## ASSESSING THE ECONOMIC BENEFITS OF ANCIENT FOREST TRAIL ECOTOURISM IN MCBRIDE, BRITISH COLUMBIA

by

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#### ABSTRACT

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McBride, British Columbia, has long relied on forestry as the primary sector of its economy. With shrinking employment, timber demand and supply, community members are now pursuing opportunities for economic diversification. Tourism has been identified as one of three initiatives aimed at improving local economic stability and diversification. An emerging element in the region's ecotourism potential is the Ancient Forest Trail (AFT). The purpose of this research is to assess the AFT's potential economic benefit as a tourist attraction and contributor to economic diversification. First, the number of AFT tourists and their economic benefit is calculated using a trail counter and questionnaires. Second, AFT ecotourism is examined in the context of local economic diversification, using economic analyses to describe the structure and dynamics of the local economy and key informant interviews to access community knowledge. Results describe a local economic benefit, and a community disagreement regarding tourism as an economic priority.

Key Words: Economic diversification, Rural Economic Development, Ecotourism, Ancient Forest Trail, Ancient Cedar, McBride, British Columba

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#### Chapter 1

#### INTRODUCTION

Peripheral regions are typically characterized by economies that are geographically isolated, have poor access to and from markets, and have overdependence on singular industries (Nepal, 2008). Historically, economic prosperity in the peripheral regions throughout Canada has been strongly linked to the notion of resource dependency (Horne and Penner, 1992). The natural resource is captured (e.g., through mining, forestry, agriculture, fishing, etc.), local employment rises, income enters the local economy, and, depending on market conditions, economic stability can be achieved (Korber, 1997). This is known as the economic-base approach to local development (Davis and Hurron, 1992). Although the economic-base approach can produce significant wealth by creating a commercially successful export/manufacturing industry, it can also create an inherent weakness in the foundations of local economies by increasing vulnerability to external market fluctuations (Cox and Mair, 1988; Douglas, 1994).

The recent economic turmoil in some of British Columbia's resource-dependent peripheral regions, including McBride, suggests the need for more stability in volatile economic times (Opinion 250, January 2012; McBride B.C. Economic Development Action Plan, 2010; Valley Sentential, January 2012). When considering the structure of a resource dependent community, researchers typically associate a diverse local economy with a more stable and resilient local economy (Davis and Hurron, 1992; Brown, Hall and Hall, 2000; Nepal, 2008). Economic diversification refers to the process by which an economy becomes less dependent on specific industries by expanding the diversity of its economic outputs and is often a potential solution for peripheral economies, especially

those dependent on extractive resource industries such as forestry or mining (Brown, Hall and Hall, 2000; Nepal, 2008; Randall and Ironside, 1996; Halseth, 2009). An important challenge to policy makers in many peripheral communities with abundant natural resources is to find ways to reduce their dependence on these resources through successful diversification of economic activity (Williamson and Annomraju, 1996; Gylfason, 2001).

Increasingly, tourism and ecotourism are being recognized as important factors for regional economic development and diversification around the world, most notably in peripheral regions (Douglas and Harpman, 1995; Wunder, 1999; InterVISTA, 2008; Horne, 2009; Council of Ecotourism Associations [COTA], 2007; Halseth, 2009; Job, 2008, Robson-Canoe Valleys Economic Opportunities Plan, 2010; Sinclair, 1998; Robson Valley Land and Resource Management Pan, 1999). Considered an important aspect of the B.C. government's "heartland strategy", which attempts to revitalize the dwindling economies of northern B.C. communities, ecotourism development has been identified as a primary option for economic diversification in Northern B.C. as it is believed to promote conservation, have little or no visitor impact, involve the local population in the tourism economy, and generate economic benefits for the local economy (Nepal, 2008; B.C. Resort Task Force, 2004).

#### **1.1 Site Description**

The Robson Valley is a region situated between the Canadian Rockies and the Cariboo Mountains in the Robson Valley of Northern B.C. Resting within the Inland Temperate Rainforest (ITR), the towns and communities of the Robson Valley have and continue to depend heavily on forestry and forestry-related manufacturing as the primary sectors within the regional economy. The majority of the labour force activity in the region is concentrated in the manufacturing of forest-based products (Horne, 2009; Stevenson et al., 2011). However, since the discovery of the ecological significance of the ITR in the mid 1990s, there has been increased pressure to alter harvesting practices, a development that has adversely affected the available timber supply in the region and on the economy in general (TSR, 2011; Stevenson et al., 2011). Compounded by the general decline of the forestry industry, it is apparent that the regional economy is in a period of change. Now, more than ever, there exists a need for economic development as well as economic diversification within the regional economy of the Robson Valley (Horne, 2009; Hayter, 2000; Williston and Keller, 1997; Hammer and Siegrist, 2008).

The village of McBride (CSD 5753012), population 586, is one of many communities located within the Robson Valley in northern B.C. (Statistics Canada, 2011) (see Figure 1). Situated in the Fraser-Fort George (FFG) regional district (see Figure 2), McBride is located 208km southeast of Prince George, the largest city in Northern B.C. Within the FFG regional district are six sub-regions; McBride, along with the Ancient Forest Trail (AFT), is situated in Electoral Area H of the FFG regional district (see Figure 3).

The village of McBride was chosen for this study for several of reasons. McBride has a unique relation with the AFT, as it is the closest town located within the same subregion of Electoral Area H. This proximity to the trail suggests that tourism activity at the site has the potential to positively benefit the McBride economy. McBride is also uniquely positioned in close proximity to Jasper, Alberta, a well-known tourism

destination, and is situated on Highway 16, a route heavily used by tourists driving into Northern B.C. By virtue of being located in the Robson Valley, McBride is well situated to benefit from the natural resources present in the valley, most notably the natural landscape, including ancient cedar trees, as seen at the AFT site. Recognizing these elements, as well as the need to diversify their economy, the Village of McBride has identified both economic diversification and local tourism as being focus areas for future economic development (The Robson Valley Land and Resource Management Plan, 1999; Stamm, 2004; Valley Sentential, 2012; Opinion 250, 2012).

For the purpose of this study, the definition and boundary of the local economy was derived from a combination of trade area analysis, an understanding of local geography, and the location of significant communities along Highway 16 (see Section 4.2.1). Using these tools, the local economy encompasses the Village of McBride and the small localities of Dome Creek and Crescent Spur (see Section 4.2.1). While Dome Creek and Crescent Spur are of importance when considering the benefit of tourism and AFT ecotourism in the region, the primary focus of this study (specifically the process of economic diversification) is on the Village of McBride, which has a larger population, has a more significant impact on the region as an economic contributor, has available statistical data (population, labour force, etc.), and has identified diversification as an economic priority.





