Cowichan Region
State of the Environment Report
Update 2014

Introduction to the Cowichan Region

CVRD

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The 2014 State of Environment Update Report has been prepared by the Cowichan Valley Environment Commission's State of Environmental Reporting Subcommittee, chaired by Scott Akenhead.

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Many thanks to Kate Miller and Keith Lawrence of the CVRD for their support and advice, as well as the many others who provided contributions to this Update.

Introduction to the 2014 State of Environment Update Report

The Cowichan Region is in a constant state of change. The climate is in flux, our population is growing, resources are in high demand, and natural ecosystems are continually under pressure. A State of the Environment report helps us all to track and assess the impacts of these changes, in keeping with the principle "you can't manage what you don't measure".

The 2010 State of the Environment Report set out to answer some key questions:

Is the natural environment healthy?

- Are ecosystems and species being adequately protected?
- Is biodiversity resilient in the face of change?
- Are we approaching, or crossing, the region's natural thresholds[1]?
- Is the air quality good?

Are we living within the "natural" capital'?

- Are we effectively balancing the needs of ecological functions and economic activity?

1 Example of an ecosystem threshold: the species diversity of a landscape may decline steadily with increasing habitat degradation to a certain point, and then fall sharply after a critical threshold of degradation is reached.

- Is the natural capital[2] (e.g., fisheries and forests) being managed in a sustainable way? Will it be at least as abundant and productive for future generations? Are we making good use of available land, and creating smart, flexible and resilient communities?
- Are we producing enough local food?

The 2010 document reported findings on 13 indicators (see below). It is important to continue tracking these indicators to see whether this region is moving towards or away from a healthy natural environment.

This 2014 Update provides new information on six of the 13 indicators. These six indicators were chosen based on availability of data and their alignment with other initiatives within the region. Each year, additional indicators will be selected for update, with the goal of updating each indicator on a four-year cycle.

This updated version of the CVRD State of the Environment Report contains the best data available as of December 2014, sourced from local, regional, provincial, federal, and First Nations governments, as well as from community organizations.

Indicators used for the 2010 Report [those in bold are part of the 2014 Update]		
Landbase	Water	**Climate change mitigation/ adaptation (climate action)**
Sensitive ecosystems	**Air quality**	Waste management
Species at risk	**Smart growth (built environment)**	Leadership and innovation
Invasive species	**Farm land and food security**	
Fish	Drinking water supply	

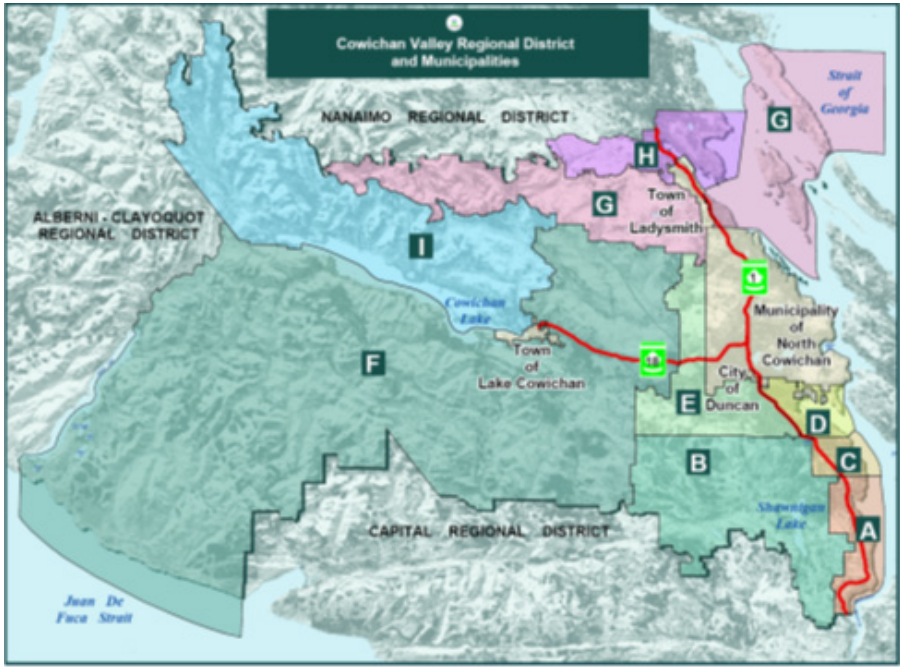
2 Natural capital is all of the elements that sustain all forms of life, such as water and oil, the land, and the ecosystems that maintain clean water, air and a stable climate. Most of these elements are irreplaceable and not renewable.

