Green Shores™ Background Report

Shoreline Regulations and Permitting Processes in BC

STEWARDSHIP CENTRE
FOR BRITISH COLUMBIA

October 2014

GREEN SHORES

This report was compiled by DG Blair, M.Sc.

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Acknowledgements

Funding was provided for this study by the Climate Action Secretariat, BC Ministry of Environment.

The Stewardship Centre for BC

The Stewardship Centre for BC (SCBC) was created to assist governments, businesses, conservation and environmental organizations, and citizens carry out stewardship activities in the most efficient, effective, and rewarding ways. A leader in promoting stewardship values as the foundation for sustainability, the SCBC wants to help make "shared stewardship" – the voluntary adoption of environmentally sustainable practices by all sectors of society – a reality in British Columbia.

We are committed to champion science-based best stewardship so that British Columbians understand, enjoy, and sustain healthy ecosystems through stewardship. As good stewardship relies on good decision-making, we work closely with our partners to develop innovative technical, educational, and capacity building resources. For more information about the Stewardship Centre, visit our website at www.StewardshipCentreBC.ca.

Preface

This report has been prepared to provide background information for the Green Shores™ program of the Stewardship Centre for BC (SCBC). It begins with an overview of the Green Shores program, gives a summary of regulations affecting shoreline development – both marine and freshwater - and details information about the shoreline development permitting process in BC. Also included is an Appendix with an example Development Permit Area description, a table referencing the regulatory framework and Green Shores pre-requisites/credits, and a scan of local government policies and regulations that are applicable to Green Shores. It is hoped that this information will be useful to provide the regulatory context for Green Shores and assist in implementation of Green Shores practices in communities across BC. This report is a compilation of information as noted in the reference section and other research as completed by SCBC.

Cover Photos

Main Cover and bottom left: Harriet Rueggeberg, Qualicum Beach, BC.
Bottom right: Nick Page, Jericho Beach, Vancouver, BC.

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Table of Contents

The Green Shores Program 3

Green Shores for Homes (GSH) 3

Green Shores Coastal Development Rating System (CDRS) 3

Certification 4

Green Shores for Homes Certification 4

Green Shores CDRS Certification 4

What is the Opportunity for Green Shores? 5

Regulations Affecting Shoreline Development 6

BC Marine Coastal Shorelines 6

Current Legislation and Policy for Marine Coastal Shorelines 8

Current Legislation and Policy for Freshwater Shorelines 12

Legislation and Green Shores Cross-reference 15

Shoreline Owner Rights and Responsibilities 18

Property Rights Regarding Shoreline Erosion 18

Shoreline Protection and Building along Shorelines 19

Documentation Required to Apply for Shoreline Works 20

Conclusion 22

Recommendations 22

Bibliography 23

Appendices 25

The Green Shores Program

The Green Shores™ (GS) program is designed to encourage sustainable use of shoreline ecosystems through planning and design that recognizes the ecological features and functions of shoreline systems. Green Shores provides resources and tools for shoreline property, land-owners and managers to minimize the impacts of new developments and restore shoreline ecosystem function of previously developed sites.

The guiding principles for Green Shores are to

1. preserve the integrity or connectivity of shoreline processes
2. maintain or enhance habitat diversity and function
3. minimize or reduce pollutants to the environment
4. reduce cumulative impacts to the shoreline environment.

Green Shores consists of two programs – one for homeowners (see Green Shores for Homes Ratings Guide), the other for larger scale shoreline developments like municipal parks, institutions and mixed-use shoreline projects (see Coastal Development Rating System Guide)[1]. Green Shores is a trademarked program of the Stewardship Centre for British Columbia.

Green Shores for Homes (GSH) is a voluntary, incentive-based program that helps waterfront homeowners restore natural shorelines and enjoy the many recreational, scenic, environmental, and shoreline-protection benefits they bring.

Green Shores benefits homeowners because they can help to

- make shorelines accessible, eliminating drop-offs and walls and creating opportunities for strolling, kayaking, foraging, and simple beach fun
- beautify shorelines, adding native vegetation, wildlife habitat, and access to waterfront activities
- make shorelines more secure against erosion and flooding, with alternatives to costly bulkheads that still address owners' concerns
- provide a wide range benefits similar to the model of the popular LEED for Homes, Built Green, and Sustainable Sites programs.

Green Shores Coastal Development Rating System (CDRS) is a voluntary assessment and certification process that applies to residential and commercial marine waterfront development projects as well as to infrastructure development (such as public walkways) and shore protection works in public spaces (parks and recreational areas).

The Coastal Development Rating System is not intended to be applied to major industrial developments that require a high degree of shore infrastructure (such as ports facilities industrial plants), commercial

[1] The CDRS Guide is available at www.greenshores.ca; the Green Shores for Homes Guide is currently in draft form, contact info@greenshores.ca to obtain a copy of this guide

facilities or developments such as marinas, with a large requirement for 'in water' activities such as dredging.

The CDRS benefits shoreline developments because it

- provides voluntary motivation rather than regulation
- is marketable, as certification can enhance development value
- can be used as an education tool for shoreline developers and landowners
- is adoptable by local governments –providing a clear standard for shoreline development applications.

Certification

Both programs are based on specific criteria that are articulated in a series of pre-requisites and credits. See below for further details.

Green Shores for Homes Certification applies to both new development and renovations and modifications of existing structures; and to both whole-site development and riparian and shoreline development alone. Green Shores for Homes is a new pilot program of the SCBC and will be applicable to both freshwater and marine shorelines.

All GSH projects must fulfill four prerequisite best management practices by

1. conducting a pre-design site assessment
2. creating a site design plan
3. forming an environmental management plan for construction
4. avoiding critical and sensitive habitats.

Credits are awarded in four categories

1. shoreline physical processes
2. shoreline habitats
3. water quality
4. shore stewardship.

Green Shores CDRS Certification is achieved by meeting all prerequisites and an additional number of credit points (Green Shores 2010, City of Seattle DoPD 2014b). The certification levels (Green Shores™ Certified, Silver Certified and Gold Certified) are set as a total of all applicable points rather than a percent of applicable points. The CDRS applies only to marine shorelines.

All projects must fulfill five prerequisite best management practices by

1. locating permanent structures appropriately
2. preserving critical or sensitive habitat
3. maintaining or enhancing riparian vegetation

4. conserving or restoring coastal sediment processes
5. creating and implementing an onsite environmental management plan.

Credits are awarded in eleven categories:

1. Design with Conservation of Shore Zone
2. Shore Friendly Public Access
3. Re-Development of Contaminated Sites
4. Climate Change Adaption Plan
5. Rehabilitation of Coastal Habitats
6. Rehabilitation of Coastal Sediment Processes
7. Enhanced Riparian Zone Protection
8. Light Pollution Reduction
9. Integrated Stormwater Planning and Design
10. Innovation
11. Outreach and Public Education.

What is the Opportunity for Green Shores?

Green Shores has been created as a tool for shoreline property owners and their contractors as well as local governments to treat properties in a shore friendly way. It applies to all types of shorelines in both marine and lake environments – from rocky to sand and gravel shores, estuaries to mudflats, rock cliffs to coastal bluffs. Many shoreline developments involve activities that are regulated or require permits. Agencies at local, provincial, and federal levels review shoreline projects to ensure that they are safe, protect aquatic habitats and species, maintain water quality, and preserve public lands and interests. Many jurisdictions are trying to encourage the kinds of practices reflected in Green Shores. Local governments, in particular, can utilize Green Shores criteria to develop local guidelines that encourage shore friendly practices many of which address shoreline owners concerns related to sea level rise.[2]

Many levels of governments are working together to foster Green Shores and are working to make the regulatory process smoother for restoration of natural processes along shorelines. Many of the items needed for Green Shores credits (such as design plans, site photos or aerial photos, species or habitat inventories, etc.) are part of permit applications and will help meet regulatory requirements. Proposals that feature natural beaches and plantings will tend to be more acceptable than those that emphasize armouring – so, following the Green Shores process may make any applicable permitting process easier and faster.

[2] See Greening Shorelines for Enhancing Resilience: an evaluation of approaches to sea level rise (2014)

Regulations Affecting Shoreline Development

BC Marine Coastal Shorelines

Jurisdiction over coastal areas in B.C. is split among federal, provincial and local governments, depending on the location along the coast and the relationship to the shore. It is important to note that while the following points refer to ownership and jurisdiction, all of B.C.'s coast is subject to aboriginal claims based on traditional use by First Nations and constitutional recognition of Aboriginal Title and Rights.