Figure 1: North America, British Columba, and McBride Source: Theo Mlynowski, MSc NRES Candidate UNBC, 2011

Figure 2: Regional Districts of B.C. – Fraser-Fort George #13 Source: Regional Districts, B.C. Stats, 2009



Figure 3: Regional District of Fraser-Fort George Electoral Areas, with AFT and McBride Source: Regional District of Fraser-Fort George, 2010

#### **1.2 Ancient Forest Interpretive Trail**

In 2005, the Caledonia Ramblers, an outdoor recreation group based in Prince George, B.C., submitted an application to the Ministry of Forests to build a hiking trail as a means to create more accessible year-round hiking in the Driscoll Ridge area (Ancient Cedar Website, 2011). During the consultation process, a second outdoor group, the Prince George Naturalists Club, had showed interest in constructing an additional interpretive hiking trail, providing hikers with a chance to learn about the regional flora and fauna. With the help of the Dome Creek Forest Information Committee, a conservation/outdoor group located in Dome Creek, the closest community to the Driscoll Ridge area, a section of old-growth forest with exceptionally large and extraordinarily old western cedars was identified and suggested for the interpretive trail (Stevenson et al., 2011). In June 2006, permission was granted from the Ministry of Forests to build the trails, and on September 24, 2006, both the Driscoll Ridge Trail and the Ancient Forest Interpretive Trail (AFT) were officially opened.

Since 2006, the AFT has served to raise the level of awareness that regional residents possess regarding the inland rainforest and, in particular, the old-growth cedar trees (Stevenson et al., 2011). Importantly, the trail has also grown in popularity as a tourist attraction (Connell, Shapiro, and Hall, 2011). This increase in tourist activity is significant as growing levels of tourist activity suggest a potential for local economic diversification as visiting tourists contribute to the local economy through direct expenditures and induced benefits (Stevenson et al., 2011). However, the economic benefit of visiting tourists and the potential role that ecotourism might play within the local economy are unknown. As an emerging tourist attraction, the AFT represents a unique

opportunity to study the connections inherent in ecotourism, economic development, and economic diversification in the Robson Valley.

#### **1.3 Research Questions and Objectives**

This project has implications for future research and development decisions concerning the economic diversification of peripheral regions that rely on single-industry sectors to drive the local economy. Research shows that tourism and ecotourism, which typically make alternative use of the natural resources and landscapes common to many peripheral regions, can play an important role in the diversification process (Budowski, 1976; Douglas and Harpman, 1995; Wunder, 1999; InterVISTA, 2008). While tourism is limited in its ability to affect the diversification process, sites like the AFT demonstrate the potential benefits associated with a growing tourism industry and serve well to highlight the economic significance that tourism industries can have on the development and diversification of local economies.

The purpose of this research is to assess the potential contribution of Ancient Forest Trail (AFT) ecotourism to the diversification of the economy of the Village of McBride. A case study method is used to achieve two objectives. The first objective is to calculate the annual economic benefit of AFT ecotourism. This objective was accomplished by combining data from trailhead questionnaires and a heat-sensing trail counter to determine average tourist daily expenditures. The second objective is to examine AFT ecotourism in the context of local economic diversification. The potential contribution of AFT ecotourism to economic diversification was examined by analyzing the structure and dynamics of the local McBride economy. AFT economic impact data and economic analyses, including location quotients and shift-share analysis, were used

in order to assess the AFT's potential contribution. Finally, key informant interviews were conducted to address community knowledge regarding ecotourism-induced economic opportunities and the future of ecotourism with regard to economic diversification. Key informant respondents included local outdoor groups, tourism operators, government tourism organizations, local forest district representatives, regional recreation officers, economic development officers, the McBride chamber of commerce, timber supply analysts, and local mill operators.

#### **1.4 Chapter Preview**

Chapter 2 Literature Review provides background and context for this research project and is divided into five sections. The first section summarizes evolving ecotourism and tourism definitions and how these definitions can be applied to this research project. The second section reviews the methodological issues associated with measuring various tourism related economic benefits, the structure and dynamics of a local economy, and interview practices. Lastly, a review of economic diversification within resource dependent communities provides the necessary context to assess the current situation in McBride. Chapter 3 outlines the study design and methods chosen to answer the research questions. Chapter 4 summarizes the results of the AFT economic benefit calculations, the economic analyses of the local economy, and the key informant interviews. Chapter 5 uses the data collected from these methods to interpret the findings and discuss the significant and broader implications of the results, including limitations. Chapter 6 summarizes the study, examines ecotourism as an economic priority, and suggests areas for future research.

#### Chapter 2:

#### LITERATURE REVIEW

The purpose of this literature review is to provide context for this study by outlining the literature on ecotourism and economic development research. The review covers tourism, ecotourism, and tourist definitions, the methods used to describe the structure and dynamics of a local economy as well tourism-specific economic impact analysis. Lastly, a review of the literature surrounding resource dependent communities and the role that tourism can play within the diversification process is outlined.

#### 2.1 Defining Tourism, Ecotourism and Tourists

The ecotourism industry is at the center of this research and a clear understanding of ecotourism, as differentiated from tourism, is important when assessing the economic benefit of ecotourism activity at the AFT. Over the past few decades, the definition of ecotourism has had multiple meanings and uses. In an attempt to synthesize the many existing definitions, Fennell (2001) compiled eighty-five definitions of ecotourism and identified five dominant themes: natural setting, conservation, culture, local benefits, and education. In a content analysis of thirty definitions, Donohoe and Needham (2006) found the same top two themes, nature and conservation, and similar secondary themes. According to Weaver and Lawton (2007), ecotourism should satisfy three core criteria: ecotourism destinations should (1) feature the natural environment as a central attraction, (2) offer the prospect of learning or education, and (3) at least intend to be sustainable environmentally, culturally, and economically (Weaver and Lawton, 2007). This definition does well to incorporate the key components as determined by Fennell (2001) and Donohoe and Needham (2006), including a natural setting, education, conservation, culture, and economic benefits for the local region. Tourism activity at the Ancient Forest Trail satisfies these three core criteria: (1) the predominant feature and primary draw of the trail is the natural environment, specifically the ancient cedar trees; (2) as an Interpretive Site, the trail contains frequent signage along the path offering hikers an opportunity to learn about the flora and fauna of the Inland Temperate Rainforest; (3) the AFT represents a conscious effort by concerned local citizens to conserve what they perceive to be a valuable part of their local environment.

The definition of a 'tourist' is also important, as classifying AFT trail users is a step in calculating the economic benefit of AFT ecotourism. Within the tourism literature, authors present varying definitions of a tourist depending largely on the social, political, and economic context of their study (Gee, Makens, and Choy, 1997; McIntosh, Goeldner, and Ritchie, 1995; Mill and Morrison, 1997; Nickerson, 1996; Ryan, 1991). Working within an economic context, Leiper (1979) became the first author to propose a definition of a tourist based on three dimensions: tourists, three geographical elements (generating region, transit route, and destination region), and a tourist industry. Later, Smith (1988), working in a supply-side economic context, offered a definition that focused on leisure activities away from the home environment, which introduced the idea of distance traveled as a feature in the definition of a tourist. In 1994, the World Tourism Organization (WTO) first introduced a definition aimed at encompassing all potential contexts. Combining Leiper's concept of geographical elements and Smith's concept of activities away from the home environment, the WTO introduced the concept of the

'usual environment'. It was proposed that "persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business, and other purposes," would fall under the classification of a tourist (B.C. Statistics, 2009; WTO, 2011).