The Cowichan Region

The Cowichan Valley Regional District (CVRD) covers an area of more than 3,473 square kilometres stretching from the Pacific Coast to the Strait of Georgia, and includes the southern Gulf Islands of Penelakut, Thetis and Valdes. The CVRD is made up of nine electoral areas and four municipalities—City of Duncan, Town of Lake Cowichan, District of North Cowichan, and Town of Ladysmith (Figure 1).

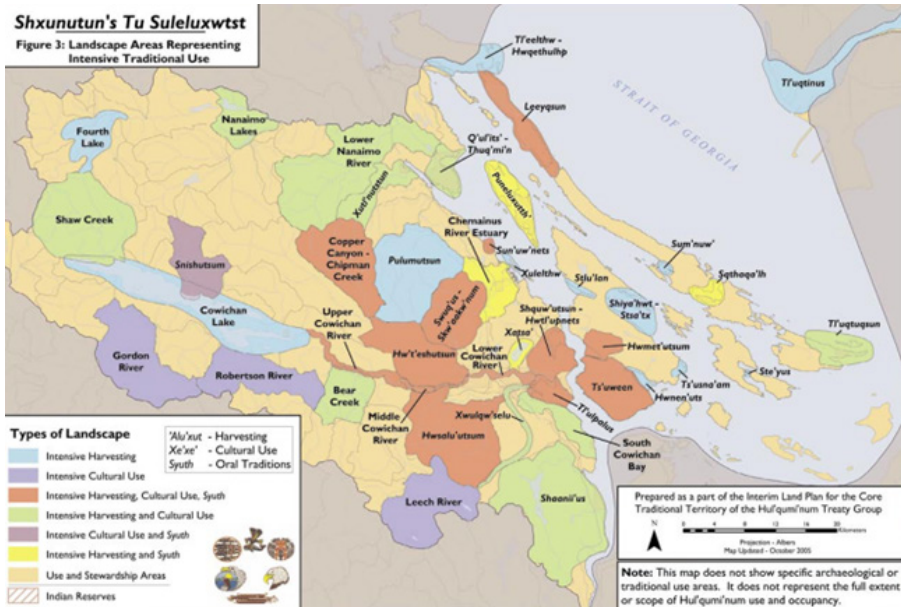
The CVRD land is part of the traditional territories of several First Nations, including the Cowichan people (the largest First Nation in the province), Stz'uminus, Malahat, Penelakut, Lyackson, Halalt, Lake Cowichan, Dititdaht, Pahcheedaht, and Pauquachin First Nations. Today, six of these First Nations make up the Hul'qumi'num Treaty Group— Cowichan Tribes, Stz'uminus, Penelakut, Lyackson, Halalt and Lake Cowichan, (Figure 2).

Figure 1: Cowichan Valley Regional District electoral areas and municipalities



Source: CVRD website www.cvrd.bc.ca

Figure 2: First Nations traditional territories



Source: Hul'qumi'num Treaty Group. 2005. Shxunutun's Tu Suleluxwtst. In the footsteps of our Ancestors. Summary of the Interim Strategic Land Plan for the Hul'qumi'num Core Traditional Territory.

Ecology and Landscapes

The Cowichan Region includes a striking diversity of landscapes and vegetation cover.

