

Ecological Health

Regional Sustainability Strategy Policy Options Series | Fall 2010

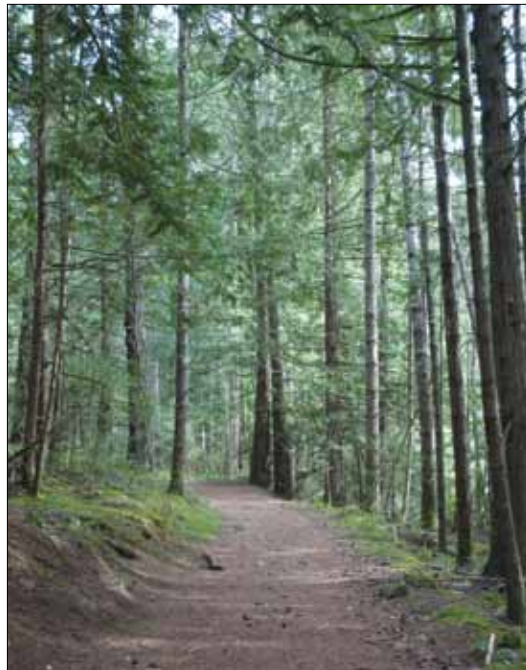
Our region has a rich inheritance of lands and waters of great beauty and biophysical diversity. Many areas are of national and international significance. Regional residents place great value on this endowment and look to our regional and municipal decision-makers to ensure that environmental quality is carefully stewarded and enhanced. Protected areas, open spaces and marine environments help to facilitate and support our region's ecological health.

This is one of nine papers that aims to challenge our thinking about being a sustainable region. This paper describes the drivers behind the ecological health policies, highlights best practices, outlines the CRD's current and future directions and presents three policy directions.

Your feedback is welcome.

Ecological Health

Ecological health is a state of environmental well-being where the environment has enough resiliency, integrity and vitality to maintain its ecological processes and functions. The maintenance of ecological health helps to support cultures, beauty and spiritual sustenance, improve green infrastructure and adapt to a changing climate. Some of the key stressors to ecological health are invasive plants and animals, poor development and land use practices, habitat fragmentation, loss of sensitive ecosystems and urban forest and climate change.



What's Driving Government Involvement in Ecological Health?

The Canadian and BC governments have been active in ecological health through legislation, regulation, best management practices and incentive programs. Locally, community stakeholders have been centrally involved with ecological initiatives.

Government of Canada. *Fisheries Act* (1985), *Water Act* (1985), *Convention of Biological Diversity* (1992) – Canada is a signatory, *Canadian Biodiversity Strategy* (1994), *Oceans Act* (1997), *Species At Risk Act* (2002), *BC Conservation Framework Federal Marine Protected Area Strategy* (2005).

BC Government. *Fisheries Act (1996), Wildlife Act (1996), BC Weed Control Act (1996), Water Act (1996)/ Modernization (2011), Fish Protection Act (1997), Forest and Range Practices Act (2002), Environmental Management Act (2003), Integrated Pest Management Act (2003), Living Water Smart: B.C.'s Water Plan* commits to change the way water is governed and managed by 2012, *Riparian Areas Regulation (2004), Auditor General's Report on Conservation of Ecological Integrity in B.C. Parks and Protected Areas.*

CRD. The CRD's Strategic Plan (2009) identifies environmental protection as one of the top priority issues facing the region. The desired outcomes are: protection of environmentally sensitive and significant areas and multi-use watersheds; effective stewardship of the region's urban forests, parklands and protected areas and increasing lands protected as parks and trails.

Public and Stakeholders. Nature Conservancy of Canada Salish Sea Conservation Strategy, Biodiversity BC, plus more than 100 active conservation groups in the CRD.



Biodiversity: Context and Framework for Policy Options

The Capital Region has a complex geology and climate with a diversity of ecosystems. The intersection of development and ecosystems has made the area one of Canada's focal points for conservation. The development of a regional biodiversity strategy could include sensitive and significant ecosystems, species at risk, urban forests and ecological connections.

- Canada is a signatory to the Convention on Biological Diversity – an agreement to protect biodiversity. British Columbians agree that species at risk are a priority. In a recent poll, 95% of respondents agreed that the public should be encouraged to be involved in protecting and recovering species at risk, while 74% agreed that landowners should not have the right to use their property in ways that jeopardizes plants or animals at risk of extinction, endangerment or threat.

Environmentally sensitive and significant areas include wetlands, creeks and waterways, harbours, shorelines, nearshore marine ecosystems, sand dunes, coastal bluffs, old growth forests, urban forests and other ecosystems. There are nine biogeoclimatic zones in the region. Three sub-zones are globally significant. In 1997, the Sensitive Ecosystems Inventory (SEI) was conducted. Some SEI areas have been protected, while others were lost or degraded. There is no monitoring system for tracking SEI areas.