Despite the varying definitions of 'usual environment' provided in the literature, the World Tourism Organization does not specify how the concept should be operationalized. Instead, statistical agencies are free to decide how this concept should be defined within their own social, political, and economic context (Smith, 1999). Influenced by several papers, such as Rogers (2002a; 2002b), the discussion on the definition of 'usual environment' has since been brought to an international level. Following these discussions, Govers, Hecke, and Cabus (2008) summarize two dimensions of the concept of 'usual environment': distance (or the crossing of administrative boundaries) and definitions of places where people perform routine activities (home, work, study, shop, etc.).

Ecotourism definitions and tourist definitions are important elements with regard to this study as they lie at the center of the economic analysis used to measure tourism related economic impacts. Following the components outlined by Fennell (2001), Lawton (2007), and Donohoe and Needham (2006), this study defines tourism at the AFT as ecotourism. Additionally, this study defines tourists (as differentiated from recreational day-tripper and commuters) based on the World Tourism Organization definition, which is rooted in the concept of 'usual environment' (WTO, 1999). Following guidelines set forth by Govers, Hecke, and Cabus (2008), this study defines the concept of 'usual environment' based on the geographic location where people perform routine or usual

activities. Individuals travelling outside their environment of 'usual activities' constitute them as a 'tourist'.

#### **2.2 Methodological Issues**

#### 2.2.1 Economic Impact Analysis

The general aim of an economic impact analysis is to provide decision makers (economic development officers, community planners, government officials, etc.) with useful information regarding the state of the local economy to make decisions regarding economic development (Cities Alliance, 2007). Importantly, if the economic value of a particular project or development is to be properly assessed, one must understand the structure and dynamics of the local economy (Hustedde, Shaffer, and Pulver, 2005). Economic impact studies are based largely on conditional predictive models of economic analysis that produce "if...then" statements in order to help determine the impacts that future scenarios may generate (Davis, 1990). Ultimately, economic impact studies are designed to estimate the quantitative effects or changes in the local economy that result from a stimulus, either positive or negative (Davis, 1990).

Economic base analyses and income-expenditure analyses are two types of economic methods designed to estimate the amount of induced economic activity associated with a new or expanded activity within the local economy (Davis, 1990). The economic base analysis, a method employed in regional economic analysis, is a structurally simple model that determines short-term economic impacts on small-scale, single-export economies by dividing economic sectors into basic (firms that serve markets outside the region, i.e. exports) and non-basic (firms that serve markets inside the region, i.e. non-exports)

sectors (Davis, 1990; Goeldner and Brent-Ritchie, 2006). Once basic employment is identified, the outlook for basic employment is investigated sector by sector and projections made sector by sector. In turn, this permits the projection of total employment in the region. Economic base theory asserts that the means of strengthening and growing the local economy is to develop and enhance the basic sector (Davis, 1990). The basic sector is therefore identified as the driver of the local economy.

Like economic base analysis, the income-expenditure analysis, a method designed to reflect increases in income in service sectors as a result of rising productivity in export sectors, is most appropriately applied to regional economies (Davis, 1990). The primary limitation of these two analyses is the predominance given to the export industry as the primary driver of the economy. While the export of goods can generate an economic injection into the local economy that in turn helps induce local spending and creates a foundation for a local economy to grow (Fletcher, 1991), an over dependence on export industries can make the local economy vulnerable to fluctuations in external markets (Cox and Mair, 1988: Horne, 2009). If the local economy is more diversified, relying on both export and import sectors, money injected into the community can more easily circulate within the community, increasing employment and income (Douglas, 1994).

The total economic impact of a tourism activity is the sum of the direct, indirect, and induced effects within a local economy (Goeldner and Brent-Ritchie, 2006). Direct effects refer to the changes in production associated with the immediate effect of changes in tourism expenditures (Crompton, 1993; Frechtling, 1994; Richardson, 1972). For example, if an increased number of tourists stay overnight at a hotel, a direct economic effect may be associated with additional hotel sales and increased hotel wages and

salaries. Indirect effects refer to the changes in production that result from various rounds of re-spending in other backward-linked industries (Crompton, 1993; Frechtling, 1994; Richardson, 1972). If the business that provides supplies to the hotel saw a related increase in productivity, this would be considered an indirect effect. Lastly, induced effects refer to the changes in economic activity associated with household spending of income earned directly or indirectly as a result of tourism activity (Crompton, 1993; Frechtling, 1994; Richardson, 1972; Goeldner and Brent-Ritchie, 2006).

#### 2.2.2 Measuring Structure and Dynamics of a Local Economy

What follows is a review of the analytical tools available to describe a local economy, which in turn can be used to better assess the potential role that any given industry or economic stimulus might play within the local economy (Hustedde et al., 2005; Wagner, 1997). The general purpose of these analytical tools is to address the size, shape, and composition of the local economy; economic trends, past, present, and future; opportunities for growth; sectors that a community should target for attraction; the kinds of goods and services similar communities support in order to determine potential gaps in the local trade service sector; and the proportion of total local business that comes from local residents and what proportions come from the surrounding market areas (Shaffer, Deller, and Marcouiller, 2004).

Because the use of any analytical tool in isolation can lead to erroneous conclusions, a variety of tools should be employed to gain a clearer understanding of a local economy. Only by using a range of descriptive tools can the local economy be better understood in its complexity (Shaffer, et al., 2004; Hustedde, Shaffer, and Pulver, 2005; Cities Alliance, 2007). Focusing only on those analytical tools that have direct relevance to policymakers and community developers, Shaffer (2004) recommends using a specific combination of descriptive tools, including trade area analysis, shift-share analysis, location quotients, income dependencies, and a growth share matrix in order to properly describe the structure and dynamics of a local economy.

Determining a community's trade area, the geographic location from which the community draws the majority of its retail trade customers, is an important part of an analysis. Although trade areas usually extend beyond municipal boundaries, the general criterion is that the majority of trade area residents shop in the community (Hustedde et al., 2005; Cities Alliance, 2007). The next step is to use census data to gain further insight about the population, income level, age, and other demographic data in the trade area. These figures can be found in the census of population for each township, village, and city located within the trade area, all of which can be used to estimate the market potential for the community (Darling, 1999; Cities Alliance, 2007).