The forests on the west side of Vancouver Island are some of the wettest in the province and so burn very infrequently—some forests here have escaped any large disturbance for 4,000 years or more. As a result, they are characterized by huge-statured and often old or ancient western red-cedar, yellow-cedar, coast western hemlock, and Sitka spruce forests. These multi-storied canopy forests (forests with many layers) provide a home to a vast diversity of plants and animals and perform many natural functions, including the long-term storage of carbon.

The eastern side of the Island—the Nanaimo Lowland and Leeward Island Mountains—are characterized by dry Coastal Douglas-fir forest and grasslands and, as well as Garry oak ecosystems, which historically burned relatively frequently by both "natural" and First Nation-driven fires. This Coastal Douglas-fir (CDF) zone is home to the highest number of species and ecosystems at risk in B.C., many of which are ranked globally as imperilled or critically imperilled.[3]

Other sensitive ecosystems in the region include wetlands and riparian[4] habitats, older forests, terrestrial herbaceous areas (rocky outcrops and grassy knolls), coastal bluffs, and coastal dunes and spits, as well as many shoreline ecosystems.

Influences Changing the Cowichan Region

In the past 150 years, the face of the Cowichan Region has changed more than in the preceding 5,000 years.[5] And the rate of change is accelerating.

Changing vegetation cover

East-side old growth forests are mostly gone, replaced by young trees that are cut as soon as they become marketable—and long before they replace the functionality of a natural forest and the rich biological system it supports. Less than 30% of the historic natural levels of old forest remain. There are no intact watersheds remaining, and the area is fully roaded.

A growing population

About 79,000[6] people call this region home, many times the number of people that lived here a century ago. And growth is continuing—the region's population grew by 11.5% between 2001 and 2011.[7] Official Community Plans throughout the region predict more growth, and hundreds of thousands of visitors come for recreation and tourism each year,[8] resulting in increased pressures on the environment and resources.

Changing water availability

More and more water is being diverted from rivers and streams and pumped from aquifers, and areas for water to soak into the ground (such as wetlands) are being filled or paved over. Demand for water far outstrips supply, creates conflicts between user groups and jeopardizes Cowichan's ability to meet food self-sufficiency targets—a situation worsened by fluctuations in supply due to climate change. Summer and winter droughts are already the new normal, including the extreme summer drought experienced in 2014.

A changing climate

Climate change is impacting all aspects of our region:

- Winters are milder and wetter and summers drier, with some local and regional variation, creating significant farm land and food production implications;
- Wildfire risks and incidences have increased, with important air pollution and public safety implications;
- The average air temperature has become higher in many areas. Air temperature on the coast has been less affected than in the interior and northeast of the province;
- The sea surface temperature has risen along the coast, and deep-water temperatures have increased in some inlets on the South Coast;

3 BC CDC 2012. Cited on Coastal Douglas-Fir Conservation Partnership website. Accessed November 11, 2014 http://www.cdfcp.ca/index.php/about/why-is-the-cdf-at-risk

4 A riparian habitat or zone is the interface between land and a flowing surface water body such as a river.

5 A more detailed timeline (going back to the ice age!) can be found in the 2010 State of the Environment Report.

6 Census 2011.

7 Census 2011.

8 The Vancouver Island region received 3.7 million overnight person-visits in 2010. Destination BC Regional Tourism Profile. April 2013. http://www.destinationbc.ca/getattachment/Research/Research-by-Region/Vancouver-Island/RegionalProfiles_Vancouver-Island.pdf.aspx. Accessed October 2014.

- Relative sea level has risen along the BC coast, except in those areas being pushed upward by geological processes.[9] The sea level is expected to rise by at least one metre by the end of the century[10];
- Storm surges—both windstorms and rainstorms—are and will continue to be more frequent and more intense.

Goals and Aspirations

The CVRD Strategic Plan

Through its Corporate Strategic Plan, the Regional District has a vision that "Cowichan communities will be the most livable and healthy in Canada." Some of the regional objectives are shown in Table 1. This 2014 State of Environment Update provides information on progress towards these objectives.

