada and the world. These Areas will be based on marine ecoregions, and will allow for zoning for multiple uses. Two MCAs are currently proposed for B.C.: one in Haida Gwaii, and the other in the Gulf Islands. Public consultation will occur before designation takes place. These areas are planned to be larger in size than many existing MPAs and may resemble other systems such as that used in the Great Barrier Reef in Australia, and the marine sanctuary system in the United States. A map of the marine sanctuaries on the Pacific Coast of the U.S. illustrates the importance of these systems for conservation and the potential value of a vastly expanded system of MPAs, including marine conservation areas, for coastal habitat protection in Canada.

Private Land Conservation

Private land conservation also plays a role in coastal habitat preservation. The BC Land Conservancy, a nongovernmental organization, was instrumental in acquiring South Winchelsea Island, an ecologically significant property. Jedediah Island was acquired

through a legacy from a well known climber. The Waterbird Watch Collective on Saltspring Island has established the McFadden Heron Colony through private fundraising efforts.

Acquisition programs are often used to secure more coastal habitat protection. The Pacific Marine Heritage Legacy is a five-year federal/provincial program to acquire coastal properties in the Gulf Islands for future designation as national and/or provincial marine parks. The Pacific Estuary Conservation Program is another major acquisition program. The Pacific Estuary Conservation Program is the acquisition arm of the Pacific Coast Joint Venture, described in the setion on Intergovernmental programs below. The Pacific Estuary Conservation Program is a co-operative plan to acquire, reserve and enhance wetland habitat essential to wildlife populations on the BC Coast. Begun in 1987, the program stems from an agreement between the provincial Ministry of Environment, Lands and Parks' Habitat Conservation Fund, the Crown Land Allocation Branch of that Ministry, DFO, the Canadian Wildlife Service, Ducks Unlimited Canada, Wildlife Habitat Canada and the Nature Trust of BC. Since 1987, the PECP has acquired 1,612 hectares of private land on and around wetlands, and has arranged the transfer and designation of 54,736 hectares of Crown lands for wildlife habitat. The PECP won the first Ramsar Wetland Conservation Award in 1999 for its contribution to preserving wetlands along the coast of British Columbia (BC), Canada's Pacific province. A seven member steering committee comprised of one representative from each participating organization is responsible for approving properties to be acquired, approving site-specific management plans for each parcel proposed as a restoration or enhancement project, and for promoting land stewardship.

The Islands Trust Fund, established by the *Islands Trust Act*, administers and manages the real and personal property assets of the trust fund. The Fund acquires and holds land and interests in land for the protection of special areas and features of the islands and waters of the Strait of Georgia and Howe Sound.

Once privately owned land has been acquired, often it is secured through a conservation covenant, described below, or through another land title legal tool. For example, a statutory right of way pursuant to s. 214 could be used to create and protect a wildlife corridor, or to protect a coastal wetland. A right-of-way could also be reserved along the coast to create a shoreline buffer, or reserve, zone. A conservation covenant would be a good adjunct to a statutory right of way to prohibit incompatible uses on the wildlife corridor.

Two types of covenants are used to protect land. Covenants held by a government body are commonly referred to as s. 215 covenants, and the newer types of covenants held by conservation groups are known as conservation covenants. Covenants registered under s. 215 of the *Land Title Act* have been used extensively by the provincial government to protect fish habitat. Many areas of critical fish habitat and other significant riparian and coastal areas are privately owned and vulnerable to degradation without some form of legal protection.

A s. 215 covenant is a voluntary, written agreement between a landowner and one of the following parties:

- the Crown or a Crown corporation or agency,
- a municipality or regional district, or
- a local trust Committee under the *Islands Trust Act*

A conservation covenant is a similar agreement between a landowner and a designated conservation organization. Approximately 136 covenants have been registered in the province.

In the covenant, the owner of the land promises to protect the land in specified ways. The covenant holder can enforce it, if necessary, against the owner. The covenant is filed in the BC Land Title Office. It is registered on title to the property, remaining on the property's title even if the land subsequently is sold to a new owner. The conservation covenant is intended to last permanently and binds future owners of the land, not just the current landowner. The covenant can cover all or just a portion of the landowner's property.

In the covenants used by the provincial government for fish habitat protection, the covenantor (the private landowner) agrees not to alter the riparian portion of his or her property covered by the covenant. The covenants commonly contain building setback requirements, fencing requirements and the maintenance of a buffer zone dedicated to local government for conservation purposes.

Water Use

Fresh water withdrawals

The *Water Act* is the chief provincial law controlling the use of fresh water. It regulates quantities of water through a licence system. This *Act* may be relevant for fish and near shore habitat protection if, for example, there is a proposal to withdraw water from a coastal wetland or carry on activities in or around a stream in a coastal area.

Marine Transport

Marine transport activities can harm coastal habitat, particularly from oil spills, chronic oil discharges, and waste and dumping from ships. The main laws regulating marine transport include the *Navigable Waters Protection Act,* which requires permits for any structures built in navigable waters; the new *Canada Marine Act* which establishes port authorities and other matters related to maritime trade and transport; environmental assessment regulations for port activities and developmentsunder *CEAA* and the *Canada Shipping Act*

The *Canada Shipping Act* controls pollution from ships, other vessels and oil handling facilities. Regulations under the Act cover both operational and accidental discharges. Ships must maintain shipboard oil pollution emergency plans in accordance with International Maritime Organization requirements. Regulations under the *Canada Shipping Act* that are relevant to habitat protection in BC include:

- *Pollutant Discharge Reporting Regulations*,
- *Oil Pollution Prevention Regulations*,
- *Garbage Pollution Prevention Regulations*,
- *Non-Pleasure Craft Sewage Pollution Prevention Regulations*,
- ***Pleasure Craft Sewage Pollution Prevention Regulations***
- *Pollutant Substances Regulations*, and
- *Dangerous Chemicals and Noxious Liquid Substances Regulations*.

There are limited regulations that control the introduction of alien marine species through shipping, such as from ballast release. DFO advised that the only regulatory provision that controls the introduction of alien marine species through shipping is section 5 of the *Pacific Fishery Regulations, 1993*. Twenty-three species are currently outlined in Schedule VIII, including Rock lobster, Oyster drill, Oyster crab, Moon snail, Tilapia, Sucker, Stickleback, Shad and Alewife, and Rudd.

Coastal Recreation and Tourism

Activities such as kayaking, hiking, sailing and cruising are on the rise in BC, and bring people to previously pristine areas. These activities are largely unregulated, with some minor exceptions. Sewage disposal regulations may soon be extended to apply to pleasure craft in some marine waters in B.C. . There are some limits on access to natural areas imposed by protected area requirements, as in Robson Bight.

Pollution and Waste Disposal – ocean dumping, liquid waste management, pollution

Nearshore habitat, and particularly the plants and animals in those habitats, are harmed by deteriorating water quality caused by pollution.

The BC *Waste Management Act* is the central anti-pollution law in the province. Its provisions related to liquid waste management planning and stormwater management are important for near shore habitat protection.

A number of regulations under the *Waste Management Act* control pollution from different sources, such as pulp mills and pulp mill effluent, antisapstain chemicals, and oil and gas waste. A municipal sewage regulation, with new standards for treatment and disposal of municipal sewage, is under development. Regulations under the *Fisheries Act* that limit effluent deposition into the ocean are also important for habitat protection.

The *Canadian Environmental Protection Act* (CEPA) regulates the production and control of toxic substances. A number of toxic substances can destroy or harm habitat. CEPA also contains provisions to control all aspects of the life cycle of toxic substances from their development, manufacture or importation, transport, distribution, storage and use, to their release into the environment as emissions and their ultimate disposal as waste.

CEPA also contains a chapter on ocean dumping, which may have a negative impact on fish and fish habitat. Ocean dumping may occur only if a permit has been obtained pursuant to the provisions of CEPA, subject to a few legislated exceptions. CEPA requires the government to notify the public of an application for a permit. This gives members of the public an opportunity to register objections or to request the Minister of Environment to appoint a board of review to examine the permit. If a permit is granted, the holder of the permit must pay a fee.

Pollution from pulp and paper mills is a source of significant concern in relation to the protection of fish and other habitat. Effects of pulp mill effluent on organisms are well documented, including acute toxicity and sub-lethal effects to aquatic life. Since 1988, the federal government has closed hundreds of kilometres of British Columbia coastline to shellfish harvesting because of dioxin and furan contamination from pulp mills. These shellfisheries closures were accompanied by a number of health advisories warning people not to consume certain species of fish over set limits, some types of diving ducks and waterbirds, and a general advisory against eating the livers of any bottomfish caught near coastal mills. A number of regulatory requirements have been brought into effect since the time of the first shellfisheries closures to reduce pollution from this industry, both at the federal and provincial level. Significant improvements to the quality of pulp mill effluent have been achieved under the more stringent regulatory regime.

The *Pulp and Paper Effluent Regulations*, adopted under the federal *Fisheries Act*, set minimum national standards for BOD, TSS and non-toxic effluents. Additional more stringent standards have been adopted for the MacMillan Bloedel mill at Port Alberni due to the sensitive, site-specific conditions at that mill, including a serious problem with extremely low levels of dissolved oxygen in the receiving waters posing a severe threat to salmon and other fish moving through these waters.

Two regulations were also adopted by the federal government under CEPA. The first of these, the *Pulp and Paper Mill Liquid Effluent Chlorinated Dioxins and Furans Regulations* set minimum national standards for the concentrations of the two most toxic forms of dioxins and furans, 2,3,7,8-TCDD and 2,3,7,8-TCDF in mill effluent. The

second, the *Pulp and Paper Mill Defoamer and Wood Chip Regulation* requires the virtual elimination of dioxins and furans from the defoaming chemicals used in the pulping process and prohibits mills from using dioxin and furan contaminated wood chips.

