Socioeconomic Baseline Analysis for the Kootenay Caribou Recovery Action Plans

Final Report

Prepared for
Ministry of Water, Land and Air Protection

By

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In association with:

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TABLE OF CONTENTS

1 – INTRODUCTION

This study was commissioned by the Ministry of Water, Land and Air Protection which has responsibility for wildlife management in British Columbia including the recovery of species at risk such as the mountain caribou, which is one of three types of woodland caribou on the provincial "Red List" of species at risk. This allows them to be legally designated as threatened or endangered under the Provincial Wildlife Act, while the Federal Species at Risk Act "SARA" requires that recovery strategies and recovery action plans be developed. These Action Plans are intended to specify a series of measures or actions to recover the species, but as part of the overall plan it is important to evaluate the socioeconomic benefits and costs of implementing the recovery measures.

Three ecotypes of woodland caribou (*Rangifer tarandus caribou*) are found in British Columbia (BC). These ecotypes are distinguished from one another by habitat use, seasonal migration patterns, and behaviour.

- The *mountain caribou ecotype* (estimated at 1,800 animals) is closely associated with the Interior Wet Belt area of central-east and southeast BC. Although mountain caribou forage on a wide variety of foods throughout the year, they rely almost entirely on arboreal lichens (*Alectoria sarmentosa and Bryoria* spp.) during winter.
- The *northern ecotype* (approximately 15,000 animals) is found throughout much of central and northern BC
- The *boreal ecotype* (approximately 700 animals) is restricted to the lowlands of northeast BC (MCTAC 2003).

Mountain caribou populations have been declining and their geographic ranges shrinking for several decades. In 1993, the BC Conservation Data Centre (CDC) placed mountain caribou on the provincial Blue List of "species at risk". In 2000, the CDC elevated mountain caribou to the Red List of "threatened or endangered" species because of continuing declines in abundance and substantial threats to their survival. In May 2002, the national Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated woodland caribou within the Southern Mountains National Ecological Area (SMNEA) as nationally threatened. The North Kootenay mountain caribou populations, which include the Central Rockies, Revelstoke, Central Selkirk and Monashee herds, occur within the SMNEA.

The overall purpose of this study is to prepare a socioeconomic baseline analysis that will form the foundation for any socioeconomic impact analysis undertaken for the North and South Kootenay Caribou Recovery Action Plans.

North and South Kootenay Caribou Recovery Action Plans

There are currently two separate Recovery Action Plans being developed for mountain caribou in the Kootenay region, as follows:

- The South Kootenay Recovery Action Group (SKRAG) has developed a Recovery Action Plan for the South Selkirk and South Purcell populations of caribou
- The North Kootenay Recovery Action Group (NKRAG) has been developing a Recovery Action Plan for the Central Rockies, Revelstoke, Central Selkirk and Monashee caribou populations.

The Action Plans propose a whole range of measures to help recover caribou populations including the trans-location of caribou to various parts of the region. There are a number of actions proposed that would potentially place restrictions, limitations and revised practices upon forestry licensees and backcountry recreation tenure holders. These actions and restrictions could have significant economic impacts on the forestry and tourism sectors, depending on how and where they are implemented and the extent to which the two industries can re-locate some of their activities or engage in less intensive practices.

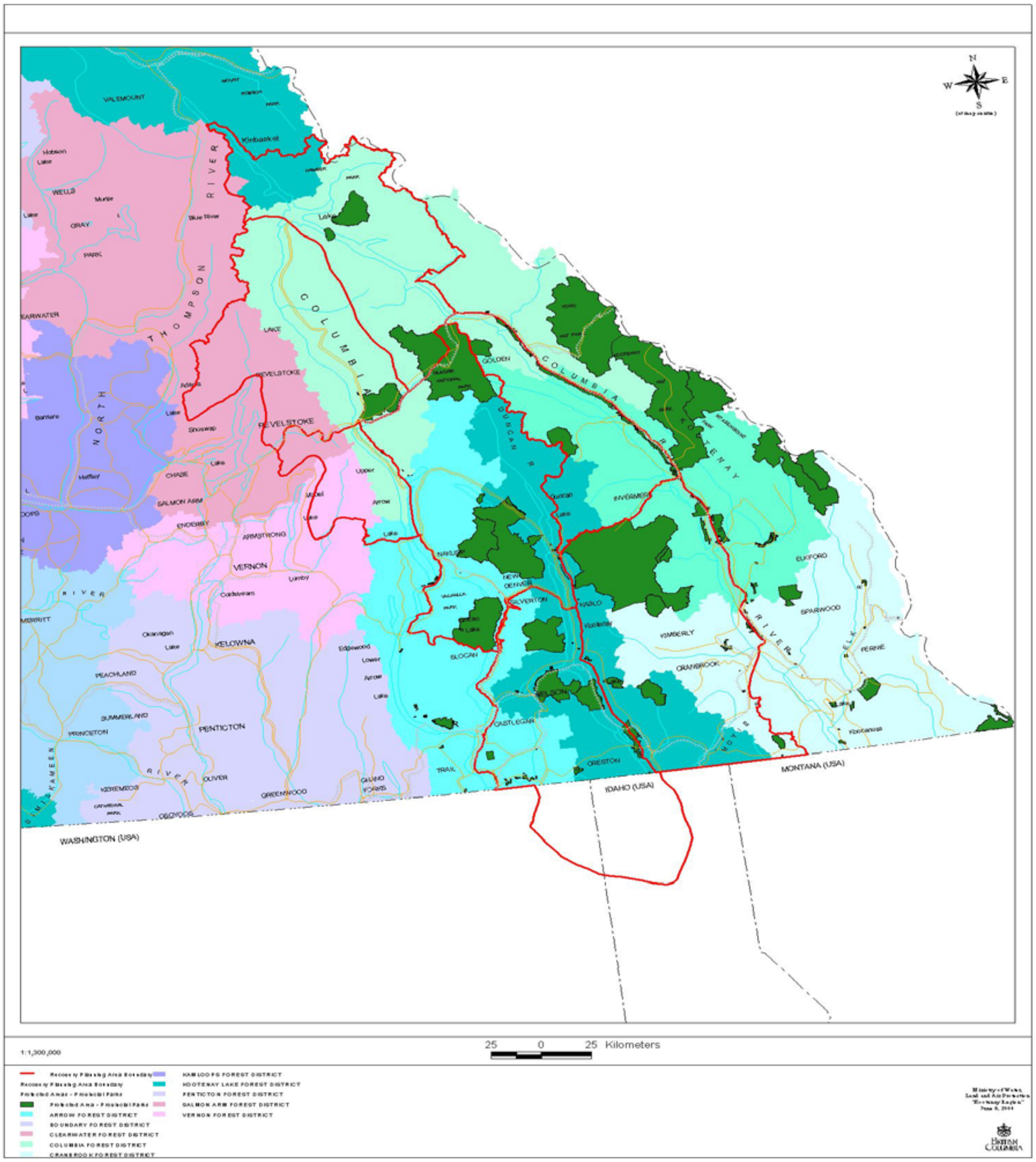
On the other hand, some of the actions may have a more positive impact. For example, the recovery of the caribou herds could enhance some aspects of backcountry tourism by providing opportunities for caribou wildlife viewing. Further analysis of this potential would be required in the impact analysis in order to determine its economic significance.

Study Area

The study area is the combination of the two Recovery Planning Areas including communities within and on the edges of these zones, which are shown on the map in Figure 1.1. We understand that the Recovery Planning Areas encompass not only caribou habitat, but habitat of other species which may affect caribou, and they have already been determined for both Recovery Action Plans.

The principal communities included within the study area are Creston, Salmo, Nelson, Castlegar, Trail, New Denver, Kaslo, Nakusp, Revelstoke, Golden, Radium Hotsprings, Invermere, Cranbrook and various adjacent smaller communities. Based on information and data availability we have examined the socioeconomic base for the overall study area by smaller sub-regions in order to understand what parts of the region could be most affected by the Caribou Recovery Action Plans.

Figure 1.1 – Map of Study Area (study area outline in red/bold black line)



Source: Ministry of Water, Land and Air Protection

OUTLINE OF THIS REPORT

This report is divided into several chapters and includes an Appendix with additional socioeconomic data, on each of four sub-regions.

- **Chapter 2 – Overall Regional Socioeconomic Profile.** This profile includes population characteristics, labour force and education data, income data, unemployment levels, and dependence on the social safety net. Data has been shown for the overall study area as well as discussing differences among the four sub-regions for which data has been included in the Appendix. Additional information is included in this chapter for two of the natural resource-based sectors that could be impacted by the proposed recovery program – mining and agriculture. Forestry and tourism sector activity and impacts are covered in Chapters 4 and 5.
- **Chapter 3 – First Nations Socioeconomic Profiles.** This presents population and labour force data and other relevant information for each of the five First Nations located within or adjacent to the study area.
- **Chapter 4 – Forestry Sector Activity and Impacts.** This chapter provides extensive information on the current economic impacts of forestry harvesting and processing activities in six Timber Supply Areas (TSAs) and five Tree Farm Licensees (TFLs), which are located wholly or partly within the study area.
- **Chapter 5 – Tourism Activity and Impacts.** The study area has a large scale tourism industry which is highly dependant on various forms of commercial backcountry recreation. This chapter discusses the magnitude of the tourism sector overall, as well as some of the specific backcountry tourism sub-segments that would be most impacted by caribou recovery actions such as heli-skiing, snowcat skiing and snowmobiling.
- **Chapter 6 – Implications of Socioeconomic Baseline Analysis.** This brief concluding chapter presents some of the principal findings and conclusions of the socioeconomic baseline analysis that have implications for proposed caribou recovery actions.

It should be noted that the analysis of this report is primarily based on secondary data sources, so the extent to which relevant data is available for particular sectors has affected the amount of coverage in this report. Therefore, the number of pages devoted to a particular sector is not necessarily an indication of its relative importance to the economy, nor of the extent to which it might be impacted by the Caribou Recovery Action Plans.

2 – OVERALL REGIONAL SOCIOECONOMIC PROFILE

The Study Area overlaps four Regional Districts: Columbia-Shuswap, Central Kootenay, East Kootenay and Kootenay Boundary. Parts of three of these Regional Districts fall outside the Study Area. Thus, for analysis purposes, the Study Area is defined as consisting of four sub-regions as follows:

- North – consists of the Columbia-Shuswap Regional District excluding Sicamous and Salmon Arm
- Central – includes the complete Central Kootenay Regional District
- East – consists of the East Kootenay Regional District excluding Elkford, Fernie and Sparwood.
- Southwest – consists of the Kootenay Boundary Regional District excluding Grand Forks, Midway and Greenwood.

This chapter provides a socioeconomic overview of the Study Area as a whole. Where there are substantial differences across the four sub-regions of the Study Area, these are noted. The Appendix contains the detailed socioeconomic data tables for the four sub-regions.

OVERALL SOCIOECONOMIC CHARACTERISTICS

The study area's overall population has remained relatively stable over the period 1999-2003 in the 166,000 range. The population has roughly an equal mix of males and females, and tends to be slightly older than the population of the province. Several other socioeconomic characteristics are evident:

- The area's education level tends to be lower than for the province, with a higher proportion of people who have not completed high school and a lower proportion with post-secondary education. However, it has a higher proportion of people with trade certificates than the province.
- The labour force participation rate is slightly lower than the provincial rate – 63% versus 65%. Compared with the province, the Study Area labour force is more highly attached to the primary sector (9% vs. 4.4%) and the goods producing sector (21% vs. 16%), and correspondingly has a lower attachment to the service sector (71% vs. 79%)
- Study area income levels are about 8% lower than the provincial level.

- Pension income contributes over 15% of total income in the study area compared with about 12% for the province. Earned income contributes 64% of the total versus 66% for the province.

POPULATION AND EDUCATION CHARACTERISTICS

The study area population has been relatively stable over the five-year period 1999-2003, growing by about 0.43%, as compared with provincial population growth of about 3.4% over the same period (Figure 2.1). There have been population shifts within the study sub-regions, however. The East sub-region grew by about 2.3% and the North by about 1.3% while both the Central and South West declined by about 1%

Figure 2.1: **Study Area Population, 1999-2003**

(as of July 1, includes estimate of Census undercount)

Year	Kootenay RSA	% Change Prev Year	BC	% Change Prev Year
1999	166,123		4,011,342	
2000	166,133	0.0%	4,039,198	0.7%
2001	166,007	-0.1%	4,078,447	1.0%
2002	166,535	0.3%	4,114,981	0.9%
2003	166,830	0.2%	4,146,580	0.8%

Source: BC Stats

The total population of the study area is about evenly split between males and females, as shown in Figure 2.2. Up to age 24, males outnumber females slightly, but from age 25 up, females are more numerous. By age, the study area population is a little older than the province as a whole: 43.6 % are 45 years or older versus 38.7%, respectively. The pattern is very much the same across the four sub-regions.

Figure 2.2: Age Distribution by Gender, 2001

	Male	Female	% Distribution	
			Kootenay RSA	BC
All Ages	79,460	79,615	100.0%	100.0%
0-14	14,765	13,830	18.0%	18.1%
15-24	10,220	9,375	12.3%	13.2%
25-44	20,255	21,285	26.1%	30.1%
45-64	22,695	22,190	28.2%	25.1%
65+	11,555	12,945	15.4%	13.6%

Source: BC Stats

Residents of the Kootenay study area have less formal academic education, but more trades education (17.5%) in the Kootenay region compared with the province as a whole (12.8%), as shown in Figure 2.3. More people failed to complete high school, – 28.7%, versus 24.3% for the province. Moreover, the region has slightly fewer people with university or other post-secondary training, – 41.8% versus 42.1% for the province. This pattern varies only slightly across the four sub-regions.

Figure 2.3: Educational Levels of Population Base, 2001

	Kootenay RSA		BC
	Number	Percentage	Percentage
Population, 20 yrs & over	117,285	100.0%	100.0%
Less than grade 9	8,405	7.2%	6.6%
Some high school	25,235	21.5%	17.7%
High school graduate	14,065	12.0%	12.3%
Trades certificate	20,560	17.5%	12.8%
University degree	11,610	9.9%	9.1%
Other post secondary	37,380	31.9%	33.0%

Source: 2001 Census

Labour Force, Households and Income

The study area has a labour force of about 81,560 people, as shown in Figure 2.4. This is the result of a participation rate of 63.2%, slightly lower than the provincial rate of 65.2%.

- Labour force participation across the region varies from a low of 61.8% in the Southwest to a high of 65.6% in the East sub-region.
- The Study Area average unemployment rate was 10.8% in 2001, ranging from a low of 9.7% in the East to a high of 11.7% in the North sub-region.

Single family households (45,710) account for about 69% of all households (66,420), compared with a rate of 66% for the province. Correspondingly, non-family households make up a smaller proportion of total households, 30% versus about 32% for the province.

Figure 2.4: Labour Force, Household and Income Characteristics, 2001

	Kootenay RSA	BC
Population, 2001	159,074	3,907,738
Labour force (15+)	81,560	2,059,950
Employees	65,500	1,715,600
Self-employed	3,975	95,185
Participation Rate	63.2%	65.2%
Unemployment Rate	10.8%	8.5%
Households	66,420	1,534,335
1-family households	45,710	1,012,925
Multi-family housholds	520	35,050
Non-family households	20,180	486,355
Median Family Income	$ 50,452	$ 54,840
Median Income	$ 19,720	$ 22,095
Males	$ 27,510	$ 28,976
Females	$ 15,082	$ 17,546
Population in Private Hh	155,820	3,785,270
Incidence of low income	13.6%	17.8%

Source: Statistics Canada, incomes are for 2000.

Almost 98% of the population lives in private households (155,820 out of 159,074) versus about 97% for the province.

Family income is about 8% lower in the Study Area ($50,452) than for the province ($54,840). This is largely accounted for by the lower rate of median income for females in the region at about 86% of the provincial median ($15,082 versus $17,546). There are several other aspects of income levels that are worth noting:

- The male median income is about 95% of the provincial level.
- Median family income is highest in the East sub-region at $53,777 and the Southwest at $53,299; it is lowest in the North at about $47,300.
- Male median income in the Southwest and East exceeds the provincial median for males. This is likely due to the presence of minerals and mining and significant forest products employment in the two sub-regions.
- The study area exhibits a lower incidence of low income (13.6%) than the province (17.8%), even though the area has lower median incomes than the province. This is explained by the high incidence of low income in the Vancouver region, which tends to pull up the provincial figure.

Total income for the study area is almost $3 billion, as shown in Figure 2.5.

- About $1.9 billion or 64% comes from employment, slightly less than the 66% employment income for the province.

- Pension income ($459 million) makes up over 15% of total study area income, compared with slightly less than 12% for the province.
- Investment income, on the other hand, at 7.9% is less than for the province at 9.7%.
- Self-employed income (3.6%) is also lower than for the province (5.0%).

Figure 2.5: Sources of Total Income. 2001

	Kootenay RSA		BC
	$ million	% of total	% of total
Employment	1,909	64.1%	66.0%
Pension	459	15.4%	11.9%
Investment	235	7.9%	9.7%
Self-employed	108	3.6%	5.0%
Other	165	5.5%	4.7%
Tax Exempt	101	3.4%	2.6%
Total	2,978	100.0%	100.0%

Source:Canada Customs and Revenue

On a sub-region basis, Central accounts for about 36% of total Study Area income, the East about 30%, and the North and Southwest about 17% each. Central and Southwest are the major recipients of pension income, at 16.3% and 16.5%, respectively, of total income.

Taxation and Dependence on the Social Safety Net

The economy in the study area has been growing more slowly than in the province as a whole over the period 1996-2000. The number of taxable returns increased by about 1.7% (72,480 to 73,680) over the period 1996 to 2000 as compared with a provincial increase of about 2.6% (see Figure 2.6).

- Average income per tax filer in the Study Area increased by a little over 10% ($33,457 to $36,876) as compared to about 14% for the corresponding provincial figure.
- The North sub-region showed the most income growth with a 2.2% increase in the number of returns and a 13.8% increase in average income.
- The other three sub-regions had lower rates of income growth.

Figure 2.6: Taxable Returns and Average Incomes, 2001

Year	Taxable Returns		Average Income	
	Kootenay RSA	BC	Kootenay RSA	BC
1996	72,480	1,879,340	$ 33,457	$ 36,961
1997	73,310	1,898,700	$ 34,193	$ 37,894
1998	73,640	1,915,220	$ 34,340	$ 38,398
1999	73,270	1,937,520	$ 35,504	$ 39,758
2000	73,680	1,928,560	$ 36,876	$ 42,121

Source:Canada Customs and Revenue

The study area population is somewhat more dependent on safety net income (BC Basic Income Assistance and Canada Employment Insurance) than the provincial population, as shown in Figure 2.7.

- For ages 19-64, 5.6% of the study area's population relies on safety net income as compared with 5.1% for the province.
- The heaviest dependence occurs in the 25-54 age group, often referred to as the prime working age group: 6.6% for the study area versus 5.6% for the province, perhaps a reflection of more limited employment opportunities in the study area.
- The dependency pattern by age group is about the same for the four sub-regions.

Figure 2.7: Dependence on the Social safety Net

% of Population by Age Receiving Benefits - September Total, BC Basic Income Assistance* & EI		
Age group	Kootenay RSA	BC
19-24	5.0%	5.1%
25-54	6.6%	5.6%
55-64	2.7%	2.6%
19-64	5.6%	5.1%

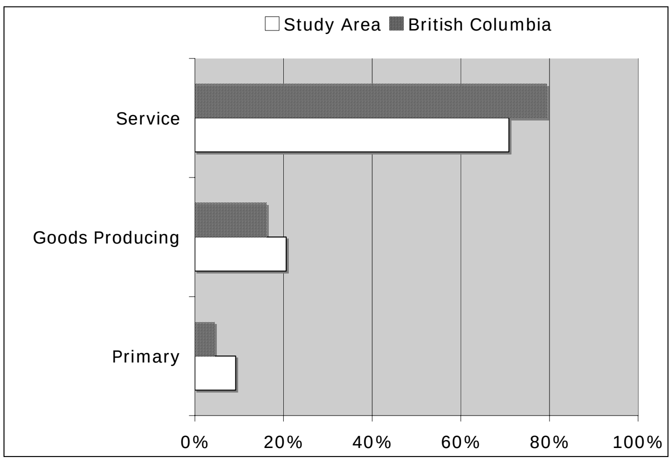
Source: BC Stats; includes temporary assistance only, aboriginal people living on reserve, seniors/OAS, children with a relative

Labour Force Characteristics

The labour force in the study area shows greater attachment to the primary and goods producing sectors and less attachment to the service sector than for the provincial economy as a whole (see Figure 2.8).

- The area's primary sector accounts for over 9% of the labour force, as compared to 4.4% at the provincial level.
- Goods producing industries support about 21% of the labour force in the area versus about 16% provincially.
- Service industries, on the other hand, support almost 71% of the area's labour force as opposed to over 79% provincially.
- The Central and North sub-regions show about the same distribution across the three sectors. The East sub-region has a greater attachment to primary industries and a lesser attachment to goods producing industries.
- The Southwest is the reverse, displaying a higher attachment to goods producing industries and a lower attachment to primary industries.

