



A Picture Of Our Region



Fraser Basin Council

A report of the
Fraser Basin Council
to residents of the:

- Robson Valley
- Prince George area
- Stuart/Nechako

This Upper Fraser Sustainability Snapshot report offers residents of the Stuart-Nechako, Prince George area and Robson Valley an opportunity to learn about the state of sustainability in their communities

The Snapshot pulls together key indicators and data on a number of topics relevant to the region and showcases examples of communities and organizations working to achieve sustainability. Over the past five years, the Fraser Basin Council (FBC) has published three Sustainability Snapshot reports on the Fraser Basin and one regional report. This is the first report to focus on the Upper Fraser.

Most people can name the municipality, province and country where they live, but what about the watershed? Watersheds follow natural boundaries of the landscape, from mountaintops to valleys – everywhere water flows to benefit local ecosystems and economies.

The Fraser Basin is a major BC watershed, stretching across one-quarter of the province. At its heart is the mighty Fraser River, which begins as an ice-blue trickle near Mount Robson, the highest peak in the Rocky Mountains. Fed by multiple tributaries, including the McGregor, Salmon, Nechako and Stuart Rivers, the Fraser River crosses five climatic zones on a dramatic 1,400 km journey to the Pacific Ocean.

This magnificent watershed is home to 2.7 million people – about two-thirds of BC. It generates much of the province's economy and supports many species of fish, wildlife and vegetation. The Upper Fraser region – pictured on the map on the back panel – is 80,000 km² in total, about one-third of the Fraser Basin. It is the Basin's largest region, and a vibrant one, even while having the second smallest population – about 108,000 people.



How are we doing?

In picturing the Upper Fraser region, the image that emerges is one of resilience over time – of communities facing serious challenges, yet demonstrating success on many fronts.

Whether the economy is in a downturn or a local problem seems overwhelming, the concept of sustainability offers fresh hope. Sustainability is about long-term thinking. It calls on people to live and manage our activities in a way that balances social, economic and environmental considerations to meet our own needs and those of future generations.

Indicators are a powerful tool to help communities describe current conditions, identify trends, make informed decisions and plan for sustainability. There are many indicators important to the Upper Fraser region, and this Snapshot report touches on a few of them, across several topic areas: Aboriginal & Non-Aboriginal Relations, Air & Water Quality, Consumption & Waste, Forests & Forestry, Employment & Income, Fish & Wildlife, and Health.

One of the stories of the past 10 years is that, despite a downturn in the forestry sector, and a 6% decrease in population, there are positive economic indicators in the Upper Fraser. Average income varies by sub-region, but overall is comparable to the rest of the province. There is a smaller proportion of low-income households in the Upper Fraser than in BC and the Fraser Basin overall. Life expectancy has increased 2% in the past decade although not as significantly as in the rest of BC, and there remain various health risks of particular concern, including cancer, which is a leading cause of death.

Unlike the Upper Fraser population as a whole, the number of Aboriginal people has increased. The health of Aboriginal people, however, still lags behind that of non-Aboriginals in several respects. A challenge ahead is to continue to forge stronger relationships between Aboriginal and non-Aboriginal communities. To date, there are no ratified treaties, but there are agreements, including natural resource agreements that demonstrate progress. Forestry, including manufacturing of forest products, remains a significant economic engine of the Upper Fraser, but one that is vulnerable to fluctuating market demand. Forest health, moreover, has been seriously damaged by mountain pine beetle infestation. Beetle kill has offered short-term harvesting opportunities in the region, but the recovery of forests will take time. Long-term employment in forestry is uncertain. One thing seems clear: resilience is important for Upper Fraser communities, and economic diversification is a component. The economy of the region includes agriculture, tourism, manufacturing and retail services as well as natural resource sectors. Prince George is a vital transportation hub, and has a significant inland port for shipping rail freight and an expanded airport.

An important environmental health concern is air quality in the Prince George area, especially fine particulate matter. Energy consumption and solid waste disposal in landfills are other concerns, both having increased in recent years. There is good news: the region has the best water quality in the Fraser Basin, particularly in the Robson Valley. There are, however, habitat and ecosystem concerns, and species that are facing difficulty. These include Woodland Caribou, Early and Late Stuart Sockeye, Endako Chinook and Nechako White Sturgeon.

Climate change is a critical overarching threat and may prove one of the greatest tests of resilience, now and in the decades ahead. There are dual challenges: reducing greenhouse gas emissions to slow climate change, and adapting to climate change to limit its impacts on communities.