Renewable Resource Extraction

Fisheries – wild and farmed

Fishing in marine waters is controlled by the federal *Fisheries Act* and associated regulations. This activity has the potential to damage habitat, if harmful fishing technologies such as dragging or trawling are used, but most wild fishing activity does not cause negative impacts on coastal habitat. No law protects benthic organisms against harmful fishing or any other destructive activities.

The Crown Lands branch has responsibility under the *Land Act* for accepting, evaluating and issuing tenures on aquatic Crown land for salmon farming. The Salmon Aquaculture Review conducted by the Environmental Assessment Office recommended significant changes to the siting policy.

"Impacts from salmon farming on sensitive habitats such as marine bird colonies, known seal or sea lion haul outs, herring spawning areas, wild fish rearing areas or important wild fish migration routes appear to be limited, but there has been no comprehensive studies to identify the degree of overlap between existing salmon farms and sensitive fish and wildlife habitats. At a minimum, provincial siting policies need to be more explicit in the criteria that are to be applied in efforts to protect sensitive habitat values."

The existing *Aquaculture Siting Guidelines* are being revised based on this review.

Forestry

Approximately 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. As a result, the Ministry of Forests has the primary responsibility for the management of most provincial Crown land. The laws regulating forests are therefore an integral part of the legal framework for coastal habitat protection because such a large proportion of BC's coastal habitat occurs on forested land.

The main law which regulates forest practices is the *Forest Practices Code of British Columbia Act* which consists of enabling legislation, regulations, standards and guidebooks.

The *Code* applies to private land within a tree farm or woodlot licence issued under the *Forest Act,* Crown land in a provincial forest and wilderness areas. Except as provided in section 216, the *Code* does not apply to other privately owned land.

The *Code* addresses such forest practices as timber harvesting, road engineering, silviculture and soil conservation in the context of certain environmental criteria such as riparian management, biological diversity, visual values and wilderness preservation.

As part of its riparian management scheme, the *Code* establishes Riparian Management Areas (RMA's) around streams, lakes and wetlands which include both a reserve zone and a management zone. The reserve zone is immediately adjacent to both sides of all streams greater than 1.5 metres wide that are either fish-bearing or located within a community watershed. The management zone extends beyond the reserve zone. Timber harvesting is prohibited in reserve zones except in special circumstances, with the approval of the Ministry of Environment, Lands and Parks.

Coastal zone areas are not specifically addressed in the *Code,* however they can be protected several different ways depending on the type of activity proposed and the features of the area itself.

1. If the area classifies as either a stream or estuary then it is protected under the riparian area rules.

   According to the *Code,* estuaries include the intertidal zone of coastal streams directly influenced by saline water. Estuarine portions of a stream are assigned the same fish bearing status and stream/riparian class as the reach immediately upstream of tidal influence. (A seaward portion of an estuary that does not meet the definition of a stream is protected as a marine sensitive zone.)

2. The area may be classified as a "marine sensitive zone." Marine sensitive zones include: herring spawning areas, shellfish beds, marsh areas, existing aquaculture sites, juvenile salmonid rearing areas and adult salmon holding areas. MSZs are considered to be a "resource feature" under the *Code* which means that any "known MSZ" must be identified on forest development plans (if the MSZ is in or adjacent to a proposed cutblock or road.)

Once the forest development plan has been approved it is legally binding on all subsequent operations and plans. If an area is determined to meet the definition of a MSZ, certain forest practices apply.

Several of the Code regulations specify requirements relating to operations around forest practices in marine sensitive zones, such as a requirement that forest harvesting and silviculture treatments must not result in the deposit of volume of slash or debris capable of damaging fish habitat or reducing water quality in a MSZ.

The Riparian Management Area Guidebook sets guidelines for harvesting practices within a marine sensitive zone.

Any activities in coastal zone areas that are not classified as MSZs or streams are required to meet the standards set out in the *Code* for forest practices in general. In all cases, activities "should not damage fish habitat."

Agricultural Practices and Habitat Protection

Agricultural practices can have negative impacts on coastal habitat. For example, pesticide runoff and nutrient loadings can harm streams that drain into coastal waterways. Clearing a field to the banks of a stream can destroy habitat.

A number of laws, programs and policies regulate pollutants, land use, and farming and grazing practices that affect habitat in the province's agricultural area. The most important is the *Agricultural Land Commission Act* which establishes the Agricultural Land Reserve (ALR), to preserve agricultural land and open space, and to encourage development of the agricultural industry.

Soil based agriculture can also benefit wildlife by providing important upland habitat to adjacent coastal areas. For example, certain types of agriculture are very important to the survival of migratory bird populations in the Lower Mainland. Programs such as the Pacific Coast Joint Venture, the Waterfowl Management Program, and the Delta Farm and Wildlife Trust contribute to habitat protection in agricultural and ranching areas.

Nonrenewable Resource Extraction

Oil, Gas and Mining

A moratorium on oil, gas and mineral exploration and development off the coast of BC was instituted in 1972 and is still in place. The federal and provincial governments have not agreed how these resources should be developed, if at all. A major issue is how revenues from these activities would be shared if the mortaorium was lifted.

Discharges from mines frequently have had an adverse effect on coastal habitat. Provincial regulatory requirements provide a number of measures that are designed to prevent or mitigate impacts from mines and may serve to protect coastal habitat, such as permit requirements under the *Mines Act*. The permit may contain conditions including requirements for the owner to post security for mine reclamation and provide for the protection of, and mitigation of damage to, watercourses affected by the mine. The *Act* also authorizes the establishment of a mine reclamation fund which is available to pay for the costs of reclamation if the owner fails to do so.

Some new or expanding mining operations may require an environmental assessment under the provincial *Environmental Assessment Act* or the *Canadian Environmental Assessment Act* or both *Acts*. This provides the opportunity for the design of the facility and the operational components to include measures to prevent or reduce any potential impact to fish or wildlife habitat.

Runoff from old mining sites may damage coastal habitat in the Georgia Basin. For example, the mine at Britannia Beach has been emitting acid mine drainage for many years, and has appeared on the provincial non-compliance list nine times.

Environmental Assessment

Since many projects and developments are proposed for coastal sites, laws that examine the potential environmental effects of the projects before approvals are granted are important for coastal habitat protection. The BC *Environmental Assessment Act* and the *Canadian Environmental Assessment Act* are the laws which set the rules for environmental assessments. Examples of major projects in the Georgia Basin coastal zone which have been subject to assessments include the:

- Roberts Bank Superport
- Sea Island Jet Fuel Barge Facility
- Vancouver Airport Expansion
- Boundary Bay Airport Reactivation
- Nanaimo Harbour Port Study
- Fraser Shipping Channel, and
- Vancouver Greystone Convention Centre.

Environmental assessment laws are crucial for ensuring that the full environmental effects of these proposals are considered before government agencies grant approvals which may result in habitat loss or destruction. The federal law provides for the environmental effects of a project to be assessed, as far as possible, before a project has been granted approval and before irrevocable decisions have been made. Depending on the outcome of an environmental assessment, a project may not be approved, or may be modified to minimize any environmental impacts.

The types of projects that are subject to environmental assessment by the provincial government are listed in the Environmental Assessment Reviewable Projects Regulation. These projects include:

- industrial projects, such as chemical plants, forest product industry, sawmill plants, fibre production and contract textile dying plants and leather tanneries, among others;
- mine projects;
- energy projects including electric transmission lines and energy storage facilities and power plants;

- water management containment and diversion projects such as dams, dykes and groundwater extraction and shoreline modification projects;

- waste disposal projects such as special waste facilities;

- food processing projects such as meat packing and poultry and fish processing plants;

- transportation projects such as public highways, railways, ferry terminals and airports; and,

- tourism and recreational projects such as destination resorts.

All of these projects will be subject to an environmental assessment review if they meet the size thresholds listed in the regulations. The Reviewable Projects Regulations contains several loopholes related to highway construction, energy projects and others.

An environmental assessment is required under the federal *Canadian Environmental Assessment Act* if a federal authority, as defined in the Act, exercises one or more of the following duties, powers or functions in relation to a project:

- proposes the project;

- contributes any other form of financial assistance to the project;

- sells, leases or otherwise transfers control or administration of land to enable the project to be carried out; or

- exercises a regulatory duty in relation to a project, such as issuing a permit or licence, that is included in the Act's Law List regulation.

A number of provisions from the existing federal *Fisheries Act* are included in the Law List, triggering the requirement for an environmental assessment. An assessment is also triggered by other regulations.

If the *Canadian Environmental Assessment Act* does apply, then the relevant government agency (the "Responsible Authority") proceeds with an assessment of the likely environmental effects of the project. For example, the initial steps of an environmental assessment of a project with fisheries impacts may be conducted by the Department of Fisheries and Oceans. Projects with significant environmental impacts require full public review conducted by an independent panel or mediator.

Though both *Acts* provide for cumulative impact assessment, in practice each new project is assessed independently, and cumulative impacts are rarely accounted for.

Recently, there have been significant reductions in public sector spending, forcing governments to find ways to deliver their programs more cost effectively. In this

context, the federal and provincial governments have undertaken far-reaching harmonization initiatives designed to reduce overlap and duplication in the delivery of environmental protection commitments. In April, 1997, the BC and federal governments signed a bilateral agreement to harmonize the application of both federal and provincial environmental assessment legislation in BC. This agreement unites the implementation of the two regimes into one model, based upon the BC project review process. The agreement provides that while the requirements of both acts must still be met, and independent decisions will be made by each jurisdiction, the governments are committed to cooperating through the use of the BC model.