Figure 2.8: Broad Sectoral Distribution of Labour Force



Source: Statistics Canada

Turning to the details, the study area has an experienced labour force of almost 80,000 persons, as shown in Figure 2.9. Statistics Canada defines the experienced labour force as persons who, during the week prior to Census Day, were employed or unemployed, as well as those who worked for pay or in self-employment (since January 1 of 2000). In the primary sector, forestry is the most important industry accounting for almost 3,700 persons or 4.6% of the experienced labour force, considerably more than agriculture and mining.

- Manufacturing is the leading industry in the goods producing sector, accounting for over 11% of the experienced labour force.
- Wood and paper products, which are of course linked to forestry for their raw material supply, contribute about half of the manufacturing figure.

Figure 2.9: Labour Force by Industry, 2001

	Kootenay RSA	Percentage	BC %
Total Labour Force	81,550		
Experienced LF by Industry	79,275	100.7%	100.0%
Agriculture	2,140	2.7%	2.0%
Forestry	3,685	4.6%	1.7%
Mining, oil & gas extraction	1,475	1.9%	0.7%
Utilities	705	0.9%	0.6%
Construction	6,625	8.4%	5.9%
Manufacturing Total	9,015	11.4%	9.6%
Wood and paper products	4,860	6.1%	3.1%
Wholesale Trade	1,535	1.9%	4.1%
Retail Trade	9,175	11.6%	11.6%
Transportation and Warehousing	4,185	5.3%	5.7%
Business, personal & other	13,740	17.3%	25.0%
Education	5,125	6.5%	6.9%
Health Care, Social Assistance	7,965	10.0%	9.9%
Arts, entertainment and recreation	2,230	2.8%	2.3%
Accommodation & Food Service	8,560	10.8%	8.3%
Public Administration	3,650	4.6%	5.6%
Agrilculture, Food and Beverage	2,680	3.4%	3.0%
Logging and Forest Products	8,545	10.8%	4.7%
Minerals and Mineral Products	3,750	4.7%	2.0%

Source: Statistics Canada

In the service sector, two features stand out: the area has substantially less of its labour force involved in the business, personal and other services sector (17.3%) than does the province overall (25%); on the other hand, accommodation and food service supports close to 11% of the labour force, compared with 8.3% for the province, indicating the strong role of tourism in the study area's economy.

DISTINGUISHING FEATURES OF EACH OF THE SUB-REGIONS

This section describes the important differences in the socioeconomic characteristics across the four sub-regions within the study area that we collected data for (see Appendix for detailed data). This discussion focuses on differences that serve to identify how each sub-region may differ from the overall study area or from the other sub-regions.

Figure 2.10: Population of Study Area and Each Sub-Region

	Population	Percent
Study Area	159,074	100%
North	30,289	19%
Central	57,019	36%
East	45,281	28%
Southwest	26,485	17%

Source: Statistics Canada

The study area population is slightly more than 159,000 (see Figure 4.10). The Central sub-region with a population of just over 57,000 is the largest of the four sub-regions and accounts 36% of the total population. The East sub-region is the next largest at 28%, while North at 19% and Southwest at 17% make up the rest.

North Sub-Region

This sub-region had a relatively stable population over 1999-2003, hovering in and around 31,700. It has several features that distinguish it from the rest of the Study Area.

- The North sub-region has the highest proportion of the labour force attached to logging and forest products, at 13.4%, compared with the other three sub-regions.
- It also has the highest proportion of the labour force attached to accommodation and food service, at 13.7%.
- It has the highest labour force concentration in transportation and warehousing, at 8.4%.
- Compared with the other sub-regions, it has a relatively high labour force participation rate at 63.2%, but also has the highest unemployment rate at 11.7%.
- This sub-region has the highest rate of income derived from pensions and investments, at 25%, indicative of a significant retirement population.

Central Sub-Region

The features that distinguish this sub-region from the overall study area and the other sub-regions include:

- The Central sub-region experienced a slight decline in population over the period 1999-2003.
- This sub-region has the lowest median family income of the four sub-regions at $ 47,300, which is 86% of the provincial median income.
- Central receives about 16.3% of its total income as pension income.
- Central has the second lowest sub-region labour force participation rate (61.9%), compared with the provincial rate of 65.2%.
- Central has the second highest sub-region unemployment rate at 11.6%.
- Central has a strong forest industry labour force attachment: forestry and wood products account for 11.9% of its experienced labour force.

- Central has the second highest sub-region proportion of its labour force in Health Care and Social Services (11.6%), influenced by the presence of Nelson and Castlegar as major regional public service centres.

East Sub-Region

This sub-region is the only one to experience continuous, albeit modest population growth over the period 1999-2003. For the most part, it exhibits socioeconomic characteristics that are very similar to the other areas. Some features that differentiate it from the other sub-regions are:

- It has the highest median family income of the four sub-regions, $53,777, which is 98% of the provincial median family income.
- It has strong labour force attachments to both logging and forest products (9.8%) although this is third highest value of the four sub-regions.
- It has the second highest labour force attachment to mining and minerals (4.9%) of the four sub-regions.
- Accommodation and food service attract 11.5% of its experienced labour force, the second highest concentration of the four sub-regions, and this has likely grown over the past few years as a result of major resort development activity.

Southwest Sub-Region

Over the period 1999-2003, this sub-region experienced a small decline in population, although there were signs of a modest increase towards the end of the period.

- This sub-region has the largest concentration of labour force in manufacturing (19.6%) of all the sub-regions. A zinc and lead smelting and refining complex at Trail is the major manufacturing employer.
- The area also has a substantial portion of its labour force in logging and forest products. (7.1%)
- The health care sector is a prominent employer as well, attracting 13.2% of the labour force, the highest concentration of the four sub-regions.
- The area's median family income ($53,300) is 97% of the provincial median family income and the second highest of the four sub-regions.
- The area is the highest recipient of pension income (16.5% of total income) among the four sub-regions.

Conclusions Regarding Sub-Regions

To summarize, on the one hand, households in the study area receive a higher proportion of their total income from pension sources than the province as a whole. This tends to provide a stable base to the area's total income. On the other hand, as shown in Figure 2.11, three sectors have particular importance – forest products (including logging), accommodation/food service and transportation.

Figure 2.11: Sub-Regional Labour Force Concentration

	North Forest Products Accommodation and Food Transportation	
Central Forest Products		**East** Forest Products Accommodation and Food Mining and Minerals
	Southwest Forest Products Manufacturing Health	

Source: Study team analysis

For all of the sub-regions forest products are an important source of employment and earned income. In two of the sub-regions, North and East, the accommodation and food services sector is a particularly important employer. Transportation, which would include the railways and heli-skiing businesses, is a key sector for the North.

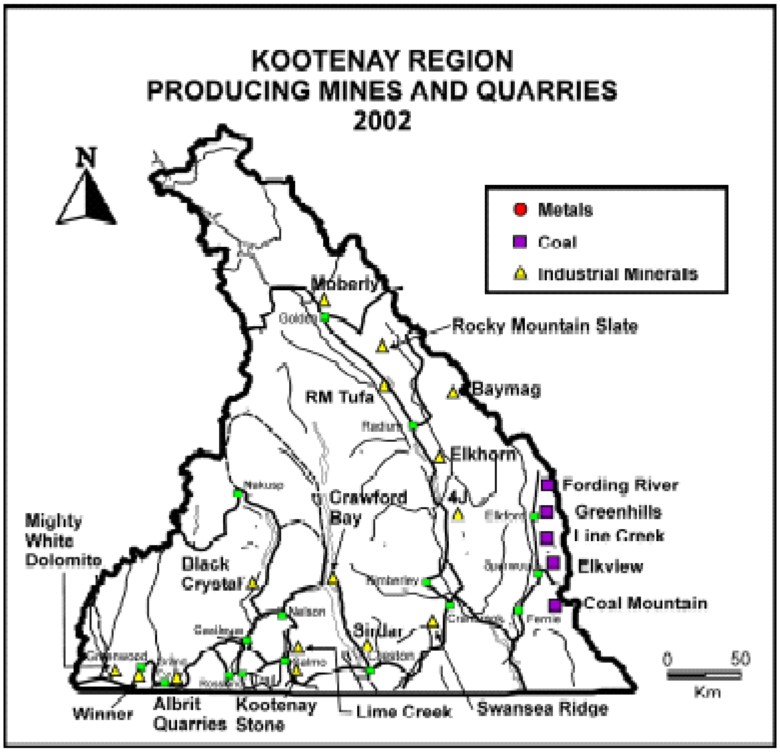
KOOTENAY REGION MINING AND AGRICULTURE ACTIVITY

The Caribou Recovery Action Plans may have an impact on the natural resource-based sectors, which include mining, agriculture, forestry and tourism. In the Kootenay region forestry and tourism account for the largest components of the natural resource-based economy (especially in terms of employment), so these sectors are covered in detail in chapters 4 and 5 of this report. The remainder of this chapter includes some overall information on the mining and agriculture sectors to provide an indication of their contributions to the Kootenay region's economy.

Mining Activity

As of 2002, there were a total of 20 producing mines and quarries distributed throughout the region, as shown in Figure 2.12, with 15 of them producing industrial minerals and 5 producing coal. Mining has played a role in the economic development of many towns in the Kootenays for over a century.

Figure 2.12: Kootenay Region Producing Mines and Quarries, 2002

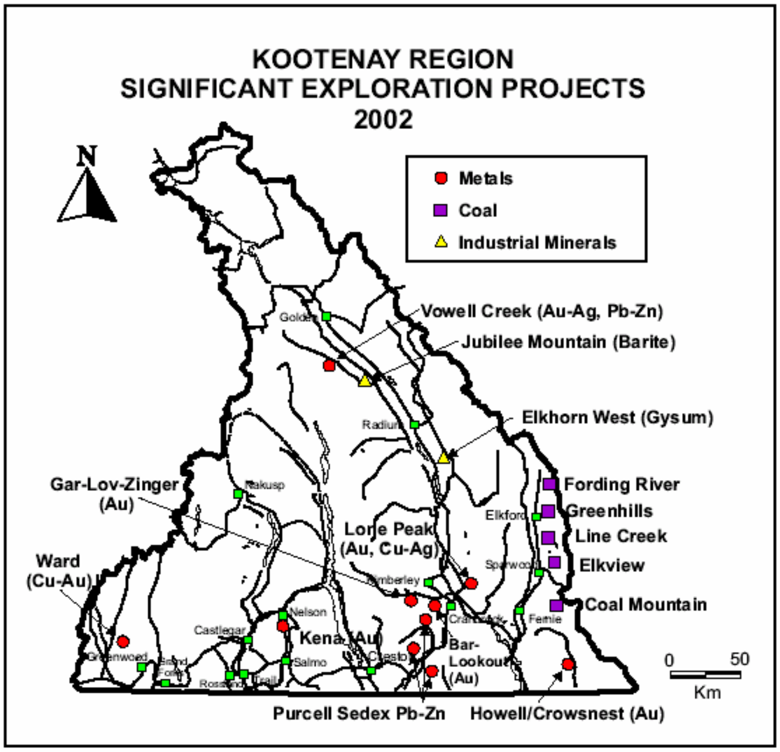


Source: Exploration and Mining in British Columbia - 2002

- For the Kootenay region overall, mining is a major economic driver with an output valued at almost $1.55 billion in 2002.
- Overall an estimated 4,169 people were directly employed in the Kootenay region mining sector in 2001.
- The principal minerals are coal, followed by zinc, lead and silver in that order.

Mining exploration expenditures in the Kootenay region were estimated at $7.1 million in 2002 and there were 17 significant exploration sites throughout the region (10 exploring for metals, 5 for coal and 2 for industrial metals), as shown in Figure 2.13. The sector seems destined for expansion with coal-bed methane gas interests and a wide belt of land with high mineral potential along the Columbia River, where development of additional mines is considered highly probable.

Figure 2.13: Location of Kootenay Region Mining Exploration Projects, 2002



Source: Exploration and Mining in British Columbia - 2002

Agricultural Activity

Agriculture in the Kootenays is diverse (see Figure 2.14), with revenues being produced from beef, dairy, poultry, eggs, hay, grain, pigs, potatoes, vegetables, fruits, and nursery and greenhouse products.

Figure 2.14: % Distribution of Kootenay Region Agricultural Activity by Type

Type of Farm	% of Farms	% of Farm Receipts	% of Farm Capital	% of Farm Expenses	% of Farm Area	% Total Paid Labour	Average Farm Size (acres)
Tree Fruit	7.68%	4.25%	3.98%	4.67%	0.88%	5.93%	38
Grain and Oilseed	0.72%	2.21%	0.96%	1.97%	1.13%	1.99%	513
Other Field Crop	12.39%	7.59%	10.59%	8.22%	6.18%	x	411
Potato and Field Vegetable	3.99%	7.76%	2.39%	6.45%	0.81%	10.10%	67
Berry and Nut	1.59%	0.24%	0.56%	0.35%	0.09%	x	18
Grapes	0.43%	0.15%	0.23%	0.23%	0.02%	x	16
Greenhouse Vegetables	1.09%	0.91%	0.59%	0.95%	0.08%	1.49%	26
Mushrooms	0.22%	x	x	x	x	x	x
Floriculture	3.04%	5.63%	1.50%	4.45%	0.27%	9.56%	29
Nursery and Sod	2.61%	10.17%	1.59%	8.99%	0.81%	16.71%	102

All Other Crops	3.19%	3.81%	3.74%	3.86%	4.89%	0.67%	274
Total Crops	36.96%	42.72%	26.16%	40.14%	15.16%	46.45%	149
Dairy	2.46%	15.08%	4.87%	13.30%	1.51%	16.22%	201
Cattle	7.50%	5.06%	11.55%	5.24%	23.56%	3.20%	816
Hog	0.23%	0.03%	0.09%	0.05%	0.03%	x	30
Poultry	0.26%	0.02%	0.08%	0.03%	0.02%	x	20
Egg	0.51%	0.11%	0.16%	0.13%	0.05%	0.06%	24
Horses	3.19%	0.76%	1.94%	1.10%	1.13%	0.43%	92
Bees	0.25%	0.08%	0.09%	0.08%	0.05%	x	53
Other Livestock (Specialty)	1.16%	0.10%	0.52%	0.21%	0.37%	x	84
All Other Livestock	1.20%	0.21%	0.58%	0.36%	0.46%	0.19%	100
Total Livestock	16.76%	21.45%	19.87%	20.50%	27.17%	20.09%	158
All Farms *	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	329

Source: 2001 Census of Agriculture

The percent distribution of agricultural activity in the Kootenays by type of crop or product shown in Figure 2.13 indicates the importance of nursery and sod production (over 10% of farm receipts in 2002), potato and field vegetables (7.7% of receipts) and other field crops (7.6%), as well as dairy cattle (15% of receipts) and beef cattle (5%). Floriculture is also relatively important contributing approximately 6% of total farm receipts for the Kootenay region. Some production statistics available for the region include the following:

- Farm land in 2001 constituted 3.1 percent of the Kootenay Boundary Regional District, totalling 453,331 acres (183,457 ha). The capital value of all farm land, buildings, machinery and stock was estimated at $847.4 million in 2001, 5.4 percent of the provincial total. Farm sales receipts were approximately $59 million in 2000.
- For the Columbia-Shuswap Regional District, total farm capital value was estimated at $366.5 million, with sales receipts at $35 million.
- For the Central Kootenay Regional District total farm capital value was estimated at $261.8 million, with farm sales receipts at $26.2 million in 2000. Farms covered almost 67,500 acres of land in2001. The Creston area is the agricultural focal point for Central Kootenay.

3 – First Nations Socioeconomic Profiles

The First Nations in the Kootenay Region belong to the Ktunaxa/Kinbasket Tribal Council. Prior to 1990 this was known as the Kootenay Indian Area Council. Ktunaxa is the traditional name for Kootenay and Kinbasket refers to the family of Chief Kinbasket of the Shuswap Nation who came into the traditional territory approximately 150-180 years ago. There are five First Nations within Canada that are part of the Ktunaxa/Kinbasket Tribal Council:

- ?Akisq'nuk First Nation (Columbia Lake Indian Band)
- Akun'kunik' First Nation (Tobacco Plains Indian Band).
- A'qam First Nation (St. Mary's Indian Band)
- Shuswap First Nation
- Yaqan nukiy First Nation (Lower Kootenay Indian Band)

The location of these First Nations is shown on the map in Figure 3.1.

Figure 3.1: Location of Kootenay Region First Nations

Source: Ministry of Community, Aboriginal and Women's Services

Based on information available, we have prepared socioeconomic profiles on each of these five First Nations. At the end of the Chapter we also note the Sinixt First Nation which is also indigenous to the region, although currently do not have a formally recognized land base.

?AKISQ'NUK FIRST NATION (COLUMBIA LAKE INDIAN BAND)

The traditional Ktunaxa name for this First Nation means "two bodies of water" referring to Windermere and Columbia Lakes as, the Reserve lands are adjacent to the shore of Windermere Lake and north of the Town of Fairmont Hotsprings. This First Nation has two Reserves as follows:

- Columbia Lake Number 3, which is located on the shore of Windermere Lake and encompasses approximately 3,300 hectares
- Some of the Band members live at St. Mary's No. 1a, which is located at St. Eugene Mission, six miles north of Cranbrook on the St. Mary's River.

The total registered population of this First Nation is 252 as of 2004, shown in Figure 3.2. This includes the on-Reserve and off-Reserve population. An educational profile of band members 15 years and over indicate that 8% have no high school education, 28% have some high school, 44% have some non-university post secondary education and 20% have some university education (but no degrees).

Figure 3.2: ?Akisq'nuk First Nation Registered Population as of October, 2004

Residency	# of People
Registered Males On own Reserve	69
Registered Female On own Reserve	65
Registered Male On Other Reserve	18
Registered Female On Other Reserve	21
Registered Male On Own Crown Land	0
Registered Female On Own Crown Land	0
Registered Male On Other Band Crown Land	0
Registered Female On Other Band Crown Land	0
Registered Male On No Band Crown Land	0
Registered Female On No Band Crown Land	0
Registered Male Off Reserve	40
Registered Female Off Reserve	39
Total Registered Population	252

Source: Indian and Northern Affairs Canada

Community Economic Base

The ?Akisq'nuk First Nation is committed to economic development and supports individual businesses initiatives, training opportunities and mentorship programs. They intend to focus on economic development and the current economic activities include:

- Band-owned campground
- Individually owned dude ranch
- Ceramics production

The facilities available on the reserve include a community recreation hall, church and ceramic shop.

Profile of Columbia Lake No. 3 Reserve

This is the main Reserve for the ?Akisq'nuk First Nation and the population and basic characteristics are shown in Figure 3.3, indicating a total population in 2001 of 165 people and encompassing a land area of 35.2 square kilometres.

Figure 3.3: Characteristics of Columbia Lake No. 3 Reserve

Characteristics	Columbia Lake 3
Population in 2001	165
Population in 1996	176
1996 to 2001 population change (%)	-6.3
Total private dwellings	187
Population density per square kilometre	4.7
Land area (square km)	35.19

Source: Statistics Canada

In Figure 3.4 the resident population of the reserve is shown by each group, which indicates a fairly young age distribution with a majority of the population under 44 years in age.

Figure 3.4: Population Age Distribution of Columbia Lake No. 3 Reserve

Characteristics	Columbia Lake 3		
	Total	Male	Female
Total - All persons	165	80	80
Age 0-4	15	5	5
Age 5-14	35	15	20
Age 15-19	15	5	5
Age 20-24	10	5	5
Age 25-44	50	25	25
Age 45-54	25	15	10
Age 55-64	10	5	5
Age 65-74	10	0	5
Age 75-84	0	0	0
Age 85 and over	0	0	0

Characteristics	Columbia Lake 3		
	Total	Male	Female
Median age of the population	34.3	31.0	34.5
% of the population ages 15 and over	72.7	70.6	68.8

Source: Statistics Canada

A summary of labour force characteristics for the ?Akisq'nuk First Nation is shown in Figure 3.5, which indicates a fairly high employment rate relative to some reserves, with the labour force focussed in business related occupations and sales and service occupations.