Shift-share analysis is a method that aims to measure the movement of the local economy into either faster or slower growth sectors, the 'shift' of the regional economy. This analysis also measures a particular community's portion of the growth occurring in a given sector, the 'share' element (Hustedde et al., 2005; Cities Alliance, 2007). The first step in this analysis is to calculate the national growth component, which measures the potential change in local employment assuming the local economy is similar to the national economy. The second step is to calculate the industrial mix component by multiplying the local employment in each economic sector by the difference in the national growth rate for that sector and the growth rate for the whole economy (Shields,

2003). Assuming the regional economy is similar to the national or provincial economy, this analysis is useful for showing the number of new jobs that were created locally due to national economic trends. This method can help provide insight into the growth prospects of particular key industries, or industries of interest to the particular study.

Location quotient analysis is another procedure that helps to describe the structure and dynamics of a regional economy. Location quotients identify the level at which a local economy is producing more than is needed for its own direct needs, surplus that is then sold to non-regional markets (Chapin, 2004). It also serves to highlight businesses and industries that are not accommodating the local needs and are subsequently a source of consumption leakage. Working on the assumption that the national economy is selfsufficient, the local economy is compared against that standard of self-sufficiency. Relatively low economic activity in a particular industry might suggest the service is being imported from other communities. The location quotient for a particular site can be compared to regional and provincial figures, highlighting any differences in the structure of the economics being compared (Hustedde et al., 2005; Cities Alliance, 2007).

Lastly, the use of income dependencies can be another valuable technique used to highlight the primary industries within a regional economy as measured by income levels. Income dependencies are calculated by looking at the basic and non-basic sectors of the economy and by examining at the sources of income within a specific economy as they relate to specific basic and non-basic industries (Horne, 2009). Income dependencies have the potential to provide insight into the primary industries of the local economy, which in turn may highlight which industries support the local economy (Horne, 2009).

#### 2.2.3 Tourism Related Economic Impact Analysis

Due in part to growth of tourism and ecotourism, communities may be interested in determining the economic impact of an increased tourism sector within the local economy (Wagner, 1997; Stynes, 2006; Job, 2008; COTA, 2007; Sebele, 2010). When considering the impact of ecotourism within resource dependent communities, a combination of economic analyses and interview data can be employed to measure both the economic benefit of ecotourism and the local understanding of ecotourism potential. These methods provide researchers with a comprehensive understanding of ecotourism's potential to positively impact the local economy (Crompton, 1993; Frechtling, 1994; Shaffer, Deller, and Marcouiller, 2004; Stynes, 2006).

The economic impacts of tourism are typically estimated by some variation of the following formula (Crompton, 1993):

# Economic Impact of Tourism = Number of Tourists \* Average Spending per Visitor \* Multiplier

This formula requires three distinct steps and corresponding measurements or models (Stynes, 2006):

 Estimating the change in the number and types of tourists to the region due to the proposed policy or action.

a) Economic impact estimates rest heavily on good estimates of the numbers
and types of visitors. These must come from carefully designed
measurements of tourist activity, a good demand model, or good judgment.
This step is often the weakest link in most tourism impact studies, as few
regions have accurate counts of tourists.

2) Estimate average levels of spending of tourists in the local area.

a) Spending averages come from sample questionnaires or are sometimes borrowed or adapted from other studies. Multiplying the number of tourists by the average spending per visitor gives an estimate of total tourists spending in the area. Use and spending estimates are two of the most important parts of an economic impact assessment. When combined, they capture the amount of money brought into the region by tourists.

 Apply the change in spending to a regional economic model or set of multipliers to determine secondary effects.

> a) Multipliers generally come from an economic base or input-output model of the local economy. In many cases multipliers are borrowed or adjusted from published multipliers or other studies.

Stynes (2006) offers three recommendations when conducting an economic impact analysis of tourism. First, he stresses the importance of obtaining a reliable estimate of the number of tourists included in the analysis. This requires clearly defining what one wishes to include as 'tourism' and the region of interest. Second, he suggests dividing tourists into distinct subgroups with distinct spending patterns. In particular, local visitors should be distinguished from visitors from outside the region, as well as between day users and overnight visitors. Last, Stynes suggests a focus on direct economic effects, especially when considering tourism impacts. He cautions that multiplier affects are not nearly as important in most cases as their use in tourism literature might suggest, and that multipliers tend to introduce complexities that most users of the results do not fully understand.

When attempting to determine the economic benefit of tourism at two national parks in Germany, Job (2008) used an economic impact analysis that focused on the primary variables outlined above. Like Stynes (2006), Job posits that the economic value of tourism is primarily comprised of two variables: a) the total number of visitors and, b) the average daily expenditures spent during the stay. Working with these two variables, Job was able to demonstrate a correlation between tourist visits and a positive economic benefit. Importantly, Job concludes by acknowledging the potential benefit of the tourism industry to aid structurally laggard regions, specifically in peripheral locations where other economic activities are underdeveloped. The methods used in Job's (2008) study serve well to demonstrate the positive economic benefits provided by tourism.

As noted in the literature (Stynes, 2006; Crompton, 1993), few regions are able to obtain accurate counts of tourists, let alone models for predicting changes in tourism activity or separating local visitors from visitors from outside the region. Because of the relatively small scale of the AFT, this research was able to accurately estimate the number of tourists and, through the use of on-site surveys (Stronza, 2008; Zarnoch, 2011), was able to accurately distinguish tourists from local residents.

Within the tourism literature, random systematic sampling is often used to select a sample population for the purpose of conducting on-site surveys, specifically when the goal is to obtain attitudes and opinions and to apply them to a larger population (Sinclair, 1998; Cooper et al., 1998). Systematic random sampling is a method of sampling in which individuals are selected from a list by choosing every 'k'th sample frame member, where k represents the population size divided by the desired sample size (Cooper et al., 1998). Because most research projects are unable to interview all daily trail users, a

random systematic sampling is used, providing researchers with a relatively unbiased method for selecting participants in their survey (Chen et al., 2004; Bowker, Bergstrom, and Gill, 2007; Gill, 2001). Random sampling, however, can be vulnerable to sampling error as the randomness of the selection may result in a sample that doesn't reflect the makeup of the population.

Systematic and stratified techniques attempt to overcome this problem by using information about the population to choose a more representative sample, which involves the division of a population into smaller groups, known as strata (Sinclair, 1998; Cooper et al., 1998; Babbie, 2011). Once a strata is formed, based on members' shared attributes, a random sample is then taken from each stratum, a number proportional to the size of the strata compared to the total population. One advantage of stratified sampling is that it can reduce sampling error by ensuring that all relevant portions of the population are included in the sample.

Stratified sampling (Stronza, 2008) has been shown to be an effective method of gaining a broad representation of a particular sample when studying the economic impact of ecotourism. When examining a single site, a stratified sample of the days contained within a particular tourist-related season (Zarnoch, 2011) allows for specific strata within the sample to be identified and subsequently divided and sampled. The division of seasonal days into weekend and weekday strata (Pollock et al, 2011) allows researches to further distinguish between local participants and tourists.