Referrals

The urban referral system is one of the chief mechanisms used by the governments to provide environmental protection recommendations to approving agencies for urban projects. The referral process varies from region to region. Generally, the project proponent, which can be a developer or local government, prepares a development application describing the proposed project and submits it to the agency responsible for approving the project. Applications which are referred include:

- subdivisions,
- building permits,
- rezoning,
- higher level planning initiatives, such as changes to an Official Community Plan, and
- *Water Act* applications, for water licences and works in or about a stream.

The approving agency will vary depending on the type of project. For example, marine foreshore works are submitted to DFO, rezoning and subdivision applications are submitted to a municipality, and instream works applications are submitted to MELP. The approving agency refers the applications to the senior environmental agencies — the Habitat and Enhancement Branch of DFO, the Fish and Wildlife Branch of MELP and the Water Management Branch of MELP — which then issue a response to the proponent.

The agencies can decide to refuse the project, request further information, or approve the project with conditions of approval designed to mitigate damage to fish and fish habitat. Refusals must be based on legal requirements. One of the strongest legal reasons for refusing a project application is that it will violate s. 35(2) of the *Fisheries Act* — the prohibition against harmful alteration, damage or destruction (HADD) of fish habitat. There is no equivalent legal protection for wildlife habitat under any provincial law which results in refusal of a project application.

DFO and MELP may recommend conditions for a project's approval such as:

- fishery sensitive zone or riparian leave setbacks,
- sediment control
- nonpoint source pollution requirements, e.g., wood preservatives, paint
- vegetation/revegetation requirements
- stormwater management requirements
- construction practices, and
- mitigation measures.

The effectiveness of the urban referral system was examined in a recent evaluation, which examined the level of compliance approval conditions in five watersheds over a 10-year period from 1985 to 1995. The watersheds were in 3 growth areas of the province. The study found that there was significant non-compliance with the approval conditions in all the studied watershed areas. There was also a significant variation in the types and rigour in approval conditions issued in each region.

"Given the rate of non-compliance and the variability of compliance conditions across regions, the conclusion of this study is that the effectiveness of the "traditional" urban referral system for protecting fish habitat and water quality is diminished."

Problems with the referral system include:

- municipalities have the decision-making authority whether or not to include the senior agency's conditions in their final approval documents, and are not legally required to include these conditions,
- there is no monitoring procedure to determine if approval conditions are actually followed,
- the time required to carry out the referrals — DFO is asked to review approximately 15,000 referrals each year,
- inconsistent results between different staff and different regions.

Because of the staff time required for reviewing referrals, monitoring and enforcement get short shrift. MELP staff talk about the need to get off the "referral treadmill" and devote more time to monitoring and enforcement. One of the purposes of the new *Fish Protection Act* and its regulations is to set more uniform standards that will reduce the need for these referrals.

Intergovernmental Programs

In addition to the wide array of legal tools used by each individual level of government, there are a number of co-operative multijurisdictional programs for habitat protection.

Pacific Coast Joint Venture

The Pacific Coast Joint Venture (PCJV) implements the Pacific portion of the North American Waterfowl Management Plan, an effort by the Canadian, American and Mexican governments to restore declining populations of waterfowl through habitat identification and acquisition. The Pacific Coast Joint Venture encompasses wetlands and other habitats on the Pacific Coast, and includes many government agencies as well as nongovernmental organizations. As of 1995, the PCJV had secured over 1,000 hectares of important waterfowl habitat at a cost of $130 million. An example of an important Joint Venture undertaken by this program is the Englishman River Estuary established near Parksville in 1992. It is now designated by the provincial government as a Wildlife Management Area.

Fraser Basin Management Program

The Fraser Basin Management Program was established in 1992 for a five-year period to advance the environmental, economic and social sustainability of the Fraser River Basin. The program has a nineteen-member Board with representatives from government, First Nations, business, labour, NGOs and other groups throughout the Basin. One of the purposes of the Program was to bring the various levels of government together to coordinate their efforts and resolve institutional problems related to multijurisdictional issues like wetland protection. It produces an annual report card on the state of the Fraser.

Fraser River Estuary Management Program

The Fraser River Estuary Management Program (FREMP) is a co-operative effort between federal, provincial and municipal governments. It aims to coordinate planning and decision-making in the Fraser Estuary. FREMP was authorized by a provincial Order in Council. An environmental impact assessment is required for any development or improvement of land in designated areas, or approval of a subdivision. Since FREMP has no enforcement powers, it is up to representatives from the relevant department or agency to enforce any terms or conditions imposed by the Project Review Process.

Because of the high wildlife and fish habitat values in the Fraser River Estuary, FREMP has developed procedures for preserving habitat. The need to leave habitat undisturbed must be reconciled with the number of user groups and water dependent industries in the estuary:

- the forest industry and its need for a coast wide log movement system,
- the marine transportation industry that requires unimpeded water access,

- the fisheries industry and its interest in maintaining a viable commercial fishery,
- urban and industrial developers who require waterfront land,
- the agricultural industry and its water, land and waste disposal needs,
- First Nations with land claims and aboriginal fishing rights,
- recreational users, and
- government agencies.

A FREMP Habitat Activity Working Group reported in 1991 that application of the DFO "no net loss" policy and environmental assessment review processes had improved the conservation of fish habitat, but that the existing legislation was not adequate to protect and conserve all the important habitat in the estuary. The group recommended co-ordinating and enforcing existing regulations to better protect wildlife habitat, and preparing a formal policy on compensation for loss of wildlife habitat. It also recommended acquiring more valuable pieces of land to be used for habitat in the Estuary.

The FREMP Management Plan was finalized in August 1994. It lists the current procedures used to conserve habitat such as the DFO Policy for the Management of Fish Habitat, the federal Wetlands Policy, and the FREMP Log Storage Guidelines. The two key features of the FREMP habitat program are the habitat coding system and Area Designation Agreements. Each area of shoreline is classified and colour coded red, yellow or green, loosely translated as stop, proceed with caution or go. However, the codes are revised periodically and in May 1996 the red code was revised: development may now occur in red areas provided that mitigation is applied to avoid impacts on habitat features of the area. Area Designation Agreements are entered into between municipalities and FREMP member agencies and define the intended uses of the foreshore. The "single window" project review process, which is a co-ordinated approval procedure, is also meant to protect habitat. Any project that has the potential to affect the environment in the FREMP area will be reviewed by the Environment Review Committee. The Area Designations and Project Review Process were designed to halt habitat and wetland losses. There are some concerns that tidal wetlands continue to be lost due to the reliance on compensation measures, which are not always successful.

Other estuary management plans in the province are located in the Squamish and Cowichan estuaries. Similar plans are under development in Courtenay and Campbell River.

Planning and Growth Management

Provincial and Federal Government Planning

The current land use planning system operates at many different levels: provincial, regional, subregional, local and site specific. Planning also varies according to whether the land is Crown land or privately owned. The coastal planning system is even more complex, because of federal jurisdiction over issues like fisheries, migratory birds, harbours, and marine waters.

Planning at the provincial level advanced in the early 1990s with the adoption of a Land Use Charter in 1994, developed by the Commission on Resources and the Environment (CORE). The Land Use Charter sets out the principles for sustainable land and water use, such as maintenance of life support systems and conservation of biological diversity. Draft land use goals were also prepared by CORE, including ensuring the special management of sensitive areas such as wetlands and estuaries. One of the Land Use Goals developed by CORE is to "make the planning and management of land and water uses in coastal and marine areas integrated and consistent, across jurisdictions." The province's 1998 Coastal Zone Position paper recognizes the commitments of the Land Use Charter to maintaining environmental, economic and social sustainability.

The regional plans produced by CORE and the subregional Land and Resources Management Plans (LRMPs), are government initiated long term, negotiated multistakeholder planning processes. CORE produced three Regional Land Use Plans for the Kootenays, the Cariboo and Vancouver Island. Subregional planning processes initiated by the province will also have an impact on habitat protection. LRMPs are the primary zoning mechanism if no regional plan exists. The Central Coast Land and Resources Management Plan is the first LRMP which will be developed with a marine component. The plans may result in zoning of coastal as well as upland areas.

The federal government is also embarking on more coastal zone planning initiatives. *The Canada Oceans Act* came into force on January 31, 1997. This *Act* consolidates Canada's ocean related legislation. The relevant part of the *Act* for coastal habitat protection is the part on an Oceans Management Strategy, which authorizes the Minister to lead the development of a strategy and integrated management plans for estuarine, coastal and marine ecosystems. The federal government recognizes that Canada lacks a comprehensive oceans management framework with clear strategic objectives, which could help resolve conflicts between competing interests and identify management and planning gaps. The Minister of Fisheries and Oceans must collaborate with Canadians to develop the Strategy, which will be based on the principles of sustainable development, the integrated management of oceans activities and the precautionary approach. The *Act* will involve stakeholders in developing specific mechanisms, planning, guidelines and standards required to bring about sustainable use of the oceans.

Local Government Planning

Local government planning decisions play an important role in protecting habitat, because local government control land use and development. Decisions about planning, zoning, park and land acquisition, bylaws, and environmentally sensitive areas all have a major impact on coastal habitat protection.

