



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.

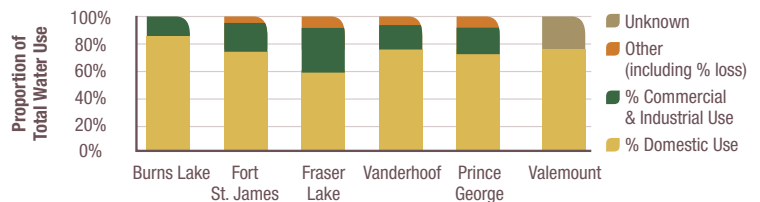
Water Consumption and Wastewater Treatment (2004)²

- 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.

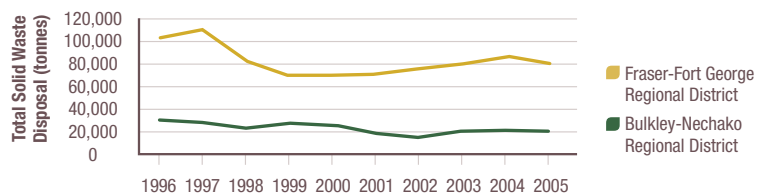
Solid Waste Disposed In Landfill (1996–2005)³

- 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).

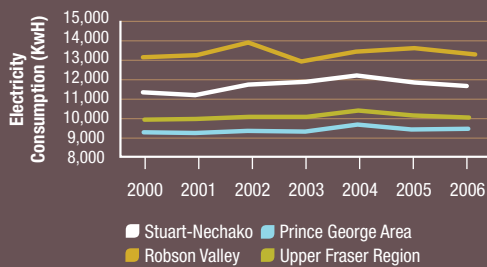
Total Water Use by Type for Upper Fraser Municipalities (2004)²



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



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.



Steps for Sustainability

Steps For Individuals

Reduce, Reuse, Recycle – Purchase products with minimal packaging; compost your food scraps and yard waste; find out where you can safely recycle electronic and hazardous goods (Regional District of Bulkley-Nechako: www.rdbn.bc.ca; Regional District of Fraser-Fort George: www.rdffg.bc.ca; Recycling Council of BC: www.rcbc.bc.ca).

Buy Locally – Support local businesses and purchase products that are made or grown in the area. Visit your local Chamber of Commerce for more information (for example, www.pgchamber.bc.ca).

Be Power Smart – Save money and energy by reducing your electricity consumption; take advantage of BC Hydro home upgrade incentives and rebates (www.bchydro.com); improve fuel efficiency and reduce air pollution by turning your engine off when possible (www.idlefreebc.ca).

Live Water Smart – reduce household water consumption by installing water-saving appliances and fixtures, such as low-flow shower heads and toilets; don't pollute water with garbage, motor oil, paint or pesticides (www.livingwatersmart.ca).

Volunteer or Donate – Help support a worthy cause in your community and connect with your neighbours (www.volunteerbc.ca); support local stewardship groups to help fish and wildlife habitat in your local area (www.stewardshipcentre.bc.ca, www.pskf.ca and www.scwa.bc.ca); report illegal fishing and polluting to the 24-hour hotline 1 877 952-RAPP (7277).

Get Active – take the healthy living pledge and enhance your health by getting at least 30 minutes of physical activity per day – walk the dog, ride your bike or go snowshoeing with friends or family (www.actnowbc.ca).

Build New Relations – Learn more about and engage with Aboriginal and non-Aboriginal people in or near your community; attend local events, such as National Aboriginal Day; visit a friendship centre; and explore mutual opportunities with Aboriginal business owners (www.pgnfc.com).

Steps for Private and Public Organizations

Buy Smart – Purchase your supplies and materials using policies and practices that consider how goods and services can promote a healthier community and environment, including extraction/harvesting, manufacturing and disposal (Sustainability Purchasing Network: www.buysmartbc.com).

Use Resources Wisely – Ensure production processes use resources efficiently (for example, water, wood, paper and energy) and recycle or reuse by-products where possible (BC Industrial Materials Exchange www.bcimex.ca).

Manage Your Building and Fleet Operations – Save money and energy while reducing air pollution and greenhouse gas emissions by reducing your electricity consumption (PowerSmart www.bchydro.com); becoming idle-free (www.idlefreebc.ca); and adopting practices and technologies to enhance vehicle efficiency (www.greenfleetsbc.com).

Build New Relations – Explore mutual opportunities with Aboriginal business owners and First Nations communities (for example Prince George Aboriginal Business Development Association; Burns Lake Native Development Corporation: www.blndc.ca).

Offer Training Internships – Training opportunities for youth, recent graduates, new immigrants, persons with disabilities and unemployed people in the community help develop necessary work experience and build labour force capacity.

Support Individuals and Families – Look for opportunities to implement policies and programs that support affordable housing, childcare, poverty reduction and other social services.

Smart Planning for Communities – Local and First Nations governments can strengthen the social, economic and environmental fabric of communities by incorporating sustainability principles and practices into their planning policies and processes (www.fraserbasin.bc.ca/programs/smart_planning.html).

The Fraser Basin Council (FBC) is a not-for-profit organization dedicated to advancing sustainability in the Fraser Basin and across BC. To learn more about the state of sustainability and opportunities to take action where you live and work, contact the Fraser Basin Council's Upper Fraser Office.