Biodiversity components are measurable and manageable. There are about 200 species-at-risk. In regional parks, there are 59 nationally and provincially-listed plant species, 31 animal species and 12 ecological communities at risk.

Learning from Others | Biodiversity

Biodiversity Conservation Strategy, Metro Vancouver

The strategy assesses the status of biodiversity and sets out coordinated strategies and an action plan. Key drivers were habitat fragmentation, impaired ecological function, increased species at risk, invasive species, and lack of coordinated land management to conserve biodiversity.

- Federal and provincial governments have legislation, policies and initiatives to conserve species at risk. Regional and municipal governments and landowners are also important players. Local governments regulate land use on private property where species at risk occur and own many important habitats. Most importantly, local governments can protect a variety of habitats – although this may not be enough. Lack of connectivity between critical habitats and implications of climate change may also imperil species.
- Conservation measures require the collaboration of senior and local governments, First Nations, industry, non-government organizations, private landowners and knowledgeable individuals. A regional plan for biodiversity conservation will often be the most effective approach.



Urban forests are treed landscapes that include old-growth remnants, backyard fruit trees, urban parks and trail systems, Garry oak meadows and treed boulevards. Mapping of the region’s urban forest was conducted in 1986 and 2005. Between the two periods there was a loss of 8.3% in the amount of tree cover and an increase of 13.2% in impervious surfaces. Not all municipalities have the resources to undertake an urban forest management plan and some municipalities do not have tree protection bylaws.

A detailed analysis of urban forest characteristics is needed to provide information that can be used for decisions at a regional or site-specific scale. Expanding the urban forest inventory to the southern Gulf Islands and the Juan de Fuca Electoral Area may be needed.

Invasive species are a threat to ecosystem biodiversity, watershed health and agricultural land. The Capital Region Invasive Species partnership (CRISP) is a group of local government staff who share information, knowledge and expertise on managing emerging invasive plant species (e.g., Garlic mustard, Giant hogweed).

Connectivity between natural areas and a variety of habitats is crucial to the survival of many wildlife species. Greenways between parks and major urban centres contribute to livability and sustainability. While many municipalities and CRD Parks have greenway plans, most focus on non-motorized connections between parks and urban centres. Few focus on creating ecological connections between natural areas and sensitive ecosystems.

Learning from Others | Urban Forests

Urban Forest Management Strategy, Regina, SK

This comprehensive policy contains programs, policies, standards, procedures and specifications necessary for managing the urban forest. It includes an overview of the status of the urban forest, a tree planting program, tree maintenance and protection, integrated pest management and public education.

Integrated Watershed Management (IWM): Context and Framework for Policy Options

Our region is home to hundreds of urban, rural and natural multi-use watersheds. Many cross jurisdictional boundaries, encompass a wide range of ecosystems and land uses and require integrated, collaborative and co-operative management.

Integrated watershed management (IWM) is the coordinated, sustainable management of land and water resources within a watershed to ensure the sustainability of vital ecosystems, where local governments and stakeholders work together to conserve hydrology, ensure biodiversity, minimize land degradation and maximize economic, social and environmental objectives.

1995-2002 | Watershed management plans were adopted for Millstream Creek, Craigflower Creek and Goldstream River. Some actions were undertaken, but most plans are not being actively implemented.

2003 | Regional Growth Strategy (RGS) identified an integrated watershed management planning approach to surface water, drainage and groundwater in multi-use watersheds.

2003 | The Bowker Creek watershed management plan was completed. The *Bowker Creek Blueprint: A 100-year Action Plan* will be taken to municipal councils for adoption in 2010.

Since 2006 | The CRD, municipalities and community groups have been working towards an IWM agreement. A proposed plan (completed in July 2010) presents a vision and framework for how the CRD can support municipalities. Staff are now working on an implementation plan for IWM in the Core Area.

Watersheds are not confined by administrative boundaries. Using watershed boundaries helps address interrelated land uses and involves governments and community stakeholders in planning and implementation. Effective collaborative management and stewardship, along with innovation, monitoring and assessment, maintenance and reinvestment help to achieve community objectives.

The financial value of natural ecosystems becomes apparent when compared with investments in piped infrastructure – needed to replace the ecological systems and functions. Development that retains and improves these natural functions effectively reduces cost. Policies can be encouraged that seek innovation in site design and solutions that mimic the natural hydrology or preserve natural features.