Figure 3.5: Labour Force Characteristics of Columbia Lake No. 3 Reserve

Characteristics	**Columbia Lake 3**		
	Total	Male	Female
Participation rate	72.0	75.0	66.7
Employment rate	64.0	66.7	58.3
Unemployment rate	11.1	22.2	25.0
Labour Force by Industry			
Total - Experienced labour force	90	45	40
Agriculture and other resource-based	10	0	0
Manufacturing and construction industries	10	0	0
Wholesale and retail trade	0	0	0
Finance and real estate	10	10	0
Health and education	10	0	10
Business services	25	10	15
Other services	35	15	20
Labour Force by Occupation			
Total - Experienced labour force	85	45	40
Management occupations	0	10	10
Business, finance and administration	20	0	20
Social science, education, gov't, religion	10	0	10
Sales and service occupations	30	20	0
Trades, transport, equipment operators etc.	10	10	0
Occupations unique to primary industry	15	10	10

Source: Statistics Canada

AKUN'KUNIK' FIRST NATION (TOBACCO PLAINS INDIAN BAND)

The traditional name translates into "people of the place of the flying head" and this First Nation was also known as the "Big Village" or ancient capital of Ktunaxa. The Band has one Reserve, which is located adjacent to the Canada-U.S. border in the southeastern part of the province at Grasmere.

Community Economic Base

The band is active in agriculture including livestock, logging and retail services such as a restaurant, gas bar and duty-free shop. Other facilities available on the Reserve include the band office, a garage, school, firehall, and band hall.

Profile of Tobacco Plains No. 2 Reserve

The 2001 population of the Akun'kunik' living on the Reserve is 82, as shown in Figure 3.6 for 2001, and the Reserve covers a land area of 41.2 square kilometres.

Figure 3.6: Characteristics of Tobacco Plains No. 2 Reserve

Characteristics	Tobacco Plains 2
Population in 2001	82
Population in 1996	77
1996 to 2001 population change (%)	6.5
Total private dwellings	33
Population density per square kilometre	2.0
Land area (square km)	41.24

Source: Statistics Canada

The age distribution of the population is shown in Figure 3.7, which indicates that approximately 59% of the population are 44 years old or younger with a median age of 40.

Figure 3.7: Population Age Distribution of Tobacco Plains No. 2 Reserve

Characteristics	Tobacco Plains 2		
	Total	Male	Female
Total - All persons	85	50	35
Age 0-4	10	5	0
Age 5-14	5	5	5
Age 15-19	5	5	5
Age 20-24	5	5	0
Age 25-44	25	15	10
Age 45-54	10	5	5
Age 55-64	10	0	0
Age 65-74	10	10	5
Age 75-84	0	0	0
Age 85 and over	0	0	0
Median age of the population	40.1	36.5	43.0
% of the population ages 15 and over	87.5	70.0	85.7

Source: Statistics Canada

Characteristics of the labour force for band members are shown in Figure 3.8, which indicates a relatively low labour force participation level and employment rate. A majority of those in the labour force are involved in agriculture and service businesses, as shown.

Figure 3.8: Labour Force Characteristics of Tobacco Plains No. 2 Reserve

Characteristics	Tobacco Plains 2		
	Total	Male	Female
Participation rate	46.2	42.9	50.0
Employment rate	38.5	28.6	50.0
Unemployment rate	0.0	0.0	0.0
Labour Force by Industry			
Total - Experienced labour force	35	15	20
Agriculture / other resource-based industries	10	10	0
Manufacturing and construction industries	0	0	0
Wholesale and retail trade	0	0	10
Finance and real estate	0	0	0
Health and education	0	0	0
Business services	10	0	0
Other services	10	0	0
Labour Force by Occupation:			
Total - Experienced labour force	30	10	20
Management occupations	10	0	10
Business, finance and administration	0	0	10
Natural and applied sciences and related	0	0	0
Health occupations	0	0	0
Social science, education, gov't, religion	0	0	0
Art, culture, recreation and sport	0	0	0
Sales and service occupations	15	10	10
Trades, transport, equipment operators, etc.	0	10	0
Occupations unique to primary industry	0	0	0
Processing, manufacturing and utilities	0	0	0

Source: Statistics Canada

A'QAM FIRST NATION (ST. MARY'S INDIAN BAND)

The traditional name means "people of the dense forest or brush" and the band has a total of five separate Reserves as shown in Figure 3.9, the largest of which is located on the Kootenay River near Fort Steele. All of the Reserves are in the Cranbrook area and St. Mary's No. 1a, six miles north of Cranbrook is the location of the Delta St. Eugene Mission Resort, which has been developed in partnership with the St. Mary's Band.

Figure 3.9: Location of A'qam First Nation (St. Mary's Indian Band) Reserves

Name of Reserve	Location	Hectares
Kootenay No. 1	Cranbrook District, on the Right Bank of the Kootenay River at the Mouth of St. Mary's opposite Fort Steele	7,293.7
Isadore's Ranch No. 4	Cranbrook District, on the Kootenay Valley 8 miles East from Cranbrook	275.2
Casimayooks (Mayook) No. 5	Cranbrook District, in the Kootenay Valley, 9 miles East from Cranbrook	64.6
Bummers Flat No. 6	Cranbrook District on the Left Bank of the Kootenay River, 3 miles above the Mouth of the St. Mary River	76.9
St. Mary's No. 1A	Kootenay District, Part of Lot 1, GP. 1 at St. Eugene Mission, 6 miles North of Cranbrook, on the St. Mary's River	140

Source: Indian & Northern Affairs Canada

The total population of the First Nation is shown in Figure 3.10, which indicates a total of 329, of which 253 live on the Reserves.

Figure 3.10: Registered Population of A'qam First Nation (St. Mary's Indian Band), as of October 2004

Residency	# of People
Registered Males On own Reserve	125
Registered Female On own Reserve	128
Registered Male On Other Reserve	2
Registered Female On Other Reserve	4
Registered Male On Own Crown Land	0
Registered Female On Own Crown Land	0
Registered Male On Other Band Crown Land	0
Registered Female On Other Band Crown Land	0
Registered Male On No Band Crown Land	0
Registered Female On No Band Crown Land	0
Registered Male Off Reserve	37
Registered Female Off Reserve	33
Total Registered Population	329

Source: Indian & Northern Affairs Canada

Community Economic Base

In addition to the Delta St. Eugene Mission Resort, golf course and the adjacent Casino of the Rockies, the band is active in a number of other community and business enterprises. These include the St. Mary's Band Ranch, the A'Qamnik Day Care Centre, the A'qam Native Plant Nursery, and the A'qam Extended Care facility. Members of the First Nation operate various service businesses ranging from an auto body shop to arts and crafts and even a cattle ranch. The band also manages a housing society, which purchases rental properties in order to provide affordable housing for Aboriginal people in Cranbrook. The band members are active in producing Aboriginal arts and crafts.

Profile of St. Mary's Band Kootenay No. 1 Reserve

This is the Reserve where the largest component of the band population live. It housed 166 band members as of 2001 and covers a land area of approximately 69 square kilometres, as shown in Figure 3.11.

Figure 3.11: Characteristics of St. Mary's Band Kootenay No. 1 Reserve

Characteristics	Kootenay 1
Population in 2001	166
Population in 1996	160
1996 to 2001 population change (%)	3.8
Total private dwellings	58
Population density per square kilometre	2.4
Land area (square km)	69.19

Source: Statistics Canada

The age distribution of the band members on the Reserve is shown in Figure 3.12 which indicates a fairly young age profile with a median age of 28 and 79% of the population 44 years or younger.

Figure 3.12: Population age Distribution of St. Mary's Band Kootenay No. 1 Reserve

Characteristics	Kootenay 1		
	Total	Male	Female
Total - All persons	165	85	80
Age 0-4	10	10	5
Age 5-14	40	20	20
Age 15-19	25	10	15
Age 20-24	5	5	0
Age 25-44	50	25	25

Age 45-54	20	10	10
Age 55-64	10	5	10
Age 65-74	5	0	0
Age 75-84	5	5	0
Age 85 and over	0	0	0
Median age of the population	28.3	28.8	27.5
% of the population ages 15 and over	69.7	72.2	73.3

Source: Statistics Canada

Labour force characteristics are shown in Figure 3.13, which indicate a higher labour participation rate than on many Reserves, although still significant unemployment. Labour force is focussed in the service sector with some involved in business and agriculture, as shown.

Figure 3.13: Labour Force Characteristics of St. Mary's Band Kootenay No. 1 Reserve

Characteristics	Kootenay 1		
	Total	Male	Female
Participation rate	63.6	66.7	70.0
Employment rate	45.5	33.3	50.0
Unemployment rate	35.7	37.5	28.6
Labour Force by Industry			
Total - Experienced labour force	70	35	30
Agriculture / other resource-based industries	10	10	0
Manufacturing and construction industries	10	10	0
Wholesale and retail trade	0	0	0
Finance and real estate	0	0	0
Health and education	10	0	10
Business services	0	0	0
Other services	35	15	20
Labour Force by Occupation			
Total - Experienced labour force	70	40	30
Management occupations	0	0	0
Business, finance and administration	20	0	15
Natural and applied sciences and related	0	0	0
Health occupations	0	0	0
Social science, education, gov't and religion	10	0	10
Art, culture, recreation and sport	0	0	0
Sales and service occupations	10	10	0
Trades, transport, equipment operators, etc.	10	10	10
Occupations unique to primary industry	20	15	0
Processing, manufacturing and utilities	10	0	0

Source: Statistics Canada

SHUSWAP FIRST NATION

The Shuswap First Nation is located one mile north of Invermere on the bank of the Columbia River in a Reserve, which consists of 11 hectares. The total registered population of the First Nation is 222, as shown in Figure 3.14.

Figure 3.14: Shuswap First Nation Registered Population as of October, 2004

Residency	# of People
Registered Males On own Reserve	33
Registered Female On own Reserve	28
Registered Male On Other Reserve	18
Registered Female On Other Reserve	17
Registered Male On Own Crown Land	0
Registered Female On Own Crown Land	0
Registered Male On Other Band Crown Land	0
Registered Female On Other Band Crown Land	0
Registered Male On No Band Crown Land	0
Registered Female On No Band Crown Land	0
Registered Male Off Reserve	54
Registered Female Off Reserve	72
Total Registered Population	222

Source: Indian & Northern Affairs Canada

Community Economic Base

The band is focussed on education and self-government with a desire to improve the career opportunities for its members and have better control over the natural resources in its traditional territory. There is a strong desire to achieve economic stability and independence and maximize jobs that provide permanent meaningful work and help distribute economic and social benefits among band members.

Profile of Shuswap Indian Band Reserve

The on-Reserve band population was 176 in 2001 as shown in Figure 3.15.

Figure 3.15: Characteristics of Shuswap Indian Band Reserve

Characteristics	Shuswap
Population in 2001	176
Population in 1996	180
1996 to 2001 population change (%)	-2.2
Total private dwellings	71
Population density per square kilometre	16.2
Land area (square km)	10.88

Source: Statistics Canada

The age distribution (Figure 3.16), as with the other First Nations, shows a very young average age with median age at less than 27 and 80% of the population 44 years or younger.

Figure 3.16: Population Age Distribution of Shuswap Indian Band Reserve

Characteristics	Shuswap		
	Total	Male	Female
Total - All persons	175	85	90
Age 0-4	10	5	10
Age 5-14	30	15	20
Age 15-19	20	5	15
Age 20-24	20	5	10
Age 25-44	60	40	25
Age 45-54	15	10	10
Age 55-64	10	5	5
Age 65-74	5	5	0
Age 75-84	0	0	0
Age 85 and over	0	0	5
Median age of the population	26.5	29.5	23.8
% of the population ages 15 and over	77.1	76.5	68.4

Source: Statistics Canada

Labour force characteristics indicate a high participation rate in the labour force and also relatively high unemployment rate at 29%, as shown in Figure 3.17. The labour force is involved in construction, as a result of a lot of resort activity undertaken in the region, as well as various service occupations, many of which would be related to tourism.

Figure 3.17: Labour Force Characteristics of Shuswap Indian Band Reserve

Characteristics	**Shuswap**		
	Total	Male	Female
Participation rate	84.0	84.6	75.0
Employment rate	56.0	53.8	66.7
Unemployment rate	28.6	36.4	0.0
Labour Force by Industry			
Total - Experienced labour force	95	55	45
Agriculture / other resource-based industries	0	10	0
Manufacturing and construction industries	30	30	0
Wholesale and retail trade	0	0	10
Finance and real estate	0	0	0
Health and education	10	0	0
Business services	15	10	10
Other services	35	10	25
Labour Force by Occupation			
Total - Experienced labour force	95	55	45

Management occupations	0	0	0
Business, finance and administration	0	0	0
Natural and applied sciences and related	10	0	0
Health occupations	0	0	0
Social science, education, gov't, religion	10	0	0
Art, culture, recreation, sport	0	0	0
Sales and service occupations	45	10	30
Trades, transport, equipment operators, etc.	30	30	0
Primary industry	10	10	0
Processing, manufacturing and utilities	10	10	0

Source: Statistics Canada

YAQAN NUKIY FIRST NATION (LOWER KOOTENAY INDIAN BAND)

The traditional name means " the people where the rock is standing" which refers to the mountain cliff that faces the Creston Valley where the band is located. The band has several Reserves as shown in Figure 3.18, the largest of which is 740 hectares in size.

Figure 3.18: Location of Yaqan nukiy First Nation (Lower Kootenay Indian Band) Reserves

Name	Location	Hectares
Creston No. 1	Nelson District, on the right bank of the Kootenay River 4 miles north of the international boundary line	740.1
Lower Kootenay No. 1a	West division of Kootenay Land District lying to east of the Kootenay River & south of Creston I.R. No.1	184.1
Lower Kootenay No. 1b	In Townships 7 & 8 , west division of Kootenay Land District now known as lot 9998 Kootenay District	483.2
Lower Kootenay No. 1c	West division of Kootenay Land District both banks of the Kootenay River north of mouth of the Goat River	537.7
Lower Kootenay No. 2	West division of Kootenay Land District on left bank of the Kootenay River	202
Lower Kootenay No. 3	West division of Kootenay Land District on left bank of the Kootenay River 4 miles NW of Creston	63.9
Lower Kootenay No. 5	West division of Kootenay Land District on left bank of Kootenay River 6 miles NW of Creston	202.3

Source: Indian & Northern Affairs Canada

The total registered population of the First Nation as of 2004 is shown in Figure 3.19 and totals 205 people, with 106 living on the Reserve.

Figure 3.19: Registered Population of Yaqan Nukiy First Nation (Lower Kootenay Indian Band), as of October 2004

Residency	# of People
Registered Males On own Reserve	52
Registered Female On own Reserve	54
Registered Male On Other Reserve	7
Registered Female On Other Reserve	5
Registered Male On Own Crown Land	0
Registered Female On Own Crown Land	0
Registered Male On Other Band Crown Land	0
Registered Female On Other Band Crown Land	0
Registered Male On No Band Crown Land	0
Registered Female On No Band Crown Land	0
Registered Male Off Reserve	40
Registered Female Off Reserve	47
Total Registered Population	**205**

Source: Indian & Northern Affairs Canada

Community Economic Base

The band's economic activities include agriculture (a hay ranch), trapping, band operated guiding and outfitting operation, a shoe repairing business, and an annual traditional Pow Wow. There is also a waterfowl sanctuary and the band operates other programs and services including an elementary school and its large new community hall/recreation centre.

Profile of Creston No. 1 Reserve

The largest reserve where most of the population live is the Creston No. 1 Reserve which houses 122 people as of 2001, as shown in Figure 3.20 (may include some on-reserve non-Aboriginals).

Figure 3.20: Characteristics of Creston No. 1 Reserve

Characteristics	Creston 1
Population in 2001	122
Population in 1996	113
1996 to 2001 population change (%)	8.0
Total private dwellings	51
Population density per square kilometre	15.7
Land area (square km)	7.78

Source: Statistics Canada

The age distribution of the population is shown in Figure 3.21, which again shows a young overall age with the median age at just under 28 and 84% of the population 44 years and younger.

Figure 3.21: Population Age Distribution of Creston No. 1 Reserve

Characteristics	Creston 1		
	Total	Male	Female
Total - All persons	125	65	60
Age 0-4	15	5	5
Age 5-14	25	20	10
Age 15-19	10	5	5
Age 20-24	10	0	5
Age 25-44	45	25	20
Age 45-54	15	10	10
Age 55-64	10	5	5
Age 65-74	0	5	0
Age 75 and over	0	0	0
Median age of the population	27.7	28.7	26.7
% of the population ages 15 and over	64.0	69.2	66.7

Source: Statistics Canada

Characteristics of the labour force are shown in Figure 3.22, which indicates a fairly high participation rate and an overall unemployment rate of 18.2%. A majority of band members are in business or service occupations, although some are involved in manufacturing and construction-type activities.

Figure 3.22: Labour Force Characteristics of Creston No. 1 Reserve

Characteristics	Creston 1		
	Total	Male	Female
Participation rate	64.7	66.7	50.0
Employment rate	52.9	55.6	50.0
Unemployment rate	18.2	33.3	50.0
Labour Force by Industry			
Agriculture / other resource-based industries	0	10	0
Manufacturing and construction industries	10	0	0
Wholesale and retail trade	0	0	0
Finance and real estate	0	0	0
Health and education	15	10	10
Business services	10	10	0
Other services	15	0	10
Total - Experienced labour force	60	30	25
Labour force by Occupation:			
Management occupations	0	0	10
Business, finance and administration	10	0	0
Natural and applied sciences and related	0	0	0
Health occupations	0	0	0
Social science, education, gov't, religion	10	0	0
Art, culture, recreation and sport	10	0	0
Sales and service occupations	15	10	0
Trades, transport, equipment operators, etc.	10	10	0
Occupations unique to primary industry	0	0	0
Processing, manufacturing and utilities	10	10	0
Total - Experienced labour force	60	35	25

Source: Statistics Canada

Sinixt First Nation

This First Nation is indigenous to the Arrow Lakes area of the Kootenay region, but is not currently recognized by the provincial government and have no current formally recognized land base (e.g.- in the form of Reserves). Most of their traditional villages and burial grounds were flooded with the damming of the Arrow Lakes. However, descendants of the Sinixt people continue to live in the region and are working towards achieving official status, so we must take them into consideration when assessing impacts of the caribou recovery action plan.

4 – Forestry Sector Activity and Impacts

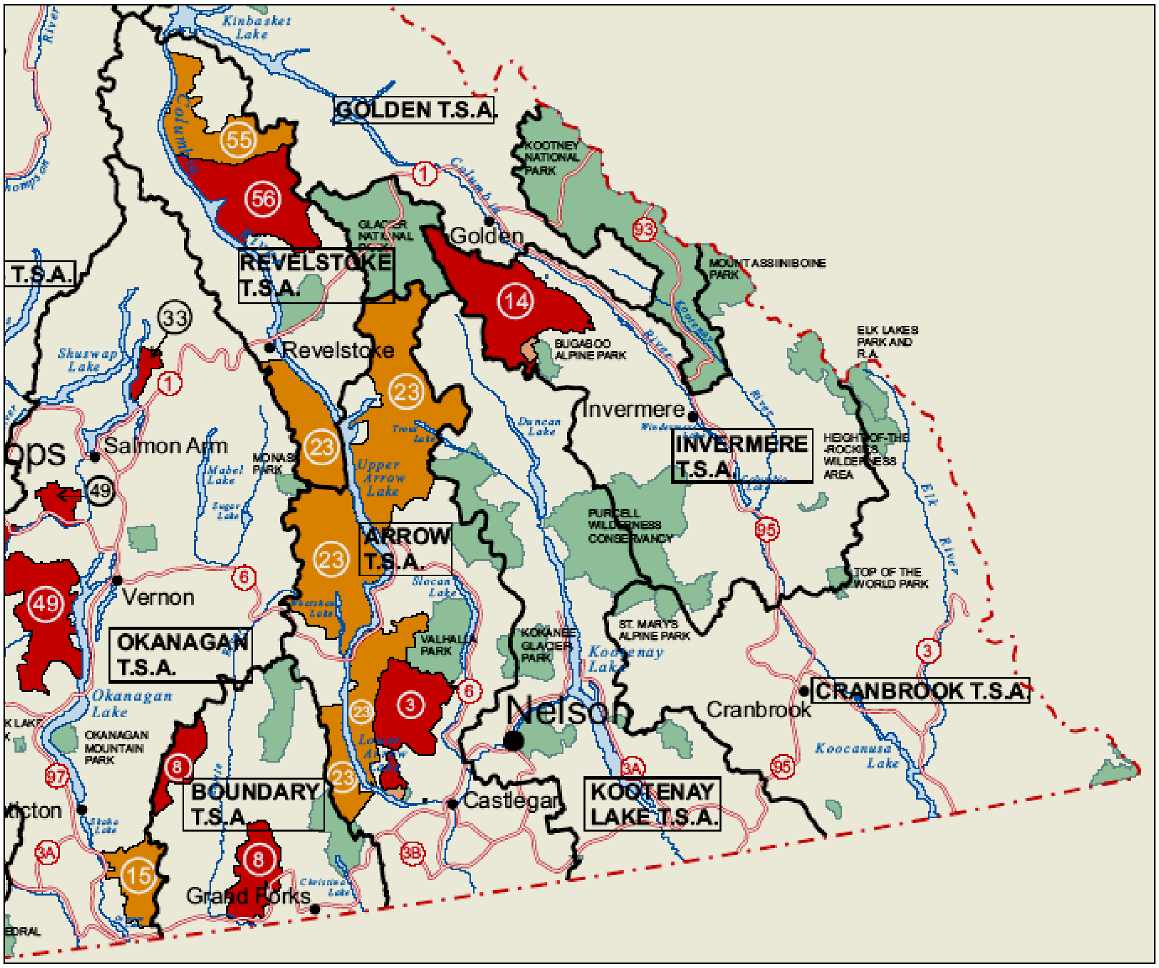
The study area covered by the North and South Kootenay Caribou Recovery Action Plans is extensively forested and the location of substantial forest industry activity throughout most of the region. There are four forest districts, which are totally within the study region or have a substantial portion of the District within the study area. These four forest districts contain in whole or in part the following timber supply areas (TSAs) and Tree Farm Licenses (TFLs):

- Arrow Boundary Forest District which includes the Boundary and the Arrow Timber Supply Areas (only the latter is in the study area), TFL3, and TFL23.
- The Columbia Forest District which includes Revelstoke and Golden Timber Supply Areas, TFL55, and TFL56.
- The Kootenay Lake Forest District which has one overall Kootenay Lake Timber Supply Area
- The Rocky Mountain Forest District, which includes Invermere and Cranbrook Timber Supply Areas, and TFL14.