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Watch for Sustainability Snapshot 4, an indicators report covering 18 sustainability topics. The report will be released at the 2009 State of the Fraser Basin Conference in Vancouver on February 19-20. For more information, contact Steve Litke, Senior Program Manager, at slitke@fraserbasin.bc.ca.



Fraser Basin Council

Social well-being supported by a vibrant economy and sustained by a healthy environment



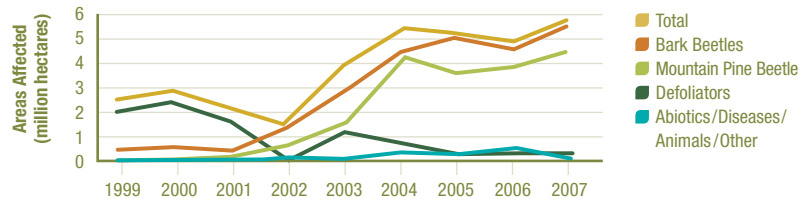


Forests and the forest industry are vitally important to the ecological, economic and social well-being of the Upper Fraser region. People depend on healthy forests for wood, for forestry-related employment and for recreation. Forests also provide invaluable natural services such as generating and maintaining clean air and water, regulating stream flows, storing carbon to offset greenhouse gas emissions and providing a diversity of wildlife habitat. Sustainable forest management practices can contribute to long-term forest health and community stability.

Forests & Forestry

- There are many significant pressures on forest health and the forestry sector throughout the Upper Fraser region and much of BC, including the Mountain Pine Beetle epidemic, other forest pests and diseases, and a downturn in the forest sector. There have been significant improvements in the forest sector with respect to sustainable forest management certification as well as forest tenure and resource management agreements involving First Nations.
- The most current forest inventory data available is from 2002, when the Upper Fraser region included about six million hectares of forest cover (about 81% of the region), and supported 52% of the Fraser Basin's spruce forests and 46% of the Basin's true fir forests. In 2002 a majority of the trees in the region were more than 140 years old. It is important to note that, because of Mountain Pine beetle, other forest pests and related beetle-kill salvage logging, the overall distribution of species and age-classes has likely changed in the last six years.¹
- Forest health, in terms of hectares of forests affected by pests (bark beetles, defoliators), disease, animals and natural hazards (fire, windthrow, drought) is getting worse for the Northern Interior Forest Region.² There are also human pressures on forests and the forest sector, including climate change and variable seasonal temperatures, as well as changing policies, regulations and a downturn in international markets.
- According to one survey, residents from Vanderhoof, Fort St. James and Prince George identified "sustaining the productive capacity of forest ecosystems" as the number one forest management priority.³

Factors Affecting Forest Health in the Prince George (1999–2002) and Northern Interior (2003–2007) Regions of the BC Ministry of Forests and Range²



Employment & Income

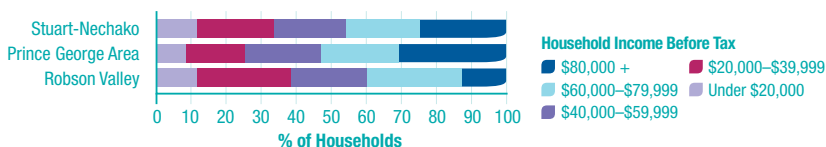
Employment

- Employment rates were higher in the Upper Fraser region in 2006 than in the Fraser Basin or BC overall. These rates increased slightly in all sub-regions of the Upper Fraser from 63% in 2001 to 65.4% in 2006. Growth in employment, however, was slower in the region (1%) between 1996 and 2006 compared with the rest of BC (3%).¹
- In 2006, one third (33%) of the labour force in the Upper Fraser region was employed in the following sectors: manufacturing (13%), retail trade (10%), and health care and social assistance (10%). It is important to note that sawmills and pulp mills are included in the manufacturing sector. In the Stuart-Nechako and Robson Valley sub-regions, 17% of people were employed in the combined sectors of agriculture, forestry and fishing in 2006.¹

Income

- As of 2005, the average (after-tax) income for individuals in the Upper Fraser region was \$29,437, which is similar with the Fraser Basin and BC overall. Income levels varied by over \$6,000 between sub-regions: the highest (\$30,236) was in the Prince George area and the lowest (\$24,075) in the Robson Valley.
- Average household incomes (before tax) in the Upper Fraser in 2005 were \$67,675. Average household income has increased over time, but at a slower rate than in the Fraser Basin and BC overall. Between 1995 and 2005, average household incomes in the Upper Fraser rose by 24% as compared to 34% in both the Fraser Basin and BC overall. In 2005, 7.2% of households in the Upper Fraser were considered low income, which is below the proportion of low-income households in both BC and the Fraser Basin overall.¹

Proportion of Households by Income Group in the Upper Fraser Region (2005)¹



A vibrant and sustainable economy provides people with secure sources of income and steady employment, while diverse economic activity helps stabilize the economy overall. It is important that people in the region have adequate income to meet their needs and participate fully in society.