Learning from Others | Integrated Watershed Management (IWM)

- Metro Vancouver Watershed Management Plan
- Fraser Valley Watershed Coalition
- Saskatchewan Watershed Authority

GOAL: Protect and enhance biodiversity through improved management of species at risk, regionally sensitive and significant areas, urban forests and Integrated Watershed Management.

Target	Status Quo	Moderate	Significant
Improved protection of sensitive and significant ecosystems.	<p>Implement through OCPs and development permit applications.</p> <p>Sensitive Ecosystem Inventory (SEI) – conducted by the Province – complete for eastern portion of the region; incomplete for Juan de Fuca Electoral Area.</p>	<p>Enhance coordinated effort, complete SEI with provincial assistance and support municipal planning policy for sensitive and significant ecosystems.</p> <p>Expand public awareness on the value of sensitive and significant ecosystems.</p>	<p>Develop regional management plan for sensitive and significant ecosystems.</p> <p>Identify and prioritize protection of regionally significant and sensitive ecosystems.</p>
Species-at-risk (SAR) have current or improved population levels and/or distributions.	<p>Many municipalities have incomplete SAR inventories.</p> <p>Few municipalities have policies regarding protection of SAR.</p>	<p>Identify and inventory SAR in the region with provincial assistance.</p> <p>Agree on mechanisms for SAR protection.</p>	<p>Coordinate regional level SAR inventory, policy and implementation strategy.</p> <p>Lever regional commitment to engage senior governments on mechanisms for SAR protection.</p>
Increase amount of urban forest on non-resource lands.	<p>Individual municipalities complete urban forest management plans as resources permit.</p> <p>Inventory complete from Sooke to Saanich Peninsula; incomplete for Juan de Fuca Electoral Area.</p>	<p>Encourage targets for urban forest canopy protection in municipal plans.</p> <p>Expand awareness and education of the value of urban forests to assist municipalities in the development of urban forest management plans.</p>	<p>Develop a regional urban forest management plan and agree on a coordinated management and implementation strategy.</p> <p>Identify canopy targets as part of a regional forest management plan.</p>
Enhance connectivity and ecological connections between natural areas.	<p>Some municipal OCPs refer to creating ecological connections.</p> <p>Many municipalities have multi-use greenways plans.</p>	<p>Collaborate on identifying a connectivity network for natural areas in the region; encourage inclusion in OCPs.</p>	<p>Agree on a regional connectivity network and designate within OCPs.</p>
<p>Restore and retain watershed ecological function and services.</p> <p>Integrate ecologically focused policies and technologies into decision-making, business processes and communications.</p>	<p>Monitor discharge quality and report back to municipalities.</p> <p>Identify sources of contamination.</p> <p>Develop an integrated watershed management approach to manage surface water, drainage and groundwater in non-catchment watersheds in the core area.</p>	<p>Environmental management decisions based on watershed management plans in priority watersheds, i.e. Bowker Creek, CRD water lands.</p>	<p>Develop a sub-regional approach to IWM (e.g. core area) and pursue implementation strategies and coordinated approaches with participating partners.</p>

**The Significant Change approach builds on the Moderate Change option. The effect is cumulative, with Moderate Change policies assumed to be part of the Significant Change option.*

Marine Environment: Context and Policy Options Framework

The forces of wind, waves, currents and tides are constantly changing the coastal environment. The movement of water changes by time of day, year, and season and during extreme weather events. Our region is increasingly vulnerable to the impacts of climate variability, putting ecosystems and infrastructure at risk.

The Regional Green/Blue Spaces Strategy (GBS), adopted by the CRD in 1997, identifies many of coastal waters and tidal zones as having ecological value of regional and national significance and sets out a number of objectives. Since then, multi-stakeholder initiatives, coordinated by the CRD, have been established for Esquimalt Lagoon, Gorge Waterway and Portage Inlet, Esquimalt and Victoria harbours. The CRD is a member of the Great Victoria Harbour Authority Board.

In the future, there needs to be a coordinated vulnerability assessment of regional watersheds and shorelines, and tools developed to assist municipalities to plan and adapt to a changing climate.



Photo: Sophie Wood



Photo: Sophie Wood

Learning from Others | Marine Environment

- Fraser Valley Estuary Management Plan
- Victoria and Esquimalt Harbours Environmental Action Plan

GOAL: Protect marine habitat.