The Ministry of Forests undertakes timber supply analyses in each of the Timber Supply Areas, including comprehensive reviews of the economic base and economic impacts of forestry within each of these areas. TFL holders undertake similar analyses for their TFL areas. The map of the Southern Interior Forest Region in Figure 4.1 shows the location of the six TSAs and five TFLs which are the focus of the analysis in the remainder of this chapter.

At the outset it is important to note that the socioeconomic impact analyses which have been undertaken for each of the TSAs and TFLs has occurred at different points in time and there appear to be some inconsistencies in the way the information was analyzed and presented. Therefore, as part of our analysis for this study we undertook some additional calculations and organization of the data in order to present reasonably consistent data for each TSA and TFL.

Figure 4.1: Map of Southern Interior Forest Region Including TSA and TFL Boundaries

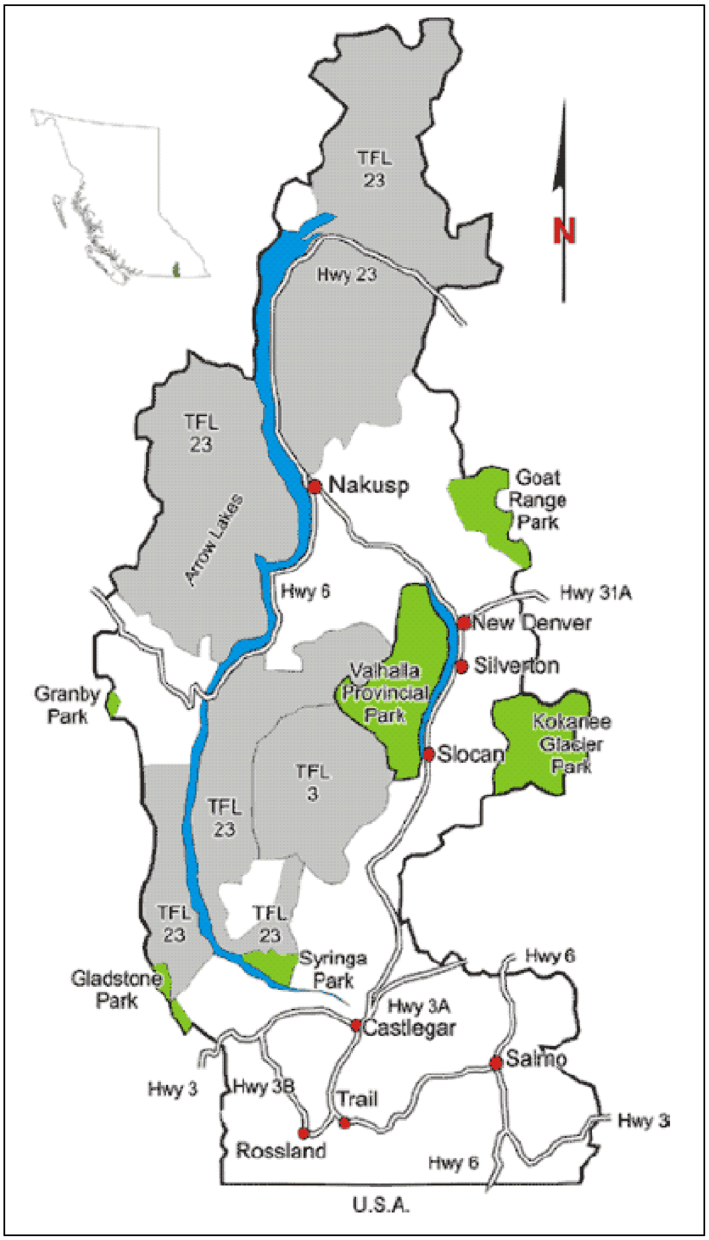


Source: Ministry of Forests

ARROW TIMBER SUPPLY AREA

This covers the southwestern portion of the study area extending from Trail and Rossland in the south and northward past Nakusp and Upper Arrow Lake, as shown on the map in Figure 4.2.

Figure 4.2: Map of Arrow TSA and TFLs 3 and 23



Source: Ministry of Forests

The region had a significant population base of almost 44,000 in 2001, as shown in figure 4.3, although experienced an overall population decline of 4.5% subsequent to the 1996 Census. More than half the population is located within seven major communities, as shown, with Castlegar, Trail and Rossland being the largest.

Figure 4.3: Arrow Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Castlegar	7,027	7,002	-0.4%
Trail	7,874	7,574	-3.8%
Rossland	3,802	3,646	-4.1%
Nakusp	1,736	1,698	-2.2%
Fruitvale/Montrose/Warfield	4,972	4,901	-1.4%
Unincorporated Areas	20,344	18,866	-7.3%
Total Arrow Forest District	45,755	43,687	-4.5%

Source: Arrow Timber Supply Area Analysis Report, March 2004

The economic base of any region consists of two components: the basic sector which refers to goods and services sold to customers outside the region (also known as the traded sector) and the non-basic sector which provides goods and services to residents and businesses within the region. Any positive or negative economic impact on the basic sector has a similar impact on the non-basic sector.

For the Arrow Timber Supply Area the basic employment by sectors shown in Figure 4.4, which indicates that 20% of total basic employment is associated with forestry, making it one of the more important individual sectors along with the public sector (31%) and tourism (10%). These key sectors are in effect the engines of the local economy.

Figure 4.4: Arrow Timber Supply Area Basic Employment by Sector, 2001

Sector	% of Total Employment
Forestry	20%
Other Primary and Related Industries	18%
Tourism	10%
Construction	9%
Public Sector	31%
All Others	13%
Total	**100%**

Source: Arrow Timber Supply Area Analysis Report, March 2004

Forestry Sector Employment and Income Impacts

Total timber harvesting from the TSA averaged approximately 543,000 cubic metres annually during the period 1998 through 2002. This timber is harvested by a number of major licensees including the following:

- Atco Lumber Company Ltd.
- Bell Pole Company
- Kalesnikoff Lumber Company Ltd.
- Riverside Forest Products Ltd.
- Pope and Talbot Ltd.
- Slocan Forest Products Ltd.

In addition to the timber harvesting activity of these companies most have affiliated timber processing facilities which include six lumber mills, one pulp mill, one veneer mill, one pole/post plant and two additional pole plants. The forestry sector employment impacts in the Arrow Timber Supply Area are shown in Figure 4.5 which indicates a total of 619 person-years directly and indirectly employed within the timber supply area itself with the total employment for the province overall as a result of forest activity within this TSA amounting to 1,423 person-years. The table also shows the person-years per thousand cubic metres of timber which is 1.14 for the TSA and 2.62 for the province overall.

Figure 4.5: Arrow Timber Supply Area Forestry Sector Employment, 2003

Forestry Activity	Within TSA		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	171	0.32	228	0.42
Silviculture	38	0.07	52	0.10
Timber Processing	194	0.36	335	0.62
Total Direct Employment	403	0.74	616	1.13
Indirect + Induced Employment	216	0.40	807	1.49
Total	**619**	**1.14**	**1,423**	**2.62**

Source: Arrow Timber Supply Area Analysis Report, March 2004

In Figure 4.6 the total employment income impacts for the province overall as a result of forestry activity within the Arrow TSA are shown. Total employment income including indirect and induced impacts is approximately $58.6 million for the Arrow TSA or almost $108,000 per thousand cubic metres of harvest.

Figure 4.6: Arrow Timber Supply Area Forestry Sector Provincial Employment Income Estimates, 2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ '000)	Employment Income ($ per 1,000 m^3)
Logging & Forestry Services	281	51,245	14,383	26,487
Solid Wood Processing	290	49,934	14,469	26,645
Pulp & Paper Processing	46	53,972	2,465	4,539
Total Direct Employment	616	n/a	31,316	57,671
Indirect + Induced Employment	807	33,800	27,277	50,233
Total	**1,423**	**n/a**	**58,594**	**107,905**

Source: Arrow Timber Supply Area Analysis Report, March 2004

Provincial Revenues from Forestry

An estimated $18.9 million accrues to the province annually as a result of forestry activity in the Arrow TSA from stumpage and related revenues, forestry industry taxes, and employment income taxes, as shown in Figure 4.7. This results in average annual provincial revenues of more than $31,000 per thousand cubic metres of timber harvest.

Figure 4.7: Arrow Timber Supply Area Average Annual Provincial Revenue Estimates, 1998-2002

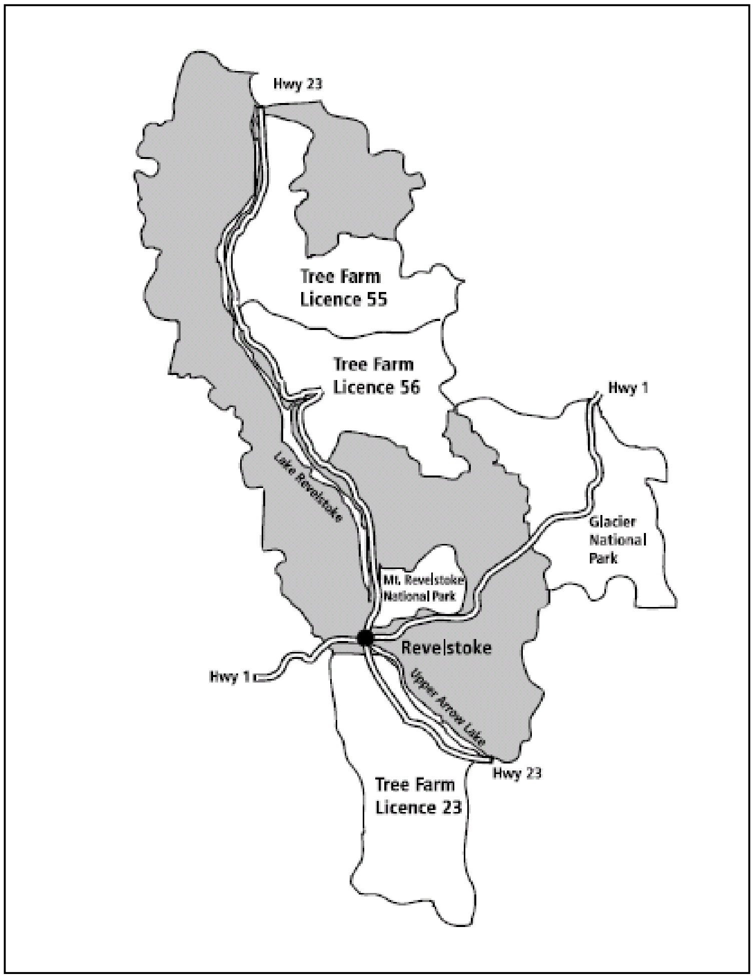
Source of Provincial Revenues	Volume Harvested (m^3) in 2003	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	543,015	8.47	14,150
Forestry Industry Taxes	543,015	5.19	8,664
Employment Income Taxes	543,015	5.26	8,789
Total	543,015	**18.92**	**31,603**

Source: Arrow Timber Supply Area Analysis Report, March 2004

REVELSTOKE TIMBER SUPPLY AREA

This region is a popular tourist area, encompassing a particularly scenic stretch of the Trans Canada Highway including the Roger's Pass, as well as Mount Revelstoke and Glacier National Park, as shown on the map of Figure 4.8. It is noted for a wide variety of back-country tourism and recreation activities including hiking, back-packing, mountain biking, river rafting and winter sports such as downhill skiing, ski touring, cat skiing, snowmobiling and heli-skiing.

Figure 4.8: Map of Revelstoke TSA and TFLs 55 & 56, and part of TFL23



Source: Ministry of Forests

The area has a relatively small population base as shown in Figure 4.9, with just over 8,000 people as of 2001, the majority of which (7,500) reside in Revelstoke itself. The region's population has declined between the 1996 and 2001 censuses by almost 7%.

Figure 4.9: Revelstoke Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Revelstoke	8,047	7,500	-6.8
Unincorporated Areas	592	562	-5.0
Total Revelstoke TSA	8,639	8,062	-6.7

Source: Revelstoke Timber Supply Area Analysis Report, September 2004

The importance of tourism as a local employer is clear from the distribution of basic employment by sector, as shown in Figure 4.10, which indicates that

34% of basic employment is associated with tourism, compared with 23% for forestry and 21% for the public sector.

Figure 4.10: Columbia Forest District Basic Employment by Sector

Sector	% of Total Employment
Forestry and Wood-Related Processing	23%
Agriculture and Food	2%
Tourism	34%
Construction	8%
Public Sector	21%
All Others	12%
Total	**100%**

Source: Revelstoke Timber Supply Area Analysis Report, September 2004

Forestry Employment and Income Impacts

Within the Revelstoke Timber Supply Area approximately 315 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.11. The overall provincial impact of forestry activity in the Revelstoke TSA is 638 person-years of employment. Within the TSA 1.39 person-years of employment per thousand cubic metres of harvest is generated, which increases to 2.81 person-years per thousand cubic metres for the province overall.

Timber is harvested in the TSA primarily by a number of major licensees including the following:

- Louisiana Pacific Engineered Wood Products Ltd.
- Wood River Forest, Inc.
- Canadian Timber Frames Ltd.

Figure 4.11: Revelstoke Timber Supply Area Forestry Sector Employment

Forestry Activity	Within TSA		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	77	0.34	95	0.42
Silviculture	2	0.01	14	0.06
Timber Processing	136	0.60	170	0.75
Total Direct Employment	215	0.95	279	1.23

Indirect + Induced Employment	100	0.44	359	1.58
Total	**315**	**1.39**	**638**	**2.81**

Source: Revelstoke Timber Supply Area Analysis Report, September 2004

The annual average income per worker (1998-2002) in the Revelstoke TSA is in the range of $29,150 resulting in total employment income of $18.6 million for the region (Figure 4.12). This translates to employment income of almost $82,000 per thousand cubic metres of timber harvest.

Figure 4.12: Revelstoke Timber Supply Area Forestry Sector Provincial Employment Income Estimates

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	279	34,610	9.7	42,731
Indirect + Induced Employment	359	24,730	8.9	39,207
Total	**638**	**n/a**	**18.6**	**81,938**

Source: Revelstoke Timber Supply Area Analysis Report, September 2004

Provincial Revenues from Forestry

These are shown in Figure 4.13, which indicates that the average annual harvest from 1998-2002 of 227,000 cubic metres generated total provincial revenues annually of $3.23 million or $14,243 per thousand cubic metres.

Figure 4.13: Revelstoke Timber Supply Area Average Annual Provincial Revenue Estimates, 1998-2002

Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	227,000	1.49	6,570
Employment Income Taxes	227,000	1.74	7,673
Total	227,000	**3.23**	**14,243**

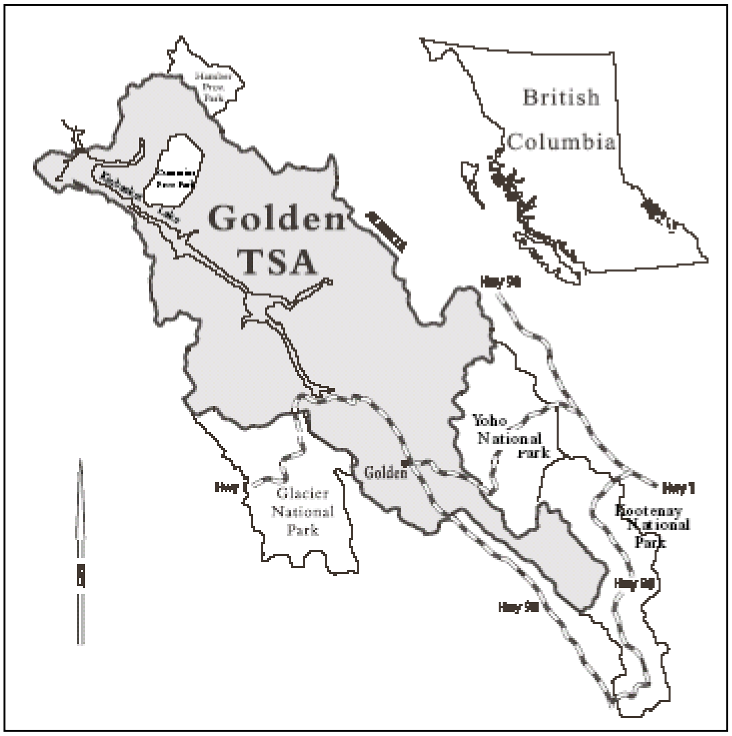
Source: Revelstoke Timber Supply Area Analysis Report, September 2004

GOLDEN TIMBER SUPPLY AREA

The Golden Timber Supply Area is located immediately east of the Revelstoke TSA and extends to the northwest and southeast along the

Alberta border, as shown in Figure 4.14. It is adjacent to Yoho and Kootenay National Parks in the Southeast and Glacier National Park to the west and extends north to Kinbasket Lake.

Figure 4.14: Map of Golden Timber Supply Area



Source: Ministry of Forests

Similar to the Revelstoke TSA, the Golden TSA has a small population base, the majority of which are located in the Town of Golden itself, as shown in Figure 4.15. The local population base, however, is growing significantly and increased by 10% between the 1996 and 2001 Censuses. Much of this growth has been fuelled by the development of Kicking Horse Resort, just outside Golden, which is a major world-class downhill ski resort that is developing a Whistler-style resort village at the base.

Figure 4.15: Golden Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Golden	3,968	4,020	1.3
Other Communities	1,964	2,435	24.0
Total Golden TSA	5,856	6,455	10.2

Source: Golden Timber Supply Area Analysis Report, August 2003

Like the Revelstoke TSA forestry and tourism are the largest employment components of the basic sector of the economy as shown in Figure 4.16, with tourism providing 28% of basic employment and forestry and wood related processing at 26%.

Figure 4.16: Golden Timber Supply Area Basic Employment by Sector, 1996

Sector	% of Basic Employment
Forestry and Wood-Related Processing	26%
Tourism	28%
Construction	7%
Public Sector	23%
Mining and Related	3%
All Others	13%
Total	**100%**

Source: Golden Timber Supply Area Analysis Report, August 2003

Forestry Sector Employment Impact

Within the Golden TSA a total of 655 person years of employment are supported directly and indirectly by the forestry sector, which expands to 1,067 person years for the province overall, as a result of forestry activity within the Golden TSA (Figure 4.17). The person-years per thousand cubic metres of timber harvested are 1.62 within the TSA and 2.63 for the province overall.

Timber harvesting and processing in the Revelstoke TSA is primarily from the following licensees:

- Bell Pole Company Ltd.
- Joe Kozek Sawmills Ltd.
- Downie Street Sawmills Ltd.
- Wood River Forest Inc.
- Selkirk Specialty Wood Ltd.

Figure 4.17: Golden Timber Supply Area Forestry Sector Employment

Forestry Activity	Within TSA		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	194	0.48	231	0.57
Silviculture	4	0.01	49	0.12
Timber Processing	267	0.66	316	0.78
Total Direct Employment	465	1.15	596	1.47

Indirect + Induced Employment	190	0.47	471	1.16
Total	**655**	**1.62**	**1,067**	**2.63**

Source: Golden Timber Supply Area Analysis Report, August 2003

Total employment income related to forestry is $29.9 million annually on a direct basis, plus $15.1 million of indirect and induced employment income for a total income impact of $45 million annually (Figure 4.18). This amounts to $111,000 in employment income per thousand cubic metres of timber harvested.

Figure 4.18: Golden Timber Supply Area Forestry Sector Provincial Employment Income Estimates, 2000-2002

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	596	50,100	29.9	73,750
Indirect + Induced Employment	471	32,100	15.1	37,250
Total	**1,067**	**n/a**	**45.0**	**111,000**

Source: Golden Timber Supply Area Analysis Report, August 2003

Provincial Revenues from Forestry Sector

These estimates are shown in Figure 4.19 and indicate that an average of $9.3 million accrued to the province as a result of stumpage and related revenues, forestry industry taxes and employment income taxes. This amounts to almost $23,000 per thousand cubic metres of timber harvested.