Fish & Wildlife

Fish

- Early and Late Stuart Sockeye salmon stocks have decreased since the 1990s, largely because of migration conditions and mortality within the Fraser, Nechako and Stuart Rivers. River temperatures have increased significantly since the 1950s.¹
- White sturgeon in the Nechako/Stuart and Upper Fraser are listed as endangered and the fishery has been closed indefinitely.²
- The 21 years of records for Nechako Chinook show the extreme variability that can occur in fish populations from year to year. For example, in 2007, Chinook salmon numbers in the Endako and Nechako Rivers were the lowest recorded in 14 years; however, in 2008, Nechako Chinook had the fifth highest escapement levels since 1988. Total Chinook escapement in the Nechako River (1,441 fish) in 2007 fell below conservation goals set in the 1987 Settlement Agreement between Alcan, Fisheries and Oceans Canada and the BC Ministry of Environment. In 20 years of monitoring, these goals have been met or exceeded in all but three years. Low spawning escapement for the Endako River (only 36 fish) indicates that the population may be in danger of disappearing.^{3,4}

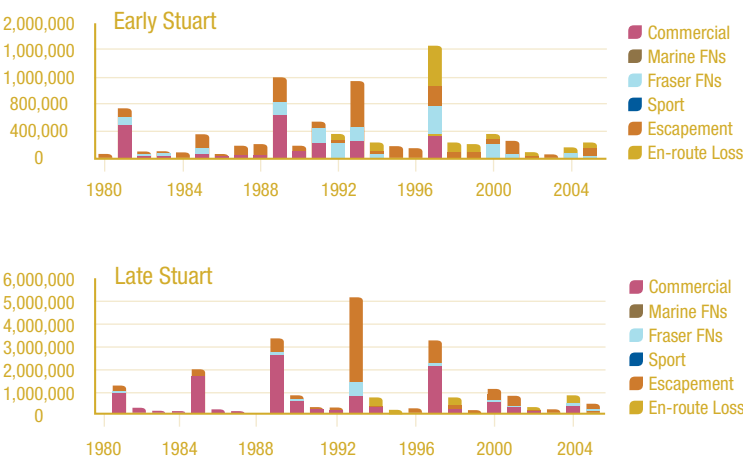
Wildlife

- Woodland Caribou (*Rangifer tarandus caribou*) in the Upper Fraser region include both mountain and northern ecotypes. The Hart Ranges herd is increasing in population, the Northern Cariboo Mountains and Takla herds are stable, the Narrow Lake and Tweedsmuir herds are declining, and the George Mountain herd was extinct as of 2003.⁵

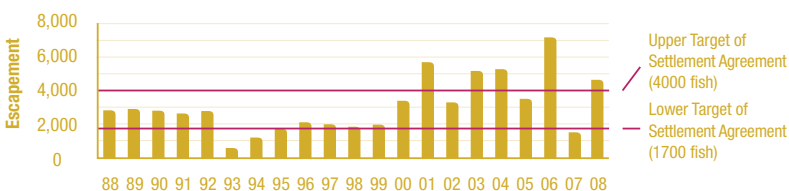
Protected Areas

- The area of land with protected area status within the region, and the ecosections contained within the region, are two scales to assess the viability and function of the natural environment. There are 15 different ecosections within the Upper Fraser region or extending beyond it. Over 2 million hectares of land is protected in and near the Upper Fraser region, which is equivalent to 14% of the total land area within these ecosections. Of the 15 ecosections that occur in and near the Upper Fraser region, seven have less than 5% of the area protected. Three ecosections have more than 25% of the area protected, with the Nechako Upland Ecosection having the largest proportion of the area protected (69%).⁷

Distribution of Early Stuart and Late Stuart Sockeye Salmon Returns (1980–2005)¹



Nechako River Chinook Escapement (1988–2008)⁴

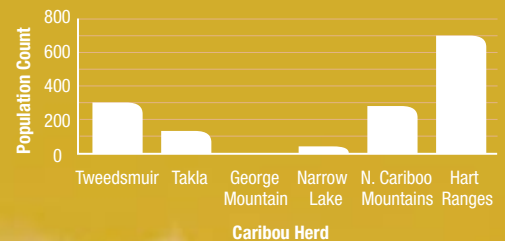


The Woodland Caribou is a threatened sub-species under the federal Species At Risk Act.

Fish, wildlife and the ecosystems they inhabit are vital to the environmental, social and economic sustainability of the Upper Fraser region. For people, the natural environment offers food, recreational pursuits, economic opportunities and cultural, spiritual and aesthetic values.

The health of fish, wildlife and ecosystems is greatly influenced by our actions. The ways that we develop communities, grow food, and use other natural resources, such as water, energy, trees and minerals, can be managed to protect sensitive areas and to minimize impacts on other natural features and functions. Limiting human impacts on the landscape allows ecosystems to function without fragmentation or disruption of natural cycles, which, in turn, enhances and secures natural resources for the future.

Status of Woodland Caribou Herds in the Upper Fraser Region (2006)⁵





Health is determined by many factors. The genes we inherit, our lifestyle and behaviour (including eating habits, exercise, smoking, consumption of alcohol and seat belt use) all play a role, as does the state of our environment, including the quality of our air, food and water. Health is also affected by access to health services and other informal systems of support.