Target	Status Quo	Moderate	Significant
<p>Improve management of shoreline.</p> <p>Increase protection of Blue Spaces Core Policy Area.</p>	<p>Provincial and federal governments in consultation with the CRD and member municipalities, prepare a Coastal Zone Management Plan for marine areas.</p> <p>Coordinate harbour initiatives.</p>	<p>Designate Coastal Zone development permit areas and create shoreline management policies.</p> <p>Expand inventory of important ecosystems within the Harbour Coastal Atlas.</p>	<p>Develop regional shoreline management policies for use in establishing criteria for coastal zone protection.</p> <p>Develop regional education program to improve landowner protection of shorelines.</p>

Protected Areas: Context and Policy Options Framework

Since 2000, the GBS has influenced the Regional Parks Plan and land acquisition program. In 2003, it was integrated into the RGS.

During the past decade, the CRD acquired about 4,500 hectares of land for regional parks valued at more than \$46 million.

Approximately 11% of the entire land base is protected through national, provincial, regional and municipal parks, the Islands Trust and land held by land conservancies. Half the lands within the region are protected areas.

Over the next 30 years, population growth will primarily be in the West Shore and Core areas. The implications for regional parks and trails are:

- Increased use of all trails for hiking, biking and dog walking.
- Increased use of regional parks and trails, especially in the West Shore and Sooke.
- Increased use of existing beach areas — a beach at the Humpback Reservoir may be needed.
- Increased pressure on the natural environment and impacts.
- Higher property values will make it difficult to purchase additional land.

Planning involves connecting protected areas, protecting identified ecosystems west of Sooke River, increasing the amount of protected area to 20% by 2020 and protecting lands that are valued as “open Space”, but do not necessarily have important natural value (e.g., agricultural land).

Learning from Others | Protected Areas

Best management practices from Auckland NZ; Boulder County, CO; Metro Vancouver, East Bay, CA; and Portland, OR embrace:

- Protecting the natural environment by sustaining the variety of life, protecting outstanding features and processes, storing carbon, maintaining clean air and water, and cooling cities;
- Protecting about 20-30% of land base through park and land conservation programs;
- Providing a buffer to suburban development;
- Supporting the economy through tourism and recreational industries; and
- Reflecting First Nations and European settlement cultures.

GOAL: Increase protection of open spaces.

Target	Status Quo	Moderate	Significant
<p>Create green and blue space connections between parks that contribute to biodiversity and parkland.</p> <p>Define open space values and protect important open spaces.</p>	<p>Municipalities and regional departments implement through existing policies and bylaws.</p> <p>Encourage municipalities to retain open space through land use legislation.</p>	<p>Define open space values and their role in supporting biodiversity and urban settlement.</p> <p>Advocate putting critical elements of open space into protected area status or private covenants.</p>	<p>Establish multi-agency stewardship agreements to protect priority open spaces in the region.</p>

GOAL: Increase the amount of land in protected area status.

Target	Status Quo	Moderate	Significant
<p>Identify critical features and areas to be protected to support sustainability in the region.</p> <p>Seek ways to protect natural areas that warrant protection and work with landowners seeking agreements.</p>	<p>Follow the current Regional Park Land Acquisition Strategy.</p> <p>Update Regional Parks Strategic Plan.</p>	<p>Adopt and implement Regional Parks Strategic Plan.</p> <p>Prioritize acquisition and protection of critical natural areas, based on agreed upon funding levels, e.g., set increased targets for protection of critical natural areas through acquisition, stewardship agreements and other measures.</p>	<p>Coordinate a multi-level government agency approach to terrestrial and marine protected area strategy.</p>

What Do You Think?

The 2003 RGS aimed to protect the region’s landscape character, ecological heritage and biodiversity. The transition to a Regional Sustainability Strategy provides an opportunity to update policy.

- How can we achieve improved ecological health and improve our collective ability to adapt to changing climate?
- How can we facilitate the development of regional management plans for sensitive and significant ecosystems, species at risk protection, connectivity and managing urban forests?
- What can we learn from others about protecting our land base and marine environments?
- How can we work together to increase the amount of protected land and enhance open space connections?
- Would Shoreline Management policies assist in protecting marine habitat?

Notes:

Feedback

The CRD values your input in developing the Regional Sustainability Strategy. Please submit your comments on this policy paper via sustainability@crd.bc.ca.

For in-depth information, **visit www.crd.bc.ca/sustainability** to view notices on upcoming consultations, discussion papers, and the overall progress of the Regional Sustainability Strategy.

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Making a difference...together

Regional Sustainability Strategy

The CRD, together with member municipalities, stakeholder groups and residents, is working to developing a vision and a planning framework to promote sustainability and create a lasting legacy for future generations. This will lead to the CRD’s first Regional Sustainability Strategy, a broadly ranging document that charts a course to a complete and inclusive community, committed to sustainable practices socially, environmentally, economically and financially.

The Strategy has its foundations in earlier commitments by the CRD Board and member municipalities through the Regional Growth Strategy, adopted in 2003.