Figure 4.19: Golden Timber Supply Area Average Annual Provincial Revenue Estimates, 2000-2002

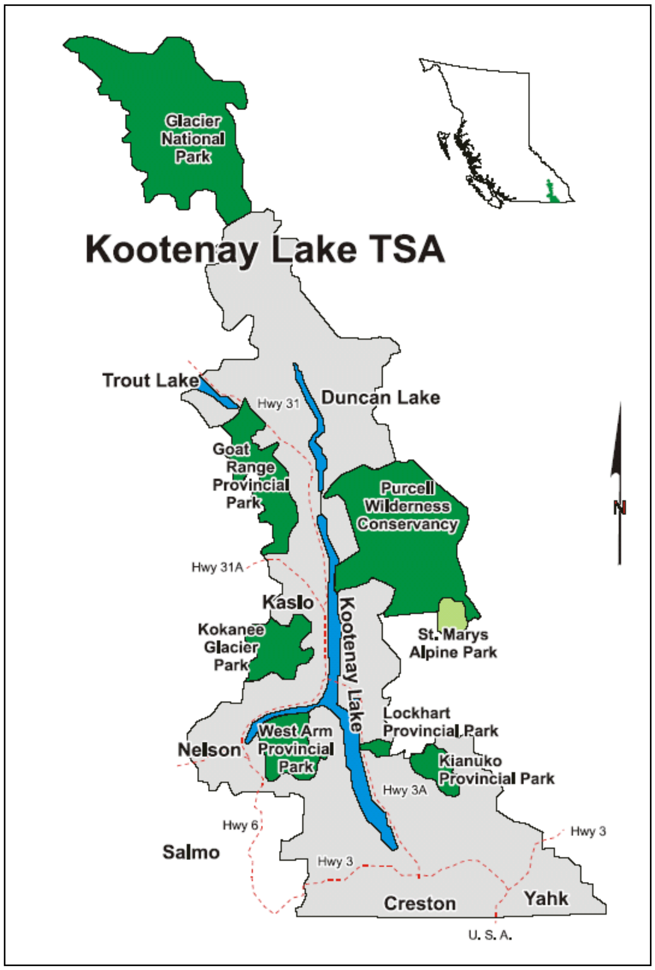
Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	405,000	3.1	7,644
Forestry Industry Taxes	405,000	3.4	8,302
Employment Income Taxes	405,000	2.8	7,000
Total	**405,000**	**9.3**	**22,946**

Source: Golden Timber Supply Area Analysis Report, August 2003

KOOTENAY LAKE TIMBER SUPPLY AREA

The Kootenay Lake TSA extends from the Creston area and U.S. border in the south, north encompassing the Kootenay Lakes region to Glacier National Park at the northern end, as shown in Figure 4.20. There are also several large provincial parks and protected areas within the region including Goat Range, Kokanee Glacier, West Arm, Kianuko and Lockhart Provincial Parks, plus the Purcell Wilderness Conservancy and St. Mary's Alpine Park. As a result tourism and outdoor recreation is a significant activity throughout the region, along with forestry.

Figure 4.20: Map of Kootenay Lake Timber Supply Area



Source: Ministry of Forests

This is a more heavily populated region with a 2001 population in excess of 34,000, almost half of which reside in the two largest communities – Nelson and Creston (Figure 4.21). The region's population is growing in part because the area has become increasingly popular as a recreation, resort and retirement location.

Figure 4.21: Kootenay Lake Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Creston	4,816	4,998	3.8
Kaslo	1,063	1,157	8.8
Meadow Creek/Lardeau	1,296	1,419	9.5
Nelson	9,585	10,094	5.3
Wynndel	1.021	1,154	13.0
Other Communities	15,134	15,586	3.0
Total Kootenay Lake TSA	32,915	34,408	4.5

Source: Kootenay Lake Timber Supply Area Analysis Report, 2001

The estimates of employment by sector shown in Figure 4.22 are for 1996 as the Timber Supply Review was done prior to the 2001 Census data being available. As a result, the increasing importance of tourism is not fully reflected in the data, which shows 13% of total employment in tourism, 15% for forestry and wood related processing, and 35% in the public sector (Nelson is a major focus of public sector activity in the Kootenay region overall).

Figure 4.22: Kootenay Lake Timber Supply Area Employment by Sector, 1996

Sector	% of Total Employment
Forestry and Wood-Related Processing	15%
Other Primary and Related Industries	8%
Tourism	13%
Construction	12%
Public Sector	35%
All Others	17%
Total	**100%**

Source: Kootenay Lake Timber Supply Area Analysis Report, 2001

The Timber Supply Review does note that tourism has shown significant growth in recent years with almost 2,000 persons employed in the Kootenay Lake TSA's tourism sector and nearly 300 businesses catering to visitor needs.

Employment Impacts of Forestry Activity

During the period 1995 through 1999 the average timber harvest was in the range of 621,000 cubic metres undertaken by a number of major forestry operators including the following:

- Atco Lumber Ltd.
- Celcrest Timber Ltd.
- Wynndel Box & Lumber Company Ltd.
- Tembec Industries Inc.
- J.H. Huscroft Ltd.
- Kalesnikoff Lumber Company Ltd.
- Kaslo and District Community Forest Society
- Meadowcreek Cedar Ltd.
- Slocan Forest Products Ltd.

Other licensees include Goose Creek Lumber Ltd., the Harrop-Proctor Community Forest Pilot Project, and the Kootenay Lake TSA's former Small Business Forest Enterprise Program.

Timber processing facilities include five lumber mills, one pole plant, and two shake and shingle plants.

As shown in Figure 4.23, a total of 882 person-years of employment is supported by forestry within the TSA and this expands to 1,970 for the province overall. The person-years per thousand cubic metres factors are 1.46 within the TSA and 3.26 for the province overall.

Figure 4.23: Kootenay Lake Timber Supply Area Forestry Sector Employment

Forestry Activity	Within TSA		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	266	0.44	322	0.53
Silviculture	46	0.08	55	0.09
Timber Processing	263	0.44	494	0.82
Total Direct Employment	575	0.95	871	1.44
Indirect + Induced Employment	307	0.51	1,099	1.82
Total	**882**	**1.46**	**1,970**	**3.26**

Source: Kootenay Lake Timber Supply Area Analysis Report, 2001

The provincial employment income estimates total $74.24 million as shown in Figure 4.24, which translates to more than $123,000 per thousand cubic metres of timber harvested. This high income per thousand cubic metres is partly as a result of the significant value-added operations in the region.

Figure 4.24: Kootenay Lake Timber Supply Area Forestry Sector Provincial Employment Income Estimates

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Logging & Forestry Services	378	46,844	17.66	29,290
Solid Wood Processing	449	46,183	20.74	34,392
Pulp & Paper Processing	45	55,931	2.52	4,174
Total Direct Employment	872	n/a	40.92	67,856
Indirect + Induced Employment	1,099	30,320	33.32	55,265
Total	**1,971**	**n/a**	**74.24**	**123,121**

Source: Kootenay Lake Timber Supply Area Analysis Report, 2001

Provincial Forestry Revenues

As shown in Figure 4.25, these averaged almost $19 million annually during the period 1997 - 1999, which amounts to more than $31,000 per thousand cubic metres of harvest.

Figure 4.25: Kootenay Lake Timber Supply Area Average Annual Provincial Revenue Estimates, 1997-99

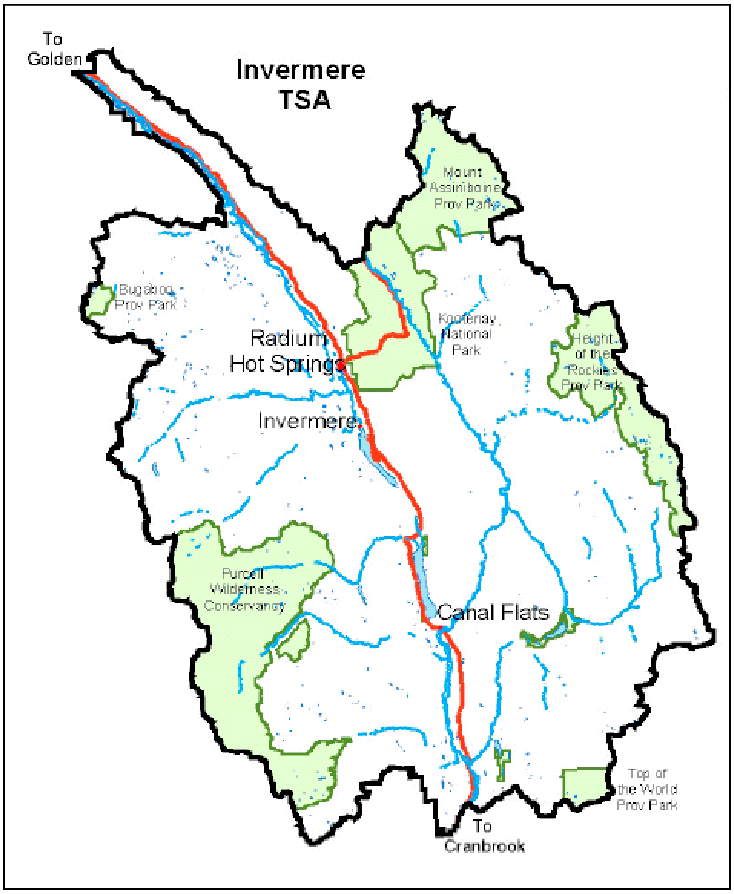
Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	602,940	7.80	12,940
Forestry Industry Taxes	602,940	4.66	7,729
Employment Income Taxes	602,940	6.37	10,570
Total	**602,940**	**18.83**	**31,239**

Source: Kootenay Lake Timber Supply Area Analysis Report, 2001

INVERMERE TIMBER SUPPLY AREA

The map of this region in Figure 4.26 shows that the Invermere TSA is in the heart of the Kootenay Rockies tourism destination region and includes several large Provincial Parks including Mount Assiniboine, Height of The Rockies, Top of the World, and Bugaboo, as well as a major portion of the Purcell Wilderness Conservancy. In addition, several major tourism destinations are located within the region including Radium Hot Springs, Invermere and Lake Windermere, Panorama Mountain Resort, and Fairmont Hot Springs.

Figure 4.26: Map of Invermere Timber Supply Area



Source: Ministry of Forests

The growth of tourism activity in the Invermere/Panorama area is clear from Figure 4.27, which indicates 11% population growth for the Town of Invermere between 1996 and 2001, while the population of other communities less tied to tourism declined.

The current harvest level in the TSA is about 585,000 m3 per year. Licensees for this harvest include the following:

- Tembec Industries Inc.
- Canadian Forest Products Ltd.
- North Star Planing Company Ltd.
- Ktunaxa Kinbasket Tribal Council.
- Clarence Palumbo Sawmills Ltd.

Figure 4.27: Invermere Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Invermere	2,687	2,983	11.0
Other Communities	6,543	6,182	-5.5
Total Invermere TSA	**9,230**	**9,165**	**-0.7**

Source: Invermere Timber Supply Area Analysis Report, May 2004

The employment by sector table in Figure 4.28 shows the dominance of tourism in terms of employment in the region's basic sector, accounting for one-third. Forestry accounts for 19% and the public sector for 21%.

Figure 4.28: Invermere Timber Supply Area Basic Employment by Sector, 2000

Sector	% of Total Employment
Forestry and Wood-Related Processing	19.1%
Tourism	33.9%
Construction	18.1%
Public Sector	21.3%
Mining	2.9%
All Others	4.7%
Total	**100.0%**

Source: Invermere Timber Supply Area Analysis Report, May 2004

Forestry Sector Employment Impacts

Tembec Industries Inc., Canadian Forest Products Ltd. (Canfor) and Slocan Forest Products (purchased by Canfor) are the largest licensees in the region accounting for the majority of the annual allowable cut. In addition, BC Timber Sales allocates about 13% of the annual allowable cut. There are also several timber processing facilities in the region including one pulp mill, seven lumber mills of various types, and one pole plant.

As shown in Figure 4.29, forestry activity in the Invermere TSA accounts for 530 person-years of employment within the TSA and 1,161 for the province overall. This translates to .75 person years per thousand cubic metres of timber harvest within the TSA and 1.63 for the province overall.

Figure 4.29: Invermere Timber Supply Area Forestry Sector Employment

	Within TSA	Province Overall

Forestry Activity	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	164	0.23	214	0.30
Silviculture	11	0.02	21	0.03
Timber Processing	214	0.30	314	0.44
Total Direct Employment	389	0.55	549	0.77
Indirect + Induced Employment	141	0.20	612	0.86
Total	**530**	**0.75**	**1,161**	**1.63**

Source: *Invermere Timber Supply Area Analysis Report, May 2004*

The total employment income from forestry activity within the region is significant at almost $45 million as shown in Figure 4.30, or almost $63,000 per thousand per cubic metres of harvest on a direct, indirect and induced basis.

Figure 4.30: Invermere Timber Supply Area Forestry Sector Provincial Avg. Annual Employment Income Estimates, 2000-2002

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Logging & Forestry Services	225	44,642	10.51	14,728
Solid Wood Processing	228	42,555	9.72	13,621
Pulp & Paper Processing	86	58,995	5.05	7,076
Total Direct Employment	549	n/a	25.28	35,426
Indirect + Induced Employment	612	31,899	19.51	27,340
Total	**1,161**	**n/a**	**44.79**	**62,766**

Source: *Invermere Timber Supply Area Analysis Report, May 2004*

Provincial Forestry Revenues

These are shown in Figure 4.31, which indicates the provincial annual average revenues from 2000-2002 at $23 million, or in excess of $32,000 per thousand cubic metres of timber harvested.

Figure 4.31: Invermere Timber Supply Area Average Annual Provincial Revenue Estimates, 2000-2002

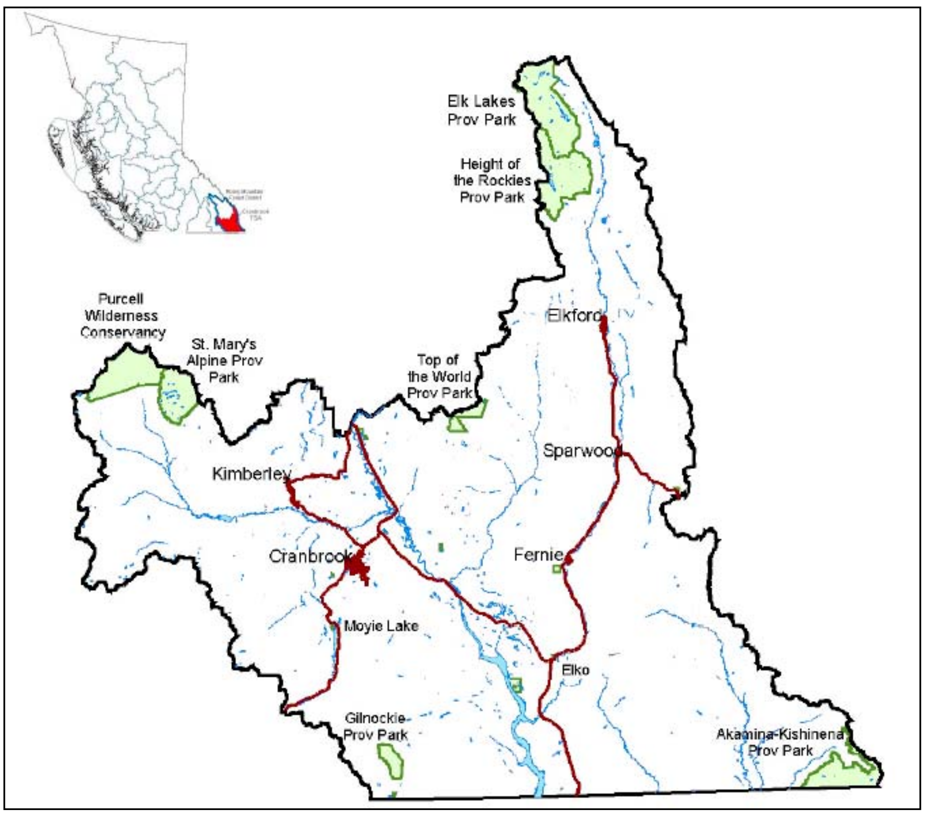
Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	713,603	10.1	14,154
Forestry Industry Taxes	713,603	8.1	11,351
Employment Income Taxes	713,603	4.8	6,726
Total	**713,603**	**23.0**	**32,231**

Source: Invermere Timber Supply Area Analysis Report, May 2004

CRANBROOK TIMBER SUPPLY AREA

A map of the Cranbrook Timber Supply Area is shown in Figure 4.32, which indicates that it is primarily the western half of this area that is really within the South Kootenay Caribou Recovery region.

Figure 4.32: Map of Cranbrook Timber Supply Area



Source: Ministry of Forests

This western half, however, accounts for well over 50% of the region's population, which reside in Cranbrook and Kimberley, as shown in Figure

ECONOMIC GROWTH SOLUTIONS INC.

4.33. The region's population has been declining slightly, although the City of Cranbrook continues to experience population growth.

Figure 4.33: Cranbrook Timber Supply Area Population

Communities	1996	2001	% Change 1996-2001
Cranbrook	18,828	19,280	2.4
Other Communities	28,770	27,699	-3.7
Total Cranbrook TSA	**47,598**	46,979	-1.3

Source: Cranbrook Timber Supply Area Analysis Report, May 2004

The importance of the public sector and tourism are evident in Figure 4.34, as the region is a major public sector service centre for the southeastern part of the province and tourism continues to grow significantly with major resort expansion and development activity occurring at the Kimberley Alpine Resort and the St. Eugene Mission Golf Resort recently developed by the St. Mary's First Nation. Mining activity is also a significant employer in this region accounting for 19.4% of total basic sector employment compared with 13.4% for forestry.

Figure 4.34: Cranbrook Timber Supply Area Employment by Sector, 2000

Sector	% of Total Employment
Forestry and Wood-Related Processing	13.4%
Mining	19.4%
Tourism	21.6%
Construction	8.2%
Public Sector	28.6%
All Others	8.8%
Total	**100%**

Source: Cranbrook Timber Supply Area Analysis Report, May 2004

Forestry Employment and Income Impacts

The major timber licensees in the Cranbrook TSA include Tembec Industries Inc., and Galloway Lumber Company Ltd., which along with BC Timber Sales account for a majority of the annual allowable cut. There are several timber processing facilities located in the region including 4 lumber mills, a posts, rails and stakes plant, a pole plant, and a log home manufacturer.

In the Cranbrook TSA the total person-years related to forestry activity is estimated at almost 1,000 annually for the period 2000-2002 within the TSA and more than 1,900 for the province overall (Figure 4.35). On a per thousand cubic metres basis the factors are .95 person-years within the TSA and 1.82 person-years for the province overall.

Figure 4.35: Cranbrook Timber Supply Area Forestry Sector Employment, 2000-2002

Forestry Activity	Within TSA		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	400	0.38	410	0.39
Silviculture	42	0.04	63	0.06
Timber Processing	285	0.27	421	0.40
Total Direct Employment	726	0.69	895	0.85
Indirect + Induced Employment	271	0.26	1,022	0.97
Total	**997**	**0.95**	**1,917**	**1.82**

Source: Cranbrook Timber Supply Area Analysis Report, May 2004

Employment income estimates are shown in Figure 4.36, which indicates a total of $73.55 million in total employment income for the province as a result of forestry activity in the TSA and almost $70,000 per thousand cubic metres of timber harvest.

Figure 4.36: Cranbrook Timber Supply Area Forestry Sector Provincial Employment Income Estimates, 2000-2002

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Logging & Forestry Services	473	44,642	21.14	20,085
Solid Wood Processing	305	42,555	12.99	12,342
Pulp & Paper Processing	116	58,995	6.83	6,489
Total Direct Employment	895	n/a	40.96	38,917
Indirect + induced employment	1,022	31,899	32.59	30,964
Total	**1,917**	**n/a**	**73.55**	**69,881**

Source: Cranbrook Timber Supply Area Analysis Report, May 2004

Provincial Revenue Impacts from Forestry

As shown in Figure 4.37, the provincial revenues from forestry are also significant at almost $35 million annually during the period 2000 - 2002 or more than $33,000 per thousand cubic metres of timber harvest.

Figure 4.37: Cranbrook Timber Supply Area Average Annual Provincial Revenue Estimates, 2000-2002

Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	1,052,520	14.90	14,160
Forestry Industry Taxes	1,052,520	12.02	11,420
Employment Income Taxes	1,052,520	7.84	7,445
Total	**1,052,520**	**34.76**	**33,025**

Source: Cranbrook Timber Supply Area Analysis Report, May 2004

TREE FARM LICENSE 3

To complete this forestry impact analysis we have also included the employment, income and taxation impacts of the tree farm licensees within the Kootenay region, which were also shown on the map in Figure 4.1 at the beginning of this chapter.