Health

Life Expectancy

- Life expectancy in the Upper Fraser region is rising, but continues to be lower than the average in BC and the Fraser Basin overall. Average life expectancy in the Upper Fraser ranged from 77.4 to 78.3 years in 2002-2006, rising by approximately 2% over the past decade in all three of the Local Health Areas (LHAs) in the region (Burns Lake, Nechako and Prince George). The increase in life expectancy has been more significant for men than women. While life expectancy for men increased between 2.4% and 3.3% in all three LHAs between 1996 and 2006, life expectancy for women increased by a maximum of 1.8% in one LHA and decreased in the Burns Lake LHA.¹

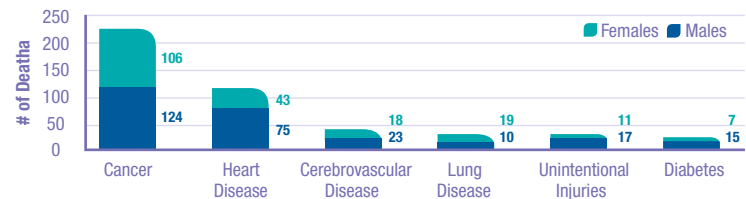
Low Weight Births

- Babies weighing less than 2,500 grams at birth are at increased risk of experiencing serious health problems as newborns, lasting disabilities or premature death. While the proportion of low weight births decreased slightly in the Prince George LHA from 1996-2006, the proportion increased in both the Burns Lake and Nechako LHAs.²

Leading Causes of Death

- In 2006, cancer was the leading cause of death in the Upper Fraser region, resulting in 230 deaths. Cancer caused almost as many deaths as the next five causes combined: heart disease (118 deaths), cerebrovascular disease (41), lung disease (29), unintentional injuries (28) and diabetes (22).³

Leading Causes of Death by Gender in the Upper Fraser Region (2006)³



References & Notes

How are we doing?

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 Prince George (p. 2), John Prince Research Forest (p. 3), Ancient Forest Trail (back panel) and Medical School graduation (back panel), courtesy of University of Northern British Columbia. Woodland Caribou (p. 7), courtesy of the Ministry of Forests and Range. Prince George Wastewater Treatment (back panel), courtesy of the City of Prince George. White Sturgeon, courtesy of Nechako White Sturgeon Recovery Initiative (back panel).

The Upper Fraser: A Picture of Our Region

Health



UNBC's New Medical Grads

(Photo left) It was a picture-perfect moment for members of the first-ever graduating class of the Northern Medical Program in May 2008. There were 23 graduates of the four-year program, delivered by the University of BC in collaboration with the University of Northern BC. Researchers from Simon Fraser University are now beginning a study of the impacts of a locally based medical program on community health.

Cancer Centre for the North

Prince George will soon have a new Cancer Centre. The Centre, part of a northern cancer control strategy, will provide residents of the Upper Fraser region with better access to cancer treatment and diagnostic services. Construction will begin in 2009, with a completion goal of 2012.

Healthy Moms and Babies

The Northern Family Health Society (NFHS) provides outreach services to at-risk pregnant women and their families including the Pregnancy Outreach Program (Healthiest Babies Possible - funded through Northern Health), the Public Health Agency of Canada's Community Action Program for Children (CAPC) and the Canadian Prenatal Nutrition Program (CPNP).

Spirits of Burns Lake™ Girls Hockey

Staying active is important to health and wellness, and community sport and recreation is an ideal way to motivate each other. Take the Spirits of Burns Lake girls hockey. With support from local businesses, friends, and families, and funding from Bell Community Sport Fund and Canadian True Sport Foundation, the Spirits of Burns Lake have come together through a great team effort. Players gain skill and technique on the ice, and also the opportunity to become role models for other young women in the community, and to form lifelong friendships through the game of hockey.

Aboriginal & Non-Aboriginal Relations



John Prince Research Forest And Other Forestry Partnerships

One exciting collaboration is that of Tl'azt'en Nation and the University of Northern BC. Together they established the John Prince Research Forest in 1999 to promote interdisciplinary research and provide education and employment opportunities for the Fort St. James, Tl'azt'en and Nak'azdli area residents. This 13,000-hectare working forest and living laboratory is managed by equal representation from UNBC and the Tl'azt'en through the not-for-profit Chuzghun Resources Corporation.¹

On another front, Prince George and the Lheidli T'enneh were jointly named Forest Capital of BC in 2008 by the Association of BC Forest Professionals for their accomplishments. The place of Aboriginals in forestry is stronger, reflected in an increase in Crown forest tenures since 2001.²