The federal government has jurisdiction over offshore waters – from the low water mark out to 12 nautical miles along the outer coast. The federal Dept. of Fisheries and Oceans is responsible for fisheries protection provisions to prevent serious harm to Commercial, Recreational, and Aboriginal fisheries under the *Fisheries Act*, including shoreline "riparian" habitats, as well as for maintaining maritime safety through the Coast Guard. Transport Canada is responsible for preserving the public right of navigation under the *Navigation Protection Act* (2014) in waters listed in the Schedule to that Act. The public right of navigation will continue to be recognized at common law for navigable waters not listed in the Act. Port Authorities are also established under federal legislation to manage major harbours and facilities that are federal Crown lands, such as Victoria, Metro Vancouver, Port Alberni, Prince Rupert and Nanaimo harbours.

On B.C.'s coast, the area between high tide and low tide (the foreshore area) is owned and controlled by the provincial government as well as the beds of inland seas such as the Strait of Georgia, Juan de Fuca Strait and Johnstone Strait (

Figure 1). Foreshore area is never privately owned, though the province may grant leases and licences for special uses of the foreshore – like gathering oysters or building docks and wharves. The Land Tenure Branch (under the Ministry of Forests, Lands, and Natural Resource Operations) administers lands in the foreshore area and issues permits, licences or leases for a wide range of uses – private and public moorage, wharves, marinas, aquaculture, and log storage to name a few. The Province may also establish regional coastal zone or estuary management plans. Use of the foreshore is also subject to local government land use regulations (Table 1).

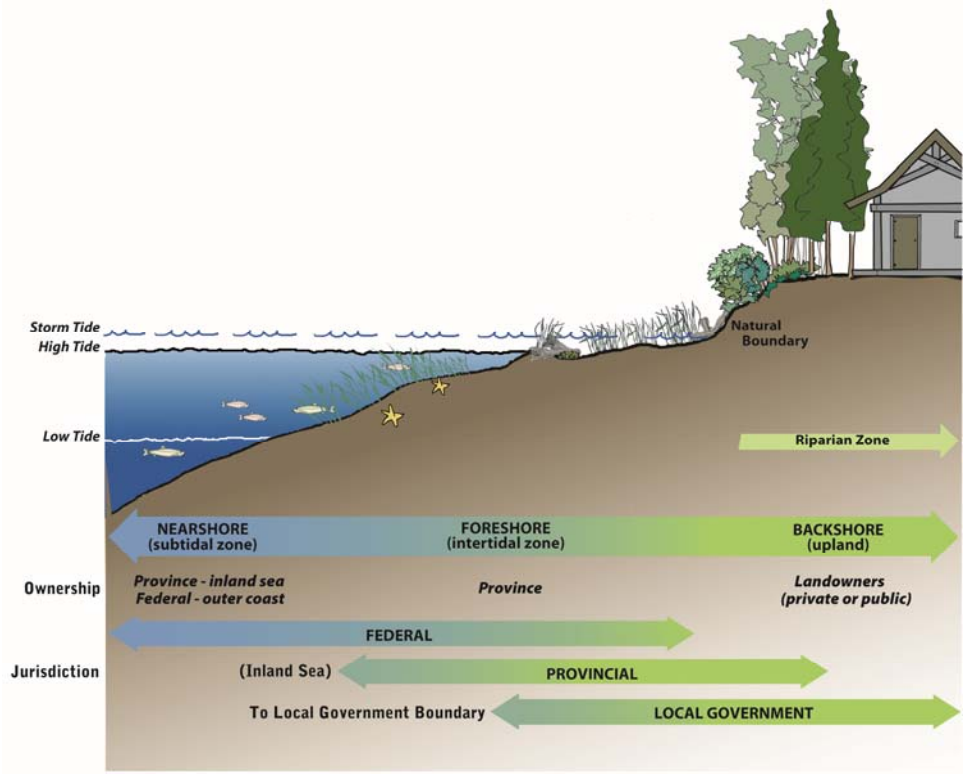

Figure 1. Ownership and jurisdiction on BC's coastal shores (credit: H. Rueggeberg)

Table 1. Governance on coastal shores

	Local Government (LG) municipal, regional	Provincial Government	Federal Government	First Nations
Backshore	Plan and regulate land use through Official Community Plans (OCPs), zoning, development permits, etc.	Issue tenures (permit, licence of occupation, lease or grant) and sale of provincial Crown lands	Protection of commercial aboriginal and recreational fisheries, including shoreline (riparian) vegetation and timing windows	Planning and regulation on Reserve lands; may have claims to Aboriginal Title and Rights in other areas
Foreshore	Land use planning & regulation extends into the surface of the water that lies within Local Government (LG) boundary	Issue tenures over foreshore	Fish and fish habitat protection Protect public navigation in listed waters	Same as above
Nearshore	Land use planning and regulation extends into nearshore areas that lie within LG boundary	Issue tenures over nearshore areas in inland seas	Same as above	Same as above

Current Legislation and Policy for Marine Coastal Shorelines

Compliance is required with applicable aquatic and other related legislation for works along the shoreline, including those noted below. Depending on the type and location of work, a number of Provincial, Federal and local government permits may be required, and some activities and works may be prohibited or restricted, or allowed only at certain times. Protection of fish and other aquatic life includes practices that not only directly protect these species but also protect water quantity and quality, riparian areas, and habitats. The BC provincial government may be contacted through Front Counter BC; Fisheries and Oceans Canada, and Environment Canada offices may be contacted for advice on what is required. Along all shorelines, work is restricted to periods when no native fish are spawning or have eggs developing, as well as during periods when birds, amphibians and other wildlife are not reproducing. The exact window varies among regions and watersheds. The Provincial Ministry of Environment and Fisheries and Oceans Canada, should be consulted to determine precise local work windows.

Jump to a section:

Federal Government	Fisheries Act	Navigation Protection Act	Species at Risk Act
Provincial Government	Migratory Birds Convention Act	Canadian Environmental Assessment Act	Canadian Environmental Protection Act
Local Government	Canadian Wildlife Act	Fish Protection Act	Wildlife Act
			Land Act

Government	Legislation	Permits/Authorizations
Federal	Fisheries Act	The Fisheries Act requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work being conducted in or near waterbodies that support fish that are part of or that support a commercial, recreational or Aboriginal fishery. DFO collection permits apply to any species that DFO manages. For the most current information on Fisheries Act reviews and permitting processes refer to DFO's Projects Near Water website: http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html
	Migratory Birds Convention Act	General prohibitions under the Act and its regulations protects most species of migratory birds, and their nests and eggs, anywhere they are found in Canada, regardless of ownership. The deposit of substances harmful to migratory birds in waters or areas frequented by them is also prohibited. Environment Canada recommends that you: 1. know your legal obligations 2. avoid engaging in potentially destructive or disruptive activities in key sensitive periods and locations, in order to reduce the risk of affecting birds, their nests or eggs 3. develop and implement appropriate preventive and mitigation measures to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds. Note that appropriate measures need to be decided on a case-by-case basis. It is the responsibility of the individual or company undertaking

Government	Legislation	Permits/Authorizations
Federal *continued*	Migratory Birds Convention Act *continued*	the activities to determine these measures. For more information, please visit the information page on the MCBA: http://www.ec.gc.ca/Nature/default.asp?lang=En&n=7CEBB77D-1 and the Environment Canada Incidental Take website: http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=C51C415F-1
	Canada Wildlife Act	Applicable if the property lies within a National Wildlife area. The Act allows for the creation, management and protection of wildlife areas for wildlife research activities, or for conservation or interpretation of wildlife. The purpose of wildlife areas is to preserve habitats that are critical to migratory birds and other wildlife species, particularly those that are at risk. The Wildlife Area Regulations prohibits all activities that could be harmful to species and to their habitat, unless a permit is issued indicating the permitted activity. Activities such as hiking, canoeing, photography and bird watching can be carried out without a permit in most areas. Visit http://ec.gc.ca/alef-ewe/default.asp?lang=En&n=E8EA5606-1 for more information.
	Navigation Protection Act, 2014	Applicable if a project that would substantially interfere with navigation in a scheduled navigable water. See http://www.tc.gc.ca/eng/programs-623.html. The public right of navigation in non-scheduled navigable waters continues to be recognized at common law.
	Canadian Environmental Assessment Act, 2012	The *Canadian Environmental Assessment Act, 2012* (CEAA) focuses on major projects and their environmental effects on areas of federal jurisdiction and as a result of federal decisions associated with a project. Under CEAA 2012, an environmental assessment focuses on potential adverse environmental effects that are within federal jurisdiction, including: • fish and fish habitat • other aquatic species • migratory birds • federal lands • effects that cross provincial or international boundaries • effects that impact on Aboriginal peoples, such as their use of lands and resources for traditional purposes • changes to the environment that are directly linked to or necessarily incidental to any federal decisions about a project.
	Canadian Environmental Protection Act	*The Canadian Environmental Protection Act, 1999,* came into force on March 31, 2000 and provides for the regulation of emissions and scheduled substances. Visit http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=E00B5BD8-1&offset=1&toc=show.
	Species at Risk Act	Killing, harming, harassing, capturing, taking, collecting and/or possessing any Endangered, Threatened or Extirpated aquatic species