Forestry Employment and Income Impacts

Within TFL 3 approximately 71 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.38. The overall provincial impact of forestry activity in TFL 3 is 288 person-years of employment. Within the TFL 1.14 person-years of employment per thousand cubic metres of harvest are generated, which increases to 2.62 person-years per thousand cubic metres for the province overall.

Figure 4.38: TFL 3 Forestry Sector Employment

Forestry Activity	Within TFL 3		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	20	0.32	26	0.42
Silviculture	43	0.07	62	0.10
Timber Processing	22	0.36	38	0.62
Total Direct Employment	46	0.74	70	1.13
Indirect + Induced Employment	25	0.40	92	1.49
Total	**71**	**1.14**	**288**	**2.62**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Employment income estimates are shown in Figure 4.39, which indicates a total of $4.9 million in total employment income for the province as a result of forestry activity in the TFL and almost $79,000 per thousand cubic metres of timber harvest.

Figure 4.39: TFL 3 Forestry Sector Provincial Employment Income Estimates, Average from 1994-2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	70	34,610	2.4	38,685
Indirect + Induced Employment	92	24,730	2.5	40,297
Total	**152**	**n/a**	**4.9**	**78,982**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Provincial Revenue Impacts from Forestry

As shown in Figure 4.40, the provincial revenues from forestry are almost $20 million annually during the period 2000 - 2002 or more than $27,500 per thousand cubic metres of timber harvest.

Figure 4.40: TFL 3 Average Annual Provincial Revenue Estimates, 1994-2003

Source of Provincial Revenues	Avg. Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	62,040	8.47	12,338
Forestry Industry Taxes	62,040	5.19	7,560
Employment Income Taxes	62,040	5.26	7,662
Total	62,040	**18.92**	**27,560**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

TREE FARM LICENSE 14

Forestry Employment and Income Impacts

Within TFL 14 approximately 263 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.41.

The overall provincial impact of forestry activity in TFL 14 is 451 person-years of employment. Within the TFL 2.63 person-years of employment per thousand cubic metres of harvest is generated, which increases to 2.63 person-years per thousand cubic metres for the province overall.

Figure 4.41: TFL 14 Forestry Sector Employment

Forestry Activity	Within TFL 14		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	78	0.48	93	0.57
Silviculture	2	0.01	19	0.12
Timber Processing	107	0.66	122	0.78
Total Direct Employment	187	1.15	239	1.47
Indirect + Induced Employment	76	0.47	188	1.16
Total	**263**	**1.62**	**451**	**2.63**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Employment income estimates are shown in Figure 4.42, which indicates a total of $45 million in total employment income for the province as a result of forestry activity in the TFL and $111,090 per thousand cubic metres of timber harvest.

Figure 4.42: Average TFL 14 Forestry Sector Provincial Employment Income Estimates, 1994-2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	239	50,100	12.0	73,917
Indirect + Induced Employment	188	32,100	6.0	37,173
Total	**263**	**n/a**	**45.0**	**111,090**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Provincial Revenue Impacts from Forestry

As shown in Figure 4.43, the provincial revenues from forestry are over $9 million annually during the period 2000 - 2002 or more than $57,000 per thousand cubic metres of timber harvest.

Figure 4.43: TFL 14 Average Annual Provincial Revenue Estimates, 1994-2003

Source of Provincial Revenues	Average Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	162,344	3.1	19,095
Forestry Industry Taxes	162,344	3.4	20,943
Employment Income Taxes	162,344	2.8	17,247
Total	162,344	**9.3**	**57,285**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

TREE FARM LICENSE 23

Forestry Employment and Income Impacts

Within TFL 23 approximately 782 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.44. The overall provincial impact of forestry activity in TFL 23 is 1,799 person-years of employment. Within the TFL 1.14 person-years of employment per thousand cubic metres of harvest is generated, which increases to 2.62 person-years per thousand cubic metres for the province overall.

Figure 4.44: TFL 23 Forestry Sector Employment

Forestry Activity	Within TFL 23		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	220	0.32	288	0.42
Silviculture	48	0.07	69	0.10
Timber Processing	247	0.36	426	0.62
Total Direct Employment	508	0.74	776	1.13
Indirect + Induced Employment	274	0.40	1,023	1.49
Total	**782**	**1.14**	**1,799**	**2.62**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Employment income estimates are shown in Figure 4.45, which indicates a total of $52.2 million in total employment income for the province as a result of forestry activity in the TFL and $86,037 per thousand cubic metres of timber harvest.

Figure 4.45: TFL 23 Average Provincial Employment Income Estimates, 1994-2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	776	34,610	26.9	39,184
Indirect + Induced Employment	1023	24,730	25.3	46,853
Total	**1,799**	**n/a**	**52.2**	**86,037**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Provincial Revenue Impacts from Forestry

As shown in Figure 4.46, the provincial revenues from forestry are over $18.92 million annually during the period 2000 - 2002 or more than $27, 000 per thousand cubic metres of timber harvest.

Figure 4.46: TFL 23 Average Annual Provincial Revenue Estimates, 1994-2003

Source of Provincial Revenues	Avg. Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	686,503	8.47	12,338
Forestry Industry Taxes	686,503	5.19	7,560
Employment Income Taxes	686,503	5.26	7,662
Total	686,503	**18.92**	**27,560**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

TREE FARM LICENSE 55

Forestry Employment and Income Impacts

Within TFL 55 approximately 163 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.47. The overall provincial impact of forestry activity in TFL 55 is 329 person-years of employment. Within the TFL 1.39 person-years of employment per thousand cubic metres of harvest is generated, which increases to 2.81 person-years per thousand cubic metres for the province overall.

Figure 4.47: TFL 55 Average Forestry Sector Employment, 1994-2003

Forestry Activity	Within TFL 55		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	40	0.34	49	0.42
Silviculture	1	0.01	7	0.06
Timber Processing	70	0.60	88	0.75
Total Direct Employment	111	0.95	144	1.23
Indirect + Induced Employment	52	0.44	85	1.58
Total	**163**	**1.39**	**329**	**2.81**

Source: Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area

Employment income estimates are shown in Figure 4.48, which indicates a total of $18.6 million in total employment income for the province as a result of forestry activity in the TFL and $154,729 per thousand cubic metres of timber harvest.

Figure 4.48: TFL 55 Average Provincial Employment Income Estimates, 1994-2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	144	34,610	5.0	80,583
Indirect + Induced Employment	185	24,730	4.6	74,146
Total	**329**	**n/a**	**18.6**	**154,729**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Provincial Revenue Impacts from Forestry

As shown in Figure 4.49, the provincial revenues from forestry are over $3 million annually during the period 2000 - 2002 or more than $48, 000 per thousand cubic metres of timber harvest.

Figure 4.49: TFL 55 Average Annual Provincial Revenue Estimates, 1994-2003

Source of Provincial Revenues	Avg. Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	62,040	1.49	20,017
Employment Income Taxes	62,040	1.74	28,046
Total	62,040	**3.23**	**48,063**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

TREE FARM LICENSE 56

Forestry Employment and Income Impacts

Within TFL 56 approximately 137 person-years of total employment are generated by forestry activity directly and indirectly, as shown in Figure 4.50. The overall provincial impact of forestry activity in TFL 56 is 277 person-years of employment. Within the TFL 1.39 person-years of employment per thousand cubic metres of harvest is generated, which increases to 2.81 person-years per thousand cubic metres for the province overall.

Figure 4.50: TFL 56 Average Forestry Sector Employment, 1994-2003

Forestry Activity	Within TFL 56		Province Overall	
	Employment (person-years)	Person-Years per 1,000 m^3	Employment (person-years)	Person-Years per 1,000 m^3
Harvesting	34	0.34	41	0.42
Silviculture	1	0.01	6	0.06
Timber Processing	59	0.60	74	0.75
Total Direct Employment	94	0.95	121	1.23
Indirect + Induced Employment	43	0.44	156	1.58
Total	**137**	**1.39**	**277**	**2.81**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Employment income estimates are shown in Figure 4.51, which indicates a total of $18.6 million in total employment income for the province as a result of forestry activity in the TSA and $81,764 per thousand cubic metres of timber harvest.

Figure 4.51: TFL 56 Average Provincial Employment Income Estimates, 1994-2003

Employment Category	Person-Years of Employment	Annual Income per Worker ($)	Total Employment Income ($ millions)	Employment Income ($ per 1,000 m^3)
Total Direct Employment	121	34,610	4.2	42,618
Indirect + Induced Employment	156	24,730	3.9	39,146
Total	**277**	**n/a**	**18.6**	**81,764**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

Provincial Revenue Impacts from Forestry

As shown in Figure 4.52, the provincial revenues from forestry are $3.2 million annually during the period 2000 - 2002 or more than $32, 000 per thousand cubic metres of timber harvest.

Figure 4.52: TFL 56 Average Annual Provincial Revenue Estimates, 1994-2003

Source of Provincial Revenues	Avg. Annual Volume Harvested (m^3)	Avg. Annual Prov. Revenue ($ millions)	Avg. Annual Prov. Revenue ($ per 1,000 m^3)
Stumpage & Related Revenues	98,551	1.49	15,119
Employment Income Taxes	98,551	1.74	17,655
Total	98,551	**3.23**	**32,775**

Source: *Study team preliminary analysis using timber harvesting data from the Ministry of Forests and impact coefficients from an adjacent Timber Supply area*

5 – TOURISM ACTIVITY AND IMPACTS

Tourism is one of BC's largest industries and generates a total economic impact in excess of $9 billion annually. It is second only to forestry in terms of total GDP contribution to the provincial economy. The geographic region covered by the South Kootenay Caribou Recovery Action Plan and the North Kootenay Caribou Recovery Action Plan takes in most of what is one of Tourism BC's six tourism regions, known as the Kootenay Rockies. In this region of the province tourism makes a significant contribution to the regional economy, in the range of close to $1 billion annually.

In examining the Kootenay Rockies tourism industry and its economic impacts we have first examined the overall impact of tourism on the region and its highly diversified product base. Then we have specifically examined nature-based tourism, which is most relevant in the context of the Caribou Recovery Action Plan as it is this type of tourism that makes extensive use of the backcountry throughout the region.

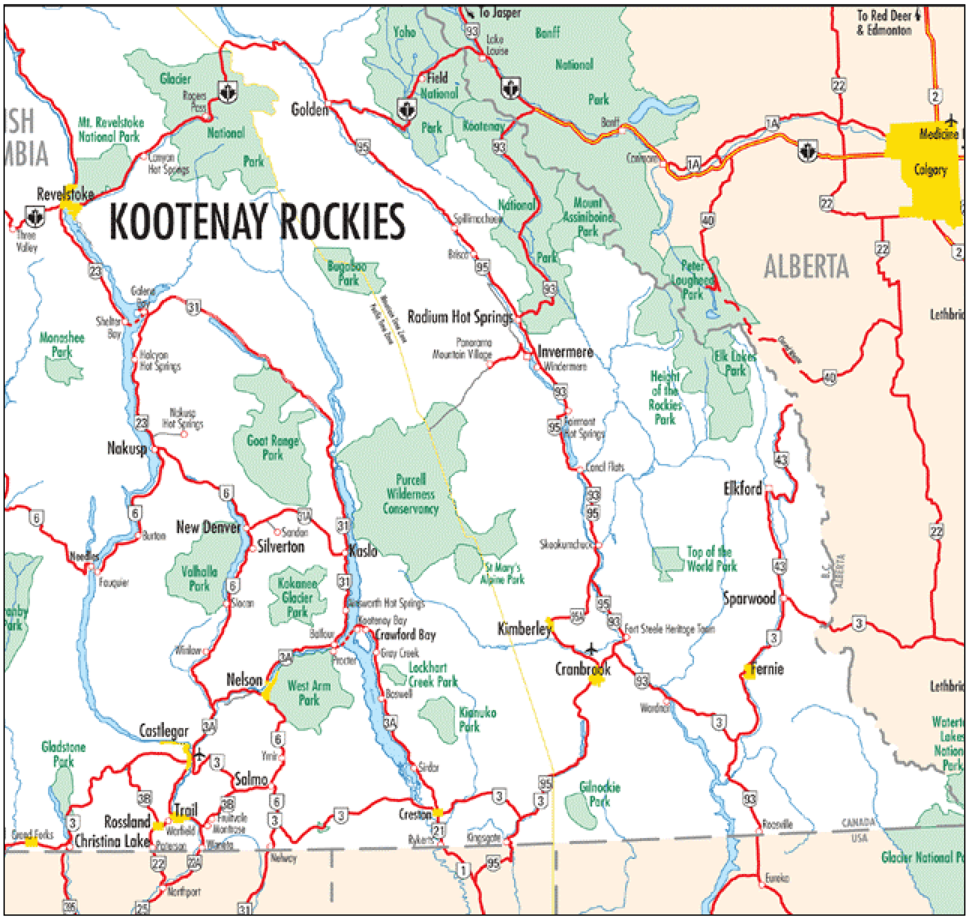
In addition to looking at the broad impacts of nature-based and other forms of backcountry tourism we have also examined the economic impacts of heli-skiing and snowcat skiing, which make extensive use of the backcountry including areas of caribou habitat. Then we examined snowmobiling, which also uses the backcountry in areas of caribou habitat, to understand the economic impact of this component of the Kootenay region's tourism sector. Finally we examined the economic impacts of hunting and angling activity in the Kootenay region.

We should stress that this tourism impact analysis is limited by the extent of data available that is relevant to the Kootenay region. Tourism is a difficult industry to measure because it encompasses many thousands of businesses in several sectors of the economy within BC.

OVERALL KOOTENAY ROCKIES TOURISM SECTOR

A map of the Kootenay Rockies travel region is shown in Figure 5.1, and provides an indication of the significant tourism activity in the region as a result of four major National Parks, several large provincial parks, the Purcell Wilderness Conservancy, and several large lake systems including Kootenay Lake, Arrow Lake, Windermere Lake and Columbia Lake, all of which have developed as premier tourism and resort destination areas. Added to this are several major hotsprings locations including Radium Hotsprings, Fairmont Hotsprings, Nakusp Hotsprings, and Halcyon Hotsprings, all of which have spawned significant tourism and resort activity.

Figure 5.1: Map of Kootenay Rockies Travel Region



Source: Kootenay Rockies Tourism Association

It is recognised that this region is does not overlap entirely with the Study Area – a significant portion of the Northern part of the study area is not represented and a smaller portion of the tourism region lies outside the study area. More refined information on tourism will be acquired prior to any socio economic impact analysis.

The region is also home to several mountain resort villages and downhill ski facilities that cater to national and international markets including:

- Kicking Horse Resort near Golden
- Panorama Resort near Invermere
- Red Mountain near Rossland
- Kimberley Alpine Resort at Kimberley
- Fernie Alpine Resort near Fernie

There are other smaller downhill ski operations within the region as well. Many of these mountain resorts have successfully developed on a four-season basis, adding golf and backcountry outdoor recreation activities to their offerings. Major golf and summer resort developments have occurred near Invermere, Fairmont Hot Springs, and Cranbrook (particularly the Delta St. Eugene Mission Resort). Considerable development has occurred even in the past three years, which is not reflected in any data currently available measuring the impact of the tourism industry. The boom in the Alberta economy has helped to fuel this development and is indeed a major source of tourism visitation for the Kootenay Rockies.

Overall Tourism Visitation and Revenue

The last major provincial visitor study was conducted in 1996. This study indicated a total of 6.1 million person-visits to the Kootenay Rockies, generating revenue of approximately $706 million, as shown in Figure 5.2.

Figure 5.2: Kootenay Rockies Tourism Visitation and Revenue, 1996

Visitor Category	No. of Visits (000)	Revenue* ($ Millions)
BC Residents	1,478	178
Non-Residents	4,612	528
Total	**6,090**	**706**

** Defined as total direct visitor expenditures*

Source: Tourism BC

Visitor volumes and revenue have naturally increased since then, particularly revenues as a result of the major tourism developments just described and the increased flow of visitation from Alberta and overseas to the region. Data is not available to provide a reliable estimate of the current magnitude of tourism in the Kootenay Rockies, but based on the judgement of the consulting team, it is likely that tourism contributes in the range of $800 million to $1 billion annually to the region as of 2004. We should note that much of the recent major development which has occurred has been on a fairly large scale and catering to the high-end of the market which generates a higher per person expenditure yield.

Other Tourism Indicators

Additional indicators of tourism visitation are shown in Figure 5.3 for 2002 and 2003. This clearly shows the impacts of 9/11, SARS, the Iraq war and other problems facing the tourism industry, as there has been some decline in U.S. visitation to the region, as indicated by Custom entries via the region. Also, passenger volumes at Castlegar Airport declined in 2002 and 2003, as well as the use of visitor information centres. However, this data does not adequately reflect the impact of the Alberta market and it is worth noting that in both 2002 and 2003 regional room revenues for roofed accommodations showed an increase, supporting our assertion that the major developments over the past few years have supported industry growth, particularly from Alberta. In addition, the overseas market typically accesses the region through Calgary Airport, which is also not reflected in the data.

Figure 5.3: Kootenay Rockies Regional Tourism Visitation Indicators

Visitation Indicator	2002	2003
Total Custom Entries via Region	354,210	325,077
% Change	-4.2%	-8.2%
% of Total Provincial Customs Entries	4.4%	4.4%
Regional Room Revenue ($000)	96,031	96,705
% Change	+9.6%	+0.7%
Castlegar Airport (passenger volume)	62,926	61,476
% Change	-19.4%	-2.3%
Visitor Info Centres (total no. of parties)	162,205	153,155
% Change	-11.8%	-5.6%

Source: Tourism BC

The accommodations sector in the Kootenay Rockies is very significant and we did a count of the number of accommodation establishments and rooms listed in the 2004 BC Accommodations Guide in order to understand the scale of this sector. This showed the following:

- A total of 263 accommodation establishments listed for the region
- A total of approximately 8,600 accommodation units or rooms listed
- 53 Campgrounds and 67 B&B's were also listed, although for B&B's this would represent only a small proportion of the total units available
- Hostels listed in the Guide had 303 beds in the region.

Kootenay Region Provincial Parks

A large number of Provincial Parks and protected areas are situated within the Kootenay Region and, in particular, within the North and South Kootenay Caribou Recovery Areas. In addition, there are several National Parks and other protected areas. These are listed in Figures 5.4 and 5.5 which shows a total of 26 Provincial Parks, 4 Provincial Marine Parks, 3 Provincial Ecological Reserves, along with some other protected areas such as the large Purcell Wilderness Conservancy. In addition there are two National Parks within the study area (Glacier and Mount Revelstoke) as well as two adjacent to the region to the east (Yoho and Kootenay).

In total within the North Kootenay Caribou Recovery Area there are 3,253,000 hectare of parks and protected area, and 288,600 hectares of parks and protected area in the South Kootenay Caribou Recovery Area.

The following figures do not include all areas protected for either wildlife habitat and/or recreation. Riparian reserves, ungulate winter ranges, forest service recreation sites, other wildlife management zones, and old growth management areas exist throughout the study area. The socio-economic impact analysis will include a more detailed inventory of these areas, especially those that are intended to directly contribute to Caribou habitat and recovery objectives.

Figure 5.4: Major Protected Areas in the North Kootenay Mountain Caribou Recovery Areas

Park/Protected Area	Area (km^2)
Glacier National Park	1,357
Goat Range Provincial Park	541
Mt Revelstoke National Park	261
Hamber Provincial Park	251
Monashee Provincial Park and Protected Area	220
Cummins Lakes Provincial Park	218
Bugaboo Provincial Park	138
Upper Seymour River Provincial Park	106
Greenbush Lake Protected Area	28
Goosegrass Creek Ecological Reserve	26
Pukeashun Protected Area	18
Mount Griffin Ecological Reserve	18
Lew Creek Ecological Reserve	12
Foster Arm Provincial Park	10
Other	23
Total	**3,253**

Source: Recovery Action Plan for the North Kootenay Mountain Caribou Populations: Draft Report, September 2003.

Figure 5.5: Provincial Parks and Protected areas within the South Kootenay Recovery Planning Area.

Park/Protected Area	Area (ha)
Purcells:	
East Purcells Provincial Park Corridor	1,991
Gilnockie Provincial Park	2,822
Gilnockie Creek Provincial Park	56
Kianuko Provincial Park	11,638
Lockhart Creek Provincial Park	3,751
Lockhart Beach Provincial Park	3
Purcell Wilderness Conservancy	198,115
St. Mary's Alpine Provincial Park	9,146
Jim Smith Lake Provincial Park	14
Moyie Lake Provincial Park	90
Yahk Provincial Park	9
Pilot Bay Provincial Park	347
Campbell Bay Marine Park	25
Selkirks:	
Erie Creek Provincial Park	11
Stagleap Provincial Park	1,133
West Arm Provincial Park	25,319
Champion Lakes Provincial Park	1,426
Kokanee Glacier Provincial Park	32,035
Kokanee Creek Provincial Park	260
Midge Creek Marine Park	223
Coffee Creek Marine Park	52
Drewey Point Marine Park	26
Cody Caves Provincial Park	63
Beaver Creek Provincial Park	44
Total	**288,599**

Source: Recovery Action Plan for the South Purcells and South Selkirks Mountain Caribou Populations: Draft 2, March 2004

Overall visitation statistics for the Kootenay region Provincial Parks is shown in Figure 5.6. This indicates annual overall visitation levels in the range of 1.7 to 2 million annually over the last several years.