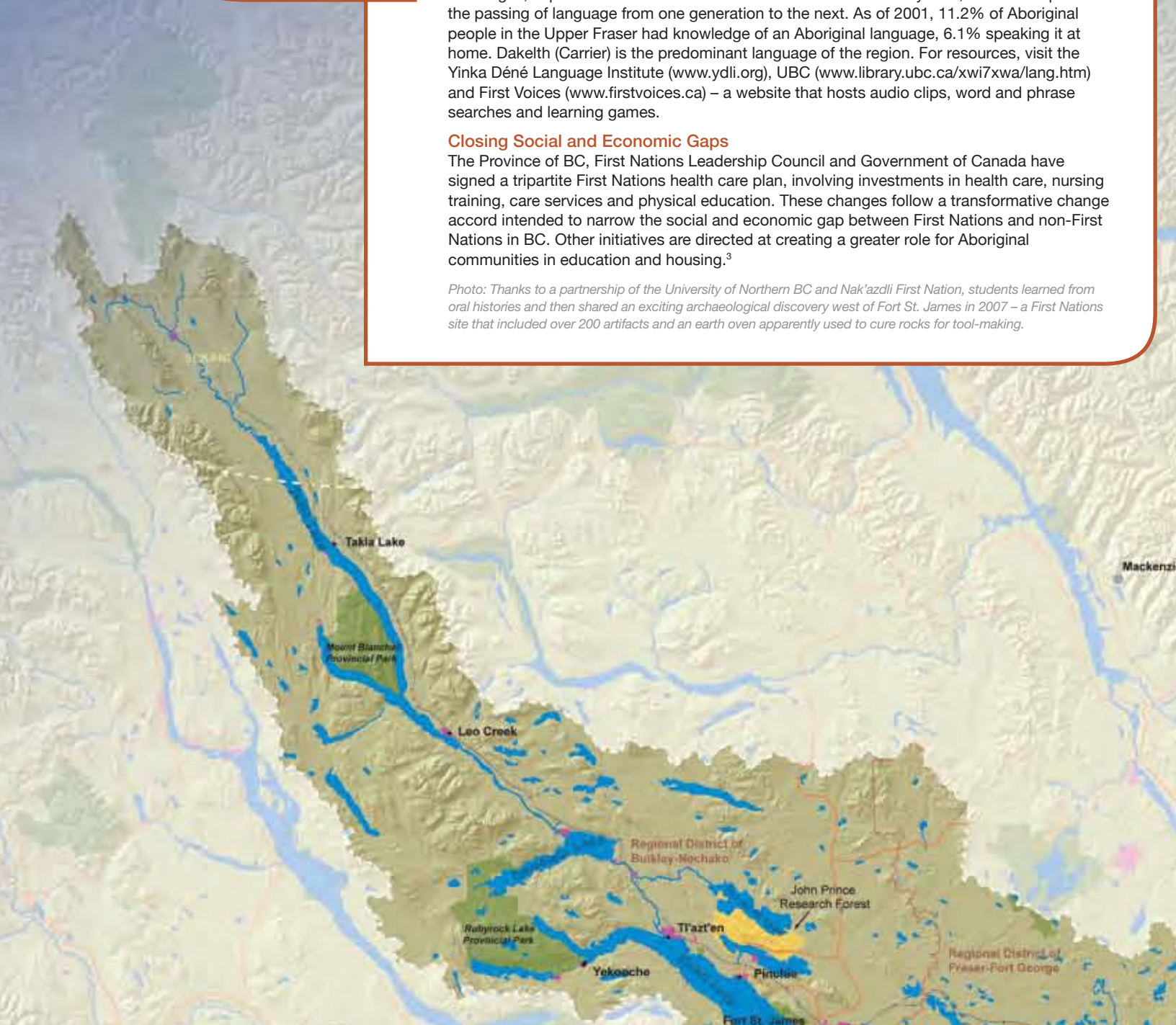
Encouraging Language Learning

Language is at the heart of culture and identity. Yet Aboriginal communities have faced past challenges, in particular because of the former residential school system, which disrupted the passing of language from one generation to the next. As of 2001, 11.2% of Aboriginal people in the Upper Fraser had knowledge of an Aboriginal language, 6.1% speaking it at home. Dakelh (Carrier) is the predominant language of the region. For resources, visit the Yinka Déné Language Institute (www.ydli.org), UBC (www.library.ubc.ca/xwi7xwa/lang.htm) and First Voices (www.firstvoices.ca) – a website that hosts audio clips, word and phrase searches and learning games.

Closing Social and Economic Gaps

The Province of BC, First Nations Leadership Council and Government of Canada have signed a tripartite First Nations health care plan, involving investments in health care, nursing training, care services and physical education. These changes follow a transformative change accord intended to narrow the social and economic gap between First Nations and non-First Nations in BC. Other initiatives are directed at creating a greater role for Aboriginal communities in education and housing.³

Photo: Thanks to a partnership of the University of Northern BC and Nak'azdli First Nation, students learned from oral histories and then shared an exciting archaeological discovery west of Fort St. James in 2007 – a First Nations site that included over 200 artifacts and an earth oven apparently used to cure rocks for tool-making.



Consumption & Waste

Product Care

Product Care is a not-for-profit industry-sponsored association that manages product stewardship programs for household hazardous and special waste (paint, flammable liquids, pesticides and gasoline).

Product Care protects the environment through a collection depot and product management system, diverting waste materials from landfills, waterways and sewers. There are four depots in the Upper Fraser region: Burns Lake, Vanderhoof, Fort St. James and Prince George. Product Care also provides consumers, retailers and local governments with information and materials about safe and responsible ways to use, store, recycle and dispose of the products: www.productcare.org/bczoom/NorthernBC.html.

Just Return-It

The Electronic Stewardship Association of BC celebrated the first anniversary of the Return-It Electronics program in August 2008. Ninety collection sites are available across BC for end-of-life electronics and recyclable metals, such as lithium, nickel, cadmium, copper, brass and bronze, as well as plastic and glass. Included in the program are desktop computers, monitors and laptops, printers, fax machines and televisions: www.electronicrecyclingbc.ca.

2008 Green Cities Award

The City of Prince George recently received a BC Green Cities award for demonstrating leadership and innovation in sustainability for initiatives that includes:

- greenhouse gas (GHG) reduction and an energy management plan
- a Smart Growth on the Ground planning project for downtown
- 20 initiatives to reduce corporate GHG emissions by 10% and community GHG emissions by 2% by 2012
- an anti-idling program
- over 6,000 trees planted in city parks, playgrounds and greenbelts
- increased public transit service - including the introduction of a U-Pass program with UNBC.

