



A Look Inside the State of the Fraser Basin Report

SUSTAINABILITY SNAPSHOT 4

The Many Faces of Sustainability

What do you think should be the top priority: social, economic or environmental well-being?

If you answered “all of the above,” you understand that the economy, the environment and our social well-being are in fact integrally connected. As we come to recognize and value these connections, we shape our commitment to sustainability. We begin to make choices that meet not only our own needs but those of future generations as well.

The newly released 2009 *State of the Fraser Basin Report: Sustainability Snapshot 4* is the latest in a series of reports from the Fraser Basin Council. The report – and this summary of highlights – offer you a look behind the headlines to learn about sustainability data and trends, information resources and inspirational stories. Take a few moments to read it and reflect: When it comes to sustainability, how well are we doing?

For a look at the full report, visit www.fraserbasin.bc.ca.

WHERE THE STORY BEGINS: AT HOME IN THE FRASER BASIN

High atop Mount Robson, small streams trickle down, merge, and transform into the headwaters of the mighty Fraser River. The Fraser is BC's longest river (almost 1,400 km long), and the Fraser Basin is the province's largest watershed (240,000 square km).

The Fraser Basin is home to the first faces of sustainability – those of First Nations – who have been its original occupants for more than 10,000 years. First Nations people bring a tradition of respect for the water and land and their inhabitants and an ethic of stewardship.

The past 200 years have brought about rapid change. Today the Basin is home to 2.7 million people – two-thirds of BC's population – the faces of many cultures, languages and religions. From Vanderhoof to Prince George, Williams Lake and Kamloops to the most populated stretches of the Fraser Valley and Greater Vancouver, the Fraser Basin is a place where many communities thrive.

Yet there are social, economic and environmental challenges that confront our communities. Many of the same issues are mirrored on provincial, national and international scales: rapid urban expansion, resource consumption, pollution, waste, water shortages, public health problems, economic uncertainties and disparities, social inequity, loss of biodiversity, and over-arching threats from global climate change. How well we manage these issues over time will depend on our understanding of – and commitment to – sustainability.

OUR SUSTAINABILITY CHALLENGE

Sustainability means living and managing activities in a way that balances social, economic and environmental considerations to meet our needs and those of future generations.

Simply put, sustainability is about securing our future. That, of course, is anything but simple. Sustainability calls for a shift from short-term to long-term thinking. It calls for an unprecedented commitment across sectors, and involving people with diverse political, cultural and philosophical perspectives.

WHY MEASURE AND REPORT ON SUSTAINABILITY?

Across BC, progressive leaders in both the public and private sectors are striving to reduce greenhouse emissions, conserve water, cut waste, alleviate poverty and improve human and ecosystem health. As targets are set, good information is critical to mobilize people and to measure progress.

Sustainability Snapshot 4 is the fourth in a series of reports prepared by the Fraser Basin Council since January 2003. Each report is intended to increase public awareness of sustainability issues and trends, identify critical issues, track progress and provide the information necessary to make decisions and take actions for sustainability. It is a resource for everyone who makes decisions on sustainability today, in the public sector, in private businesses, in home life and in community endeavours.

In this summary, you will find a few of our top indicators from Sustainability Snapshot 4 – showing areas that are getting better (green), areas that are getting worse (red) and many areas with mixed results (orange and yellow). The indicators are not complete measurements of sustainability, nor do they solve sustainability problems. They can, however, help to simplify complex issues, build understanding and flag areas where change is needed. As you will see, there is work ahead.

Find out more inside:

- Sustainability in BC's Fraser Basin
- Steps for Sustainability
- The Fraser Basin Council

SUSTAINABILITY ISSUES ARE CONNECTED

Headlines shift quickly—from social inequity, to environmental crisis, to economic downturn. But however dramatic a turn of events, it is the connections between the issues and the long-term trends that count most when planning our future health and well-being.

Making connections takes us from short-term thinking to “sustainability thinking.” Powerful examples are energy and climate change. The amount and type of energy people consume significantly affects greenhouse gas emissions, which are driving global climate change. As the climate changes, the natural environment responds and shifts. Our economic systems are dependent on environmental conditions that have been relatively stable over long periods of time. When natural cycles, habitats and biodiversity change quickly, we can expect the social, economic and environmental impacts.