Government	Legislation	Permits/Authorizations
Federal *continued*	Species at Risk Act *continued*	under the *Species at Risk Act* is prohibited. As a result, a permit may be required for in-stream activities including fish salvage that could affect a species at risk. Refer to DFO's permit page for more information http://www.dfo-mpo.gc.ca/species-especes/permits-permis/permits-eng.htm. Destruction of the identified and protected critical habitat for an aquatic species at risk is also prohibited. Activities such as drainage maintenance can take place in critical habitat, but these activities must occur in ways that do not result in destruction. For information on critical habitat refer to DFO's website at http://www.dfo-mpo.gc.ca/species-especes/act-loi/habitat-eng.htm It is prohibited to kill, harm, harass, collect or possess a migratory bird that is listed as Endangered, Threatened or Extirpated. Destroying the nest or residence of those listed migratory birds is also prohibited. Permits may be issued for certain purposes. Visit http://www.sararegistry.gc.ca/sar/permit/permits_e.cfm for more information. Critical habitat is identified in final recovery strategies and action plans for all groups of listed species at risk. There are a variety of ways critical habitat may be protected on non-federal lands. Voluntary stewardship activities can help prevent destruction of critical habitat. Depending on the species, provincial laws may apply, or there could be a federal regulation or order in place which prohibits destruction of critical habitat. Some activities may take place in critical habitat, but must occur in ways that do not result in destruction of critical habitat. For more information contact your regional Environment Canada office and visit www.sararegistry.gc.ca.
BC	Fish Protection Act	The Riparian Area Regulation (RAR) applies in delta/estuarine areas and protects freshwater riparian area vegetation during land development including, as well, activities such as adding decks or docks and may restrict activities and require restoration. Although the RAR is Provincial, it is administered by local governments. Local governments within designated regions (southern and south-central BC) are required to implement the RAR or enact regulations that meet or exceed RAR requirements.
	Wildlife Act	The British Columbia *Wildlife Act* defines wildlife as all native and some non-native amphibians, reptiles, birds and mammals that live in B.C. For some provisions of the Act, the definition includes fish, and other B.C. legislation defines some insects and plants as wildlife. Conservation and management of wildlife populations and habitat, issuing licences and permits (http://www.env.gov.bc.ca/fw/permits) for fishing, game hunting and trapping, guidelines for safe angling and trapping, outfitting, and

Government	Legislation	Permits/Authorizations
BC *continued*	Wildlife Act *continued*	nesting season protection are covered under the Wildlife Act. Wildlife Management Areas are also designated under the Wildlife Act and orders or regulations prohibiting or restricting activities may apply to a particular Wildlife Management Area. See http://www.env.gov.bc.ca/fw/habitat/conservation-lands/wma/. Fish collection permit required for fish salvages. Wildlife act permits required for salvages other wildlife (e.g., amphibians).
	Land Act	The *Land Act* is the primary article of legislation that is used by the government to convey land to the public for community, industrial and business use. The Act allows the granting of land, and the issuance of Crown land tenure in the form of leases, licences, permits and rights-of-way. If proposed works or structures will project into the foreshore (seaward of the natural boundary) then a Temporary Permit (for works or activities less than 2 years in duration) or a lease or licence of occupation (for permanent or longer-term works or structures) is required.
Local Governments	From powers derived from the Local Government Act	Development Permit and/or Building Permits may be required if the shoreline is in a Development Permit Area as designated by an Official Community Plan. For structures over a certain size, a building permit may be required. Zoning restrictions may apply. A Flood Plain Bylaw may establish restrictions of uses, establishment of minimum setbacks and/or construction requirements in flood plain areas.

Current Legislation and Policy for Freshwater Shorelines

Compliance is required with applicable aquatic and other related legislation for works along the shoreline, including those noted below. Depending on the type and location of work, a number of provincial, federal and local permits may be required, and some activities and works may be prohibited or restricted, or allowed only at certain times. Protection of fish and other aquatic life includes practices that not only directly protect these species but also protect water quantity and quality, riparian areas and habitats. The BC provincial government may be contacted through Front Counter BC; Fisheries and Oceans Canada, and Environment Canada offices may be contacted for advice on what is required. Along freshwater shorelines, work is restricted to periods when no native fish are spawning or have eggs developing and during periods when birds, amphibians and other wildlife are not reproducing. The exact window varies among regions and watersheds. The Provincial Ministry of Environment and Fisheries and Oceans Canada, should be consulted to determine precise local work windows.

Jump to a section:

Federal Government	Fisheries Act	Fish Protection Act	Species at Risk Act
Provincial Government	Migratory Birds Protection Act	Water Act	Wildlife Act
Local Government			

Government	Legislation	Permits/Authorizations
Federal	Fisheries Act	The Fisheries Act requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work being conducted in or near waterbodies that support fish that are part of or that support a commercial, recreational or Aboriginal fishery. DFO collection permits apply to any species that DFO manages. For the most current information on Fisheries Act reviews and permitting processes refer to DFO's Projects Near Water website: http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html
	Species at Risk Act (aquatic species)	Killing, harming, harassing, capturing, taking, collecting and/or possessing any aquatic Endangered, Threatened or Extirpated aquatic species protected under the Species at Risk Act is prohibited. As a result, a permit may be required for activities including fish salvage that could affect a species at risk http://www.dfo-mpo.gc.ca/species-especes/permits-permis/permits-eng.htm. Destruction of an aquatic species at risk's identified and protected critical habitat is also prohibited. Activities can take place in critical habitat, but these activities must occur in ways that do not result in destruction. For information on critical habitat refer to DFO's website: http://www.dfo-mpo.gc.ca/species-especes/act-loi/habitat-eng.htm.

Government	Legislation	Permits/Authorizations
Federal *continued*	Species at Risk Act (terrestrial species)	It is prohibited to kill, harm, harass, collect and/or possess a migratory bird that is listed as Endangered, Threatened or Extirpated. Destroying the nest or residence of those listed migratory birds is also prohibited. Permits may be issued for certain purposes: see http://www.sararegistry.gc.ca/sar/permit/permits_e.cfm for more information. Critical habitat is identified in final recovery strategies and action plans for all groups of listed species at risk. There are a variety of ways critical habitat may be protected on non-federal lands. Voluntary stewardship activities can help prevent destruction of critical habitat. Depending on the species, provincial laws may apply, or there could be a federal regulation or order in place which prohibits destruction of critical habitat. Some activities may take place in critical habitat, but must occur in ways that do not result in destruction of critical habitat. For more information contact your regional Environment Canada office and visit www.sararegistry.gc.ca.
	Migratory Bird Protection Act	General prohibitions under the Act and its regulations protects most species of migratory birds, and their nests and eggs, anywhere they are found in Canada, regardless of ownership. The deposit of substances harmful to migratory birds in waters or areas frequented by them is also prohibited. Environment Canada recommends that you: 1. know your legal obligations 2. avoid engaging in potentially destructive or disruptive activities in key sensitive periods and locations, in order to reduce the risk of affecting birds, their nests or eggs 3. develop and implement appropriate preventive and mitigation measures to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds. Note that appropriate measures need to be decided on a case-by-case basis. It is the responsibility of the individual or company undertaking the activities to determine these measures. For more information, please visit the information page at http://www.ec.gc.ca/Nature/default.asp?lang=En&n=7CEBB77D-1 and the Environment Canada Incidental Take website at http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=C51C415F-1.
	Canada Wildlife Act	Applicable if the property lies within a National Wildlife area. The Act allows for the creation, management and protection of wildlife areas for wildlife research activities, or for conservation or interpretation of wildlife. The purpose of wildlife areas is to preserve habitats that are critical to migratory birds and other wildlife species, particularly those that are at risk. The Wildlife Area Regulations prohibits all activities that could be harmful to species and to their habitat, unless a permit is