Community Action on Energy & Emissions (CAEE)

CAEE provides financial and research support to BC local governments and First Nations to advance energy efficiency, energy conservation and emissions reductions measures through policy and planning tools. Three Upper Fraser communities - Burns Lake, Prince George and Vanderhoof - are participating in the program. With support from CAEE, the District of Vanderhoof has undertaken an inventory and developed a community energy plan to increase energy efficiency and reduce greenhouse gas emissions. An energy efficiency building standard was developed for municipal buildings and a sustainability checklist was developed for voluntary use by builders. Visit www.caee.ca.



Tumbler Ridge

Grande Prairie

Upper Fraser Sub-Regions

A look at ALR, Protected Areas and Forest Harvesting

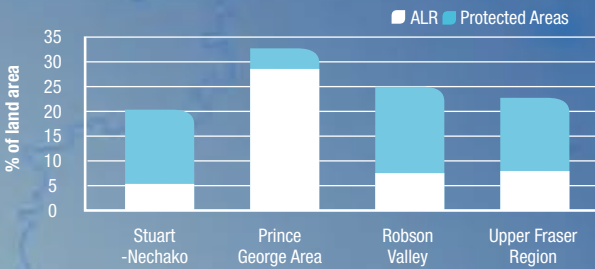
The sub-regional maps show the current extent of the Agricultural Land Reserve (ALR) and Protected Areas (PAs) network for each sub-region in 2008, along with the 30-year history of forest harvesting as depicted by forest tenure cut blocks.

The provincial Agricultural Land Commission preserves agricultural land and encourages farming as the priority land use within the ALR. In 2008 the Upper Fraser region included 655,256 hectares of ALR, representing 8.3% of the total land area.¹

Protected Areas in the Upper Fraser region include ecological reserves, Class A, B and C provincial parks, conservancies, recreation areas and protected areas that fall under the Environment and Land Use Act. The Parks and Protected Areas Branch of the BC Ministry of Environment – Environmental Stewardship Division manages parks and protected areas for conservation and public enjoyment; ecological reserves for scientific research and educational purposes; and conservation lands for critical habitat and significant fish and wildlife species.²

Forest tenure cut blocks are cumulative from 1977 (Stuart Nechako) and 1988 (Prince George area & Robson Valley) to 2008, as reported by the Forest Tenures Section within the BC Ministry of Forest and Range.³ Licensees are legally responsible for ensuring that reforestation takes place after harvesting.

Agricultural Land Reserve (ALR) and Protected Areas Land Use Designations in the Upper Fraser Region – by % of Total Area (2008)^{1,2}



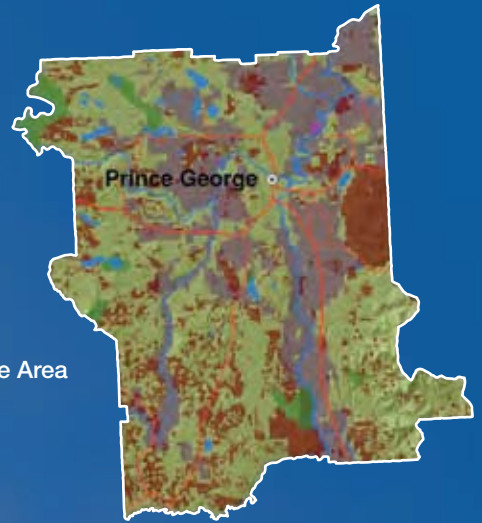
The Upper Fraser Region of the Fraser Basin



Stuart/Nechako



Prince George Area



Robson Valley



Sub Regions Legend

- Communities
- Roads
- Water
- Indian Reserves
- Protected Areas 2008
- Forest Harvest 1977 – 2008
- ALR 2008

Forests & Forestry

Sustainable Forest Management Certification

Sustainable Forest Management (SFM) certification recognizes forest companies for implementing forest management practices that are environmentally, socially and economically sustainable. The two certification systems widely adopted throughout the Upper Fraser region are the Canadian Standards Association (CSA) and Sustainable Forestry Initiative (SFI). The area of land having SFM-certified forestry operations in the Upper Fraser region has increased over the past decade, with 80-100% of forest management operations in the region certified by one or both systems as of 2008. To date, no operations in the Upper Fraser Region have been certified using the Forest Stewardship Council (FSC) standard for BC.¹

Mountain Pine Beetle

Provincial programs such as Forests for Tomorrow and Community Development Trust are helping to mitigate the consequences of the pine beetle's effect on forests (through reforestation) and on forestry workers (skills training, employment and early retirement).

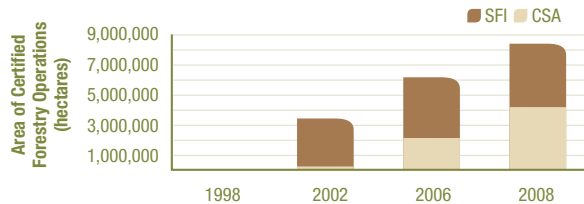
Nechako Valley Secondary School

Since 1993, the Forestry 11/12 classes at this Vanderhoof high school have operated a woodlot. This is a living lab that offers students practical lessons on pest management, harvesting, silviculture, wildlife management and recreation.