Figure 5.6: Kootenay Region Provincial Park Attendance 1995-2000

Kootenay District	1995	1996	1997	1998	1999	2000
Overnight Use	313,555	299,875	294,669	334,323	289,052	306,698
Day Use	1,454,877	1,630,563	1,697,087	1,653,575	1,457,662	1,418,526
Boating Use	7,120	10,589	9,427	11,878	9,161	8,822
Total Visits	**1,775,552**	**1,941,027**	**2,001,183**	**1,999,776**	**1,755,875**	**1,734,046**

Source: BC Parks

The tourism impacts of these parks and protected areas are significant, and a study was undertaken in 1999 by the Province, which measured the economic impacts of Provincial Parks. We have summarized these impacts for the Kootenay Region Provincial Parks in Figures 5.7, 5.8, and 5.9. As shown in Figure 5.7, the overall direct expenditure impacts of the Kootenay Region Provincial Parks was estimated at $42.3 million for 1999 based on visitor expenditures as well as the impacts of the BC Parks operations themselves.

Figure 5.7: Direct Expenditure Impacts of Kootenay Region Provincial Parks, 1999

Impact Category	Type of Expenditure	Amount of Impact ($ millions)
Visitor Expenditures	**Groceries**	**10.2**
	Vehicle Fuel	**10.4**
	Recreational Services	**6.1**
	Meals	**8.2**
	Repair Services	**3.5**
Impacts of BC Parks Operations	**Vehicle Fuel**	0.1
	Maintenance	0.1
	Business Services	0.1
	Building Maintenance	1.0
	Office Type Supplies	0.1
	Wages and Salaries	2.2
	Youth Employment Program	0.3
Total Expenditure Impacts		42.3

Source: BC Parks

The employment impact associated with Provincial Parks are shown in Figure 5.8 and is estimated at a total of 544 full-time equivalent jobs (FTEs), based on the employment supported by visitor spending as well as actual BC Parks staff, contractor staff and youth employment associated with the Provincial Parks. The Parks staff component has likely declined since 1999 as a result of provincial government cutbacks, although this would be at least partly offset by an increase in the use of private sector contractors.

Figure 5.8: Employment Impacts of Kootenay Region Provincial Parks, 1999

Impact Category	Type of Employment Impact	Amount of Impact (full-time equivalents)
Park Visitors	Employment Associated with Visitor Spending	**431**
Employment Associated with BC Parks Operations	**BC Parks Staff FTE's** **Parks Contractors FTE's** **Indirect/Induced FTE's**	31 28 0.1
Youth Team Employment	**Youth Team FTE's** **Indirect/Induced FTE's**	17 3
Total Expenditure Impacts		544

Source: BC Parks

In Figure 5.9 we have shown the tax revenue impacts of the Kootenay Region Provincial Parks, which is estimated at $13.4 million for 1999, as shown.

Figure 5.9: Tax Revenue Impacts of Kootenay Region Provincial Parks, 1999

Impact Category	Type of Tax Impact	($ Millions)
Park Visitors	Provincial Federal	**5.3** **6.4**
BC Parks Operations	Provincial Federal	0.6 0.9
Youth Program	Provincial Federal	0.1 0.1
Total Tax Impacts		13.4

Source: BC Parks

COMMERCIAL NATURE-BASED TOURISM SECTOR

In recent years one of the fastest growing components of BC's tourism industry is nature-based tourism, which includes a wide range of outdoor-oriented tourism activities including many lodges and guest ranches that specifically cater to these market segments. According to a study undertaken by Tourism BC and the Wilderness Tourism Association of BC, based on 2001 data, there were approximately 224 of these nature-based tourism commercial businesses located within the Kootenay Rockies region, as shown in Figure 5.10.

Figure 5.10: Number of Nature-Based Tourism Businesses by Type in the Kootenay Rockies

Type of Business	No. of Businesses	% of BC Total
Comprehensive Lodge	11	22%
Standard Lodge	5	12%
Guest Ranch	4	6%
Guide Outfitters	31	13%
FW Fishing Lodges	1	1%
FW Fishing (No Lodge)	21	18%
River Rafting	22	28%
FW Kayaking/Canoeing	4	10%
Land-Based Summer	57	14%
Mountain Biking	5	12%
Land-Based Winter	44	44%
Heli-Skiing	12	36%
SW (Ocean) Kayaking	1	1%
Boat Charters	3	1%
Scuba Diving	1	2%
Sail Cruising	2	2%
Total	224	**100.0%**

Source: Tourism BC

We should note that the study includes motorized activities (e.g. - heli-skiing and snowmobiling) which some may not view as being strictly nature-based (the emphasis is more on the activity than on nature), although the focus of these activities is still outdoor recreation making use of the natural environment. While a number of these business types are self-explanatory, it is worth noting the types of activities included for some of them:

- **Land-based summer nature-based tourism businesses.** These include bird watching, nature-based cultural tourism, educational outdoor experiences, hang-gliding/parasailing, hiking/backpacking, horseback riding, llama trekking, rock climbing, cycling tours, ATV experiences, day sailing and wildlife or nature observation including photography.
- **Land-based winter nature-based tourism businesses.** These include backcountry ski touring, cross-country skiing, winter outdoor educational experiences, snowmobiling and snowcat-skiing/snowboarding.

As shown, the region accounts for approximately 10% of the total of 2,253 nature-based commercial tourism businesses tabulated in Tourism BC's provincial inventory of 2001.

In Figure 5.11 we have presented preliminary estimates of the economic impacts of commercial nature-based tourism businesses in the Kootenay Rockies.

Figure 5.11: Estimated Economic Impacts of Commercial Nature-Based Tourism Businesses in the Kootenay Rockies, 2001 ($ millions)

Impact Category	Direct Impacts	Indirect Impacts	Induced Impacts	Total Impacts
Client Direct Spending*	70.8			
Output**	85.4	44.6	25.2	155.2
GDP (Value Added)	42.9	21.3	14.0	78.2
Labour Income	32.2	14.7	8.7	55.6
Employment (person-years)	1,390	440	240	2,070
Federal	7.9	2.0	1.1	11.0
Provincial	4.9	2.0	0.9	7.8
Municipal	0.8	0.6	0.4	1.8
Total Taxes and Levies	13.6	4.6	2.4	20.6

*Client spending refers to all expenditures by clients at nature-based tourism operations (incl. taxes and gratuities) excluding travel to and from the facility.

** Output essentially refers to the revenues (excluding client taxes but including gratuities) earned by the operations.

Source: *Preliminary estimates by consultants based on data in a recent study published by Tourism BC: Economic Value of the Commercial Nature-Based Tourism Industry in British Columbia, September 2004*

This table is based on data in the provincial study, but we have made the assumption that the Kootenay Rockies region represents 10% of the total provincial impact. This 10% figure is based on the percentage of the provincial nature-based tourism businesses that are located within the region. We judged this to be a reasonable approximation in that the region has well over 10% of the province's nature-based tourism businesses in some of the higher value categories such as comprehensive lodge, standard lodge, land-based winter, and heli-skiing, although it is under-represented in some of the high yield categories such as saltwater and freshwater fishing lodges. Based on this 10% factor nature-based tourism in the Kootenay Rockies had direct, indirect and induced economic output impacts of $155 million including GDP impact of $78.2 million. Total employment impact is estimated at 2,070 person-years in commercial nature-based tourism businesses and the total tax impacts were approximately $20.6 million in 2001.

It is worth noting that these estimates do not include the impacts of outdoor and backcountry recreation participation in these same activities by local residents within the Kootenay region.

HELI-SKIING AND SNOWCAT SKIING IN THE KOOTENAY ROCKIES

Heli-skiing and snowcat skiing were the subject of a major socioeconomic impact study in 2002. It is a sector that potentially has an impact on the region's caribou population, and the largest operator has undertaken some research in conjunction with the province to ascertain these impacts and endeavours to conduct its operations in a way that minimizes any negative impacts on the caribou population. A good example of this is a 2003 study entitled, *Cumulative Effects of Habitat Change and Backcountry Recreation on Mountain Caribou in the Central Selkirk Mountains*, prepared for the Ministry of Sustainable Resource Management, Canadian Mountain Holidays, and Pope and Talbot Ltd. Potentially this sector will be one of the most affected by some proposed actions of the Caribou Recovery Action Plans. Therefore, we have included a fair bit of detail about the economic impacts of this sector.

Significant backcountry tenures are held by heli-skiing, heli-hiking and snowcat skiing operators throughout the Kootenays. Within the North Kootenay Recovery area there are at least nine major heli-skiing, heli-hiking and/or cat-skiing operators, plus at least eleven additional operators in the South Kootenay Recovery area. The largest operator, Canadian Mountain Holidays, has several different bases throughout the region.

These operators have non-exclusive tenures to these regions that enable them flying rights over certain areas and permission to take-off and land in specific areas and designated locations. A variety of land use tenures (e.g. forestry, mining) are also applicable throughout much of territory where heli-skiing and heli-hiking operators have their non-exclusive tenures.

The extent of heli and snowcat skiing in the Kootenay region by major visitor origin is shown in Figures 5.12 and 5.13. In Figure 5.12 the total number of ski visitors is shown for the Golden and Revelstoke/Selkirks regions of the Kootenay and it is clear that the majority of visitors are from the U.S. and overseas, as shown.

Figure 5.12: Total Heli-Snowcat Ski Visitors by Origin for Kootenay Region, 2001

Origin of Ski Visitors	Golden		Revelstoke/Selkirks		Total Kootenay	
	# of Ski Visitors	%	# of Ski Visitors	%	# of Ski Visitors	%
BC	142	2.2	586	6.7%	728	4.6%
Other Canada	688	10.9%	1,442	16.5%	2,130	13.5%
U.S.A.	3,320	52.4%	4,879	56.0%	8,199	51.9%
International	2,330	36.8%	2,398	27.5%	4,728	30.0%
Total	**6,480**	**100.0**	**9,305**	**100.0**	**15,785**	**100.0**

Source: Analysis of Socioeconomic Benefits of Helicopter and Snowcat Skiing in BC, 2002

In Figure 5.13 the total tourism visitor days that is sustained by heli and snowcat skiing operations in the Kootenay region, indicating a total number of tourism visitor days for the region in excess of 14,000 in 2001.

Figure 5.13: Total Tourism Visitor-Days Sustained by Heli-Snowcat Skiing in the Kootenay Region, 2001

Origin of Ski Visitors	**Golden**		**Revelstoke/Selkirks**		**Total Kootenay**	
	# of Ski Visitors	**%**	**# of Ski Visitors**	**%**	**# of Ski Visitors**	**%**
BC	86	2.1%	206	2.1%	292	2.1%
Other Canada	246	6%	1,120	11.7	1,366	9.7%
U.S.A.	2,570	62.2%	5,844	60.9%	8,414	60.0%
International	1,313	31.8%	2,629	27.4%	3,942	28.1%
Total	**4,215**	**100.0**	**9,799**	**100.0**	**14,014**	**100.0**

Source: Analysis of Socioeconomic Benefits of Helicopter and Snowcat Skiing in BC, 2002

The economic impacts of the Heli and Snowcat skiing operations in the Kootenay region is shown in Figures 5.14, 5.15 and 5.16. In Figure 5.14 annual ski visitor expenditures are in excess of $51 million, in addition to annual non-recurrent spending by the heli and snowcat skiing operators of approximately $3.3 million, based on the annual average of 1998-2001.

Figure 5.14: Direct Capital and Visitor Spending by Heli- and Snowcat Ski Operators in the Kootenay Rockies

Spending Category	**Avg. Annual Capital Spending by Operators**		**Annual Visitor Spending**	
	1998-2001	**%**	**2001**	**%**
Golden	**$2,307,600**	**69.4**	**$16,745,675**	18.1%
Revelstoke/Selkirks	$1,034,900	31.0	$34,762,948	37.5%
Total	$3,342,500	**100.0**	**$51,508,623**	**32.5**

Source: Analysis of Socioeconomic Benefits of Helicopter and Snowcat Skiing in BC, 2002

The total employment impact of Kootenay Rockies heli-ski and snowcat operations is shown in Figure 5.15, which indicates a direct employment impact in person-years of 674, and indirect/induced employment impact of 693, for a total employment impact of 1,367. These impacts are so significant because of the extremely high per person, per day yield of the heli and snowcat ski visitors who all stay in luxury accommodation, eat all their meals at the accommodation establishments or restaurants, and pay for premium personalized service throughout their vacation experience.

Figure 5.15: Estimated Employment Impacts of Kootenay Rockies Heli-ski/Snowcat Operations

Impact Category	Person-Years*
Direct Employment	674
Indirect/Induced Employment	693
Total Employment Impact	**1,367**

**Estimates based on Kootenay Share of total expenditure Impacts*

Source: Estimated from provincial data in Analysis of Socioeconomic Benefits of Helicopter & Snowcat Skiing in BC, 2002

The taxation impacts of Kootenay Rockies heli-ski and snowcat operations are shown in Figure 5.18 and amount to $33.3 million annually as shown.

Figure 5.16: Estimated Taxation Impacts of Kootenay Rockies Heli-Ski/Snowcat Operations

Type of Taxes	Tax Impact ($Millions)
Federal	17.0
Provincial	13.3
Local	3.0
Total Tax Impacts*	**33.3**

** Direct, indirect and induced*

Source: Analysis of Socioeconomic Benefits of Helicopter & Snowcat Skiing in BC

SNOWMOBILING TOURISM IN THE KOOTENAY ROCKIES

Snowmobiling is a popular recreational activity throughout the region. As the provincial study of commercial nature-based tourism determined, there are a number of snowmobile tourism operations located in the Kootenay Rockies. While this sub-segment has not been studied for the region overall, as with heli-skiing and snowcat skiing, there is relevant information available in a National Study of Snowmobiling which included the economic impacts of snowmobile tourism in BC, as well as economic impact information available in a 2002 snowmobile study conducted for the Revelstoke area.

Based on an examination of the data in these two studies and some additional calculations of our own, we have presented a preliminary estimate of commercial snowmobiling tourism impact in the Kootenay Rockies for 2001 in Figure 5.17. As shown, the direct expenditure impact is in the range of $7.3 million annually, resulting in a total GDP impact of $6.4 million and an employment impact of 185 jobs. On an industry output basis, the total output impact is $14.4 million dollars annually, as shown.

Figure 5. 17: Preliminary Estimate of Snowmobiling Tourism Impact in Kootenay Rockies, 2001

Impact Component	Estimated Impact* ($ millions or # of jobs)
Direct Expenditures	**7.3**
GDP:	
Direct	2.8
Indirect/Induced	3.6
Total GDP Impact	6.4
Employment Impact (jobs):	
Direct Employment	116
Indirect/Induced	69
Total Employment Impact	185
Industry Output:	
Direct and Indirect	9.9
Induced	4.5
Total Output Impact	14.4

**Assumes Kootenay Region accounts for 20% of provincial activity*

Sources: Estimates based on data and information in: National Snowmobile Tourism Study: Final Report, December 200; and Revelstoke Snowmobile Strategy, October 2002.

The snowmobiling segment of nature-based tourism also can potentially impact the caribou population and the BC Federation of Snowmobile Clubs, along with individual clubs, have been working to educate their members and visitors on the necessity to avoid disturbing the caribou herds. Some of the actions proposed in the North and South Kootenay Caribou Recovery Action Plans could potentially restrict snowmobile activity and affect this segment of the tourism industry.

It should be noted that the economic impacts shown here do not include the local recreational value of snowmobiling throughout the region.

HUNTING AND ANGLING IMPACTS IN THE KOOTENAY REGION

Hunters and anglers make extensive use of the Kootenay backcountry, so we have broadly examined the economic impacts associated with the guide outfitting industry, freshwater angling and resident hunting activity.

Guide Outfitting Industry

Preliminary estimates of the economic impacts of this sector in the Kootenay region are shown in Figure 5.18. This indicates that total annual revenue impacts in the Kootenay region were approximately $6 million as of 2001, supporting 90 person-years of employment, 2.4 million in wages and salaries, and providing over $700,000 to the Provincial Government in the form of various licensing fees.

Figure 5.18: Estimated Economic Impacts of Kootenay Guide Outfitting Industry, 2001

Impact Component	Estimated Impacts
Revenues:	
Hunting	$4.8 million
Other	$1.2 million
Total	$6.0 million
Employment & Wages:	
Person-Years	90
Wages & Salaries	$2.4 million
Government Revenues:	
Guide Outfitter & Asst. Fees	$21,000
Guide Royalties	$61,500
Hunting Licenses	$102,000
Hunting Tags	$220,500
Land Tenure, Park Use, etc.	$300,000
Local Property Tax	$30,000
Total	$735,000

Source: Consultant preliminary estimates based on data in The Guide Outfitting Industry in BC - An Economic Profile, prepared for: BC Ministry of Sustainable Resource Management, October 2002

Freshwater Angling Activity

While freshwater angling would not appear to have a direct conflict with caribou habitat, anglers do access lakes and streams within habitat areas or travel through such areas to access backcountry waters. They also use backcountry lodges, outpost cabins and campsites that may be in areas of caribou habitat. Preliminary estimates of the economic impacts of this sector in the Kootenay region are shown in Figure 5.19. This indicates that total annual angler expenditure impacts in the Kootenay region were approximately $56.3 million as of 2000 and provided $1.6 million to the Provincial Government in the form of various licensing fees.

Figure 5.19: Preliminary Estimates of Economic Impacts of Freshwater Angling in the Kootenay Region, 2000

Impact Component	Estimated Impacts ($ millions)
Angler Expenditures:	
Major Expenses:	
Boating Equipment	5.6
Angling Equipment	2.5
Other	18.4
Direct Expenditures:	
Packages	2.9
Guide Services	0.7
Accommodation & food	11.7
Travel	8.1
Owned Boat Costs	2.3
Suppliers & Services	2.5
License/Access fees	1.6
Total:	56.3
Provincial Government Revenues:	
Basic Licenses	1.3
Conservation Surcharges	0.2
Classified Waters	0.1
Total:	1.6

Source: Consultant preliminary estimates based on data in Freshwater Angling in BC - An Economic Profile, prepared for: BC Ministry of Sustainable Resource Management, April 2003.

Resident Hunting Activity

Preliminary estimates of the economic impacts of this sector in the Kootenay region are shown in Figure 5.20. This indicates that total annual hunter expenditure impacts in the Kootenay region were approximately $11.4 million as of 2001 and provided $0.8 million to the Provincial Government in the form of various licensing fees.

Figure 5.20: Preliminary Estimates of Resident Hunting Economic Impacts in the Kootenay Region, 2001

Impact Components	Estimated Impacts ($ millions)
Hunter Expenditures:	
Transportation	4.3
Food, Beverages & Accommodation	2.3
Equipment	2.4
Taxidermy & Butchering	0.6
Hunting Fees	0.9
Other	0.9
Total:	11.4
Government Revenues:	
Hunting Licenses	0.2
TAGS	0.4
Limited Entry Hunts	0.1
Other	0.1
Total:	0.8

Source: Consultant preliminary estimates based on data in Resident Hunting in BC - An Economic Profile, prepared for: BC Ministry of Sustainable Resource Management, March 2003.

It is recognised that certain recovery actions may result in changes to predator-prey relationships for ungulates and the species that prey upon them such as wolves and cougars. The socio-economic impact analysis will address the extent to which such actions could affect hunting opportunities in future.

6 – IMPLICATIONS OF SOCIOECONOMIC BASELINE ANALYSIS

This study has provided a base of information that can be used in future to undertake a socioeconomic impact analysis of any proposed or recommended actions associated with the North and South Kootenay Caribou Recovery Action Plans. The Kootenay region has a significant population base and an economy that is focussed on forestry, tourism, and transportation, as well as some secondary processing and small scale manufacturing operations, along with a significant public sector component including the various levels of government, education and health care.