Once the classification of trail users into local residents and tourists is complete, the data is combined with an overall count of all trail users to calculate the total number of visiting tourists. The installation of an electronic trail counter in order to monitor

visitor use (Jacobi, 2003), a number representing the amount of traffic at the site can be obtained for each day of each strata within the hiking season. Validation of the count consists of observing traffic at the counter site and recording the actual traffic and the counter-recorded traffic.

Once the number of tourists is known, the average spending per visitor is needed in order to calculate the direct economic impact. A comprehensive review of previous direct tourism expenditure literature for the region is one available method for determining average daily expenditures (Sinclair, 1998; Cooper et al., 1998). The aim of such a literature review would be to determine the average daily direct expenditure made by an individual tourist while staying within the region by taking the average from all the available studies. This figure could then be applied accordingly, depending on the results of the final variable of time spent in the region to determine direct tourism impacts (Sinclair, 1998; Cooper et al., 1998).

Based on these approaches (Stynes, 2006; Job, 2008; Pollock et al, 2011; Zarnoch, 2011; Jacobi, 2003; Cooper et al., 1998) and previous research conducted at the AFT, this project used a stratified systematic sample of the days contained within the summer, dividing the days into weekday and weekend strata to create non-random sample populations for conducting on-site surveys. These data were combined with data from an on-site electronic trail counter and the results from direct tourism expenditure literature. The details of the methods are discussed in Chapter 3.

The above mentioned methods, as outlined by the tourism economic impact literature, have strong implications for the type of methods chosen by this study. Like Bowker, Bergstrom, and Gill (2007), the primary data for the research comes from on-

site questionnaires and trail counts. As demonstrated by Stynes (2006), determining the economic impact of AFT tourism revolves around calculating a reliable estimate of the number of tourists, the division of trail users into distinct subgroups, and a focus on direct economic effects. When focusing on the economic valuation of AFT ecotourism and the description of the structure and dynamics of the local McBride economy, this study used the specific combination of descriptive tools as outlined by Shaffer (2004), including trade area analysis, shift-share analysis, location quotients, and income dependencies, in order to properly describe the structure and dynamics of the local economy.

#### 2.2.4 Tourism Related Interview Literature

Although economic impact analyses are capable of providing detailed assessments of the economic contribution of a given stimulus, when used in isolation they do not account for the knowledge and expertise of key members of a given community (Cities Alliance, 2007; Hustedde et al., 2005; Shaffer, Deller, and Marcouiller, 2004). Often, in order to assess the economic benefit of a stimulus, a mixed methods approach is adopted (Kvale, 1996; Stem et al., 2002; Patton, 1990; Guba and Lincoln, 1989). Interviews, questionnaires, and surveys are examples of methods used by researchers trying to gain either a deeper or a supplementary perspective on the ability of a stimulus, like ecotourism, to affect a local economy (Nepal, 2008; Kvale, 1996; Stem et al., 2002; Patton, 1990; Guba and Lincoln, 1989). What follows is a review of common interview methods used in the literature to assess the economic impact of tourism.

Unlike a survey or a questionnaire, an interview is an interaction between an interviewer and a respondent in which the interviewer has a general plan of inquiry,

including topics to be covered, but not a set of questions that must be asked with particular words and in a particular order (Babbie, 2011). Kvale (1996) details seven stages in the complete interviewing process:

- 1. Thematizing: clarifying the purpose of the interview and the concepts to be explored.
- Designing: laying out the process through which you'll accomplish your purpose, including a consideration of the ethical dimension.
- 3. Interviewing: doing the actual interviews.
- 4. Transcribing: creating a written text of the interviews.
- 5. Analyzing: determining the meaning of gathered materials in relation to the purpose of the study.
- 6. Verifying: checking the reliability and validity of the materials.
- 7. Reporting: telling others what you've learned.

Drawing upon key strategies discussed by Patton (1990) and Guba and Lincoln (1989), semi-structured interviews are used in tourism literature to gather information on a variety of tourism-related activity, including park management activities, community perceptions of parks and tourism, levels of tourism spending, and changes in tourism projects over time (Nepal, 2008; Stem et al., 2002; Sebele, 2010; Almeyda et al., 2010).

When conducting research on community-based tourism, semi-structured interviews are able to yield insights into the nature of community participation in ecotourism activities, including park management activities, community perceptions of parks and tourism, levels of tourism spending, and changes in tourism projects over time (Stone and Wall, 2003; Weinberg et al., 2002; Sebele, 2010; Almeyda et al., 2010). Another strength of the semi-structured interview method lies in the use of probing questions, which researchers use to pursue topics raised by participants and paraphrase what participants say in order to verify or correct their interpretations.

Key informants, community members specifically chosen for participation based on their personal and professional knowledge regarding the topic of study, are often selected when conducting interviews aimed at assessing the benefits and challenges of local tourism in resource dependent communities (Sebele, 2010; Babbie, 2011). While key informants do not represent a whole community, identifying key decision-makers can provide insight into the perceptions and ideas of key individuals as their experiences relate to the social, economic, and environmental impacts of tourism (Weinberg et al., 2002; Almeyda et al., 2010; Sebele, 2010).

One challenge in the process of conducting interviews is to make sense of data gained through participant responses. This process involves sifting through the data, filtering out the significant information, identifying patterns, and constructing a framework for communicating the essence of what is revealed. While the goal of qualitative analysis is the transformation of data into findings, a formula to guide that transformation does not exist (Patton, 2002). Software that assists in the analysis of qualitative data is referred to as Computer-Assisted Qualitative Data Analysis Software (CAQDAS) (Patton, 2002). Coding is essential in qualitative analysis (Fielding, 1994; Kelle, 1997; Patton, 2002). This process usually begins when the researcher identifies major themes and the sections of text in which those themes reside. Each of the identified regions is marked with a relevant code (Kelle, 1997). In the software, these codes are stored along with the location, or address, of the appropriate passage of text so that the

researcher can locate all the information associated with a certain topic.

Drawing upon key strategies discussed by authors Patton (1990), Guba and Lincoln (1989), Cropton (1993), Stynes (2006), and Job (2008), this research used a mixedmethods approach. First, primary data (number of trail users and profile of trail users) regarding the AFT (ecotourism site) was gathered. Secondly, further primary data were collected through key informant interviews. Like Sebele (2010), Moyer, Duinker, and Cohen (2010), Almeyda et al., (2010), and Weinberg et al, (2002), key informant interviews were chosen in order provide insight into the knowledge and perceptions of key individuals as their experiences relate to local ecotourism and economic diversification. Although Sebele recognized the inability of informant responses to represent the community as a weakness of this method, he cites key informant interviews as being one of the best methods to use when conducting research aimed at providing insight into the perception and ideas of known experts (2010). This research also makes use of NVivo software to analyze the data gained from key informant interviews.