Government	Legislation	Permits/Authorizations
Federal *continued*	Canada Wildlife Act *continued*	issued indicating the permitted activity. Activities such as hiking, canoeing, photography and bird watching can be carried out without a permit in most areas. Visit http://ec.gc.ca/alef-ewe/default.asp?lang=En&n=E8EA5606-1 for more information.
	Navigation Protection Act, 2014	Applicable if a project that would substantially interfere with navigation in a scheduled navigable water. See http://www.tc.gc.ca/eng/programs-623.html. The public right of navigation in non-scheduled navigable waters continues to be recognized at common law.
BC	Water Act	Section 9 Authorization is required for works 'in or about' a stream or water course, which includes wetlands. See http://www.env.gov.bc.ca/wsd/water_rights/licence_application/section9/. A water license is required for water diversions, withdrawals or detentions. Note that the new *Water Sustainability Act* (http://engage.gov.bc.ca/watersustainabilityact/) is expected to be in force by spring 2015.
	Fish Protection Act	The Riparian Areas Regulation (RAR) protects riparian area vegetation during land development including, as well, activities such as adding decks or docks and may restrict activities and require restoration. Although the RAR is Provincial, it is administered by local governments. Local governments within designated regions (southern and south-central BC) are required to implement the RAR or enact regulations that meet or exceed RAR requirements.
	Wildlife Act	The British Columbia *Wildlife Act* defines wildlife as all native and some non-native amphibians, reptiles, birds and mammals that live in B.C. For some provisions of the Act, the definition includes fish, and other B.C. legislation defines some insects and plants as wildlife. Conservation and management of wildlife populations and habitat, issuing licences and permits (http://www.env.gov.bc.ca/fw/permits) for fishing, game hunting and trapping, guidelines for safe angling and trapping, outfitting, and nesting season protection are covered under the Wildlife Act. Wildlife Management Areas are also designated under the Wildlife Act and orders or regulations prohibiting or restricting activities may apply to a particular Wildlife Management Area. See http://www.env.gov.bc.ca/fw/habitat/conservation-lands/wma/. Wildlife Management Areas are also designated under the Wildlife Act and orders or regulations prohibiting or restricting activities may apply to a particular Wildlife Management Area. See http://www.env.gov.bc.ca/fw/habitat/conservation-lands/wma/

Government	Legislation	Permits/Authorizations
BC *continued*	Wildlife Act *continued*	Fish collection permit required for fish salvages. Wildlife act permits required for salvages other wildlife (e.g., amphibians).
Local Governments	From powers derived from the Local Government Act	Development Permit and/or Building Permits may be required if the shoreline is in a Development Permit Area as designated by an Official Community Plan. Zoning restrictions may apply. For structures over a certain size, a building permit may be required. A Flood Plain Bylaw may establish restrictions of uses, establishment of minimum setbacks and/or construction requirements in flood plain areas.

Legislation and Green Shores Cross-reference

A review of the regulatory framework affecting shoreline development is a critical step in the process to identify the extent to which Green Shores requirements mesh with typical shoreline permitting requirements (as outlined above), and to gain a sense of how much new information a Green Shores applicant might have to generate. Green Shores for Homes and the Coastal Development Rating System credits overlap with the abovementioned legislation in various ways (Table 2, Table 3).[3]

A review of these summary tables could assist federal, provincial, and local governments to decrease permitting complexity for Green Shores projects (by way of MoU's between government ministries, etc.) to assist shoreline landowners to implement Green Shores. The tables, with the cross reference to policies and legislation, may help to advance procedures to formalize the incorporation of Green Shores into government policies and/or bylaws. Finally, the information in the tables may provide some insight into ways to create incentive programs, social marketing strategies, and other efforts to encourage Green Shores.

[3] Specific information on how each Green Shores requirement meets a typical permitting process is outside the scope of this report and should be detailed in a further research report.

Table 2. Cross-reference of Green Shores for Homes credits and legislation

Green Shores **Green Shores for Homes Rating System**	Shoreline Physical Processes					Shoreline Habitats						Water Quality: Runoff & Pollutant Mgmt.							Shore Stewardhship			
	Setback/Impact Avoidance	Bulkhead Removal	Groin/Beach Structure Removal	Soft Shore Protection or Enhancement	Managed Retreat	Riparian Vegetation	Invasive Species	Wildlife Trees (Snags)	Large Woody Debris	Overwater Structures	Access Design	Site Disturbance	Rainwater Mgmt. 1 - Reducing Runoff	Rainwater Mgmt. 2 - Treating Runoff	Environmentally Friendly Building Products	Creosote Materials Removal	Herbicides, Pesticides, and Fertilizers	On-site Sewage Treatment	Shoreline Collaboration	Public Information and Education	Conservation Covenant or Easement	Shoreline Stewardship Participation
Marine Coastal Shorelines																						
Fisheries Act	○	●	●	●	○	●	○		○	●	○	○	○	○	●	●		○				
Migratory Birds Convention Act	○	○	○	○	○	●	●	●	○		○	○				○		○				
Canada Wildlife Act	legislation affects credit if working within a NWA																					
Navigation Protection Act, 2014		●	●	○						○						●						
Canadian Environmental Assessment Act, 2012	legislation affects credit if considered a major project																					
Canadian Environmental Protection Act				○		○	●		○	○			○	●	●	●	●	●				
Species at Risk Act	○	○				○	●	●	○		○	○	○	○				○				
Fish Protection Act	○	●	●	●	○	●	●	○	○		●	●	○	○		○		○				
Wildlife Act	legislation affects credit if working within a WMA																					
Land Act	legislation affects credit if working beyond the foreshore																					
Powers derived from the Local Gov. Act	Development/Building permits if in DPA; may set restrictions																					
Freshwater Shorelines																						
Fisheries Act		●	●	○		○	○		○	●	○				○	●		○				
Species at Risk Act (aquatic species)		●	●	○		●	○		○	○				○	○	●		○				
Species at Risk Act (terrestrial species)	○	○	○	●	○	●	○	○	○		●	○	○	○	○	○		○				
Migratory Bird Protection Act	○	○	○	●	○	●	○	●	○		○	○	○	○	○	○		○				
Water Act		●	●	●	○	●	○	○	●	●	○		○	○		●		○				
Fish Protection Act	○	●	●	●	○	●	●			○	○	○	○	○		○		○				
Wildlife Act	○	○	○	●	○	●	○	○	○	○	●	○	○	○	○	●		○				
Powers derived from the Local Gov. Act*	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

*may incl OCP, DPA, Zoning & policy

● Legislation likely to affect this credit
○ Legislation may affect this credit
blank Legislation unlikely to affect this credit

NWA - National Wildlife Area
WMA - Wildlife Management Area
DPA - Development Permit Area

*This chart is intended as a preliminary guide and not a replacement for contacting the relevant agencies to determine required permits.

Table 3. Cross-reference of Green Shores Coastal Development Rating System credits and legislation

Green Shores **Coastal Development Rating System**	Design with conservation of shore zone	shore friendly public access	Re-development of contaminated sites	Climate change adaption plan	Rehabilitation of coastal habitats	Rehabilitation of coastal sediment processes	Enchance riparian zone protection	Light pollution reduction	Integrated stormwater planning and design	Innovation	Outreach and public education
Marine Coastal Shorelines											
Fisheries Act	●		●		●	●	●	○			
Migratory Birds Convention Act	○	○	○		●	●	○				
Canada Wildlife Act	legislation affects credit if working within a NWA										
Navigation Protection Act, 2014	●				●	●	○				
Canadian Environmental Assessment Act, 2012	legislation affects credit if considered a major project										
Canadian Environmental Protection Act	○	○	●		●		●				
Species at Risk Act	○	○			○	○	●	○	○		
Fish Protection Act	●	●	●		●	●	●	○	○		
Wildlife Act	legislation affects credit if working within a WMA										
Land Act	legislation affects credit if working beyond the foreshore										
Powers derived from the Local Gov. Act*	○	○	○	○	○	○	○	○	○	○	○
Freshwater Shorelines											
Fisheries Act	●		●		●	●	●	○			
Species at Risk Act (aquatic species)	○	○	●		○	○	○		○		
Species at Risk Act (terrestrial species)	○	●	○		●	●	●	○	○		
Migratory Bird Protection Act	○	○	○		●	●	●		○		
Water Act	○	●	●		○	○	●		●		
Fish Protection Act	●	●	●		●	●	●		○		
Wildlife Act	○	○	●		○		○				
Powers derived from the Local Gov. Act*	○	○	○	○	○	○	○	○	○	○	○

*may incl OCP, DPA, Zoning & policy

● Legislation likely to affect this credit
○ Legislation may affect this credit
blank Legislation unlikely to affect this credit

NWA - National Wildlife Area
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**This chart is intended as a preliminary guide and not a replacement for contacting the relevant agencies to determine required permits.*

Shoreline Owner Rights and Responsibilities

Waterfront property owners have certain "rights" with respect to shorelines. Under what is known as "common law", shoreline owners in BC enjoy certain "riparian rights" that run with the upland property, including the right to

- unimpeded access to and from any point along the natural boundary of their property to deep water for the purpose of navigation. This also means that if someone constructs an improvement along their waterfront, it cannot interfere with the right of access of neighbouring properties
- protect their property from erosion or flooding by installing protective structures on their own land. Extending structures below the current natural boundary requires the approval of the Province
- acquire land that slowly and naturally accretes to the shore once that land takes on upland characteristics. This does not apply to land created by a sudden deposit due to a flood, filling or an artificial interference in natural processes. To claim accretions, landowners must have the accreted land surveyed and apply to the provincial Surveyor General to have the revised legal survey adopted in the land title registry.