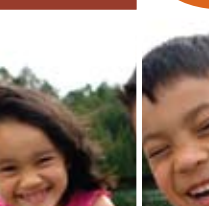
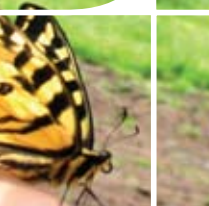
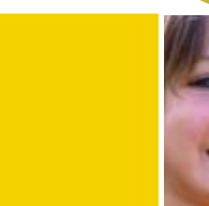
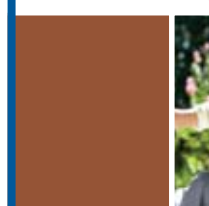
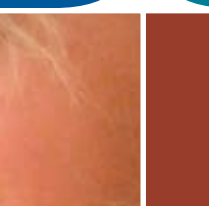
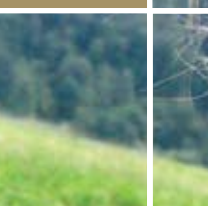
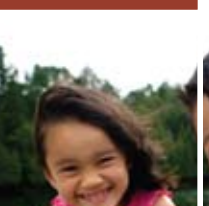
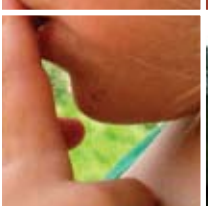
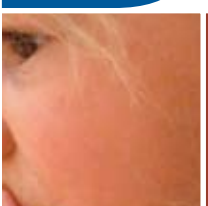
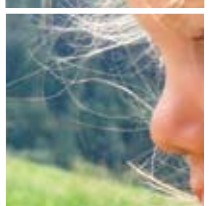
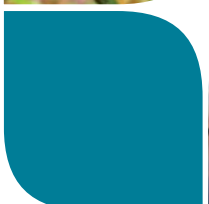
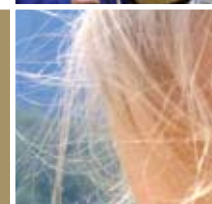
To illustrate this, warmer winters in BC have created favourable conditions for the current mountain pine beetle infestation. This has resulted in large areas of dead pine trees and a dramatic drop in an important renewable forestry resource. Although this beetle is native to BC, the average area it affected during the recent outbreak (2001–2008) increased by 47 times compared to the previous 20-year average. Anticipated impacts include a loss in timber harvest values in the medium term (with associated social and economic impacts) and an increase in the extent, frequency or magnitude of natural disturbances, such as forest fires, floods, and erosion. These events, in turn, have harmful impacts on communities as well as fish and wildlife.

Climate change and other human interactions with the environment are also taking their toll on BC's wild salmon. Water temperatures are rising in streams and rivers, approaching the limit of what salmon can tolerate. Salmon are threatened on many fronts, including poor water quality, inadequate stream flows, loss of spawning and rearing habitat and over-fishing. Declines in wild salmon stocks are having devastating consequences for many First Nations communities, for commercial and recreational fisheries, for biodiversity and the health of other wildlife in the watershed. As an icon of survival against the odds – BC wild salmon are now facing very steep odds indeed. They are an indicator of the health of our region and a reminder of a legacy that is ours to save, or lose.

SUSTAINABILITY ACTIONS DELIVER BENEFITS

Sustainability action requires a firm commitment, but delivers broad benefits. For example, increased energy efficiency, particularly when it comes to fossil fuels, can reduce greenhouse gases, mitigate global climate change and improve air quality. Energy efficiency also saves money. Improved air quality can contribute to health benefits, reduced healthcare costs, increased agricultural productivity, improved aesthetics and enhanced tourism values.

Smart community planning and development is another powerful opportunity for realizing widespread sustainability benefits. Smart planning encourages compact, multi-use development patterns that reduce urban sprawl, protect agricultural lands and conserve fish and wildlife habitat. Such development patterns also create enhanced opportunities for public transportation, walking and cycling, which result in reduced traffic congestion and air pollution. Sustainability Snapshot 4 notes some improvements in the last few years. Whether these develop into positive long-term trends depends on us. Everything we do, or don't do, cumulatively makes a difference.



Agriculture & Food

A healthy, safe and secure food supply is vital to community well-being and individual health. Agriculture is an important part of the economy in the Fraser Basin. With the increasing economic and environmental costs of global shipping, rising food prices and concerns about food safety, local and safe food supplies are becoming even more important to community sustainability.

FAIR / MIXED RESULTS

There was a net increase in land in the Agricultural Land Reserve in the Fraser Basin, a net loss in 4 of 5 Fraser Basin regions, and a net loss in prime agricultural land between 1973 and 2005. See map for the distribution of ALR land (2008).