Trees for Tomorrow

The provincial government recently announced a five-year, \$13 million program to plant four million trees in schoolyards, hospital grounds, civic parks and other public spaces in British Columbia. This program will help to store carbon to counter greenhouse gas emissions, as well as improve local air quality and beautify communities: www.treesfortomorrow.gov.bc.ca.

Area of Forestry Operations with Sustainable Forest Management Certification in the Upper Fraser Region (1998-2008)¹



Fish

Nechako White Sturgeon Recovery Initiative (NWSRI)

The Nechako White Sturgeon Recovery Initiative (NWSRI) was recently awarded a Premier's Silver Award in recognition of its collaborative success in promoting stewardship and recovery of the critically imperiled White Sturgeon of the Nechako River, whose numbers have dropped from 5,000 to under 500 in the past 50 years. The NWSRI community working group offers outreach support, while the technical working group, consisting of federal and provincial biologists, First Nations and industry experts is responsible for identifying why the sturgeon is in decline and for developing an effective plan to help restore self-sustaining populations. Loss of historic gravel spawning and rearing habitat on the Nechako River, necessary for young sturgeon to avoid predators, appears to be a key reason that very few juveniles are reaching adulthood. There are now two key priorities: conservation aquaculture to bolster the numbers of juveniles and habitat remediation to recreate suitable spawning and rearing grounds.

In the fall of 2008 the Recovery Team was rewarded for its efforts with the capture and release of a two-year old sturgeon it had originally released in 2006. For the Nechako White Sturgeon, a gentle giant that traces its ancestry back to the age of dinosaurs, there may still be hope for the future. For more information, visit www.nechakowhitesturgeon.org and www.cstc.bc.ca/cstc.