Habitat is altered and damaged in urban areas in a number of ways. An average of 20-30% of the land surface in urban areas is paved and much of the remainder is covered by buildings. Native plant and animal species are often replaced with exotic or alien species. Habitat can also be destroyed through urban sprawl, land clearing and pollution. Urban streams and riparian areas are frequently culverted, buried underground and stripped of streamside vegetation. The province's two largest urban areas, the Greater Vancouver Regional District and the Capital Regional District, both located beside the coast, have experienced loss and alteration of habitats. The rare Garry Oak ecosystem has been substantially reduced through development. Wetlands have been drained, filled and altered by residential and industrial development. Almost all the first growth forest has been removed from BC's urban centres. The consequence of all these developments has been great alterations in native wildlife habitat.

The *Municipal Act* gives municipalities a number of different powers which can be used to achieve environmental objectives, such as protecting coastal habitat. Some examples are:

- a municipality may adopt an Official Community Plan (OCP) which may use designations such as Conservation and Open Space;

- the municipality may use its zoning powers to impose buffer zones around coastal wetlands, and to regulate permitted uses near environmentally sensitive coastal habitat areas; and,

- a municipality may make bylaws regulating shoreline protection, tree cutting, flood prevention, drainage, watercourses and soil removal.

Other municipal environmental protection powers that may be relevant for habitat protection include park and other land acquisition, sewage works and waste removal, and heritage conservation.

The *Local Government Statutes Amendment Act* increased the ability of local governments to engage in environmental planning. This bill authorizes:

- OCPs to include policies relating to the "preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity";

- development permit areas to be designated for the purpose of protecting the "natural environment, its ecosystems and biological diversity";

- local governments to require developers to provide information on anticipated impacts of a proposed development or activities;

- local governments to pass bylaws requiring landowners who construct paved areas or roof areas to manage and provide for ongoing disposal of surface run-

off and stormwater, including limits on the maximum percentage of a parcel that can be covered by impermeable material; and,

- new property tax exemption powers for any portion of riparian land that is subject to a conservation covenant granted to that local government.

Growth Management

Growth management has become an important environmental and social issue in BC. In many cases, the type of development has had profound and often negative effects on coastal habitat.

In recent years, BC's population has been increasing by 100,000 people each year and there are no signs that this trend is about to slow down. Individually, communities have been planning for growth and change within their own boundaries for many years with varying degrees of success. The lack of adequate provincial co-ordination led the BC government to pass the *Growth Strategies Statutes Amendment Act, 1995* in 1995. It provides a framework for planning and actions by local governments and includes mechanisms for co-operation and co-ordination at the regional level.

The growth management legislation amends BC's *Municipal Act* and authorizes the creation of regional growth strategies. This is a regional vision that commits affected municipalities and regional districts to a course of action to meet common social, economic and environmental objectives. It is initiated and adopted by a regional district and referred to all affected local governments for acceptance. The legislation sets out five essential elements that must be included in a regional growth strategy:

- housing;
- transportation;
- regional district services;
- parks and natural areas; and
- economic development.

One of the most important features of the legislation is the set of provincial goals articulated in the statute – goals that are meant to guide the regional growth strategies developed under the *Act*. Many of these goals, such as avoiding urban sprawl, are critical to the protection of coastal habitat.

Gaps in Laws to Protect Coastal Habitat

Despite the array of laws described above, coastal habitat continues to be lost or damaged at an alarming rate. There are no laws in British Columbia designed specifically to protect the coastal zone, as in the United States, which has a federal *Act*, the *Coastal Zone Management Act* and many strong state laws, such as Washington's *Shoreline Management Act* and California's *Coastal Act*.

The legal gaps relate to:

- no proactive integrated planning to protect environmentally sensitive coastal habitat while allowing development in less sensitive areas;
- a lack of binding and enforceable requirements to protect coastal habitat;
- inadequate use of available legal powers;
- inadequate resources and enforcement;
- no cumulative impact assessment of individual developments or activities;
- a lack of public participation opportunities to allow members of the public to take actions to protect coastal areas.

Lack of Proactive Integrated Planning

One of the most important laws for habitat protection, the federal *Fisheries Act* applies only to fish habitat and is not a preventative law – penalties are applied after the damage is done. Section 35 prohibits harmful alteration, damage or destruction of fish habitat but does not set rules for land use planning to achieve this goal, since land use is a provincial area of jurisdiction. The "No Net Loss" (NNL) policy by itself will not prevent further coastal habitat loss and degradation. NNL has had differing rates of success depending on the nature of the development or habitat alteration. While major site specific projects are considered to be achieving the NNL goal, habitat continues to be lost in large and small increments through linear projects such as pipelines, forestry roads, highways and transmission lines; urban developments; and rural agriculture and forestry operations because of a lack of involvement in preventative planning, the unsuitability of the federal *Fisheries Act* as a tool to achieve NNL in these settings, and the need to have a basin-wide approach instead of a project by project evaluation.

The provincial laws designed to combat habitat loss are similarly restricted. The *Fish Protection Act* applies only to fish habitat, and does not contain any uniform enforceable habitat protection rules. The streamside protection directive (s. 12 of the *Act*) authorizing each local government to choose its own method of protecting riparian areas will continue the piecemeal approach that has caused the loss of so many urban streams and fish stocks. Local governments have shown to date that they are unable to effectively regulate developers and others who threaten the health of riparian areas. Penalties for non-compliance with the streamside protection directive are non-existent.

No other applicable provincial law takes a comprehensive approach to coastal zone protection. Uncontrolled urban and suburban growth harms coastal habitat, and existing growth management legislation is unlikely to prevent these negative impacts. The *Growth Strategies Statutes Amendment Act* contains a useful set of principles upon which to develop a regional growth strategy, but does not link the principles to a set of enforceable goals and specific outcomes to ensure that the objectives embodied in these principles are actually achieved. Municipal environmental controls, such as those contained in Official Community Plans (OCP), are relatively weak legal tools. For example, in one case involving a court challenge to construction of a hotel on a beach headland in close proximity to the shoreline, although the OCP specified that construction would be subject to "appropriate setbacks" the court found that council was free to establish the setbacks at its discretion.

As many B.C. coastal zone studies conducted over the years have noted, coastal land is subject to competing demands from a myriad of activities such as industrial use; aquaculture; tourism; transportation; resource extraction, and residential development. The laws that regulate these activities are not integrated, do not take an ecosystem approach and do not account for the cumulative impact of all the combined activities that take place in the coastal zone. The incremental loss of habitat will continue as long as the project specific approval and mitigation process proceeds. The decline in coastal and estuarine habitat is fueled each time an individual permit is issued for a new home, dock or marina; each time an authorization to damage or destroy fish habitat is made; and each time a lease for Crown land is approved. Each decision is made in isolation, without consideration for the cumulative impact of many individual small decisions. While construction of a bulkhead or seawall, known as shoreline armoring, "may have little measurable ecological effect, incremental increases in the number of small projects within an embayment would be expected to result in significant effects to the bay ecosystem."

One option for more integrated planning which would account for the cumulative impact of development decisions in the Georgia Basin would be a foreshore plan for the entire region. This plan could be modelled on the FREMP planning process and could identify red, green and yellow areas where development would be prohibited outright or allowed.

Conservation of ecologically significant coastal habitats is a low priority among the competing uses for coastal resources. One of the key recommendations of the Marine Science Panel report was for governments to begin to identify how much coastal and estuarine land should be preserved. Yet there is currently no law or policy which establishes a comprehensive, enforceable, and public process for identifying key coastal habitats for conservation. This type of public process should be accompanied by an institution that has authority to implement the results of a planning process, and should have a statutory basis to allow it to coordinate the different actors whose interests must be accommodated.

Retaining key parts of environmentally sensitive coastal land in a natural, undisturbed state poses a critical regulatory challenge that the *Land Act, Oceans Act* and other

relevant federal and provincial statutes may not be able to meet. A process of integrated coastal management (ICM) administered by the current provincial land managers, in conjunction with other regulators with responsibilities for this land such as wildlife and habitat managers at MELP, Municipal Affairs, the federal Department of Fisheries and Oceans, local governments, the Islands Trust, and public representatives, would provide an improved regulatory framework for this land. This issue will be discussed further in the next section on "Proposals for Change."

Lack of Binding and Enforceable Requirements to Protect Habitat

The laws that do protect coastal habitat are often worded to allow habitat managers wide discretion, and rarely contain binding and enforceable rules.

Federally, the *Fisheries Act* prohibition on the destruction of fish habitat is an exception to this general rule, but even that enforceable rule allows managers to get around the prohibition by issuing an authorization. The *Directive on the Issuance of Subsection 35(2)* states that authorizations should only be issued "when it proves impossible or impractical to maintain the same level of habitat productive capacity by altering the design of the project or using mitigative measures." It describes the "letters of advice" which are used to set out construction or siting conditions to avoid damage to habitat. The use of letters of advice has been heavily criticized in the past few years. There is seldom follow up to see if conditions in the letters of advice are complied with, and non-compliance is frequent. These letters may usurp powers which Parliament has directed be exercised by order or by regulation. A recent judgment from the Federal Court criticized the government's use of these letters. In addition, an environmental group has lodged a complaint with the Commission for Environmental Cooperation, the environmental body set up under the NAFTA "side deal", alleging that the use of these letters violates Canada's international obligations. The Auditor General of Canada has also noted problems with the letters of advice, finding that they can lead up an accumulation of small habitat losses.

Proposed new federal *Guidelines for Foreshore Development* under development by DFO will similarly not be binding or enforceable.