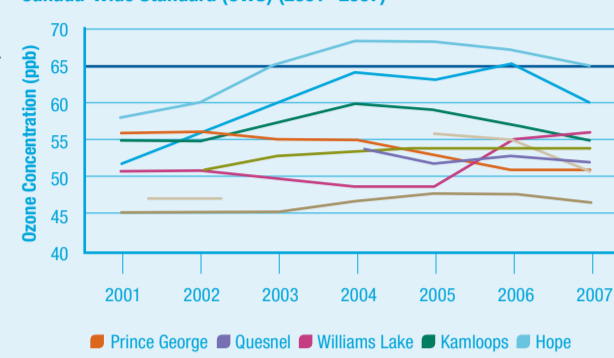


Air Quality

Clean air is essential to maintaining health and wellness. Without it, we're at greater risk of respiratory diseases such as asthma, bronchitis, emphysema and lung cancer, as well as heart attack and stroke. Air pollution is one of the most significant contributing factors in respiratory disease.

GETTING BETTER / MIXED RESULTS
Particulate Matter_{2.5} (PM_{2.5}) and Ground Level Ozone (GLO) levels have mostly improved or remained low and stable since 2004. However, GLO remains high in the Fraser Valley region and PM_{2.5} remains high in the Upper Fraser and Cariboo-Chilcotin regions.

Ground Level Ozone Concentrations Compared with the Canada-Wide Standard (CWS) (2001-2007)



Biodiversity

Biodiversity includes all living things, such as mammals, birds, fish and insects and the habitat in which they live. It also includes genetic diversity, which allows species to adapt to changing conditions and occupy different biogeoclimatic zones and habitat niches.

POOR

Six of eight BC ecosystems assessed as being "at risk" in 2008 were in the Fraser Basin, including estuaries, wetlands, grasslands, coastal Douglas-fir, Garry oak and cottonwood riparian ecosystems. See also map for the distribution of Protected Areas (2008) and grasslands (2004).



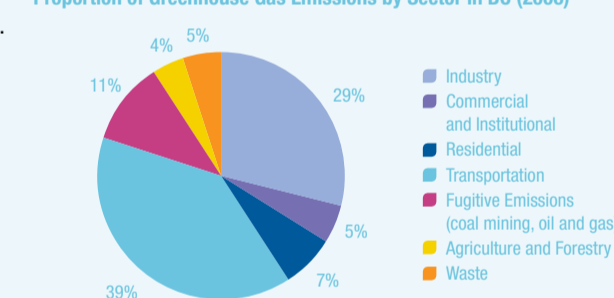
Climate Change

Climate change is one of the world's most important sustainability challenges. Scientists who study climate change agree that greenhouse gas (GHG) emissions from human activities are increasing the natural greenhouse effect to such a degree that they are adversely changing the earth's climate in many different ways.

MIXED RESULTS / POOR

In 2004, both total (65,600 kilotonnes) and per capita (15.6 tonnes) greenhouse gas emissions in BC were at their highest levels reported since 1990; however, total emissions decreased by 5% between 2004 and 2006.

Proportion of Greenhouse Gas Emissions by Sector in BC (2006)



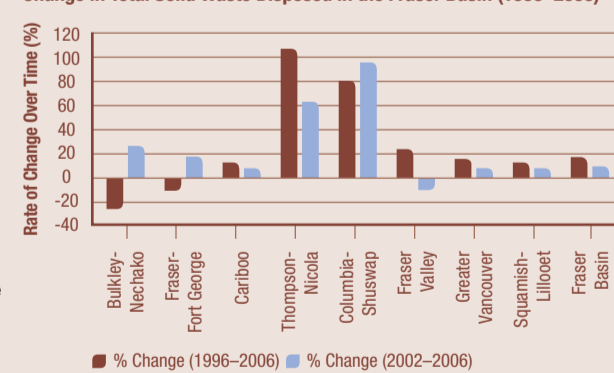
Consumption & Waste

Limiting consumption of natural resources to within sustainable levels is of utmost importance to the world. Similarly, it is vital to manage wastes in ways that do not exceed the capacity of the land, water and air to receive them. The size and location of the human population can significantly influence rates of consumption and waste generation.

POOR / GETTING WORSE

Total solid waste disposal increased in the Fraser Basin overall (18%) and in most regional districts in the Basin between 1996 and 2006. However, results of a 2006 Environment Canada survey indicate that 99% of British Columbians recycle.

Change in Total Solid Waste Disposed in the Fraser Basin (1996-2006)



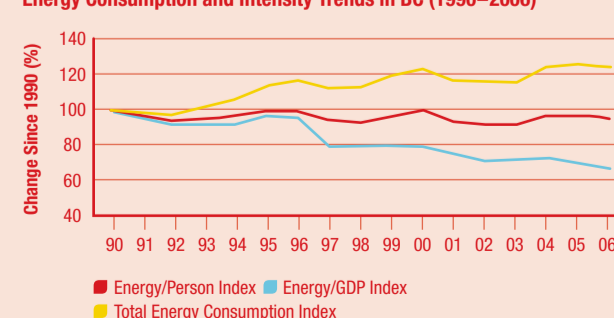
Energy

Energy underpins British Columbia's economy and communities and our personal well-being. We use energy to power our vehicles, run appliances, equipment, and industrial plants, and heat and light our homes and businesses. BC is fortunate in having a large supply of renewable energy in the form of hydroelectricity and biomass energy.