What "rights" does the public have with respect to coastal shores? The public enjoys a privilege or bare licence to use the foreshore and other aquatic lands held by the Crown. The only public *rights* that exist, however, are the right to land boats on and embark from the foreshore in cases of emergency, and the rights of navigation, anchoring, mooring[4] and fishing over lands covered by water. In addition, when the Province issues tenure in the form of a foreshore lease, the leaseholder may restrict public access to the leased area; tenures in the form of a permit or licence of occupation do not allow the holders to restrict access to other parties.

Property Rights Regarding Shoreline Erosion

When shore land naturally erodes causing the natural boundary to recede, the land lost becomes part of the foreshore and consequently, becomes Crown land owned by the Province. However, eroded land is not automatically removed from the title of the associated upland property, reverting to the Crown. A new land survey showing the revised natural boundary is required. This typically occurs when an owner wishes to subdivide a parcel, but can also occur with the consent of the upland owner or, if necessary, a court declaration. "On occasion, the ministry will find it necessary to take formal notice of the fact that a waterfront property owner's natural boundary has moved inland as a result of gradual and imperceptible erosion. To protect the interests of the public, particularly to maintain the privilege of

[4] Note that this does not include right to permanent or long-term moorage. See North Vancouver v. Seven Seas [2000] F.C.J. No. 1468, and West Kelowna v. Newcombe, 2013 BCSC 1411 (CanLII)

public foreshore access and use, and also to provide for other uses of aquatic Crown land, the Ministry may lay claim to eroded land." (BCMoAL 2008)

All shoreline property owners have the responsibility to comply with applicable aquatic and other related legislation, including those noted above.

Shoreline Protection and Building along Shorelines

Green Shores encourages methods that make shorelines more secure against erosion and flooding using soft measures – e.g. alternatives to costly seawalls that still address landowners' concerns. Any shoreline modification refers to the construction of physical structures usually undertaken to support a shoreline use or to protect a use from erosion. Shoreline stabilization includes actions taken to address erosion impacts to property and dwellings, businesses, or structures caused by natural processes, such as current, flood, tides, wind, or wave action. As such, these works may need permits and authorizations to proceed. Many jurisdictions at all levels are working to encourage the kinds of practices highlighted by Green Shores. Some of them already have some regulations that favor greener shorelines (see example Development Permit Area in the Appendices), and many are working to make the process smoother for shoreline restoration works.

In BC, various agencies review shoreline proposals to ensure that developments in and around shorelines

- avoid hazards and are safe
- protect the shoreline environment and shoreline and aquatic habitats
- maintain water quality
- respect public access.

Shoreline property owners may need to go to more than one agency (depending on the type of works proposed) but it's usually best to start with the local municipal (city, town or other incorporated area) or regional district office (rural area). Some local governments are able to provide a 'one-stop' service in terms of advice, checking applications and referring it to other agencies. In other situations, the local government local office will refer the applicant to applicable provincial or federal agency, and suggest additional information that may be needed.

If plans extend below the existing natural boundary or high water mark, most likely there will be a need to apply for a foreshore tenure from the Province. In most cases, that process starts with a visit to Front Counter BC at www.frontcounterbc.gov.bc.ca or call 1-877-855-3222.

Depending on project complexity and resources available, it may be advisable to engage professional consultants to handle permit applications.

Documentation Required to Apply for Shoreline Works

Often, if the work is being contracted, the permitting process and the assembly of required documentation is, in most cases, handled by a project designer or contractor (Figure 2). Information with the application required by local governments or other approving agencies may include (*check with agencies for specifics*):

- ☐ landowner's name, address, telephone number and, if available, a fax number and e-mail address
- ☐ water body name and location of the work site, including the complete legal description, and, if known, the latitude and longitude
- ☐ proof of ownership for the properties where the work will be done and the most recent legal survey(s)
- ☐ type of activity being proposed, such as tree removal, bank reinforcement, installing bulkheads, dock building, etc.
- ☐ rationale for the project
- ☐ detailed description of the work site including a signed and dated site map or sketch with dimensions indicating the location of existing buildings, property lines and the natural boundary
- ☐ copy of your plans containing a description of construction details, timing, building techniques and materials, and, if possible, a description of any alternative designs being considered;
- ☐ list of equipment to be used
- ☐ photographs of the work site and the surrounding shoreline during ice-free and snow-free conditions if possible
- ☐ proposed start and end dates for the project
- ☐ description of the substrate at the work site (sand, silt, clay, rock, gravel and aquatic vegetation, etc.)
- ☐ description of existing fish habitat and fish communities (species names) at or near the site, and whether any endangered species or plant communities inhabit the site;
- ☐ any mitigation measures you plan to introduce to minimize harmful impact (e.g., working in the dry, sediment erosion controls, etc.)
- ☐ federal, provincial, territorial, or municipal government agencies you have contacted or that have contacted you.

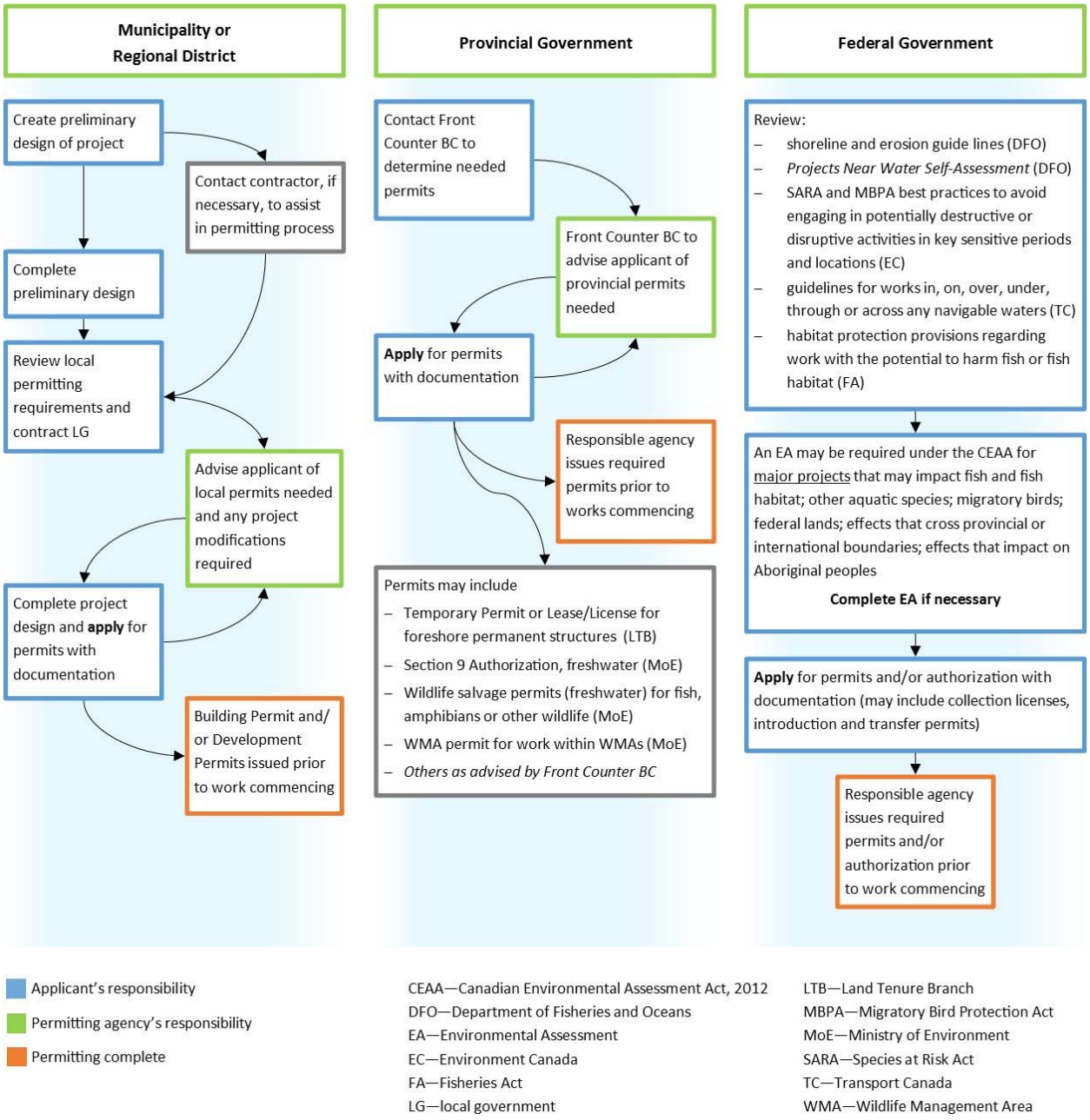

Figure 2. The permitting process for shoreline projects in BC; municipal/regional district, provincial, and federal level permits can be applied for concurrently.