#### 2.3 Economic Diversification and Tourism in Resource Dependent Communities

One of the more pressing challenges for policy makers, economic development officers, and natural resource managers in the early 21st century is the declining socioeconomic health of rural communities (Hibbard and Lurie, 2012). In 1950, the world's population in developed countries was evenly divided between urban and rural dwellers. However, the estimate for 2007 was 75% urban and 25% rural, demonstrating a marked change in the structure of rural and urban communities (United Nations, 2007).

The decline of rural populations around the world has been accompanied by relative socioeconomic decline (Nelson, 2001).

Through much of the 20th century rural communities were economically tied to the production of agriculture, forestry, and other natural resources. However, the rise to dominance of commodity production - the industrialized approach to agriculture and natural resource management including specialization, standardization, and consolidation in pursuit of increased efficiency - has transformed the rural economy, often times removing or diminishing the single industry that has historically supported the local economy (Fisher, 2001; Hibbard and Lurie, 2012).

Similar rural economic transformations were experienced throughout Canada, a geographically large nation with a multitude of rural communities (Brown and Hall, 2000; Nelson, 2001). Canada is recognized as a wealthy nation when considering the economic relationships and conditions of the global economy (Hayter, 2000). As Canada's second highest exporter of nature resource products, British Columbia is considered to be a relatively wealthy province. With a staples-based economy, B.C. has seen tremendous wealth and the development of well-diversified metropolitan regions (Brown and Hall, 2000). However, the peripheral regions of B.C., characterized by resource dependent economies, continue to have a strong influence on the overall performance of the provincial economy (Nepal, 2008). The recent economic turmoil in some of B.C.'s peripheral regions could suggest the need for a more diversified economic base, providing more stability in volatile economic times (Horne, 2009; Randall and Ironside, 1996).

Traditionally, the economic measure of community stability in the peripheral regions of B.C. has been linked to the notion of timber dependency. Trees are harvested, employment rises, income enters the local economy, and stability is achieved. If the supply of timber and the number of jobs in the forest sector increases, so will local wealth and stability. The economic base of a community is that portion of a local economy that is generated by export demand (Williamson and Annamraju, 1996). The export of goods generates an economic injection into a local economy that in turn helps induce local spending, creating a foundation for a local economy to grow. When considering forest dependent communities in B.C., the economic base theory suggests that by exporting timber, communities will receive increased employment, income, population growth, increases in local expenditures, and a boost to the local tax base (Power, 1996). This economic formula has played a large role in the growth of industry and community development policy in British Columbia (Brown and Hall, 2000).

Although this economic-base approach has succeeded in producing significant wealth and community prosperity in the short term, it is also responsible for creating an inherent weakness in the foundations of local economies in three fundamental ways (Williamson and Annamraju, 1996). First, by focusing primarily on the export of goods, local communities become vulnerable to fluctuations in external markets. Second, the economic base approach to economic development ignores the multiplier effect, an essential indicator of economic stability. If an economy is specialized (e.g., timber dependent), money that is injected into the economy through exports can more easily "leak" out through external purchases (Cox and Mair, 1988). If the local economy is more diversified, money injected into the community can more easily circulate within the

community, increasing employment and income. Lastly, the economic base approach does not take into full account the economic contribution gained from retaining natural assets in order to support, for example, the expansion of local tourism (Douglas, 1994).

In B.C., reliance on the economic base approach has created a situation in which peripheral communities find themselves striving to redefine their economic structure in the transition from an economy of natural resource abundance to one of scarcity (Marchak, 1983). Recent turbulence in the forest sector highlights many of the cyclical and structural characteristics of the industry, which, when viewed from the perspective of local economic health, illustrate the need for a more diverse approach to community and regional development (Brown and Hall, 2000).

British Columbia is particularly dependent on the forest sector as a primary driver for local economies. According to Horne (2009), "the Forest Vulnerability Index provides a number which indicates the vulnerability of each local area to potential down-turns in the forest sector" (p. 18). Northern rural communities tend to have a higher Forest Vulnerability Index, including the Robson Valley, which is rated as "most vulnerable" within the province. As Horne (2009) concludes, "though a community with one strong industry may be better off than one with a number of weak ones, there is an intuitive appeal to the notion that a diversified economic base will provide more stability in volatile economic times" (p. 10).

The development and growth of tourism during the last two decades shows that the industry is rapidly expanding to peripheral regions, specifically into resource dependent communities (Nepal, 2008). Three reciprocal factors can be cited for this expansion. First, a significantly large number of tourists are now seeking a different type
of tourism experience that is not characteristic of mass tourism attractions, but one which consists of 'unspoilt' landscapes and 'authentic' experiences (Urry, 1995). Secondly, many peripheral regions are experiencing decline in their traditional economic activities, such as agriculture and forestry and, therefore, are seeking to expand their economic base by developing some form of tourism (Jenkins et al., 1998). Thirdly, many tourism entrepreneurs are beginning to respond to potential development and expansion of tourism development opportunities in peripheral regions (Nepal, 2008).

Recently, the government of British Columbia has been proactively pursuing resort and other forms of tourism development in the province (B.C. Resort Task Force, 2004). Considered an important aspect of the government's 'heartland strategy,' which is to revitalize the dwindling economies of interior B.C. communities, many potential sites for resort development are located in B.C.'s 'peripheral' regions. The emergence and expansion of tourism in peripheral regions brings with it all kinds of challenges and opportunities for local communities (Long et al., 1990).

The Council of Tourism Association of British Columbia (COTA, 2006) identifies the tourism industry as the second largest industry in B.C. that operates within the forested land base. While tourism ranks as the second largest employer by industry, behind the combined Forestry, Fishing, Mining, Oil and Gas industry in Northern and Central B.C. (see Figure 4), the majority of the provincial tourism sector is based in the southern part of the province (COTA, 2006).



Figure 4: Employment by Industry in Central and Northern B.C.

Source: COTA, 2006

COTA (2006) uncovers many strategic trends that point to growth potential in the Northern Central region, particularly relating to ecotourism and adventure tourism. While approximately 12-15% of tourism industry revenue is directly attributable to actual nature-based tourism activities, the vast majority of B.C.'s tourism industry is somehow reliant on the province's reputation for natural beauty (COTA, 2006). Figure 5 demonstrates the relative growth in ecotourism and overall tourism in the world between 1997 and 2004. The report projects that ecotourism will grow an average of 20% per year compared with a 4% projected growth in overall tourism. Recently, ecotourism displayed steady growth, recording an overall 10% increase between 1997 and 2006 (Opportunity B.C., 2010).