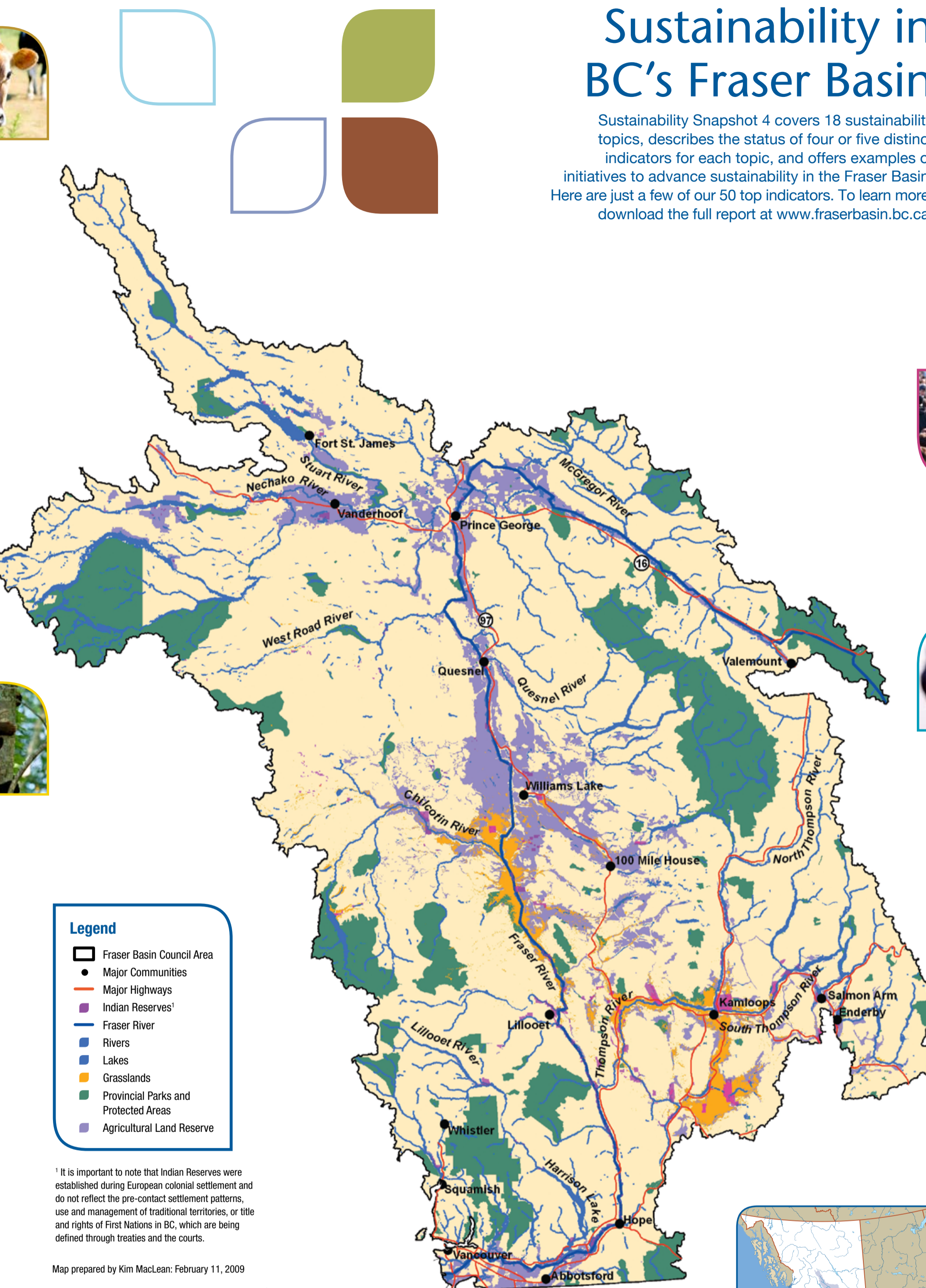
GETTING BETTER / MIXED RESULTS

Rates of energy consumption per person and per unit of real GDP declined between 1990 and 2006 (by 5% and 33% respectively). Total energy consumption in BC increased by 24% from 1990 to 2006; annual consumption has levelled off since 2000.