Conclusion

There are a number of challenges and opportunities to wide scale implementation of Green Shores for marine and freshwater shorelines in British Columbia. Challenges include aligning shoreline property owner wants and needs with the complex nature of shoreline processes; promotion and implementation of designs that accommodate these needs; comparing financial costs associated with shoreline alternatives; permitting complexity; and the lack of readily available expertise for implementation of alternatives such as Green Shores.

However, opportunities also exist for Green Shores to assist those landowners and governments who recognize the benefits of a softer approach to shoreline projects. Local governments in particular, can utilize Green Shores criteria to develop local guidelines that encourage shore friendly practices. Support by all levels of government for Green Shores would assist shoreline property owners to implement Green Shores practices by streamlining the permitting process – allowing for a coordinated approach to the permitting process.

Shoreline communities interested in Green Shores can work with the SCBC and join the Green Shores program.

Recommendations

Green Shores is intended to encourage the sustainable use of shoreline ecosystems through planning and design that recognizes the ecological features and functions of shorelines. Green Shores provides an opportunity for shoreline property owners and land-use managers to minimize the impacts of new developments and restore shoreline ecosystem function of previously developed sites. Through Green Shores, British Columbia is at the leading edge of implementation of this work. However, much work remains to be done.

Based on the results of this study, the following recommendations can be made:

1. develop and distribute technical design guides following BC-made Green Shores examples
2. advance procedures to formalize the incorporation of Green Shores into local government policies and practices
3. assist local governments and landowners by decrease permitting complexity for Green Shores projects (by way of MoU's between government ministries)
4. cultivate incentive programs, social marketing strategies, and other efforts to encourage Green Shores
5. encourage and support outreach and education for shoreline property owners to increase their understanding and support for Green Shores.

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Appendices

Appendix 1: Example of Green Shores type Development Permit Area – Saanich OCP Bylaw 1600

Appendix 2: Green Shores Local Government Policy and Regulation Summary

11.2. Marine Shoreline Development Permit Area

11.2.1. Designation

That part of Central Saanich indicated as Marine Shoreline on Schedule E, Environmental Development Permit Areas, is designated as a development permit area pursuant to Section 919.1(1)(a) of the Local Government Act.

11.2.2. Justification

Section 919.1(1)(a) authorizes local government to designate development permits where protection of the natural environment, its ecosystems and biological diversity is desired and can be justified. Section 919.1(1)(b) authorizes local government to designate development permits for the protection of development from potentially hazardous conditions.

The District's shoreline areas have high ecological values. Due to their physical and biological characteristics and situation they need to be carefully managed to avoid potential negative impacts of development. Residential development, and associated shoreline improvements or protection measures can threaten the ecological and physical integrity of the foreshore and valuable upland.

In an effort to balance development opportunities with conservation of the ecological values of the shoreline a development permit is required for all new developments within 15 m of the natural boundary of the sea.

11.2.3. General Objectives

- To plan and regulate new development in a manner that preserves and protects the long-term physical integrity and ecological values of Central Saanich's shoreline and associated foreshore and upland areas.
- To guard against erosion and avoid damage to public property.
- To ensure public safety.
- To balance development opportunities with the ecological conservation of the shoreline environment.
- To maintain the public's use and access to these important recreation areas in a manner that does not compromise the ecological integrity of the shoreline or put users at undue risk.

11.2.4. Application

The Shoreline Development Permit Area applies to all of those District lands within an area that extends 15m inland and seaward from the natural boundary of the ocean in the Plan Area.

This Development Permit Area applies to all development proposed within the Shoreline DPA. A development permit is required for the following development activities where such activities involve the subdivision of land, construction of, addition to, or alteration of a building or structure, or the alteration of land, except where such activities are specifically exempt:

a. Removal, alteration, disruption, or destruction of vegetation;
b. Disturbance of soils;
c. Construction or erection of buildings and structures;
d. Creation of non-structural impervious or semi-impervious surfaces;

e. Flood protection works;
f. Construction of roads, trails, docks, wharves, and bridges;
g. Provision and maintenance of sewer and water services;
h. Development of drainage systems;
i. Development of utility corridors and
j. Subdivision as defined in section 872 of the Local Government Act.

11.2.5. Development Permit Exemptions

The following activities are exempt from the requirement for a development permit. Despite these exemption provisions, owners must meet any other applicable local, provincial or federal requirements:

a. Development or alteration of land occurring outside of the Development Permit Area as determined by a BC Land Surveyor or another qualified person;
b. Development, upon submission to the District of a written statement from a Qualified Environmental Professional with relevant experience confirming the absence of a sensitive ecosystem within the area that would be affected by the proposed work (for example, due to mapping error);
c. The placement of impermanent structures, such as benches, tables and garden ornaments;
d. Development on land where a conservation covenant under section 219 of the Land Title Act is registered against title, is granted to the District or a recognized conservancy and includes provisions which protect shoreline ecosystems in a manner consistent with the applicable DPA guidelines;
e. Repair, maintenance, alteration or reconstruction of existing legal or legal non-conforming buildings, structures or utilities provided there is no alteration of undisturbed land or vegetation (a building permit may still be required);
f. Repair and maintenance of existing roads, driveways, paths and trails, provided there is no expansion of the width or length of the road, driveway, path or trail, and no creation of additional impervious surfacing, including paving, asphalting or similar surfacing.
g. Removal of trees deemed hazardous by a qualified arborist that threaten the immediate safety of life and buildings;
h. Removal of invasive plants or noxious weeds on a small scale within the Development Permit Area: and
i. Normal farm practices protected by the Farm Practices Protection (Right to Farm) Act or other applicable provincial legislation or guidelines on properties assessed as a farm under the BC Assessment Act.
j. The removal of invasive plants or noxious weeds within the Development Permit Area provided such works are conducted in accordance with a vegetation management plan prepared by a certified Arborist or Qualified Environmental Professional, and measures are taken to avoid sediment or debris being discharged into a watercourse or onto the foreshore and the area is replanted immediately in accordance with established best management practices.
k. Construction of a fence so long as no native trees are removed and the disturbance of native vegetation is restricted to 0.5 metres on either side of the fence.
l. Municipal public works, undertaken or authorized by a District of Central Saanich.
m. Park and works services, undertaken or authorized by a District of Central Saanich, the Capital Regional District or the Province of BC.
n. Gardening and yard maintenance activities within an existing landscaped area, such as lawn mowing, tree and shrub pruning, vegetation planting and minor soil disturbance that do not alter the general contours of the land.
o. The construction of a small accessory building such as a pump house, gazebo, garden shed or play house if all the following apply:
    - The building is located within an existing landscaped area;

- No native trees are removed;
- The building is located a minimum of 10 metres from the natural boundary of the sea or, where the bank has a slope greater than 3 : 1 , 10m from the top of bank; and,
- The total area of small accessory buildings is less than 10m2.

p. Emergency actions required to prevent, control or reduce an immediate threat to human life, the natural environment or public or private property including:
    - Forest fire, flood, and erosion protection works;
    - Protection, repair or replacement of public utilities;
    - Clearing of an obstruction from a bridge, culvert, dock, wharf or stream;
    - Bridge repairs.

11.2.6. General Guidelines

1. Development of the shoreline area should be limited and not negatively impact the ecological health of the immediate area or impede public access.
2. Shoreline protection measures should be limited to that necessary:
    a. To prevent damage to existing structures or established uses on adjacent upland; or
    b. To prevent damage to a proposed public land use.
3. New upland or shoreline structures or additions should be located and designed to avoid the need for shore protection works. Only if all options to locate and design without the need for shore protection measures are exhausted should such works be considered.
4. When required:
    a. Apply the 'softest' possible shore protection measure that will still provide satisfactory protection; and
    b. Limit the size of shore protection measures to the minimum necessary.
5. All structural shore protection measures should be installed within the property line or upland of the natural boundary, whichever is further inland. "Soft" shoreline protection measures that provide restoration of previously damaged ecological functions may be permitted seaward of the natural boundary subject to obtaining necessary approvals from the provincial and federal governments.