Provincially, habitat laws also contain a wide degree of discretion, and lack binding enforceable rules. For example:

The *Wildlife Act* does not contain strong prohibitions against destruction of or damage to wildlife habitat. Only habitat within a WMA is secured, and the total area of land covered by WMAs in the province is very small. There are no policies for wildlife habitat management similar to those developed by DFO under the *Fisheries Act*, such as for example, there is no written policy for mitigation or compensation when wildlife habitat is damaged or destroyed by a new project or development. A FREMP Habitat Activity Working Group recommended preparing a formal policy on compensation for loss of wildlife habitat.

The endangered species portion of the *Wildlife Act* is discretionary. Sections 6 and 7 of the *Wildlife Act* says the Lieutenant Governor in Council *may* designate a species as endangered or threatened and *may* designate land as habitat for endangered or threatened species. Without mandatory duties to list species, and designate and protect critical habitat, the *Wildlife Act* will not be as effective as it could for protecting habitat.

The *Water Act* is an outdated piece of legislation that requires substantial changes to adequately protect water resources. BC is the one of the few jurisdictions in North America without groundwater legal protection. Streams are drying up because of unregulated groundwater removal. The MELP Wetlands Working Group recommended that mandatory stormwater management plans should be promoted. Provincial controls on non-point source water pollution are inadequate. Stronger legislation is found in the U.S., for example, in the Coastal Non-point Pollution Control Program, part of the American federal *Coastal Zone Act Reauthorization Amendments of 1990*. It requires all coastal states with federally approved coastal zone management programs to develop coastal non-point programs which include enforceable management measures for sources of "poison runoff" like agriculture, urban use, forestry, marinas, recreational boating, channelization and channel modification, dams, and streambank and shoreline erosion.

The provincial *Land Act* allows land managers wide discretion to allocate and manage coastal land with few constraints. For example, no regulatory guidelines are currently in place for foreshore development in general or more specifically for marinas, docks or floating fishing lodges.

The joint MELP-DFO *Land Development Guidelines for the Protection of Aquatic Habitat* are not legally binding and are often ignored by developers. The *Guidelines* do not adequately protect wetland and other aquatic habitat for non-fish species, which may be crucial elements of an ecosystem which supports healthy fish populations. Currently, even the 15 metre minimum setback required by the *Land Development Guidelines for the Protection of Aquatic Habitat* is frequently not achieved because developers will not give up the land. Converting the *Guidelines* into legally binding regulations for urban areas would fill this gap in provincial habitat protection. The new *Fish Protection Act* is the province's response to concerns over inadequate fish habitat protection in urban areas. The majority of the *Act* is not yet in force. Provincial habitat protection employees have identified strong regulations under the *Fish Protection Act* as an important regulatory control to prevent nearshore habitat loss. As these regulations are now being drafted, there is an important window of opportunity available to strengthen the habitat protection regulatory framework. If weak regulations emerge, the gap will remain.

Although the *Municipal Act* allows for the protection of environmentally sensitive areas, that protection is not required. The recent amendments to that *Act* are helpful, but could go even further. For example, local governments could require developers to dedicate environmentally sensitive land in the same way that a park land dedication is now required.

Binding and enforceable regulations are a key factor in improving environmental protection. A recent report from the Environment Canada Pacific Region office reviewing 19 different regulatory groups found that those industrial sectors which relied solely on self-monitoring or voluntary compliance had a compliance rating of 60% versus a 94% average compliance rating for those industries which were subject to federal regulations combined with a consistent inspection program. Environment Canada targeted high polluting industries such as the antisapstain industry, pulp and paper industry and heavy-duty wood preservation industry with increased inspection and enforcement programs. For each industry, voluntary compliance with new environmental performance requirements proved to be entirely ineffective. The compliance rate markedly improved when regulations were issued and a consistent inspection program was instituted. In the pulp and paper industry, the volume of toxic effluent, including dioxins, furans, and contaminated defoamers and wood chips was reduced by more than 95%. Mills that used antisapstain chemicals to protect freshly cut lumber from moulds and fungi had a 99% reduction in their discharges of toxic effluent from the antisapstain chemicals. And in the wood preserving industry, toxic discharges were cut by 94%, after an eight year period in which five voluntary codes of practice developed by Environment Canada did not produce major changes in compliance.

Inadequate Resources and Enforcement

In addition to binding rules, enforcement is also important. The Environment Canada report cited above shows that regulations are a necessary component of environmental protection. The existence of regulations themselves is the important point. Prosecutions were not used in any great measure in this compliance and enforcement program. The author of the report believes that: "You can move a large portion of the (polluting) group into compliance in the inspection phase -- if you have the prosecution hammer in your back pocket."

Budget cuts at both the federal and provincial governments have resulted in reduced staff and resources to enforce the laws that protect coastal resources.

Provincially, the Ministry of Environment's budget was reduced from $265 million in 1995-96, to $204 million in 1996-97, and a further cut of 3% was announced in March 1998. Since 1996, the Ministry of Environment has eliminated over 300 positions, falling from 2520 employees (full-time equivalents) to 2202 employees (1997-98 budget estimates).

Federally, insufficient resources are devoted to enforcement. BC is the only area in the country where DFO has historically devoted substantial amounts of money, time and staff to protect the environment. The number of habitat related charges under the *Fisheries Act* has increased in BC in recent years. The legal resources devoted to prosecuting these cases and mediating solutions also has increased with new lawyers at the Department of Justice devoting full time to this issue. The on-the-ground fisheries officers also have experienced increased demands on their time. Budget cutbacks threaten this progress.

Most recently the House of Commons Standing Committee noted with dismay the effect that severe budget cuts (e.g., an overall reduction of 72% in the Environment Canada Pacific Region Office in the last fiscal year) will have on enforcement of the *Fisheries Act*. Environment Canada has responded with detailed budget and personnel numbers which show that the enforcement level has not changed significantly in recent years.

Smaller diffuse non-point pollution sources such as farms, ranches, households with septic systems, development of residential sub-divisions, commercial areas, transportation routes, and sewage treatment plants all have a great impact on habitat, and pose difficult enforcement challenges:

"When sources such as farms, ranches, and fuel distribution sites are concerned the number of inspectable targets which could be subject to federal regulations increases from approximately 5,600 to over 17,200 in British Columbia.... The impact of agriculture and ranching on stream side riparian zones and water quality has resulted in hundreds if not thousand of kilometres of deteriorated stream beds which succinctly impair or prevent spawning and rearing of fish. Regulations and enforcement of regulations for major point sources of pollution such as pulp mills, wood preservative plants, and anti-sap stain chemical facilities have shown dramatic drops in pollution. The new challenge will be to address non-point source pollution such as that described above. It is obvious that more, rather than less enforcement personnel will be needed will be needed to protect habitat at risk from pollution."

Enforcement of the terms of water licences is rare. Major water users, such as BC Hydro, routinely violate the conditions of their water licences, often with the knowledge of the Ministry of Environment, Lands and Parks. These violations can have major detrimental effects on fish as the Cheakamus River and Downton Lake cases demonstrate. The Water Use Plan (WUP) process now underway is addressing problems associated with BC Hydro water licences.

The lack of resources has affected protection of important coastal habitat areas. The process for approving new WMAs is slow. A number of areas have been identified as prime sites for WMAs, including critical coastal areas like Roberts Bank. All the paperwork has been prepared to obtain designation of the land, but no action has been taken. Reduced MELP staff and budgets may account for the lack of action.

Inadequate Use of Existing Legal Powers

A related problem to the lack of enforcement is a reluctance to use existing legal powers in some cases. For example, the federal *Fisheries Act* is rarely used against municipalities whose sewage treatment plants are breaking the law. There have been repeated attempts by environmental groups in the Lower Mainland to bring private prosecutions. The Georgia Strait Alliance has been frustrated in its attempts to prosecute the GVRD for violations of the *Fisheries Act* and the provincial *Waste Management Act*. These private prosecutions have been taken over by the provincial

Attorney General's office and the charges have been stayed in the most recent cases. This is an obvious constraint on the involvement of non-governmental organizations.

DFO rarely uses its power under the *Fisheries Act* to dictate minimum flows of water for fish-bearing rivers and streams.

The *Municipal Act* contains a large number of provisions which can be used to protect coastal habitat, but many local governments are reluctant to make use of these provisions, because municipalities question whether they, rather than more senior levels of government, should be responsible for protecting the environment; and because they perceive that they are frequently given additional responsibilities, such as those for environmental protection, but are not given additional funding to perform these additional responsibilities.

Lack of Public Participation Opportunities

There are many reasons why the public should participate in environmental decision making, such as coastal land use decisions. Decisions developed with public input will lead to decisions that are more informed and accepted. Interested groups and individuals can challenge the data upon which the proposed regulations are based, test the regulatory assumptions employed, and provide a new or different perspective. Public participation ensures a fairer process, since those who must bear the risk of the decisions should have input into the process. The public is essential in helping define the public interest through direct representations to regulators. Also, increasing public participation may well increase the public acceptance of the decision.

The public can participate in the development of laws and regulations through the relatively few statutory requirements of notice and comment; and through the more commonly used methods of ad hoc consultations on regulatory initiatives. A major drawback of both forms of public participation is that the government has no requirement to take the comments received into account or to respond in any way.

When an application is made for a permit, some statutes require that members of the public be given the opportunity to comment on the contents of the permit and to object to its issuance. An example of this type of provision in federal law is found in the *Canadian Environmental Protection Act* ss. 73-74 in which ocean dumping applications must be advertised by notice through the Canada Gazette, and the public has the opportunity to comment on the permit application, and file a notice of objection requesting a hearing before a Board of Review. Provincial pollution control statutes such as the BC *Waste Management Act* requires notice of the application to be published in local papers, and allows any person with an interest in the permit to comment upon it. For municipal land use decisions that may affect the environment, such as zoning changes, provincial statutes typically include a provision for a public hearing, such as, for example, s. 890 of the BC *Municipal Act*.