Energy Consumption and Intensity Trends in BC (1990-2006)



Energy/Person Index Energy/GDP Index Total Energy Consumption Index

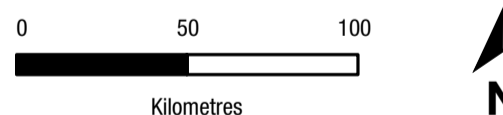


Legend

- Fraser Basin Council Area
- Major Communities
- Major Highways
- Indian Reserves¹
- Fraser River
- Rivers
- Lakes
- Grasslands
- Provincial Parks and Protected Areas
- Agricultural Land Reserve

¹ It is important to note that Indian Reserves were established during European colonial settlement and do not reflect the pre-contact settlement patterns, use and management of traditional territories, or title and rights of First Nations in BC, which are being defined through treaties and the courts.

Map prepared by Kim MacLean: February 11, 2009



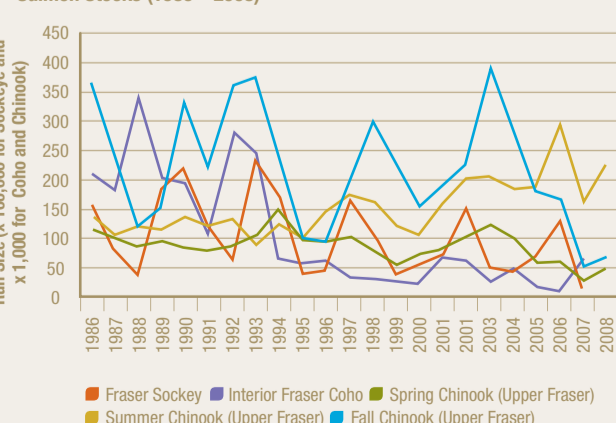
Fish & Fisheries

Fish and fisheries play critical social, economic and environmental roles in the Fraser Basin. Historically, many First Nations communities in the Basin depended on local salmon runs for survival. Salmon still play an important role in these and other communities as a source of healthy food, and by supporting social, cultural, spiritual and economic pursuits.

POOR / GETTING WORSE

Sockeye, coho and chinook salmon returns are in varying states of decline with significant cause for concern in recent years. Summer chinook (Upper Fraser) runs, are increasing.

Salmon Stocks (1986-2008)



Sustainability in BC's Fraser Basin

Sustainability Snapshot 4 covers 18 sustainability topics, describes the status of four or five distinct indicators for each topic, and offers examples of initiatives to advance sustainability in the Fraser Basin. Here are just a few of our 50 top indicators. To learn more, download the full report at www.fraserbasin.bc.ca.

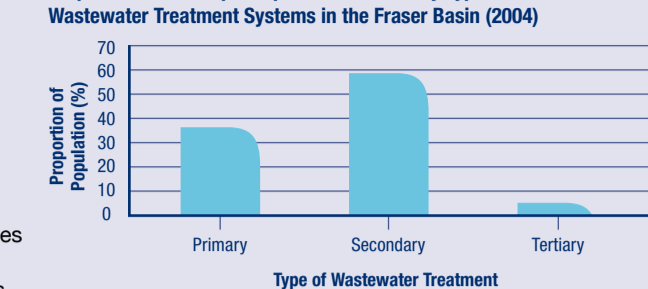
Water Quality & Quantity

Water is essential to life, and the quality and quantity of water is a key determinant of both human and ecosystem health. Water is also a key contributor to the economy of the Fraser Basin.

FAIR / MIXED RESULTS

Municipalities in the Fraser Basin provided wastewater treatment services to 85% of the population in 2004. Of the population with treatment services, 36.2% had primary treatment, 59.4% had secondary treatment, and only 4.3% had tertiary treatment. Four Fraser Basin sites were given Good or Excellent Water Quality Index rankings, while four sites were Fair or Marginal for the period between 2004 and 2006.

Proportion of Municipal Populations Served by Type of Wastewater Treatment Systems in the Fraser Basin (2004)



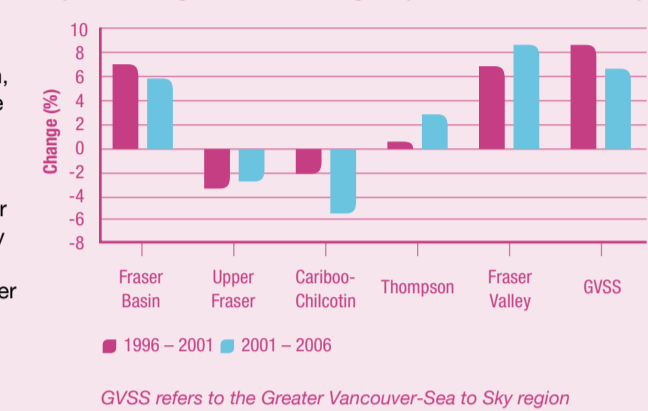
Population

The size of a population can significantly affect sustainability through rates of resource consumption and waste generation, and the land base needed to house and feed people.