# **Eco-Tourism**



Source: Opportunity B.C., 2010

A recent report from the Ministry of Jobs, Tourism, and Innovation (2012) reviews ten years of data on the economic value of tourism in British Columbia. The report noted the provincial tourism industry grew strongly between 2000 and 2007, but was negatively impacted in 2008 and 2009 by the worldwide downturn in the economy. The report outlines how the tourism industry plays a significant role in the B.C. economy in terms of revenue earned by tourism businesses, value added to the economy by tourism activities, and creation of employment opportunities. The report highlights how the tourism industry makes a significant contribution to the B.C. economy compared with other primary resource industries, including forestry, agriculture, and mining and oil and gas extraction. This demonstrates that tourism was the only primary industry that has maintained steady growth in real GDP from 2003 to 2008, dropping slightly in 2009, and returning to grow in 2010 (Tourism B.C., 2012).

Millier-Dickinson (2010) conducted an economic development strategy report aimed at proactively examining the current and future economic opportunities present in the Fraser-Fort George Regional District. The report notes that a number of macroeconomic factors have caused tourism to struggle in recent years, including the appreciation of the Canadian Dollar, passport requirements for U.S. citizens, and a struggling global economy, yet the sector was identified as having a strong 1-3 year growth potential, as well as a strong current impact on the regional economy.

The tourism sector is shown to be growing in Valemount and adding stability in McBride. The report cautions that winter activity is nearing capacity and that additional attractions are needed to diversify successfully into non-winter months. Again, looking towards 2015, the report outlines an ideal situation for the tourism sector, including an "improved year-round product offering that results in a 10% increase in visitation" (Millier-Dickinson, 2010, pg. 41). The report notes that product development is needed in the Ancient Forest and the Walker Rainforest Wilderness Forest in the Crescent Spur area and assistance is needed to create 'protected' areas and for continued industry development to support protection.

In a recent report, the Economic Development Office of the Village of McBride outlined a vision of regional economic development focused on the next three and a half years, and the strengths and weakness of local industries, and the best use of the natural resources available to the community (Economic Development Action Plan, 2010). The report identifies forestry as having the highest income dependency (31%), followed by the public sector (27%), and then by tourism (4%). The report also recognizes the heavy dependence that McBride has on the forest industry and the vulnerability associated when the sector fluctuates. Nevertheless, forest related exports are on the rise, despite a limited amount of available wood fiber, the closure of almost all mill operations, and the lack of

available industry-ready land. The tourism industry is recognized as offering a diverse range of products, noting also that the volume of visitors to Prince George increased by 115.7% between 2001 and 2007. Several strengths of the local tourism sector are identified as beneficial, including the pristine environment, a network of hiking, mountain biking, and snowmobile trails, backcountry and cross-country skiing, location along highway 16, and close proximity to Jasper National Park. Ultimately, the report suggests that McBride's focus should shift from reducing economic dependency on the forestry sector to economic diversification.

# 2.3.1 McBride as a Resource Dependent Community

Income dependencies show that the McBride-Valemount area relies on forestry as the primary source of employment income and as a result has a very low level of economic diversity making it one of the most vulnerable regions in the province to fluctuations in the forestry sector (Horne, 2009). While the McBride-Valemount economy is relatively similar to others in the interior of the province, it does have a particularly high dependence on forestry and tourism. Horne's research into the economic structure of resource dependent communities in B.C. (2009) highlights the role that emerging industries, like tourism, can play within the diversification process.

Regional economic diversity is another indicator of economic strength. Economic diversity refers to the degree to which a community relies on either a single industry as an economic driver or several industries (Nepal, 2008). Although some communities with a single dominant industry appear better off than communities with a number of smaller industries, a more diversified economy is better able to withstand changing markets and

economic uncertainties (Horne, 2009; Davis and Hurron, 1992; Brown, Hall and Hall, 2000; Nepal, 2008). Regional area economic dependencies can be used to construct a diversity index where 50 represents the lowest level of diversity and 80 represents a high level of economic diversity (Horne, 2009). The Prince George area has a diversity index of 66 and the McBride-Valemount area has a diversity index of 65. Figure 6 highlights the McBride-Valemount area as being among the least diversified regions in the province. **Figure 6: Regional Diversity in British Columbia** 



Source: Horne, 2009

British Columbia is particularly dependent on the forest sector as a driver of local economies in many parts of the province. To examine this issue, Horne developed the Forest Vulnerability Index (FVI) using Income Dependency and Diversity data. The FVI indicates the vulnerability of each local area to potential downturns in the forest sector. The combination of a high income dependency on forestry and a low diversity index identifies a community that is vulnerable to a shifting forestry sector (Horne, 2009). Both Prince George (46) and the McBride-Valemount areas (56) have a high level of forest sector vulnerability. Combined with Quesnel (100) and Williams Lake (41), the Cariboo region of the B.C. interior is one of the most vulnerable regional areas in the province to any potential downturns in the forestry sector (See Figure 7). Low regional diversity and a high dependence on the forestry sector highlights the strong need for economic development and economic diversity within the McBride-Valemount economy.



Figure 7: Forest Sector Vulnerability in British Columbia

Source: Horne, 2009

The McBride-Valemount region, however, is among the few regions in the province that has a comparably high dependence on the tourism industry (see Figure 8). Aided by its close proximity to the Alberta border and by virtue of Highway 16's direct route to Jasper, the McBride/Valemount region has a much higher dependence on tourism than the surrounding interior of the province. The McBride-Valemount dependence on tourism is comparable to tourism dependence on the Haida Gwaii, a popular tourist destination.

# Figure 8: Dependence on Tourism in British Columbia



Source: Horne, 2009

Examining the changes in income dependency over a 14-year period from 1991 to 2006 reveals the changing nature of the McBride economy (see Figure 9). In 1991, the highest income dependency was forestry, which at 33% was higher than the provincial average. Agriculture and tourism played equally important roles, while the public sector was the second highest dependency at 14%. In 1996, income dependency on forestry and tourism had risen, while dependency on agriculture began a decline that has lasted to 2006. In 2001, tourism was at a record high of 15% (well above the provincial average) while forestry reached a record low of 30%. This trend reversed in the four years between 2001 and 2006, with forestry dependency rising (33%) and tourism dependency dropping (11%). Ultimately, forestry remains the dominant industry with the public sector and tourism playing important roles.





Comparing diversity indices over a period of time can indicate positive or negative economic developments. Looking at the diversity indices for the McBride-Valemount area for the ten-year period represented by 1996, 2001, and 2006 data, we see a relatively

Source: Horne, 2009

stable level of diversity (see Table 2). Like many communities, the McBride-Valemount area slightly improved their diversity between 1996 and 2001, but dropped slightly between 2001 and 2006. These McBride-Valemount changes closely mirror the provincial changes over the same period of time: 69% in 2006, 67% in 2001, and 67 in 1996 (Horne, 2009).

Examining forest vulnerability indices over the same period of time also reveals changing economic conditions. Table 1 displays the forest vulnerability indices for the McBride-Valemount area for 1996, 2001 and 2006. The McBride-Valemount area vulnerability indices do not reflect the provincial trend, which shows a steady decline in forest vulnerability: 22 in 2006, 25 in 2001, and 29 in 1996 (Horne, 2009). Despite this general decline in forest vulnerability across the province, the McBride-Valemount actually saw the largest increase, up by 9 between 2001 and 2006, again highlighting the structural difference between the McBride-Valemount economy and surrounding economies.