11.2.7.Specific Shoreline Protection Guidelines

New Development/Subdivisions

1. Using geotechnical analysis of the site and shoreline characteristics, subdivision applications should ensure that the lots created will not require shore protection measures in order for useable, safe building sites to be created.
2. New development on steep slopes or bluffs shall be set back sufficiently from the top of the bluff to ensure that shore protection measures will not be necessary during the life of the structure, as demonstrated by a geotechnical analysis for the said structure.
3. Shore protection measures should not be allowed for the purpose of providing a sufficient setback to meet zoning requirements (i.e., where the setback could not be achieved without such measures).
4. Shore protection measures that will cause erosion or other physical damage to adjacent or down-current properties shall not be supported.
5. "Hard" structural shore protection measures (e.g. concrete walls, lock block, stacked rock, etc.) may be considered in support of new development only when a geotechnical and biophysical analysis provides conclusive evidence that:
    a. The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage associated with the proposed development;

   b. All possible on-site drainage solutions away from the shoreline edge have been exhausted;
   c. Non-structural measures, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient to address the stabilization issues; and
   d. The shore protection measure will not result in a net loss of shoreline ecological functions (i.e. any unavoidable damage to shoreline habitat will be more than off-set by habitat compensation works).
6. New driveways and septic systems should not be located in the development permit area. If such a location cannot be avoided, the encroachment into the Development Permit Area must be minimized, and the design and construction of the road or septic system be supervised by a qualified coastal professional to ensure that the objectives and guidelines the development permit area are met to the satisfaction of the District and Vancouver Island Health Authority as applicable.
7. Stormwater outflows shall have water quality and water quantity/erosion control features installed satisfactory to the District, so as to avoid impacts on slope stability and fish habitat and to comply with stormwater management guidelines and policies of the District.
8. Where this development permit area includes native plant species or plant communities dependent on a marine shoreline habitat that are identified locally, provincially, or federally as sensitive, rare, threatened or endangered, or have been identified by a qualified environmental professional as worthy of particular protection, their habitat areas should be left undisturbed. If disturbance cannot be entirely avoided, development and mitigation/compensation measures shall be undertaken only under the supervision of the qualified environmental professional with advice from applicable senior environmental agencies.

Changes to Existing Development

1. Shore protection measures should not be allowed for the purpose of extending lawns or gardens, or to provide space for additions to existing structures or new outbuildings.
2. New structural shore protection measures along the shoreline may be considered for the protection of existing structures or to protect habitat restoration projects or hazardous substance remediation projects, if the following criteria are met:
   a. A report provided by a qualified coastal professional (QCP) provides conclusive evidence that the structure is at risk from shoreline erosion caused by tidal action, currents, or waves. Evidence of normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not sufficient demonstration of need;
   b. The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage. The geotechnical analysis should evaluate on-site drainage issues and address drainage problems away from the shoreline edge before considering structural shoreline stabilization;
   c. Non-structural measures, such as locating new buildings and structures further from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient; and
   d. The shore protection works will not result in a net loss of shoreline ecological functions.
3. An existing shore protection measure may be replaced if the existing works can no longer adequately serve its purpose provided that:
   a. The replacement shore protection measures should be of the same size and footprint as the existing works, unless required to prevent shoreline erosion as determined by a qualified coastal professional;
   b. The replacement shore protection measures should be designed, located, sized, and constructed to assure no net loss of ecological functions;
   c. Replacement walls or bulkheads should not encroach seaward of the natural boundary or an existing shore protection measures unless there are significant safety or

environmental concerns that could only be addressed via such a encroachment. In such cases, the replacement shore protection measures should utilize the 'softest' approach possible and abut the existing shore protection works; and

d. Where impacts to critical marine habitats would occur by leaving the existing works, it can be removed as part of the replacement measure.

11.2.8. Guidelines for Specific Shoreline Types

Rocky Shores consist primarily of rock platform, and may include steep cliffs or shelves overlain with beach veneer of boulders, gravel or rubble. While shore protection measures are generally not required on rocky shores as the bedrock provides adequate protection from erosion the following guidelines apply:

1. Ensure that a minimum 15m setback for new buildings and structures, additions to existing buildings and structures or the placement and removal of fill is maintained.
2. A setback of less than 15m may be considered if it is supported by a report by a qualified coastal professional (for geotechnical and coastal process considerations) and a QEP (for biological/environmental considerations) and satisfies all of the guidelines associated with this development permit area.
3. Due to the inherently stable nature of this type of shoreline, applications for shore protection measures will generally not be accepted unless evidence is provided by a qualified coastal professional that there is a substantial risk of damage or loss of structures.
4. Retain or restore an average 15m (with a 5m minimum) wide shoreline zone (i.e., shoreline vegetation) over a minimum 50% of shore length, with recognition that the type and extent of vegetation on rocky shores may be less than that found on beach or stream delta shores.

Beach Shores may consist of broad silty /sandy beaches or gravely/blocky rubble beaches or mixed rock with beach sediment, and may be classified as either a drift-sector or pocket beach of Class 1, 2, or 3 rating. With this type of shoreline, the following guidelines apply:

1. Ensure that a minimum 15m setback for new buildings and structures, additions to existing buildings and structures, or the placement and removal of fill is maintained.
2. Where shore protection measures are necessary, make use of "beach nourishment" designs, which add appropriately sized material to the upper beach, creating a natural beach slope and beach armour.
3. Use of seawalls and rip rap embankments are generally not acceptable except when no alterative shore protection design is possible (e.g. on existing narrow lots at the base of the marine scarp).
4. Retain or restore an average 15m (with a 5m minimum) wide shoreline zone (i.e., shoreline vegetation) over a minimum 50% of shore length.
5. Where marine scarp areas are under other development permit area designations for geotechnical hazards (slope stability), these areas should be reviewed with respect to protection from shoreline erosion as well.

Marsh Shores include both mudflat and delta areas, and are generally highly sensitive and productive natural areas. The intertidal (foreshore) zone in this area is typically dynamic, changing in response to large stream flows and storm events. Though dynamic, the shore zone in these areas is generally accreting rather than eroding. It is important to allow sufficient space to allow these natural sediment processes to occur. With this type of shoreline, the following guidelines apply:

1. Provide a property-specific assessment with respect to building setbacks and shore protection designs, as stream sediment processes are important and will vary from site to site.
2. Dredging or filling of marsh shore should not be permitted.

3. Use of marsh shore areas should be limited to park or conservation uses that do not require structural intrusions.
4. Where shore protection measures are necessary, make use of "beach nourishment" designs, which add appropriately sized material to the upper beach, creating a natural beach slope and beach armour.
5. Sea walls and rip rap embankments should not be used to protect these shoreline areas.
6. Retain or restore an average 15m wide (with a 5m minimum) shoreline zone (i.e., shoreline vegetation) over at least 50% of shore length.

11.2.9. Construction Practices

Erosion control

All development within this development permit area should be undertaken and completed in such a manner as to prevent the release of sediment to the shore or to any watercourse or storm sewer that flows to the marine shore. An erosion and sediment control plan, including actions to be taken prior to land clearing and site preparation and the proposed timing of development activities to reduce the risk of erosion, may be required as part of the development permit application.

Monitoring

The implementation of required environmental mitigation, restoration or enhancement planting or measures approved under a development permit should be monitored by a qualified environmental professional until all such measures have been completed and the Professional has provided a report confirming completion to a standard acceptable to the District.

11.2.10. Vegetation Management, Restoration and Enhancement Guidelines

a. Existing, native vegetation should be retained wherever possible to minimize disruption to habitat and to protect against erosion and slope failure.
b. Existing trees and shrubs to be retained should be clearly marked prior to development, and temporary fencing installed at the drip line to protect them during clearing, grading and other development activities.
c. If the area has been previously cleared of native vegetation, or is cleared during the process of development, replanting should be required in accordance with these guidelines or requirements specified in the development permit. Areas of undisturbed bedrock exposed to the surface or natural sparsely vegetated areas should not require planting.
d. Vegetation species used in replanting, restoration or enhancement should be selected to suit the soil, light and groundwater conditions of the site, should preferably be native to the area, and be selected for erosion control and/or fish and habitat wildlife habitat values as needed. Suitably adapted, non-invasive, non-native vegetation may also be considered acceptable.
e. Replanting requirements should be set out in plans developed as part of the development permit application and should form part of the development permit.
f. All replanting should be maintained by the property owner for a minimum of 2 years from the date of completion of the planting. This may require removal of invasive, non-native weeds (e.g., Himalayan blackberry, Scotch broom, English ivy) and irrigation. Unhealthy, dying or dead stock should be replaced at the owner's expense within that time in the next regular planting season.

11.2.11. Shore Protection Measures Design Guidelines

Shore Protection Measures are the range of modification measures to the shoreline, or adjacent seaward or landward areas, for the purpose of protection against erosion. Structural protection methods are often

referred to as “hard” and “soft.” "Hard" measures refer to those with solid, hard surfaces, such as concrete bulkheads, while "soft" structural measures rely on less rigid materials, such as biotechnical vegetation measures or beach enhancement. There is a range of measures varying from soft to hard that include:

- Vegetation enhancement
- Upland drainage control
- Biotechnical measures
- Beach enhancement
- Anchor trees
- Gravel placement
- Rock (rip rap) revetments
- Gabions
- Concrete groins
- Retaining walls or bulkheads
- Seawalls.

