

# 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](http://www.rdbn.bc.ca); Regional District of Fraser-Fort George: [www.rdfg.bc.ca](http://www.rdfg.bc.ca); Recycling Council of BC: [www.rcbc.bc.ca](http://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](http://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](http://www.bchydro.com)); improve fuel efficiency and reduce air pollution by turning your engine off when possible ([www.idlefreebc.ca](http://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](http://www.livingwatersmart.ca)).

**Volunteer or Donate** – Help support a worthy cause in your community and connect with your neighbours ([www.volunteerbc.ca](http://www.volunteerbc.ca)); support local stewardship groups to help fish and wildlife habitat in your local area ([www.stewardshipcentre.bc.ca](http://www.stewardshipcentre.bc.ca), [www.pskf.ca](http://www.pskf.ca) and [www.scwa.bc.ca](http://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](http://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](http://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](http://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](http://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](http://www.bchydro.com)); becoming idle-free ([www.idlefreebc.ca](http://www.idlefreebc.ca)); and adopting practices and technologies to enhance vehicle efficiency ([www.greenfleetsbc.com](http://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](http://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](http://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.

**FBC Upper Fraser Office**  
207 – 155 George Street  
Prince George, BC V2L 1P8  
[jmerrick@fraserbasin.bc.ca](mailto:jmerrick@fraserbasin.bc.ca)  
250 612-0252  
[www.fraserbasin.bc.ca](http://www.fraserbasin.bc.ca)

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](mailto:slitke@fraserbasin.bc.ca).



**Fraser Basin Council**

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



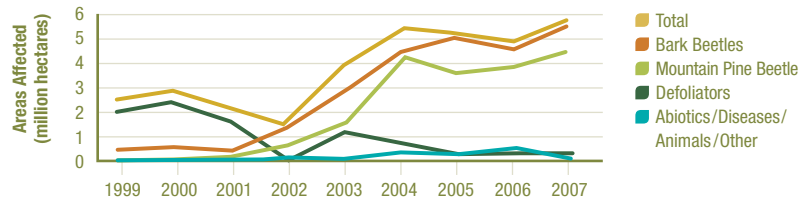


Forests and the forest industry are vitally important to the ecological, economic and social well-being of the Upper Fraser region. People depend on healthy forests for wood, for forestry-related employment and for recreation. Forests also provide invaluable natural services such as generating and maintaining 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.<sup>1</sup>
- 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.<sup>2</sup> 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.<sup>3</sup>

**Factors Affecting Forest Health in the Prince George (1999–2002) and Northern Interior (2003–2007) Regions of the BC Ministry of Forests and Range<sup>2</sup>**



## Employment & Income

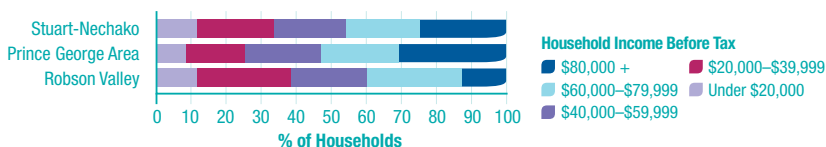
### Employment

- 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%).<sup>1</sup>
- 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.<sup>1</sup>

### 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.<sup>1</sup>

**Proportion of Households by Income Group in the Upper Fraser Region (2005)<sup>1</sup>**



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.<sup>1</sup>
- White sturgeon in the Nechako/Stuart and Upper Fraser are listed as endangered and the fishery has been closed indefinitely.<sup>2</sup>
- 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.<sup>3,4</sup>