PRINCIPAL FINDINGS AND CONCLUSIONS

The purpose of this project has been to provide a strong base of information and data for use in subsequent socioeconomic impact analyses. In putting together all of the data and economic profiles, several conclusions have emerged as follows:

- Timber harvesting and backcountry tourism are the two economic sectors most likely to be affected by specific actions aimed at Caribou recovery.
- Any restrictions imposed on timber harvesting could not only reduce employment and income from this specific activity, but would also affect various timber processing operations such as dimension lumber mills, veneer mills, log home manufacturing operations, and other secondary industries associated with forestry.
- Some forms of backcountry tourism that may be affected by possible actions of the Caribou Recovery Program include some of the more economically significant tourism market segments such as heli-skiing, snowcat skiing and snowmobiling. These generate high visitor expenditure yields on a per-person, per-day basis.
- The region overall has a substantial tourism infrastructure and it should be noted that many of the major resorts and larger scale accommodation establishments are dependant upon backcountry activities for significant components of their business, so major restrictions to backcountry activity could impact on these larger scale tourism enterprises.
- First Nations in the region are primarily located adjacent to major population centres within the Kootenay region (e.g. Creston, Cranbrook, Invermere) and are not in areas of prime caribou habitat, although their traditional territories would take in many of the habitat areas. Members of First Nations are engaged in forestry and tourism activity, which could be

affected by the Caribou Recovery actions. They also will likely have concerns about any recovery actions undertaken within their traditional territory.

- It should also be noted that some of the proposed actions may have positive economic impacts.
  - Restrictions on timber harvesting may have significant positive environmental benefits, by better conserving landscapes, viewscapes, and flora and fauna habitats.
  - Recovery action activities can provide a variety of benefits in terms of enhancing the quality and quantity of scientific information and data needed to make informed decisions on land use activities. This can include the development of more efficient use of scarce resources for monitoring and allocating funding for research and/or habitat enhancement.
  - Preservation and enhancement of the caribou herds could also have a positive impact on wildlife-viewing oriented backcountry tourism activities. The extent of this activity in presently unknown, but its potential will be addressed in the impact analysis if it is deemed to be significant.
  - The incorporation of caribou habitat objectives into the day-to-day operations of affected companies and institutions can potentially lead to more cost effective and innovative ways of conducting business. Businesses that demonstrate leadership in turning potential constraints into opportunities for innovation and efficiency can experience lower operating costs, and higher satisfaction and loyalty from their customers, and the public in general.
  - There are actions directed at caribou recovery already underway prior to the release and implementation of a formal action plan. These include

It will be important that any socioeconomic impact analysis undertaken, which makes use of the information and data in this study, includes and measures as well as possible, all impacts of the proposed caribou recovery actions.

APPENDIX – SUB-REGIONAL SOCIOECONOMIC DATA TABLES

Annual Population Estimates

(as of July 1, includes estimate of Census undercount)

Year	Columbia Sh	% Change Prev Year	BC	% Change Prev Year
1999	31,353		4,011,342	
2000	31,629	0.9%	4,039,198	0.7%
2001	31,608	-0.1%	4,078,447	1.0%
2002	31,850	0.8%	4,114,981	0.9%
2003	31,770	-0.3%	4,146,580	0.8%

Source: BC Stats

Age and Gender - 2001 Census

	Male	Female	% Distribution Columbia Sh	% Distribution BC
All Ages	15,485	14,800	100.0%	100.0%
0-14	2,890	2,650	18.3%	18.1%
15-24	1,850	1,645	11.5%	13.2%
25-44	4,085	4,095	27.0%	30.1%
45-64	4,340	4,185	28.1%	25.1%
65+	2,325	2,220	15.0%	13.6%

Source: Statistics Canada

Labour Force by Industry, 2001 Census

	Columbia Shuswap	Percentage	BC %
Total Labour Force	15,560		
Experienced LF by Industry	15,190	100.0%	100.0%
Agriculture	430	2.8%	2.0%
Forestry	865	5.7%	1.7%
Mining, oil & gas extraction	115	0.8%	0.7%
Utilities	95	0.6%	0.6%
Construction	1,325	8.7%	5.9%
Manufacturing Total	1,765	11.6%	9.6%
Wood and paper products	1,165	7.7%	3.1%
Wholesale Trade	195	1.3%	4.1%
Retail Trade	1,675	11.0%	11.6%
Transportation and Warehousing	1,325	8.7%	5.7%
Business, personal & other service	2,585	17.0%	25.0%
Education	710	4.7%	6.9%
Health Care, Social Assistance	1,020	6.7%	9.9%
Arts, entertainment and recreation	490	3.2%	2.3%
Accommodation & Food Service	2,085	13.7%	8.3%
Public Administration	510	3.4%	5.6%
Agrilculture, Food and Beverage	525	3.5%	3.0%
Logging and Forest Products	2,030	13.4%	4.7%
Minerals and Mineral Products	225	1.5%	2.0%

2001 Census Population Charateristics

	Columbia Shuswap	BC
Population, 2001	30,289	3907738
Labour force (15+)	15,565	2059950
Employees	12,050	1715600
Self-employed	925	95185
Participation Rate	63.2%	65.2%
Unemployment Rate	11.7%	8.5%
Households	12,460	1,534,335
1-family households	8,830	1,012,925
Multi-family housholds	115	35,050
Non-family households	3,510	486,355
Median Family Income	48,926	$ 54,840
Median Income	19,206	$ 22,095
Males	26,429	$ 28,976
Females	14,258	$ 17,546
Population in Private Hh	29,350	3,785,270
Incidence of low income	13.3%	17.8%

Source: Statistics Canada, incomes are for 2000.

Education Levels, 2001 Census

	Columbia Shuswap Number	Columbia Shuswap Percentage	BC Percentage
Population, 20 yrs & over	22,460	100.0%	100.0%
Less than grade 9	1,615	7.2%	6.6%
Some high school	5,505	24.5%	17.7%
High school graduate	2,950	13.1%	12.3%
Trades certificate	3,785	16.9%	12.8%
University degree	1,835	8.2%	9.1%
Other post secondary	6,770	30.1%	33.0%

Source: 2001 Census

Source of Total Income

	Columbia Shuswap $ million	Columbia Shuswap % of total	BC % of total
Employment	320.1	62.7%	66.0%
Pension	77.7	15.2%	11.9%
Investment	51.2	10.0%	9.7%
Self-employe	13.0	2.5%	5.0%
Other	30.5	6.0%	4.7%
Tax Exempt	17.8	3.5%	2.6%
Total	510.4	100.0%	100.0%

Source:Canada Customs and Revenue Agency

Personal Taxation Statistics

Year	Taxable Returns Columbia Sh	Taxable Returns BC	Average Income Columbia Sh	Average Income BC
1996	12,460	1,879,340	$ 31,728	$ 36,961
1997	12,770	1,898,700	$ 32,459	$ 37,894
1998	12,910	1,915,220	$ 32,921	$ 38,398
1999	12,770	1,937,520	$ 34,783	$ 39,758
2000	12,740	1,928,560	$ 36,114	$ 42,121

Source:Canada Customs and Revenue Agency

Dependency on the Safety net

% of Population by Age Receiving Benefits - September 2003

Age group	Total, BC Basic Income Assistance* & EI Beneficiari Columbia Sh	BC
19-24	4.0%	5.1%
25-54	6.2%	5.6%
55-64	2.9%	2.6%
19-64	5.4%	5.1%

Source: BC Stats; includes temporary assistance only, excludes aboriginal people living on reserve, seniors/OAS, children living with a relative

Central Sub-Region Socioeconomic Data Tables

Annual Population Estimates

(as of July 1, includes estimate of Census undercount)

Year	C Kootenay	% Change Prev Year	BC	% Change Prev Year
1999	59,929		4,011,342	
2000	59,637	-0.5%	4,039,198	0.7%
2001	59,503	-0.2%	4,078,447	1.0%
2002	59,394	-0.2%	4,114,981	0.9%
2003	59,388	0.0%	4,146,580	0.8%

Source: BC Stats

Age and Gender - 2001 Census

	Male	Female	% Distribution C Kootenay	% Distribution BC
All Ages	28,315	28,705	100.0%	100.0%
0-14	5,280	4,985	18.0%	18.1%
15-24	3,680	3,255	12.2%	13.2%
25-44	7,045	7,525	25.6%	30.1%
45-64	8,010	8,055	28.2%	25.1%
65+	4,300	4,885	16.1%	13.6%

Source: Statistics Canada

Labour Force by Industry, 2001 Census

	C Kootenay	Percentage	BC %
Total Labour Force	28,570		
Experienced LF by Industry	27,860	100.0%	100.0%
Agriculture	725	2.6%	2.0%
Forestry	1,515	5.4%	1.7%
Mining, oil & gas extraction	175	0.6%	0.7%
Utilities	265	1.0%	0.6%
Construction	2,435	8.7%	5.9%
Manufacturing Total	2,920	10.5%	9.6%
Wood and paper products	1,805	6.5%	3.1%
Wholesale Trade	475	1.7%	4.1%
Retail Trade	3,105	11.1%	11.6%
Transportation and Warehousing	1,180	4.2%	5.7%
Business, personal & other service	4,955	17.8%	25.0%
Education	2,275	8.2%	6.9%
Health Care, Social Assistance	3,160	11.3%	9.9%
Arts, entertainment and recreation	600	2.2%	2.3%
Accommodation & Food Service	2,630	9.4%	8.3%
Public Administration	1,445	5.2%	5.6%
Agrilculture, Food and Beverage	990	3.6%	3.0%
Logging and Forest Products	3,310	11.9%	4.7%
Minerals and Mineral Products	580	2.1%	2.0%

2001 Census Population Charateristics

	C Kootenay	BC
Population, 2001	57,019	3,907,738
Labour force (15+)	28,570	2,059,950
Employees	22,495	1,715,600
Self-employed	1,305	95,185
Participation Rate	61.9%	65.2%
Unemployment Rate	11.6%	8.5%
Households	24,205	1,534,335
1-family households	16,155	1,012,925
Multi-family housholds	195	35,050
Non-family households	7,860	486,355
Median Family Income	$ 47,299	$ 54,840
Median Income	$ 19,008	$ 22,095
Males	$ 25,235	$ 28,976
Females	$ 15,081	$ 17,546
Population in Private Hh	56,140	3,785,270
Incidence of low income	15.4%	17.8%

Source: Statistics Canada, incomes are for 2000.

Education Levels, 2001 Census

	C Kootenay Number	C Kootenay Percentage	BC Percentage
Population, 20 yrs & over	42,030	100.0%	100.0%
Less than grade 9	3,320	7.9%	6.6%
Some high school	8,395	20.0%	17.7%
High school graduate	4,740	11.3%	12.3%
Trades certificate	6,985	16.6%	12.8%
University degree	4,745	11.3%	9.1%
Other post secondary	13,845	32.9%	33.0%

Source: 2001 Census

Source of Total Income

	C Kootenay $ million	C Kootenay % of total	BC % of total
Employment	660.2	62.1%	66.0%
Pension	173.7	16.3%	11.9%
Investment	80.7	7.6%	9.7%
Self-employe	47.4	4.5%	5.0%
Other	60.4	5.7%	4.7%
Tax Exempt	40.8	3.8%	2.6%
Total	1,063.2	100.0%	100.0%

Source:Canada Customs and Revenue Agency

Personal Taxation Statistics

Year	Taxable Returns C Kootenay	Taxable Returns BC	Average Income C Kootenay	Average Income BC
1996	26,640	1,879,340	$ 32,314	$ 36,961
1997	26,860	1,898,700	$ 32,883	$ 37,894
1998	26,850	1,915,220	$ 32,976	$ 38,398
1999	26,610	1,937,520	$ 33,956	$ 39,758
2000	26,850	1,928,560	$ 35,665	$ 42,121

Source:Canada Customs and Revenue Agency

Dependency on the Safety net

% of Population by Age Receiving Benefits - September 2003

Total, BC Basic Income Assistance* & EI Beneficiari

Age group	C Kootenay	BC
19-24	5.1%	5.1%
25-54	7.6%	5.6%
55-64	3.0%	2.6%
19-64	6.3%	5.1%

Source: BC Stats; includes temporary assistance only, excludes aboriginal people living on reserve, seniors/OAS, children living with a relative

East Sub-Region Socioeconomic Data Tables

Annual Population Estimates

(as of July 1, includes estimate of Census undercount)				
Year	E Kootenay	% Change Prev Year	BC	% Change Prev Year
1999	46,778		4,011,342	
2000	46,946	0.4%	4,039,198	0.7%
2001	47,253	0.7%	4,078,447	1.0%
2002	47,539	0.6%	4,114,981	0.9%
2003	47,868	0.7%	4,146,580	0.8%

Source: BC Stats

Age and Gender - 2001 Census

			% Distribution	
	Male	Female	E Kootenay	BC
All Ages	22,545	22,745	100.0%	100.0%
0 - 14	4,235	4,015	18.2%	18.1%
15 - 24	3,055	2,910	13.2%	13.2%
25 - 44	5,945	6,255	26.9%	30.1%
45 - 64	6,420	6,280	28.0%	25.1%
65+	2,890	3,280	13.6%	13.6%

Source: Statistics Canada

Labour Force by Industry, 2001 Census

	E Kootenay	Percentage	BC %
Total Labour Force	24,055		
Experienced LF by Industry	23,710	100.0%	100.0%
Agriculture	550	2.3%	2.0%
Forestry	980	4.1%	1.7%
Mining, oil & gas extraction	1,055	4.4%	0.7%
Utilities	105	0.4%	0.6%
Construction	2,015	8.5%	5.9%
Manufacturing Total	1,875	7.9%	9.6%
Wood and paper products	1,335	5.6%	3.1%
Wholesale Trade	625	2.6%	4.1%
Retail Trade	2,855	12.0%	11.6%
Transportation and Warehousing	1,330	5.6%	5.7%
Business, personal & other service	4,105	17.3%	25.0%
Education	1,335	5.6%	6.9%
Health Care, Social Assistance	2,130	9.0%	9.9%
Arts, entertainment and recreation	855	3.6%	2.3%
Accommodation & Food Service	2,735	11.5%	8.3%
Public Administration	1,160	4.9%	5.6%
Agrilculture, Food and Beverage	700	3.0%	3.0%
Logging and Forest Products	2,315	9.8%	4.7%
Minerals and Mineral Products	1,170	4.9%	2.0%

2001 Census Population Charateristics

	E Kootenay	BC
Population, 2001	45,281	3,907,738
Labour force (15+)	24,050	2,059,950
Employees	19,840	1,715,600
Self-employed	1,270	95,185
Participation Rate	65.6%	65.2%
Unemployment Rate	9.7%	8.5%
Households	18,500	1,534,335
1-family households	13,110	1,012,925
Multi-family housholds	160	35,050
Non-family households	5,220	486,355
Median Family Income	$ 53,777	$ 54,840
Median Income	$ 20,678	$ 22,095
Males	$ 29,246	$ 28,976
Females	$ 15,789	$ 17,546
Population in Private Hh	44,200	3,785,270
Incidence of low income	12.6%	17.8%

Source: Statistics Canada, incomes are for 2000.

Education Levels, 2001 Census

	E Kootenay		BC
	Number	Percentage	Percentage
Population, 20 yrs & over	33,210	100.0%	100.0%
Less than grade 9	1,965	5.9%	6.6%
Some high school	7,230	21.8%	17.7%
High school graduate	4,030	12.1%	12.3%
Trades certificate	6,005	18.1%	12.8%
University degree	3,285	9.9%	9.1%
Other post secondary	10,675	32.1%	33.0%

Source: 2001 Census

Source of Total Income

	E Kootenay $ million	% of total	BC % of total
Employment	594.2	65.9%	66.0%
Pension	124.5	13.8%	11.9%
Investment	71.5	7.9%	9.7%
Self-employe	34.2	3.8%	5.0%
Other	48.3	5.4%	4.7%
Tax Exempt	29.1	3.2%	2.6%
Total	902.1	100.0%	100.0%

Source:Canada Customs and Revenue Agency

Personal Taxation Statistics

	Taxable Returns		Average Income	
Year	E Kootenay	BC	E Kootenay	BC
1996	21,560	1,879,340	$ 34,623	$ 36,961
1997	21,810	1,898,700	$ 35,515	$ 37,894
1998	21,970	1,915,220	$ 35,583	$ 38,398
1999	22,020	1,937,520	$ 36,689	$ 39,758
2000	22,220	1,928,560	$ 37,756	$ 42,121

Source:Canada Customs and Revenue Agency

Dependency on the Safety net

% of Population by Age Receiving Benefits - September 2003		
Age group	Total, BC Basic Income Assistance* & EI Beneficiari	
	E Kootenay	BC
19-24	5.1%	5.1%
25-54	5.7%	5.6%
55-64	2.4%	2.6%
19-64	5.0%	5.1%

Source: BC Stats; includes temporary assistance only, excludes aboriginal people living on reserve, seniors/OAS, children living with a relative

Southwest Sub-Region Socioeconomic Data Tables

Annual Population Estimates

(as of July 1, includes estimate of Census undercount)

Year	Kootenay B	% Change Prev Year	BC	% Change Prev Year
1999	28,063		4,011,342	
2000	27,921	-0.5%	4,039,198	0.7%
2001	27,643	-1.0%	4,078,447	1.0%
2002	27,752	0.4%	4,114,981	0.9%
2003	27,804	0.2%	4,146,580	0.8%

Source: BC Stats

Age and Gender - 2001 Census

	Male	Female	% Distribution Kootenay B	% Distribution BC
All Ages	13,115	13,365	100.0%	100.0%
0-14	2,360	2,180	17.1%	18.1%
15-24	1,635	1,565	12.1%	13.2%
25-44	3,180	3,410	24.9%	30.1%
45-64	3,925	3,670	28.7%	25.1%
65+	2,040	2,560	17.4%	13.6%

Source: Statistics Canada

Labour Force by Industry, 2001 Census

	Kootenay B	Percentage	BC %
Total Labour Force	13,365		
Experienced LF by Industry	12,515	100.0%	
Agriculture	435	3.5%	2.0%
Forestry	325	2.6%	1.7%
Mining, oil & gas extraction	130	1.0%	0.7%
Utilities	240	1.9%	0.6%
Construction	850	6.8%	5.9%
Manufacturing Total	2,455	19.6%	9.6%
Wood and paper products	555	4.4%	3.1%
Wholesale Trade	240	1.9%	4.1%
Retail Trade	1,540	12.3%	11.6%
Transportation and Warehousing	350	2.8%	5.7%
Business, personal & other service	2,095	16.7%	25.0%
Education	805	6.4%	6.9%
Health Care, Social Assistance	1,655	13.2%	9.9%
Arts, entertainment and recreation	285	2.3%	2.3%
Accommodation & Food Service	1,110	8.9%	8.3%
Public Administration	535	4.3%	5.6%
Agrilculture, Food and Beverage	465	3.7%	3.0%
Logging and Forest Products	890	7.1%	4.7%
Minerals and Mineral Products	1,775	14.2%	2.0%

2001 Census Population Charateristics

	Kootenay B	BC
Population, 2001	26,485	3,907,738
Labour force (15+)	13,375	2,059,950
Employees	11,115	1,715,600
Self-employed	475	95185
Participation Rate	61.8%	65.2%
Unemployment Rate	10.2%	8.5%
Households	11,255	1,534,335
1-family households	7,615	1,012,925
Multi-family housholds	50	35,050
Non-family households	3,590	486,355
Median Family Income	$ 53,299	$ 54,840
Median Income	$ 20,201	$ 22,095
Males	$ 30,673	$ 28,976
Females	$ 14,819	$ 17,546
Population in Private Hh	26,130	3,785,270
Incidence of low income	11.6%	17.8%

Source: Statistics Canada, incomes are for 2000.

Education Levels, 2001 Census

	Kootenay B Number	Kootenay B Percentage	BC Percentage
Population, 20 yrs & over	19,585	100.0%	100.0%
Less than grade 9	1,505	7.7%	6.6%
Some high school	4,105	21.0%	17.7%
High school graduate	2,345	12.0%	12.3%
Trades certificate	3,785	19.3%	12.8%
University degree	1,745	8.9%	9.1%
Other post secondary	6,090	31.1%	33.0%

Source: 2001 Census

Source of Total Income

	Kootenay B $ million	Kootenay B % of total	BC % of total
Employment	334.6	66.7%	66.0%
Pension	82.7	16.5%	11.9%
Investment	31.8	6.3%	9.7%
Self-employe	13.0	2.6%	5.0%
Other	25.8	5.1%	4.7%
Tax Exempt	13.7	2.7%	2.6%
Total	501.8	100.0%	100.0%

Source:Canada Customs and Revenue Agency

Personal Taxation Statistics

Year	Taxable Returns Kootenay B	Taxable Returns BC	Average Income Kootenay B	Average Income BC
1996	11,820	1,879,340	$ 35,899	$ 36,961
1997	11,870	1,898,700	$ 36,736	$ 37,894
1998	11,910	1,915,220	$ 36,772	$ 38,398
1999	11,870	1,937,520	$ 37,632	$ 39,758
2000	11,870	1,928,560	$ 38,853	$ 42,121

Source:Canada Customs and Revenue Agency

Dependency on the Safety net

% of Population by Age Receiving Benefits - September 2003

Total, BC Basic Income Assistance* & EI Beneficiari

Age group	Kootenay B	BC
19-24	5.5%	5.1%
25-54	6.3%	5.6%
55-64	2.3%	2.6%
19-64	5.3%	5.1%

Source: BC Stats; includes temporary assistance only, excludes aboriginal people living on reserve, seniors/OAS, children living with a relative