Making Informed Decisions

Change is a constant in the Cowichan Region. This State of the Environment report provides a reference point and a way to view these changes. Are we maintaining quality of the natural environment as well as the quality of human life? Are there aspects of our lifestyles that we need to manage differently to ensure that this happens? Overall, are we happy with the trends outlined in this report—and if not, how should we respond?

Table 1: CVRD Corporate Strategic Objectives (partial list)

OBJECTIVE	STRATEGIC ACTION
ENVIRONMENTALLY SENSITIVE DEVELOPMENT	1. Develop incentives to encourage energy efficient housing. 2. Develop a program to recognize examples of excellence in sustainable development. 3. Develop and implement an external green building policy including incentives. 4. Develop a rain water management strategy. 5. Develop ecosystem protection and enhancement guidelines for new developments. 6. Provide information and support to residents interested in voluntary environmentally sensitive development.
COMPACT, MIXED-USE COMMUNITIES	1. Establish urban containment boundaries in all OCPs. 2. Coordinate water and sewer and other infrastructure to promote compact, mixed-use communities. 3. Grow densities in designated compact areas, promote walkable communities and ensure new neighborhoods and communities are serviceable by public transit. 4. Develop plans for "complete" communities serviced with parks, open space, commercial & social services and opportunities for local employment. 5. Expedite development applications that are consistent with OCP policies. 6. Promote a diverse range of housing choices throughout the Region, including affordable housing options.

9 Common source for bullets 1, 2 and 3. Ministry of Environment, State of Environment Reporting, www.env.gov.bc.ca/soe/bcce/03_climate_change/overview.html accessed January 29, 2010.

10 Province of British Columbia. 2008. Projected Sea Level Changes for British Columbia in the 21st Century. http://env.gov.bc.ca/cas/pdfs/sea-level-changes-08.pdf

OBJECTIVE	STRATEGIC ACTION
PROTECT, RESTORE & ENHANCE THE NATURAL ENVIRONMENT	1. Develop a community focused climate change action plan to meet or beat provincial greenhouse gas emission targets. 2. Identify and map sensitive ecosystems and develop policies & guidelines to protect them. 3. Develop an air shed protection strategy. 4. Develop a long term solution to deal with contaminated soil. 5. Develop watershed management plans for all major watersheds. 6. Carry out South Cowichan Water Management planning activities. 7. Implement the Cowichan Basin Water Management Plan. 8. Develop a water management plan for the north end of the Regional District (Town of Ladysmith, and Electoral Areas G & H). 9. Develop an invasive species action plan. 10. Ensure effective bylaw enforcement and building inspections through regular monitoring, compliance checks and follow up action.
SUSTAINABLE COMMUNITIES	1. Develop a regional multi-modal transportation plan with a focus on reducing reliance on fossil fuels. 2. Implement the 25 year Transit Future Plan long and short term Transit network priorities. 3. Offer community environmental education that focuses on water conservation, protecting biodiversity, climate change, Zero Waste, Transit and air quality. 4. Implement the Regional Energy and GHG Reduction Strategy. 5. Create sustainability benchmarks. 6. Work with local government planning departments to promote regional green building guidelines. 7. Undertake a regional water management and governance study.

OBJECTIVE	STRATEGIC ACTION
LEAD BY EXAMPLE	1. Develop a green building policy to guide how CVRD facilities will be built and renovated to meet green standards. 2. Implement the Strategic Corporate Energy Management Plan. 3. Implement the Corporate Greenhouse Gas Inventory & Emissions Reduction Plan. 4. Organize quarterly learning events on environment related topics of general interest. 5. Implement the corporate employee “green team” plan. 6. Draft a smoking policy for CVRD properties. 7. Adopt an anti-idling policy for the Corporate Fleet.
RELIABLE ESSENTIAL SERVICES	1. Upgrade all CVRD water utilities to current local government standards. 2. Implement the Cowichan River Integrated Flood Management Plan. 3. Undertake storm water management planning exercises for key areas.

Source: CVRD Strategic Plan, November 2013: http://www.cvrd.bc.ca/DocumentCenter/View/61858