Public participation rights in other environmental areas are more limited. There are fewer public hearing requirements when a water use permit or a timber cutting permit is granted. For example, the federal *Fisheries Act* allows harmful alteration, damage to or destruction of fish habitat if authorized by the Department of Fisheries and Oceans, s. 35(2) of the *Fisheries Act*. That *Act* does not require public notification of the authorization decision, and contains no provisions for public hearings for that type of decision.

Once a permit has been issued, the legislation may allow members of the public to appeal the permit to an administrative tribunal. Administrative tribunals are decision-making bodies established by statutes. They are similar to courts, but have authority to make decisions in a specialized areas such as environmental appeals. Before an individual or group can appeal a permitting decision to a tribunal or bring an action for judicial review, the applicant must prove that it has standing, or, in other words, is eligible to argue the case. To establish standing, the applicant must prove that he or she is directly affected by the decision or has a genuine interest in the decision and will present a case for a serious and justiciable issue that would not otherwise be brought to trial in an effective manner. An appeal to the courts is available from the decisions of most tribunals, through statutory provisions or through judicial review.

The opportunities for public participation of the types described above are limited for coastal protection in BC by:

- the absence of a coastal zone planning process,
- no general permitting procedure for activities in the coastal zone that may impact habitat, and
- no entrenched appeal rights in those statutes that do apply to the coastal zone.

For example, there are no public appeals to an independent tribunal for decisions involving the sale or disposition of Crown land under the *Land Act*. The existing appeal mechanisms for permitting decisions such as pollution permits and water permits are limited. There are no formal opportunities to appeal Crown land decisions under the provincial *Land Act*. There are no appeal decisions for permit or authorization decisions made under the federal *Fisheries Act* to authorize destruction or damage to fish habitat. Existing guidelines such as the *Land Development Guidelines for the Protection of Aquatic Habitat*, are not enforceable and in at least one judicial review application related to these guidelines, a court found that a local council was not obligated to enforce the terms of the guidelines. It is likely that the proposed foreshore development guidelines under development by DFO will similarly lack both enforceability and public appeal mechanisms. There is no mechanism for public review of existing long term water licences, and restricted appeal rights for the initial decision to grant a water licence. Public rights of appeal are stronger for pollution permits, such as the provision in the BC *Waste Management Act* that allows any person who considers himself aggrieved to appeal a permit decision.

An ICM process that includes full public participation rights would remedy the lack of these rights in the current array of coastal zone laws.

Proposals for Changes to Laws to Prevent Further Coastal Habitat Loss

Improvements can be made to the current regulatory framework to protect near shore habitat. Possible changes range from a complete overhaul of the coastal zone planning structure including creation of a new management body backed by legislation, to smaller changes such as a new provincial wetlands policy, or extension of the FREMP colour coded foreshore zoning system to all estuaries in the Georgia Basin. Four key proposals for change are listed below, in order of degree of significance of change. The provincial government's position on each of the proposals is also noted and evaluated. The four proposals are:

- New provincial policy to protect wetlands,
- New regulations under the *Fish Protection Act,*
- Creation of a shoreline reserve, and
- Integrated Coastal Management administered by a multi-agency Coastal Commission.

A new provincial policy to protect wetlands

The province relies on the federal habitat protection policy based on the principle of "no net loss" found in the *Fisheries Act* and the *Federal Policy on Wetlands Conservation*, but has no policy of its own.

While there are many laws which can be used for wetland protection in BC, there is no specific provincial law or policy focused on protection of rivers or aquatic habitat protection. Since legal responsibility for the water in wetlands, the fish in the wetland, the wildlife that depend on the streamside habitat, and the land beside the wetlands streams is found in different levels of government and different branches within the same level of government, the result is often a lack of accountability.

The wetland policy goal of "no loss of wetlands." should be given priority in:

- land use decisions involving wetlands on Crown land under the *Land Act*;
- municipal land use decisions under the *Municipal Act* including protection of environmentally sensitive areas, zoning and subdivision procedures, preparation of and amendment to Official Community Plans;

- environmental assessment procedures involving wetlands under the provincial *Environmental Assessment Act;* and

- water licensing and approval decisions under the *Water Act*.

A MELP working group on wetlands has also been formed to prepare a strategy for moving forward with improved conservation and management of wetlands. Members of the wetland working group have identified a number of shortcomings with the institutional legislative and policy regimes that leave wetlands vulnerable to exploitation, such as a lack of adequate measures to protect wetlands in non-forested areas, private lands and water bodies without salmonid presence, and shortcomings of the *Wildlife Act*, the *Fish Protection Act*, and the *Forest Practices Code*.

A written explicit wetland policy requiring government to act to conserve wetlands, would substantially improve the current legal framework. A comprehensive wetland policy in BC would help prevent further foreshore habitat loss. A written policy statement, preferably given a statutory basis, would fulfil the key functions of requiring land use decision makers to give priority to wetland preservation; raising public awareness of the ecological value of wetlands, both within and outside government; and, authorizing programs and policies designed to enhance and restore wetlands. The province should be urged to continue with the development of a wetlands policy and with the necessary legal amendments to implement a strong new policy.

The Ministry of Environment has a background document on developing a BC wetlands policy. The document has not been released for public discussion, and the provincial government has decided not to develop a policy on wetlands at the present time.

Strong new regulations under the *Fish Protection Act*

The province's *Fish Protection Act* was passed in 1997 to improve habitat protection for fish in urban areas. Strong regulations under this *Act,* particularly for streamside protection, would improve foreshore habitat protection for those areas where riparian corridors drain into the ocean.

A streamside protection regulation is being developed under Section 12 of the *Fish Protection Act* (FPA), which will require local governments to protect streamside areas according to management objectives such as mandatory setbacks. It is anticipated that the streamside policy directives could call for a range of approaches from requiring development free areas (where riparian areas are intact or have a high potential for restoration) to vegetation, soil and impervious surface management approaches (in areas where riparian areas have been altered by existing subdivision and development). The range of approaches recognizes the difference in terrain and level of development in each area, but may be unnecessarily complicated to administer. For certainty, administrative ease, and to maximize riparian protection, specific buffer zones should be enacted in the regulation.

Buffer zones along the edge of riparian areas, in which development is restricted or limited, are an important habitat protection tool, and strong similar standards across municipal jurisdictions would help remedy some of the problems with this new law identified in the "Gaps" section above.

The province has not yet released draft regulations. The current schedule for the introduction of regulations is spring 2000.

Creation of a Shoreline Reserve

Coastal development can alter the ecology of the coastal zone and functioning of coastal and ocean processes. Some ecologically sensitive estuaries and other areas of the coast should remain free from development. Creating a Shoreline Reserve Zone, a narrow exclusionary area adjacent to the ocean's edge in the Georgia Basin area in which building and other development is prohibited is a critical improvement that could be made to the current regulatory scheme.

This "Shoreline Reserve" would recognize the importance of coastal and estuarine land, in the same way that the Agricultural Land Reserve (ALR) recognizes the importance of agricultural land. The ALR is a valuable tool for controlling urban sprawl in some areas such as the Comox Valley, because agriculture and fish can coexist, but concrete is deadly. Setting aside a Shoreline Reserve could be done through the integrated management strategies required by the *Oceans Act*. Many countries have taken this step in their ICM laws and policies. The BC Work Group on the Protection of Marine Plants and Animals in the Strait of Georgia is one group that has recommended that a moratorium on development in estuaries and wetlands should be considered.

A Shoreline Resource Reserve could be established for coastal streams, wetlands, lakes and marine foreshores. Development decisions for these areas would have to be made by a provincial Commission, either dedicated to this purpose and similar to the Agricultural Land Commission, or charged with the larger job of implementing coastal zone planning decisions.

Integrated Coastal Management administered by a Coastal Commission

> "Optimum fairness in the reconciliation of diverse interests, all competing for a share of a finite resource, demands that a framework for public participation and goal creation be established; that a legislative base be provided for the coastal management activities of both local and provincial authorities; and that mechanisms for appeal of adverse administrative decisions be put in place and made available for all affected parties- from small landowners to provincial Ministries."

As conflicts between coastal land and water uses increase, the need for integrated coastal management (ICM) grows. Conflicts are on the rise, between fisheries and agriculture; aquaculture, ecotourism and protected areas; industrial development and environmental protection. Rather than creating a new dispute resolution process each time a coastal conflict arises, an integrated coastal management strategy administered by a multi-agency Coastal Commission would improve habitat protection efforts in British Columbia. This Commission would also be the vehicle for the public process to determine how much estuarine and nearshore habitat should be preserved, one of the key recommendations of the Marine Science Panel.

Integrated coastal zone management has been recommended by a number of studies over the years. In 1988, the Ombudsman's report, *A Review of Aquaculture and the Administration of Coastal Resources in BC*, recommended a scheme for coastal zone management which would allow for consensual dispute resolution. In 1993, a joint study by MELP, Tourism and the Ministry of Agriculture, Fisheries and Food led to a workshop, discussion paper and final report on ICM. The Commission on Resources and the Environment was to have examined the coastal zone management issue before it was disbanded, and the Land Use Coordination Office (LUCO) now has responsibility for this issue. LUCO is participating in the federal government's *Oceans Act* work. LUCO held a coastal strategy workshop in June 1996 and released a coastal policy position paper in June 1998, thel Coastal Zone Position Paper, which notes the "broad consensus on the need to strengthen and improve long-range and strategic planning in the coastal zone." The 1997 Salmon Aquaculture Review report from the BC Environmental Assessment Office also discussed the need for integrated coastal management.