Population Of The Upper Fraser Region And Sub-Regions (1996–2006)¹

Census Year	Upper Fraser Region	Stuart-Nechako	Prince George area	Robson Valley	BC	Fraser Basin
1999	115,125	23,345	87,305	4,575	3,689,755	2,406,230
2006	108,255	21,605	82,195	4,455	4,074,380	2,725,930
% Change	-6.0	-7.1	-5.9	-2.6	10.4	13.3



Aboriginal & Non-Aboriginal Relations

- In the Upper Fraser 14,310 (13%) of all people identified as Aboriginal in 2006, an increase of almost 36% in 10 years. The highest rate of growth was among those people identifying themselves as Metis. In BC overall, 4.8% of people identified as Aboriginal in 2006, and the population has a youthful profile – with 46% under age 25.¹
- Health and socio-economic conditions remain a challenge. In February 2007 the Provincial Health Officer reported some improvements, but also flagged significant gaps between Aboriginals and other people in the province. Among First Nations in BC, there is a higher percentage of low weight births (6.5% in 2004 compared to 5.5% for other BC residents) and pre-term births (11.3% in 2004 compared to 7.3% for other BC residents); infant mortality rates (8.6 per 1,000 births compared to 3.7 for other BC residents between 2000 and 2004); births to teenage mothers (16.3% compared to 2.4% for other BC residents in 2004); and incidence of diabetes (1.4 times the rate experienced by other BC residents). There is also higher vulnerability to death prior to age 75 by motor vehicle accident, accidental poisoning, suicide, homicide, heart disease, cirrhosis and HIV.²
- In setting a firm foundation for the future, recognizing and reconciling Aboriginal title and rights are important. In addition to court decisions, and formal and informal agreements, treaties offer an opportunity for positive change. Five First Nations in the Upper Fraser have been in the BC Treaty Commission process since 1993. While progress was made at the Lheidli T'enneh and Yekooche tables through 2006, no treaties have been ratified to date, and the Lheidli T'enneh people in March 2007 voted (123-111) not to ratify a final agreement.^{3,4}

Celebrating its 10th anniversary in 2009, the John Prince Research Forest is a unique model of forestry co-management between a university and a First Nation in Canada. For details, see back panel.

Respect underlies all good relationships, including those between Aboriginal and Non-Aboriginal people in Canada.

In the Upper Fraser, both peoples live and work side by side, and there is reason to work on collaborations that improve opportunities for Aboriginal communities and benefit the region overall.

Air & Water Quality

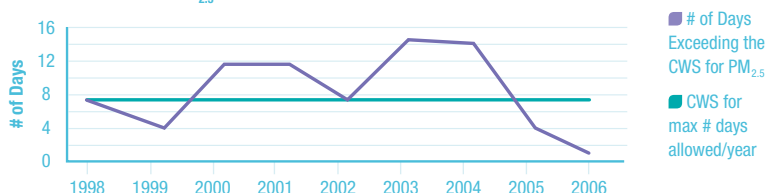
Air Quality

- Fine particulate matter (PM) consists of tiny particles that are breathed deep into the lungs and can lead to asthma and other diseases. It is one of the most serious forms of air pollution in terms of health impacts. The Canada-Wide Standard (CWS) for PM_{2.5} (ultra fine particles) allows a maximum of 7.3 days per year to exceed a concentration of 30 micrograms/m³. In Prince George, PM_{2.5} levels were worse than or equal to the CWS in 6 of 7 years between 1998 and 2004 (15 days exceeded in 2003); however, the levels were much better in both 2005 (4 days) and 2006 (1 day). Since 2004 there has been a 20% drop in the annual average concentration of PM_{2.5} and a 75% drop in the number of days PM_{2.5} exceeded the CWS. These decreases signal an improvement in air quality in 2005 and 2006. Annual average PM₁₀ levels have remained relatively constant since 1992 (an average of 20.5 ug/m³ over 16 years).¹
- There have been substantial improvements in Total Reduced Sulphur compounds (TRS) readings since 1980. TRS dropped from an annual average of 5.9 ug/m³ to 1.9 ug/m³ and there were fewer days in which TRS exceeded (was worse than) provincial objectives. TRS is mainly an aesthetic problem, characterized by an objectionable “rotten egg” smell in the air.¹

Water Quality

- In the Robson Valley (Fraser River at Red Pass), the Water Quality Index (WQI) rating has risen from good to excellent. WQI ratings for the Fraser River at Hansard and Nechako River at Prince George were good for 2001-2003 and for 2002-2004.²