FAIR / MIXED RESULTS

Between 1996 and 2006, the Fraser Basin population increased steadily (13.3%); however, population declines were observed in the Upper Fraser (-6%) and Cariboo-Chilcotin (-7.4%) regions during this period.

Population Change in Fraser Basin Regions (1996-2001 and 2001-2006)



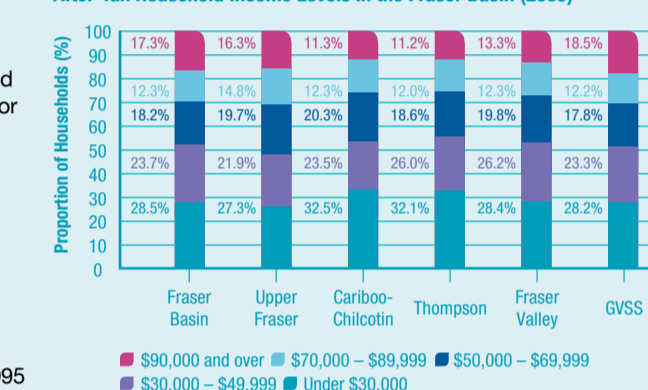
Income, Employment & Economy

Work plays an important role in our lives as individuals and in the functioning of communities, regions and societies. Work, whether it is paid or unpaid, represents a key avenue for learning, sustaining our families and contributing to our communities.

MIXED RESULTS

Average household income in the Fraser Basin was higher than the BC average in 2005 but declined by 3% since 2000. In 2005, the proportion of low-income families (11.7%) had decreased since the proportion in 1995 (17.3%) and 2000 (15.7%). Individual disposable income in BC increased by 26% between 1997 and 2007 and was similar to the Canadian average throughout this period.

After-Tax Household Income Levels in the Fraser Basin (2005)



Housing

Access to adequate and affordable housing is a basic need for all people and plays an important role in determining quality of life. Although housing is a key aspect of everyday life, for many of us, it is often taken for granted.

POOR / GETTING WORSE

In 2006, BC had the least affordable housing market among all provinces in Canada, and in 2005, had the second highest (worst) proportion of urban residents living in core housing need. In 2008, the rate of homelessness had increased in Metro Vancouver and the Fraser Valley since previous counts throughout the 2000s.

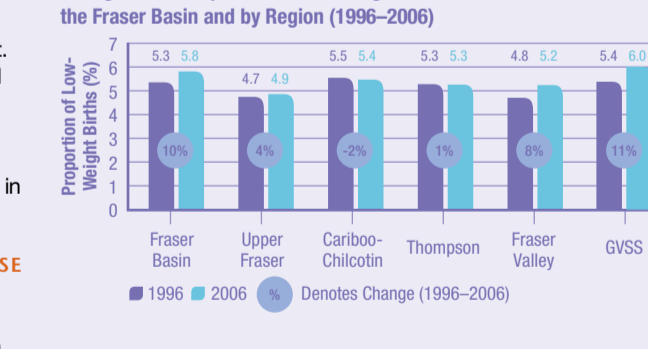
Health

Human health is implicitly connected to our natural environment, our lifestyles and behaviours and the genes we inherit. Healthy eating habits, adequate physical activity, limiting exposure to tobacco, alcohol and toxic chemicals, and using seatbelts and bike helmets to minimize the risk of injuries all influence our health in positive ways.

GETTING BETTER / GETTING WORSE

Average life expectancy across the Fraser Basin continued to rise over the 2002-2006 period. The proportion of low-weight newborns increased between 1996 and 2006. Babies weighing less than 2,500 grams at birth are at a greater risk of disease or disability.

Change in the Proportion of Low-Weight Births in the Fraser Basin and by Region (1996-2006)



The Fraser River Basin

This map of the Fraser River Basin highlights the Fraser River and tributary rivers and lakes within the Fraser watershed. The map profiles major communities, Indian Reserves, major highways and land uses in the Basin such as the Agricultural Land Reserve, Protected Areas and grasslands.