ICM in the United States

Coastal zone planning and management in the United States has resulted in many achievements in the past 25 years. The federal *Coastal Zone Management Act* was passed in 1972 with the goal to "preserve, protect, develop, and where possible, to restore, to enhance, the resources of the nation's coast." The *Act* had the goal of encouraging and assisting states to exercise their responsibilities in the coastal zone through the development and implementation of management programs. The federal agencies engaged in programs in the coastal zone were directed to co-operate and participate with the state and local governments. Public participation was also encouraged. The *Act* proceeded in two phases. Funding was available to states to develop a program for coastal zone management and subsequently additional grants were available for implementation. This provided incentives for states to develop their coastal zone management policies.

Washington State passed its *Shoreline Management Act* in 1971 due to concern about protection of the coast, a year before the federal Act was passed. The *Shoreline Management Act* gave local governments primary responsibility for developing a regulatory program for shorelines. Each city and county with a shoreline was directed to adopt a shoreline master program consistent with the goals and policies in the *Shoreline Management Act* and the regulations developed by the Washington

Department of Ecology. Substantial Development Permits are required for activities in the all nearshore areas subject to the *Shoreline Management Act*. The *Act* sets out a process for appealing a permit to a Shoreline Hearing Board – a six member quasi-judicial body appointed by the Governor. Problems with the *Act* include exemptions for permits for activities such as construction of single family bulkheads and single family residences. This has resulted in no cumulative impact assessment of shoreline development, especially single family housing. Nonetheless, the Washington State *Shoreline Management Act* has been credited with many achievements including:

- comprehensive planning established in jurisdictions lacking a planning tradition;
- creation of a forum for resolving coastal use and development conflicts;
- development of significant new public access;
- restoration and adaptation of obsolete waterfront and port facilities for tourism, recreation, conservation and interpretation;
- displacement of inappropriate waterfront development;
- modification of inappropriate development; and
- establishment of a non-point source pollution abatement program for shellfish beds.

California provides another example of coastal zone planning. The coastal zone planning initiative there came about as a result of rampant development. There was little concern in the early 70s for the protection of scenic views and marine resources and public access to the water's edge was being gradually eroded, for example, in areas such as Malibu. The situation in California was a jurisdictional quagmire with 15 counties, 53 cities, 42 state and 70 federal agencies having some kind of regulatory power over the coastal area. Concerted citizen effort culminated in the establishment of the California Coastal Commission in 1972. The Commission was directed to produce in three years a comprehensive, coordinated and enforceable plan for the orderly long-range conservation and management of natural resources of the California coast, and was given the power to regulate development along the entire length of the coast. The California coastal plan was adopted in 1975 after three years of planning and hundreds of public hearings. In 1976 the *California Coastal Act* was passed. Local governments were required to develop a coastal program, to be certified by the State of California. After the state certification of the local program, the local government would administer the program with some permit decisions appealable to the State Commission such as any development within 100 feet of a coastal wetland or stream or a major public work or energy facility. Local coastal programs are the basic planning tools which set the ground rules for future development in the coastal zone. Certain activities are exempt from permitting requirements such as repairs and improvements to single-family homes.

The California Coastal Commission is a unique partnership between state and local governments. There are twelve voting and four non-voting members. The voting members are comprised of six "public members" representative of the public at large and six locally elected officials from county or city governments. The Commission has authority over federal activities such as offshore oil development through a "federal consistency review" authority. This has been an effective means to address state and local concerns over the impact of federal activities such as military activities and federal highway projects on coastal forests, wetlands and other natural resources.

One innovative feature of the California coastal zone management process was the decision to regulate at the same time as planning occurred. While coastal commissions were producing the coastal plan, the State Commission had to ensure that development that was being approved was consistent with a plan that had not yet been developed. Commentators have said that a combination of planning and regulation works well as planning reports that sit on shelves give people a distaste for the process. Including an open and inexpensive appeals process where "any person aggrieved" had standing to appeal significantly altered the outcomes on controversial projects that had previously been approved by both local governments and regional commissions.

A recent example of the power of the *Coastal Act* and California Coastal Commission hearings was the halting of a proposed development in the Big Sur area. The Hearst Corporation had planned to build a resort in one of the most scenic and undisturbed sections of the California coast. A public interest group argued that the resort would violate the State's *Coastal Act* by reducing public access to the coast and would spur further development. The California Coastal Commission rejected the effort by local county supervisors to relax coastal regulations for the development.

Current situation in British Columbia

The province of BC released a coastal zone position paper in June 1998, which says that "there is a broad consensus on the need to strengthen and improve long range and strategic planning in the coastal zone." The position paper calls for public participation consensus-based processes for Crown land such as land and resource management plans(LRMPs) to be adapted for coastal zone designation and management. LRMPs are currently underway in a number of areas in BC. The first LRMP with a coastal component is underway in the Central Coast region of BC. The position paper states that LRMPs could be used to provide coastal management direction along coastal BC areas such as the Central Coast, Queen Charlotte Islands/Haida Gwaii and North Coast areas. The current LRMP processes result in plans that are not enforceable. There are no appeal mechanisms for any stakeholders of LRMP decisions.

Four provincial goals for coastal zone planning are set out in the position paper:

1. Utilize planning where feasible as a major tool for reducing land and resource use conflict and competition in the coastal zone.

2. Apply coastal zone plans at a strategic and local level to provide a context for consideration of other government initiatives, policies, goals and strategies.

3. Develop a Coastal Zone Planning Guide that draws upon the process and principles of the existing provincial planning framework for Crown owned upland.

4. Seek agreements with the federal government on roles and responsibilities for planning in the coastal and marine environment.

Contrasting these goals and discussion of coastal zone planning with the regulatory framework in the United States, particularly in Washington and California, it can be seen that the BC proposal lacks:

- enforceability,
- an appeal mechanism,
- a public process for determining how much of the coastal area should be preserved,
- an institutional structure for coastal zone management which includes provincial and local governments,
- a vision of the legislative or regulatory framework required to attain coastal zone management,
- concrete proposals for a coast wide planning initiative,
- proposals for a uniform permitting procedure in coastal areas,
- details of how co-ordination with the federal and local government will be attained.

Without an enforceable legal base, including public appeal mechanisms, the proposed coastal zone planning policies set out in the province's Coastal Zone Position Paper may not achieve a reduction in the loss of nearshore habitat. The value of an appeal system in the California *Coastal Act* was demonstrated by the results of an analysis which found that 86% of appeals brought by environmental and planning groups which passed the first initial hurdle of raising a substantial issue for the Commission to decide resulted in a change to the permit – either a denial of a permit previously approved by a regional commission or imposition of more stringent conditions on the permit. And contrary to the fears of ICM opponents, development on the coast of California has not been frozen as a result of the operation of the *Coastal Act* and Commission. In fact, over 95% of all coastal development permit applications are approved even though many may include conditions to bring projects into compliance with *Coastal Act* policies.

The time is ripe for a comprehensive ICM process to be instituted in B.C.. The *Oceans Act* authorizes the federal government to develop integrated coastal zone management plans, in co-operation with others such as the provincial government. The province's Coastal Zone Position paper sets planning as a goal for reducing land and resource use conflict and competition in the coastal zone. Both levels of government should cooperate to inaugurate a new system of integrated coastal management.

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Department of Fisheries & Oceans, *Wild, Threatened, Endangered and Lost Streams of the Lower Fraser Valley,* Summary Report, 1997.

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Sections 92(13) and (16) of the *Constitution Act*.

Coastal Zone Resource Subcommittee for the BC Land Resources Steering Committee, *The Management of Coastal Resources in British Columbia – A review of selected information*, April 1978.

S. 35 (2), *Fisheries Act*,

Land Act, R.S.B.C. 1996, c. 245, s.11.

Land Act, R.S.B.C. 1996, c. 245, s.18.

The *British Columbia Logging Order* regulates placing, driving, towing, booming and releasing of logs into come BC waters. The prohibitions are specifically tailored to the individual water bodies mentioned in the *Fisheries Act* regulation. If a log storage area falls within the area managed by a federal government Harbour Commission, a log storage area must obtain a foreshore and mid-channel lease and a use/occupy permit. A lease secures tenure for an applicant but is not an approval for structures, which must be approved by the appropriate Harbour Commission. Intergovernmental approvals may also be involved: log storage in the Fraser River comes under the management authority of the Fraser River Estuary Management Plan (FREMP). FREMP has prepared log storage guidelines which increase the availability of habitat previously damaged by the grounding of logs at low tide.

Ann Glover and Colin Levings, *Use of the British Columbia Provincial Tenure Administration System (TAS) for Analysis of Marine Fish Habitat Use in the Strait of Georgia,* 1998, Coastal Zone Management 1998, Victoria, B.C.

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R.S.C. 1985, c. F-14.

Policy for the Management of Fish Habitat (Ottawa: Department of Fisheries and Oceans, 1986).

Northwest Falling Contractors Ltd. v. The Queen, [1980] 2 S.C.R. 292.

S.B.C 1997, c. 21.

Ministry of Environment, Lands and Parks, *Streamside Protection under the Fish Protection Act, A Discussion Paper*, Victoria, BC 1998, 10.

For a discussion of these procedures, see, respectively, the sections of this report on Intergovernmental Programs, the *Land Act* and the *Wildlife Act*.

Ministry of Environment, Lands and Parks, *Planning Guide to Wildlife Management Areas*, Oct.1997 Draft.

Ministry of Environment, Lands and Parks, BC *Land Statistics 1996*, at 33.