In general, the harder the construction measure, the greater the impact on shoreline processes, including sediment transport, geomorphology, and biological functions.

1. Materials used for shoreline stabilization should consist of inert materials. Stabilization materials should not consist of debris or contaminated material that could result in pollution of tidal waters.
2. Revetments (rip rap slopes) and bulkheads (retaining walls) should only be constructed if no other alternative exists.
3. Where revetments are proposed:
    a. They should not result in the loss of shoreline vegetation or fish habitat;
    b. The size and quantity of materials used should be limited to that necessary to withstand the estimated energy of the location's hydraulic action and prevent collapse; and
    c. Filter cloth should be used to aid drainage.
4. Where bulkheads are proposed:
    a. They should not to be located where geo-hydraulic processes are critical to shoreline conservation. Feeder bluffs, marshes, wetlands, spits or hooks should be avoided;
    b. They should be located parallel to and landward of the natural boundary of the sea, as close to any natural bank as possible;
    c. They should allow the passage of surface or groundwater without causing ponding or saturation; and
    d. They should be constructed of stable, non-erodible materials that preserve natural shoreline characteristics. Adequate toe protection including proper footings and retention mesh should be included. Beach materials should not be used for fill behind bulkheads.

11.2.12. Beach Nourishment and Upland Fill Guidelines

1. Fill upland of the natural boundary greater than 10 cubic meters in volume should be considered only when necessary to assist in the enhancement of the natural shoreline’s stability and ecological function.
2. Such fills should be located, designed, and constructed to protect shoreline ecological functions and ecosystem-wide processes, including channel migration.
3. Fill below (seaward of) the natural boundary should be considered only when necessary to assist in the enhancement of the natural shoreline’s stability and ecological function, typically as part of a beach nourishment design.

4. All upland fill and beach nourishment materials should be clean and free of debris and contaminated material. All fill and beach nourishment proposals are subject to review and approval by the appropriate provincial and/or federal authorities.

11.2.13. Guidelines for Public Shore Access, Roads and Pathways

1. Ensure that shore protection measures do not restrict appropriate public access along the shoreline except where such access is determined to be infeasible because of incompatible uses, safety, security, or harm to ecological functions.
2. Where feasible, incorporate ecological restoration and public access improvements into the project.
3. Public road or pathways should not result in a net loss of shoreline ecological functions.
4. Public access development in extremely sensitive areas should be restricted or prohibited.
5. Fill should not be placed at or below the natural boundary for the purposes of providing a trail or walkway.
6. Parking areas should be placed away from the shore, buffered or landscaped, and constructed so as to minimize erosion and water pollution by controlling storm runoff. Structural measures such as catch basins, oil separators, filtration trenches or swales, unpaved or permeable all weather surfaces should be considered for this purpose.

11.2.14. Guidelines for the Construction and Replacement of Existing Docks and Boat Launch Facilities

1. Docks and wharves should ensure that public access along the shore is maintained, and should serve multiple users rather that one dock per property.
2. Docks and wharves should be sited to avoid impacts on sensitive ecosystems such as eelgrass beds, fish habitat, and natural processes such as currents and littoral drift.
3. Docks should be constructed in a manner that permits the free flow of water beneath. Supports should be located on a hard substrate.
4. Floating docks should not rest on the bottom at any time and a minimal, moveable ramp should be utilized to connect the dock with the shore rather than a fixed wharf or pier.
5. Piers and pilings and floating docks are preferred over solid-core piers.
6. Docks should not use unenclosed plastic foam or other non-biodegradable materials that have the potential to degrade over time. Docks should be constructed of stable materials that will not degrade water quality. The use of creosote-treated pilings is discouraged.

Table A2.1. Green Shores – Local government Policy/Regulation Scan SUMMARY

	Official Community Plan (OCP) goals and objectives	Development Permit Area (DPA)	Zoning/Land Use Bylaw	Other	Shoreline Classification
Campbell River, City of	Chap. 9 - included with Environmentally Sensitive Areas (ESA)	Included peripherally in DPA for riparian areas	Height above natural boundary for flood prevention only	-	None
Gibsons, Town of	Sec. 4.4 "The Marine Environment"	Included in DPA#1 for natural hazard, DPA#2 for environmental sensitivity	-	-	Part of general land use designation in OCP
Lantzville, District of	Sec. 4.2.4 "The Waterfront"	DPA IV coastal protection	-	-	None
Lasqueti Island - Islands Trust	Sec. 3.6 "Environmental Management"; Sec. 3.7 "community Services and Utilities"	-	General Marine-related Regulations and 10 zones	-	None
Metchosin, District of	Sec. 2.6 "Marine Shorelands"	DPA for shoreland slope - natural hazard	-	-	Sec. 2.6 OCP - 5 classes based on physical form/processes; policies for each
Nanaimo, City of	Sec. 2.1 "Waterfront Designation"	3 DPAs for site-specific natural hazard; DPA 23 - included with watercourse	Sec. 5.3 15-m leave strip (setback; same as DPA)	-	None
Nanaimo Regional District Electoral Area H	Sec. 2.4 "Coastal Zone Management"	Sec. A.4 DPA for coastal areas of 30 m upland and 30 m seaward of natural boundary	-	-	None
North Cowichan, District of	Sec. 6.4 "The Oceanfront"	Included in DPA 8 "Natural Environment" as 30-m buffer along shoreline; DPA 7 "Marine Commercial Waterfronts" for form and character primarily	-	-	None

Table A2.1. Green Shores – Local government Policy/Regulation Scan SUMMARY *continued*

	Official Community Plan (OCP) goals and objectives	**Development Permit Area (DPA)**	**Zoning/Land Use Bylaw**	**Other**	**Shoreline Classification**
North Saanich, District of	Chap. 4 "Shoreline Uses" - foreshore (300 m) designated as marine conservation area)	Site-specific DPAs for environmental protection and/or form and character	Sec. 213 - 15 m setback from natural boundary	-	Sec. 4.2 OCP - 4 classes of shore based on physical form/processes; policies for each
Peace River Regional District	-	-	-	Lakeshore Development Guidelines	5 classes of lakes with specific policies/guidelines
Powell Ricer, City of	Part 4 "Waterfront Plan and Policy" - development oriented; Sec. 5.3 "Tidal/Salt water riparian areas"	None	-	-	None
Saanich, District of	Cadboro Bay Local Area Plan, sec. 6 "Ocean Shoreline"	Proposed but not established?	Sec. 5.16 - 7.5 m setback from natural boundary	-	Maybe in Atlas?
Salt Spring Islands - Islands Trust	Sec. B.9 "Shoreline Use Objectives & Policies"	DPA 3 "Shorelines" - 10 m upland, 300 m seaward of natural boundary	Sec. 9.11 Shoreline Zones - designates land use zones for different shore uses	-	5 OCP designations 8 shoreline zones
Thompson Nicola Regional District	-	-	-	Lakeshore Development Guidelines	8 lake classes; policies for each
West Vancouver	Sec. 6 "Natural Environment" - includes shorelines	General DPA NE6 "Difficult Terrain"	-	-	-
Washington State	Shoreline Management Act Shoreline Mater Program Guidelines	"Substantial Development Permits"	-	-	6 "shoreline environments" - policies, standards for each
Thurston Region (County), Washington	Shoreline Management Act	Development permits	-	-	6 "shoreline environments"
Destin, Florida	Comprehensive Plan	-	-	-	-

Table A2.2. Summary of Tax Exemption/Incentive Programs

	Program Name	Purpose
British Columbia	Sec. 811, *Local Government Act*	Established voluntary riparian exemption system that local governments can use to compensate riparian landowners who choose to protect eligible riparian land through conservation covenant.
Gibsons, Town of	Riparian Area Property Tax Exemption Bylaw no. 944	Exempts eligible riparian property on Charman Creek from taxation 2003-2013.
Islands Trust	Natural Area Protection Tax Exemption Program	"Tax exemptions can be authorized to property owners who voluntarily register conservation covenant on eligible natural areas of their property, up to 65% of assessed value of eligible portion."
Washington State	Open Space Taxation Act	Allows owners to have open space (defined) value at current use rather than highest and best use for purposes of reducing market value and hence, taxes. Allows counties to establish public benefit rating system for open space classification to govern eligibility and determination of current use valuation.
Pierce Co., Washington State	Public Benefit Rating System Tax Program	Sets up application system for applying for reduced market value based on open space features; ranks (prioritizes) and assigns a point value to open space features; establishes market value based on accumulated points.