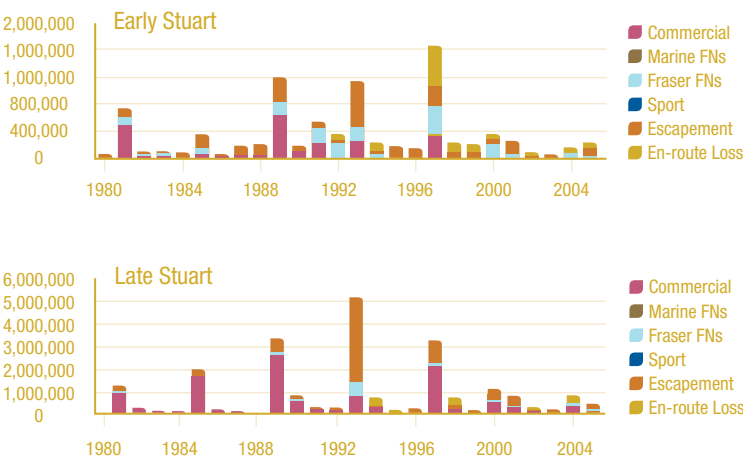
## Wildlife

- 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.<sup>5</sup>

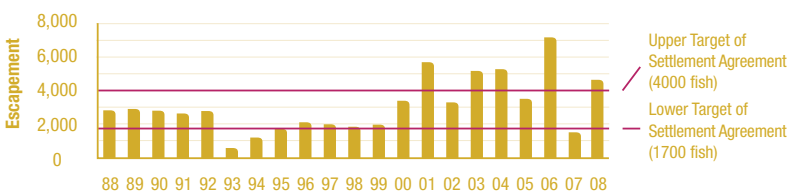
## Protected Areas

- 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%).<sup>7</sup>

## Distribution of Early Stuart and Late Stuart Sockeye Salmon Returns (1980–2005)<sup>1</sup>



## Nechako River Chinook Escapement (1988–2008)<sup>4</sup>

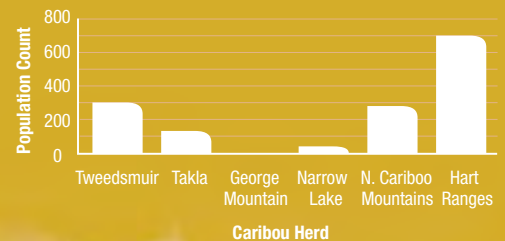


The Woodland Caribou is a threatened sub-species under the federal Species At Risk Act.

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)<sup>5</sup>



# 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.<sup>1</sup>

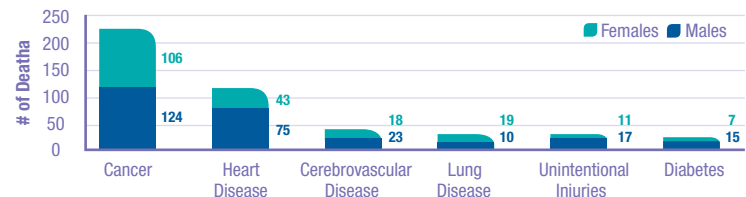
## Low Weight Births

• 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.<sup>2</sup>

## 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).<sup>3</sup>

## Leading Causes of Death by Gender in the Upper Fraser Region (2006)<sup>3</sup>



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.

## References & Notes

### How are we doing?

<sup>1</sup> Statistics Canada, Semi-Custom Area Profiles (created from 1996, 2001, and 2006 Population Census).

### Aboriginal & Non-Aboriginal Relations

<sup>1</sup> Statistics Canada. Aboriginal Peoples Highlight Tables. 2006 Census. Catalogue no. 97-558-XWE2006002 and custom tabulation.

<sup>2</sup> Office of the Provincial Health Officer. The Health and Well-being of the Aboriginal Population in British Columbia, Interim Update. (February, 2007). [www.health.gov.bc.ca/pho/pdf/Interim\\_report\\_Final.pdf](http://www.health.gov.bc.ca/pho/pdf/Interim_report_Final.pdf).

<sup>3</sup> BC Treaty Commission. Negotiation update. (2007). [www.bctreaty.net/nations/lheidli.php](http://www.bctreaty.net/nations/lheidli.php) [accessed October, 2008].

<sup>4</sup> BC Ministry of Aboriginal Relations and Reconciliation [www.gov.bc.ca/arr](http://www.gov.bc.ca/arr) (2007) [accessed October, 2008].

### Air & Water Quality

<sup>1</sup> BC Ministry of Environment. 2006 Annual Air Quality Report for Prince George (March 2008).

<sup>2</sup> BC Ministry of Environment. Water Quality Index Scores. Custom data request from Mr. Les Swain (2008).

### Consumption & Waste

<sup>1</sup> BC Hydro. Electricity Consumption Database (2008).

<sup>2</sup> Environment Canada. Municipal Use Database. Data reports from 2004 and previous years.

<sup>3</sup> Recycling Council of BC. BC Municipal Solid Waste Tracking Report (2003 – 2005) and previous tracking reports.

### Forests & Forestry

<sup>1</sup> BC Ministry of Forests and Range. Forest Inventory Database (2002).

<sup>2</sup> BC Ministry of Forests and Range. Forest health – aerial overview survey (2008). [www.for.gov.bc.ca/hfp/health/overview/overview.htm](http://www.for.gov.bc.ca/hfp/health/overview/overview.htm) [accessed 8 August 2008].