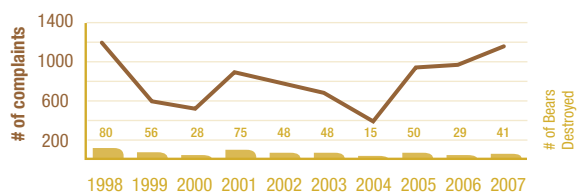


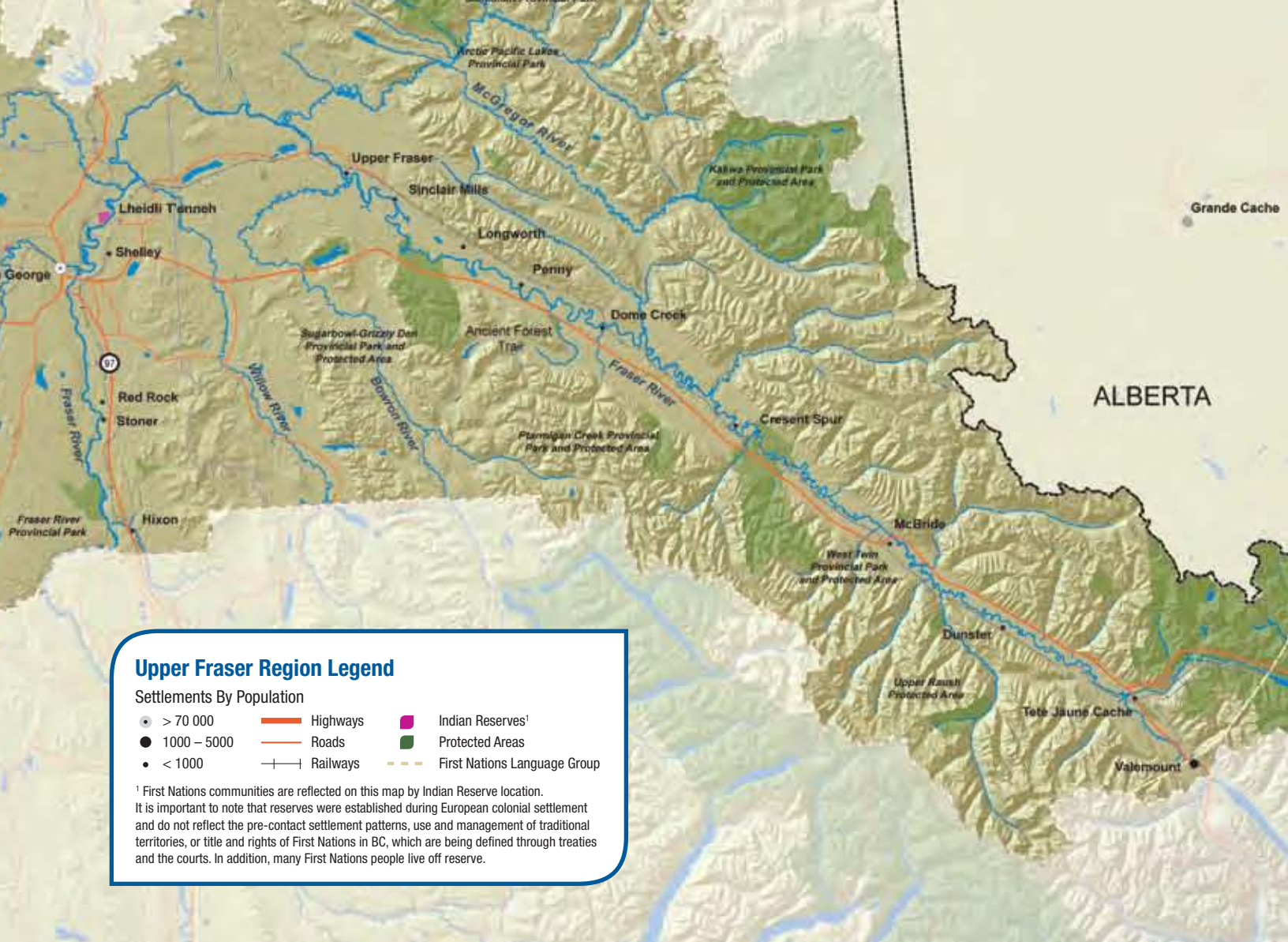
Wildlife

Northern Bear Awareness

Bears often enter neighbourhoods seeking food from fruit trees, garbage, barbecues and compost. When these bears become a risk to human safety, they are typically destroyed by conservation officers. Northern Bear Awareness, a partnership between the Spruce City Wildlife Association, the BC Conservation Foundation and the BC Conservation Corps, works to reduce conflicts between people and bears through education, innovation and cooperation. Northern Bear Awareness aims to make Prince George the very first Bear Smart Community in BC. Its Fruit Exchange Program, for example, helps residents remove and share unpicked fruit that attracts bears. For more information, visit www.northernbearawareness.com.

Bear-Human Conflicts in the Prince George Area (1998–2007)¹





ALBERTA

Upper Fraser Region Legend

Settlements By Population

- > 70 000
- 1000 – 5000
- < 1000
- Highways
- Roads
- Railways
- Indian Reserves¹
- Protected Areas
- First Nations Language Group

¹ First Nations communities are reflected on this map by Indian Reserve location. It is important to note that 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. In addition, many First Nations people live off reserve.

Air & Water Quality

PG Wastewater Treatment: Cleaner & Greener

The City of Prince George recently installed Canada's first microturbine project at the City's Wastewater Treatment Plant, using a waste methane gas digester that converts methane into power and heat, saving energy costs and reducing greenhouse gas emissions. Five new turbine engines burn compressed gas emitted from sewage, enabling the treatment plant to generate 40% of its own power and all of the heat required for the wastewater treatment. The new microturbines will reduce the treatment plant's annual greenhouse gas emissions from 2,800 tonnes to about 50 tonnes (less than 2% of former emissions), with potential for an additional 25 tonnes of annual greenhouse gas reduction from heat-energy savings. The total cost of the project was about \$661,000. With energy cost savings of about \$78,000 per year, the City estimates it will take just 8.5 years to recover the investment.

Addressing Air Quality in Prince George

Air quality improvements in Total Reduced Sulphur concentrations in Prince George have been especially notable since the early 1990s after major pollution control improvements by the pulp and paper industry. Several multi-stakeholder initiatives have tackled air quality concerns in Prince George, including an air quality committee (1995), which developed an air quality management plan (1998); the Mayor's Task Force on Air Quality Improvement (2006), which recently issued a report and recommendations (2008); and the Prince George Air Improvement Roundtable, PGAIR (2008), which brings together government, industry, business, health, community groups, not-for-profit organizations, academics and residents. The Roundtable will continue to implement the air quality management plan and address Task Force recommendations.



The Ancient Forest Trail

Just over 100 km east of Prince George are some of the Upper Fraser's oldest trees and a most fascinating forest. The Ancient Forest Trail is a labour of love, thanks to the efforts of local community groups that have worked together to showcase this unique and diverse forest ecosystem. A portion of the forest near Dome Creek is designated as an old growth management area, with Western red cedars up to 50 metres tall and up to 1,000 years old. Since 2007, this inland temperate rainforest has served as a licensed harvest block, a nature stop for 7,000 people a year, an outdoor classroom for UNBC students, a source of inspiration for artistic endeavors, and most recently, as a proposed old-growth management site. Visit www.ancientcedar.ca.¹



Economic Diversity & Resilience

Economic Diversity Index

In 2001 BC Statistics developed this index to measure economic diversity in communities throughout BC. Among 20 Fraser Basin communities, Vanderhoof ranked the least diverse (56). Including Burns Lake (60) and Prince George (64), the Upper Fraser region had three of the five communities in the Fraser Basin with the least diverse economies in 2001.¹ However, the situation seems to have improved in Prince George more recently, as the city's resilient economy maintained steady growth. Average incomes are above the provincial average and employment rates have increased. The economy is more diversified, with less reliance on wood manufacturing as well as transportation and warehousing. For example, between 2002-2006 there was an 80% increase in employment in the professional, scientific and technical services sector, as well as a 47% increase in the information, culture and recreation sector.

A Golden Raven Experience

Golden Raven (www.goldenraven.ca) works to strengthen economic growth in the arts, culture and heritage sectors by enhancing exposure and promoting cultural tourism opportunities throughout the Regional District of Fraser-Fort George.

The Community Partners Addressing Homelessness

The Community Partners Addressing Homelessness (CPAH) is a collaboration of service providers, agencies, non-profit organizations and representatives from municipal, provincial and federal governments established in 2001 to develop local solutions to homelessness in Prince George. CPAH has developed a Community Plan, and in May 2008 conducted a survey to examine the issues and situation of homelessness. Of the 375 people surveyed, 259 identified themselves as homeless. Thirty percent of those surveyed cited the cost of housing as the main reason for their homelessness; 22% indicated alcohol or substance abuse was the primary reason.