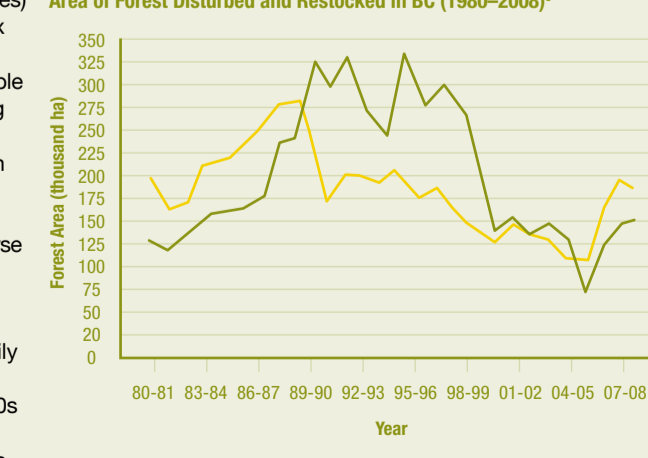
Forests & Forestry

Forests cover 75% (17 million hectares) of the Fraser Basin and include a mix of age classes and dominant tree species. These forests provide multiple goods and services, such as building materials, employment, recreation, generation and maintenance of clean air and water, regulation of stream flows, carbon sequestration to offset greenhouse gas emissions and diverse wildlife habitat.

FAIR / MIXED RESULTS

In the 1980s the area of satisfactorily restocked forest was less than the area disturbed. From the early 1990s to 2005 it was more than the area disturbed; from 2005 to 2008 it was again less than the area disturbed.

Area of Forest Disturbed and Restocked in BC (1980-2008)¹



Steps for Sustainability



Find a way to put yourself in the picture!
Here are some steps you can take.

Aboriginal & Non-Aboriginal Relations – Build New Relations

- Learn about ways to help Aboriginal and non-Aboriginal communities and organizations work together by accessing information provided by the First Nations Summit (www.fns.bc.ca), Union of BC Indian Chiefs (www.ubcic.bc.ca), BC Assembly of First Nations (www.bcafn.ca), Métis Nation British Columbia (www.mpcbc.bc.ca), Union of BC Municipalities (www.civicnet.bc.ca), BC Ministry of Aboriginal Relations and Reconciliation (www.gov.bc.ca/arr) and Indian and Northern Affairs Canada (www.ainc-inac.gc.ca).

- Learn more about and engage with Aboriginal and non-Aboriginal people in or near your community.

Agriculture & Food – Sustain BC Food Production

- Buy local at home and at work when organizing your meetings and events. Support local farmers by purchasing their products through farmers' markets, farm gate sales and community shared agriculture. See www.bcfarmersmarket.org and www.getlocalbc.org to learn more about locally produced food.

- Farm operators can implement Environmental Farm Plans and manage their land in a way that supports ecosystem health. The BC Agriculture Council can help you learn more about this initiative: www.bcac.bc.ca.

Air Quality – Breathe Easier

- Check out the Air Quality Health Index (www.airhealthbc.ca) to learn about air quality in your community and the risks posed by air pollutants.

- Walk, cycle, carpool or take public transit instead of driving alone to save fuel and reduce air pollution.

Biodiversity, Fish & Fisheries – Be a Steward

- Support local stewardship groups that help fish, wildlife and habitat. Visit the BC Stewardship Centre at www.stewardshipcentre.bc.ca, the Pacific Streamkeepers Federation at www.pskf.ca, the BC Wildlife Federation at www.bcwf.bc.ca, or other local groups to learn more about stewardship projects and volunteer opportunities.

- Support sustainability in the fishing sector by making informed choices about seafood purchases. See Canada's Seafood Guide at www.seachoice.org or Ocean Wise at www.vanaqua.org/oceanwise.

Business & Sustainability – Buy Locally and Buy Smart

- Support local businesses, buy locally produced goods and services, and support businesses that use sustainable practices. Visit the Better Business Bureau (<http://mainlandbc.bbb.org>), the BC Chamber of Commerce (www.bcchamber.org) or your local Chamber of Commerce to access BC businesses that are more sustainable.

- Businesses and government organizations can buy supplies and materials that are more sustainable. See the Sustainability Purchasing Network: www.buysmartbc.com.

Climate Change & Energy – Be Power Smart and Climate Neutral

- Save money and energy with BC Hydro's energy saving tips for homes and businesses as well as product information and upgrade incentives and rebates: www.bchydro.com.

- Take advantage of provincial and federal EcoEnergy Retrofit rebates, incentives and PST exemptions by improving your home's energy efficiency, while saving money and increasing comfort.

- Reduce energy consumption and GHG emissions by using more efficient fleet management practices and technologies. See www.greenfleetsbc.com. Participate in the E3 Fleet Rating System: www.e3fleet.com.

Community Engagement – Volunteer or Donate

- Volunteer your time to a worthy cause and help others in your community. See Volunteer BC (www.volunteerbc.ca) for information about local volunteer centres.

- Make corporate donations or match employee donations to community projects to help those less fortunate.

Consumption & Waste – Reduce, Reuse and Recycle

- Reduce, reuse and recycle wherever possible. See Recycling Council of BC (www.rcbc.bc.ca), your Regional District, the Return-It program (Encorp Pacific Canada – www.encorp.ca/cfm/index.cfm), BC Industrial Materials Exchange (www.bcimex.ca) and Product Care (www.productcare.org) for local opportunities to manage your waste.