<sup>3</sup> Harshaw, H., S. Sheppard, R. Kozak and T. Maness. Canfor sustainable forest management public opinion survey 2005/2006. Vancouver: UBC, Faculty of Forestry (2006).

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<sup>1</sup> Statistics Canada, Semi-Custom Area Profiles (created from 1996, 2001, and 2006 Population Census).

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<sup>1</sup> Levy, D., J. Woodey and L. Hardy. Stuart area sockeye salmon runs and their importance to the First Nations of the upper Fraser River watershed. Upper Fraser Fisheries Conservation Alliance (2008).

<sup>2</sup> Nechako White Sturgeon Recovery Initiative. [www.nechakowhitesturgeon.org](http://www.nechakowhitesturgeon.org) [accessed 22 July 2008].

<sup>3</sup> Ableson, D. Final Report. Prince George: Carrier Sekani Tribal Council (2007).

<sup>4</sup> Nechako Fisheries Conservation Program. Nechako Chinook escapement data (1998–2008).

<sup>5</sup> Seip, D. et al. March 2006 Mountain Caribou Census in the Prince George Forest District (2006); Seip, D. BC Ministry of Forests and Range, Prince George. Personal communication (September, 2008).

<sup>6</sup> Ecosession: an area with minor variation in physical and climatic characteristics, defined at the sub-regional level.

<sup>7</sup> BC Ministry of Environment. Environmental Trends in British Columbia: 2007. [www.env.gov.bc.ca/soe/](http://www.env.gov.bc.ca/soe/) [accessed June, 2008].

### Health

<sup>1</sup> BC Statistics. (2008). [www.bcstats.gov.bc.ca/data/pop/vital.asp](http://www.bcstats.gov.bc.ca/data/pop/vital.asp).

<sup>2</sup> BC Vital Statistics. Annual Reports. (2008). [www.vs.gov.bc.ca/stats/annual/2006/xl/append3a.xls](http://www.vs.gov.bc.ca/stats/annual/2006/xl/append3a.xls).

<sup>3</sup> BC Vital Statistics. Annual 2006 schema. Special data request (May 1st, 2008).

### Stories

#### Aboriginal & Non-Aboriginal Relations

<sup>1</sup> John Prince Research Forest. <http://researchforest.unbc.ca/jprf/jprf.htm> [accessed Sept. 4, 2008].

<sup>2</sup> Brubacher, D. Second report on First Nation-held forest tenures in Canada. Ottawa: National Aboriginal Forestry Association (2007).

<sup>3</sup> Ministry of Aboriginal Relations and Reconciliation. [www.gov.bc.ca/arr/social/change\\_progress.html](http://www.gov.bc.ca/arr/social/change_progress.html) [accessed October 2008].

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<sup>1</sup> Certification Canada. Certification status report: British Columbia – SFM – January 31 2008. Canadian Sustainable Forestry Certification Coalition (2008).

<sup>2</sup> Krensler, M. Roots run deep. Prince George: Prince George Citizen (9 August 2008).

### Economic Diversity & Resilience

<sup>1</sup> BC Statistics. British Columbia's Heartland at the Dawn of the 21st Century (January, 2004).

<sup>2</sup> Statistics Canada. Labour Force Survey (2002–2006) as reported in Initiatives Prince George. Benchmark Report (2007).

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<sup>1</sup> Northern Bear Awareness. Prince George. (2008). [www.northernbearawareness.com](http://www.northernbearawareness.com) [accessed 2 Sept 2008].

### Sub-Regions

<sup>1</sup> BC Agricultural Land Commission. About the agricultural land reserve. (2008). [www.alc.gov.bc.ca/alr/alr\\_main.htm](http://www.alc.gov.bc.ca/alr/alr_main.htm) [accessed 16 October 2008].

<sup>2</sup> BC Ministry of Environment, BC Parks. Preserving our legacy. (2008). [www.env.gov.bc.ca/bcparks/legacy.html](http://www.env.gov.bc.ca/bcparks/legacy.html) [accessed 16 October 2008].

<sup>3</sup> Government of BC, Integrated Land Management Bureau. Forest Tenure Cut Block Polygons (FTA 4.0). Geographic Data Discovery Service. (2008) <http://aardvark.gov.bc.ca/apps/metastar/home.do> [accessed August 2008].

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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).