R.S.B.C.1996, c.488, s.4 (2).

Ministry of Environment, Lands and Parks, *Planning Guide to Wildlife Management Areas*, Oct.1997 Draft.

R.S.B.C.1996, c.488, s. 5(1).

R.S.B.C.1996, c.488, s. 5(2).

This site is also one of only two B.C. Ramsar sites, wetlands listed under the 1971 Convention on Wetlands of International Importance, also known as the Ramsar Convention.

Federal laws are the *National Park Act; Wildlife Act* (National Wildlife Areas)*; Migratory Bird Convention Act* (Migratory Bird Sanctuaries); and *Oceans Ac*t (for marine protected areas). Provincial laws include the *Regional Park Act; Heritage Conservation Act; Islands Trust Act and Municipal Act*.

R.S.B.C. 1979, c.101.

BC Land Use Coordination Office, *A Protected Areas Strategy for British Columbia — Overview and Status Report,* April 1996, at 375.

Oceans Act, S.C. 1996, c. 31, s. 35. Marine protected areas may be designated for the conservation and protection of commercial and non-commercial fishery resources, including marine mammals and their habitats; the conservation of endangered or threatened marine species; the conservation and protection of unique habitats; the conservation and protection of marine areas of high biodiversity or biological productivity; or to conserve and protect any other marine resource or habitat necessary to fulfil the Minister's mandate.

DFO, B.C. Land Use Coordination Office, *Marine Protected Areas – A Strategy for Canada's Pacific Coast*, Discussion Paper, August 1998.

Bev Ramey, "Conservation Report", B.C. Naturalist Spring/Summer 1999, 17.

This power is also contained in the federal *Fisheries Act* and spot closures have been ordered in provincial and federal mpas (e.g.Race Rocks and Checletset Bay ecological reserves).

Richard Paisley, "Regional Marines Issues Overview Paper – West Coast." Prepared for the National Marine Conservation Strategy Program in the CARC/CNF *National Marine Conservation Strategy Program Vancouver Workshop*, Westwater Research Centre March 7-8, 1995 at 11.

Scott Wallace, "Protecting Marine Ecosystems," B.C. Naturalist, Spring/Summer 1999, 5-6.

Mark Zacharias and Don Howes, "An Analysis of Marine Protected reas in British Columbia, Canada Using a Marine Ecological Classification " (1998) vol. 18 (1) Natural Areas Journal 4-13.

Ibid, at 11.

S.4, *Marine Conservation Areas Act*, R.S.C. 1998,

Geoff Gilliard, Environment Canada, "The Pacific Estuary Conservation Program" 1999 at http://ramsar.org/key_awards99_interview_pecp.htm.

Islands Trust Act, R.S.B.C. 1996, c.239.

One example of a statutory right of way being used to protect a wetland is found in findlay and Hillyer, *Here Today, Here Tomorrow — Legal Tools for the Voluntary Protection of Private Land in British Columbia* (WCELRF: Vancouver, BC) 1994.

Amendments in 1994 to the *Land Title Act* significantly expanded the potential to use conservation covenants for protecting private land in BC. Prior to the change in the Act, a conservation covenant to protect ecological features of land could be held by a provincial or local government body, but not by a private conservation organization. A

conservation covenant now can be held by "any person designated by the Minister of Environment, Lands and Parks on terms and conditions he or she thinks proper."

Water Act, R.S.B.C. 1979, c. 429.

R.S.C.1985,c.S-9.

SOR/92-211.

SOR/93-3. These regulations prohibit the discharge of oil or oily mixture from a ship subject to exceptions for emergencies, minimal discharges and authorized discharges.

C.R.C. 1978, c. 1424.

SOR/91-659.

SOR/91-661.

C.R.C. 1978, c. 1458.

SOR/93-4.

SOR/93-54.

The *Pleasure Craft Sewage Disposal Regulations*, SOR/91-661, under the *Canada Shipping Act* apply only to designated water bodies. Currently only three lakes in BC have been designated, although the province of BC has proposed adding 50 more water bodies to be covered by this regulation.

Pulp Mill and Pulp and Paper Mill Liquid Effluent Control Regulation BC Reg. 470/90.

Antisapstain Chemical Waste Control Regulation BC Reg. 300/90.

Oil and Gas Waste Regulation BC Reg. No.208/96.

A number of industry and site specific regulations have been made to authorize deleterious substance discharges. Pulp and Paper Effluent Regulations SOR/92-269; Petroleum Refinery Regulations C.R.C. 1978, c.828; Metal Mining Liquid Effluent Regulations C.R.C. 1978, c.819; Meat and Poultry Products Plant Liquid Effluent Regulations C.R.C. 1978, c.818; Potato Processing Liquid Effluent Regulations C.R.C. 1978, c.829; Chlor-Alkali Mercury Liquid Effluent Regulations C.R.C. 1978, c.811; Alice Arm Tailings Deposit Regulations **CITE**; Petroleum Refinery Liquid Effluent Regulations C.R.C. 1978, c.828; and Port Alberni Pulp and Paper Effluent Regulations (SOR/92-638). Other relevant regulations under the *Fisheries Act* include the British Columbia Gravel Removal Order and the British Columbia Logging Order. C.R.C., c. 841 and C.R.C., c. 842, respectively.

SOR/92-269.

SOR/92-267.

SOR/92-282.

BC Environmental Assessment Office, *Salmon Aquaculture Review* — Vol.1, August 1997 at 53.

A background report on siting of salmon farms was prepared by Catherine Berris for the Environmental Assessment Office which discusses the issues involved in siting salmon farms. This paper is available on the Environmental Assessment Office web site at www.eao.gov.bc.ca/project/aquacult/salmon/report/volume 3. The salmon aquaculture review made a number of recommendations related to siting of salmon farms, including a recommendation that guidelines be developed.

BC Ministry of Forests, *1994 Forest, Range & Recreation Resource Analysis* at 38.

S.B.C. 1994, c. 41.

R.S.B.C. 1979, c. 140. See Code, s. 2.

Provincial forests and wilderness areas are designated under the *Forest Act*.

Private land that is classified as managed forest land under the *Assessment Act* and regulations made under it may be the subject of regulations under the Code governing timber harvesting, preparation of operational plans and the application of the Code to the land.

Sections 11 and 23 of the *Timber Harvesting Practices Regulation.*

Information regarding the ALR and percentage of agricultural land in BC, including grazing land, has been obtained from Ministry of Environment, Lands and Parks, *British Columbia Land Statistics 1996*, February 1996.

Mine Reclamation Fund Regulation, BC Reg. 287/94.

Mines Act, S.B.C. 1989, c. 56, ss. 10 and 11.

BC Ministry of the Environment, Environmental Non-compliance Report, October, 1998.

For more information see the report by Barry Sadler, *Evaluation of B.C.'s Environmental Assessment Process – Final Report,* E.A. Office, Victoria, B.C. November 1997, and Chris Rolfe and Andrea Finch, "Refining Thresholds Under the B.C. E.A. Reviewable Projects Regulation" (WCELA) 1997.

Canadian Environmental Assessment Act, S.C. 1992, c.39.

A project is defined as either an undertaking in relation to a physical work or any physical activity not relating to a physical work that is listed in the Act's Inclusion List.

These provisions include subsection 22(1): Minister making determination of what constitutes a sufficient flow of water to be provided over spill-way for safe and unimpeded descent of fish; subsection 22(2): Minister making determination about what provisions must be made during construction of an obstruction for the free passage of migratory fish; subsection 22(3): Minister deciding what level of water is sufficient in a river bed below an obstruction for the safety of fish and to protect spawning grounds; section 32: issuing authorization for destruction of fish; subsection 35(2): issuing authorization for alteration of fish habitat; and subsection 37(2): ordering modifications or restrictions to works to prevent destruction of fish habitat.

The Inclusion List describes activities that must be subjected to an environmental assessment if a federal department or agency proposes, funds or otherwise authorizes the project by issuing a permit or licence. It contains a number of activities related to fisheries that require an authorization under the Act, including activities such as dredging or filling operations, draining or altering water levels in a water body, and removing vegetation close to a water body. The Comprehensive Study List regulation describes those types of projects that must be assessed through a more detailed study, since these projects have the potential to cause significant adverse environmental effects and often generate considerable public concern. Some of these projects have the potential to cause serious impacts to fish and fish habitat, such as major electrical generation projects or large mining projects.

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Towards an Oceans Strategy for Canada, DFO, 1997, Ottawa.

Valentin Schaefer, “Urban Biodiversity” in L. Harding, ed. *Biodiversity in BC*, (Canadian Wildlife Service, MELP, 1996) at 307.

BC Round Table on the Environment and the Economy, *Georgia Basin Initiative: Creating a Sustainable Future*, May 1993 at 9-10.

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Schreffler, D.K., R.M. Thom and K.B. MacDonald. 1995 “Shoreline armoring effects on biological resources and coastal ecology in Puget Sound.” Puget Sound Research’95: Proceedings 1:121-131, cited in Ginny Broadhurst, *Puget Sound Nearshore Habitat Regulatory Perspective: A Review of Issues and Obstacles*, Puget Sound/Georgia Basin Environmental Report Series: Number 7, January 1998.

Yves Coriveau and Franklin Gertler, Quebec Environmental Law Center, *ENGO Concerns and Policy Options Regarding the Administration and Delegation of Subsection 35(2) of the Fisheries Act, Proposed Subsection 35(3) and the Consequences for Federal Environmental Assessmen*t, Discussion Paper for the Department of Fisheries and Oceans, prepared for the Fisheries Act Working Group, Canadian Environmental Network, January 1996.

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