Number of Days per Year Exceeding the Canada-Wide Standard (CWS) for Particulate Matter_{2.5} in Prince George (1998–2006)¹



The quality of air and water is influenced by many human activities, including forestry, mining, agriculture, urban development and transportation. Air quality monitoring in Prince George shows mixed results. There has been significant reduction in Total Reduced Sulphur compounds since 1990, moderate reduction in Particulate Matter (PM)_{2.5} since 2004, and little reduction of PM₁₀ since 1992. Concerns over air quality in the City of Prince George have spurred multiple initiatives to tackle the problem: see back panel.



Consumption & Waste

Electricity Consumption (2000–2006)¹

- Total residential consumption of electricity has increased by 6.8% in the Upper Fraser region, with increases of 9% in the Stuart-Nechako, 6% in the Prince George area and 8% in the Robson Valley due to an increase in the number of accounts and rising consumption per account.
- Residential consumption of electricity per account in the Upper Fraser region has increased by 2.2%. On average, the Robson Valley had the highest consumption of electricity per residential account, but the lowest increase during this period.
- Total commercial consumption of electricity has increased by 5.4% in the region overall, with increases of 6% in the Stuart-Nechako, 5% in the Prince George area and 10% in the Robson Valley. A complete record of industrial electricity consumption was not available for analysis.

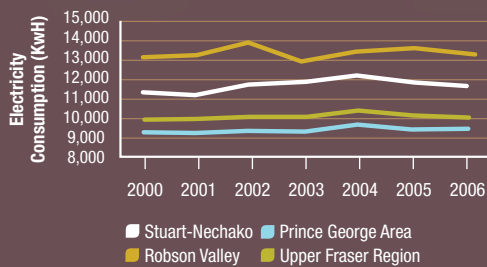
Water Consumption and Wastewater Treatment (2004)²

- Municipal water and wastewater systems in the region serve residential, commercial and some industrial consumers in Fraser Lake, Burns Lake, Fort St. James, Vanderhoof, Prince George and Valemount. In total, 86% of the people in these communities are served by municipal water and wastewater systems.
- Average daily flow of water through municipal systems in the region has remained relatively stable since 1999 following a period of increasing flows between 1991 and 1999.
- Per capita residential water consumption is highly variable, from a low of 161 litres per person per day in Fraser Lake to a high of 726 litres in Valemount. Prince George has the second highest per capita residential consumption at 499 litres per day.
- Communities in the Upper Fraser region have either a secondary level or tertiary (higher) level of wastewater treatment. Burns Lake, Fraser Lake, Vanderhoof and Valemount are all served with secondary treatment, while Prince George (serving 89% of those on municipal systems in the Upper Fraser region) has tertiary treatment.

Solid Waste Disposed In Landfill (1996–2005)³

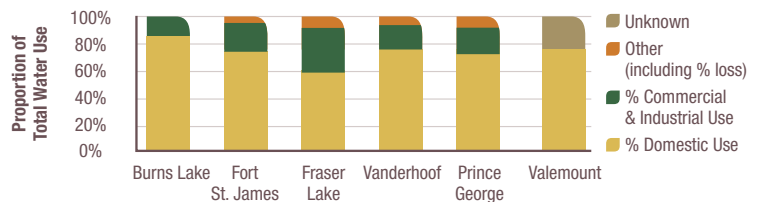
- Total solid waste sent to landfill sites in the Upper Fraser Region in 2005 was 103,205 tonnes, equivalent to 710 kg per person.
- Although there was a fairly steady decrease (33%) in total waste disposal in landfill between 1996 and 2001, there has been an increase of 14% since 2001.
- The Bulkley-Nechako Regional District had the second lowest per capita waste disposal of the eight regional districts in the Fraser Basin (470 kg), while the Fraser-Fort George Regional District had the highest per capita rate (812 kg).

Average Annual Electricity Consumption per Residential Account Within Municipalities in the Upper Fraser Region (2000–2006)¹



The quantity of resources we consume and waste we generate and release into the environment can have profound implications for the health of the region. A sustainable region is one in which people, industries and communities consume resources at rates that can be replenished over time and manage wastes in ways that minimize adverse environmental, social and economic impacts.

Total Water Use by Type for Upper Fraser Municipalities (2004)²



Total Solid Waste Disposal in Landfill Sites in the Upper Fraser Region (1996–2005)³