- Take advantage of rebates, incentives and tax exemptions that make it easier and more affordable to make green choices. See LiveSmart BC: www.livesmartbc.ca.

- Conduct a waste assessment in your organization to reduce waste and save money.

Economy, Income & Employment – Support People and Communities

- Help develop partnerships among communities, governments and businesses to diversify local and regional economies and help alleviate poverty.

- Support initiatives such as job sharing, cooperative enterprises, peer lending groups and entrepreneurship training.

- Governments and community organizations can implement policies and programs for reducing poverty and providing affordable housing, childcare and other social services for people on reduced incomes.

Education – Hands Up for Lifelong Learning

- The BC Network for Sustainability Education is a multi-sectoral, collaborative network where participants can engage in sustainability education and share an online meeting space: www.walkingthetalk.bc.ca.

- Employers can offer training opportunities such as internships for youth, recent graduates, new immigrants, persons with disabilities and unemployed people in the community to help them develop necessary work experience and build capacity to participate in the workforce.

Forests & Forestry – Support Sustainable Forestry

- Support BC forest workers and companies by buying local forest products. See BuyBCWild at <http://buybcwild.com>.

- Buy certified wood and paper products. See the Canadian Sustainable Forestry Certification Coalition: www.certificationcanada.org.

Health – Paths to Better Living

- Take the healthy living pledge and enhance your health by getting at least 30 minutes of physical activity per day: www.actnowbc.ca.

- Communities can join the BC Healthy Communities initiative: www.bchealthycommunities.ca.

- Schools can join Action Schools! BC to help children make good choices about physical activity and healthy eating: www.actionschoolsbc.ca.

Housing – Raising the Roof

- Local governments can develop land use plans and policies to create a diverse mix of housing options, and can provide developers with incentives for incorporating affordable housing units into new developments.

- Federal and provincial governments can help communities develop affordable housing options.

- Developers can build green housing designs (www.builtgreencanada.ca).

Population – Neighbours Helping Neighbours

- Help make your community a safer and friendlier place by getting to know your neighbours.

- The new Smart Planning for Communities program (www.fraserbasin.bc.ca/programs/smart_planning.html) is helping local and First Nations governments strengthen their communities by incorporating sustainability principles and practices into their planning processes.

Water Quality & Quantity – Live Water Smart

- Households, businesses and organizations can conserve water with water-saving practices, appliances and fixtures.

- Avoid water pollution by properly disposing of garbage, motor oil, paint, or pesticides away from storm drains and water bodies.

- Visit www.livingwatersmart.ca or www.waterbucket.ca to learn about ways to preserve and protect water.

Do you see yourself
in the picture yet? **We Do!**

The Fraser Basin Council

Our vision for the Fraser Basin is a place where social well-being is supported by a vibrant economy and sustained by a healthy environment.

Formed in 1997, the Fraser Basin Council (FBC) is a charitable, not-for-profit body committed to advancing sustainability in the Fraser Basin. FBC is led by 36 Directors representing the diversity of the Basin, from the four orders of government – Federal, Provincial, Local and First Nations – and from the private sector and civil society. This governance structure and commitment to collaboration is one of the first of its kind in Canada and has served as a model for others in this country and abroad.

Many of today's toughest public issues are, in essence, sustainability issues – with linkages between social, economic and environmental considerations. The Fraser Basin Council is committed to bringing together decision-makers and others from diverse areas who wish to identify sustainability concerns, begin a dialogue and seek collaborative solutions.

The Council fulfills its mandate by working with the vision, principles and goals articulated in its Charter for Sustainability. The Charter is a good-faith agreement among all those in the Basin to work collaboratively toward a more sustainable future. To ensure that the Council has a local presence and is addressing issues of real concern from all parts of the Basin, it has established regional committees, staff and offices in each of the Basin's five regions – Upper Fraser, Cariboo-Chilcotin, Thompson, Fraser Valley and Greater Vancouver-Sea to Sky.

FBC also raises awareness of sustainability issues, offers opportunities for action and supports government, agencies, businesses and community groups in their work in the Fraser Basin and across BC. Some current partnership programs include Smart Planning for Communities, Integrated Flood Hazard Management, Fraser Salmon and Watersheds Program (with the Pacific Salmon Foundation) and various climate change and clean air initiatives, including those to assist private and public sector fleets in adopting green practices and technologies.



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Chair

Contact Us

To read Sustainability Snapshot 4, visit the Fraser Basin Council website at www.fraserbasin.bc.ca. For more information on sustainability indicators contact:

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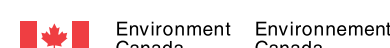


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