McBride-Valemount	Year		
	1996	2001	2006
Diversity Index	61	68	65
Forest Vulnerability	76	47	56

 Table 1: Diversity Index and Forest Vulnerability in the McBride-Valemount

 Region 1996-2006

Source: Horne, 2009

In 2007, Tourism B.C.'s Community Tourism Foundations Program released a tourism strategy plan intended specifically for the Village of McBride. The report, which was a direct response to the application by the Village of McBride to Tourism B.C.

requesting assistance under the Community Tourism Foundations development program, aimed to address destination development, marketing initiatives, and the desired outcomes outlined by the community in their original Expression of Interest. The McBride tourism vision is to create a vibrant community that offers visitors the opportunity to experience high quality nature-based experiences in a unique natural setting, through a well-managed land base, innovative product development, and strategic partnerships. The report highlights the importance of providing visitors with a reason to stay longer and to spend more money within the Upper Fraser Valley (Tourism B.C., 2007).

Despite only being open for one year at the time of publication, the AFT was identified as being a "key product" within the ecotourism industry, and part of a larger product development project aimed at enhancing the Ancient Forest Trail experience. Improvement of trail infrastructure and the development of businesses offering supporting products and services were identified as potential aids in enhancing ecotourism and adventure experiences in the region.

A strong emphasis is placed on product development, as quality tourism products are crucial to attracting new visitors and increasing the length of stay of existing visitors within the Robson Valley. Improved marketing was also identified as playing a strong role in increasing tourism revenue. By marketing McBride as a destination, highlighting its key attributes of nature, adventure, arts and culture, the community can more capably attract Jasper visitors for prolonged and overnight trips (Tourism B.C., 2007).

A review of income dependencies reveals that the McBride economy has a high level of vulnerability to forestry sector fluctuations and a low level of economic diversity.

A review of economic development strategies and reports suggest that tourism, currently the second largest employer by industry in Central and Northern B.C., shows signs of regional growth over the next ten years. These economic development strategies, some of which directly identify the Ancient Forest Trail as playing a key role within the local tourism industry, detail the expected 20% growth of ecotourism in the region and stress the need for a more concerted regional effort to enhance tourism product development. The *McBride Tourism Plan* (2007) identifies McBride as having the potential to grow tourism's contribution to the local economy over the coming years in an effort to create "a vibrant community that offers visitors the opportunity to participate in high quality nature-based and cultural experiences in a spectacular rural setting" (p. 5). An expanding tourism industry at the regional and local level has the potential to help decrease McBride's forest sector vulnerability and increase their diversity index by developing a more diversified local economy.

#### Chapter 3

#### METHODS

This study measured the economic benefit of Ancient Forest Trail ecotourism as well as the potential impact this tourism activity might have on local economic diversification. To carry out this research, this project adopted a case study approach in order to produce a comprehensive understanding of the AFT as a single site. A case study is used when Is used when illuminating a general problem through the examination of a specific instance (Yin, 2001). By recognizing multiple contributing factors and using information from a wide variety of sources, case studies can provide a degree of flexibility not evident in many alternative research modes and are consequently used extensively in tourism research (Honggen, and Smith, 2006). The data for this case study came from multiple sources of primary research, including on-site questionnaires, economic impact analysis, and key informant interviews.

# 3.1 The Economic Benefits of AFT Ecotourism

### 3.1.1 Trail Counter

A combination of methods was used to calculate the annual economic benefit of AFT ecotourism. A trail counter, an on-site questionnaire, and direct tourism expenditure research were used in order to provide the number of hiking tourists, the additional time they spend in the region, and their daily expenditures while in the region. Together, these methods were used to calculate the economic benefits of AFT ecotourism. In order to calculate the economic benefit of tourists at the AFT, the number of trail users must first be known. Before the start of the hiking season, a heat-sensing counter was placed on the trail in order to count hikers as they walked by. Manufactured by Carson Electronics, a company located in Valemount, B.C., the counter was specifically designed for the purpose of counting trail users in the forests of Northern B.C. (http://www.carsons.ca/).

Placed among debris and downfall in order to remain hidden and free from tampering, the counter operated throughout the summer and Fall hiking season (May 28 – October 8). The counter consists of two units joined by a long cable: a heat sensor (which detects individual hikers as they walk past) and a small electronic box with a digital screen (which records and displays the number of hikers). The accuracy and reliability of the counter and the data it produced depended largely on its location and positioning. A poor location could allow the counter to either mistake a single hiker for more than one individual or miss hikers entirely as they pass by. Such a scenario would produce a systematic error that could either increase or decrease the total number of recorded hikers. During the 2010 hiking season a systematic error, relating to the physical location of the counter, was discovered (Connell and Shapiro, 2012). The location was changed at the end of the season and the new location proved to be more accurate and reliable during the 2011 hiking season. This new location, along a sharp incline where hikers were unlikely to linger in front of the sensor, was carefully chosen to ensure that the count would correctly record hikers. Time was spent (prior to the beginning of the 2012 hiking season) simultaneously watching both hikers and the digital screen to insure that individuals and groups of all shapes and sizes were being counted and recorded

accurately. This process, referred to as ground truthing, was continued throughout the hiking season in order to maintain confidence in the accuracy of the counter. There was no evidence found throughout this process that passing wildlife was a regular or even occasional occurrence.

A second consideration regarding the counter location was based on the multiple route options available to hikers. Because not all hikers are interested in completing the full loop, hikers may instead complete the smaller Big Tree Loop, thus returning back through the main entrance (see Figure 10).



Figure 10: Ancient Forest Trail Map

Source: Rob Bryce, 2007

By choosing to walk the smaller Big Tree Loop, hikers will inevitably pass the counter two times. This behavior results in a certain percentage of hikers who will be double counted. Data from the on-site questionnaire determined the route hiked by trail users and was used to adjust the final count to accurately reflect the true number of trail users. Therefore, the final total count for the season was adjusted and reduced by the percentage of hikers who elected to hike the smaller loop.

# 3.1.2 On-Site Questionnaire

Using AFT hikers as respondents, an on-site questionnaire was administered during the 2012 summer hiking season (see Appendice A). The purpose of this questionnaire was to gain a deeper understanding of the AFT as an ecotourism attraction, including information (hiker profile, group size, additional time, route hiked, daily expenditures, next destination, etc.) on trail users. The data from the questionnaire was considered alongside the data from the trail counter to determine the number of visiting tourists, which was then be used to calculate the annual economic benefit of AFT ecotourism.

The objective of the first question was to determine the route chosen by each hiker, a necessary component given the inevitability of double counts. Therefore, on the questionnaire, *Loop* refers to the route that takes hikers once around the whole circuit and out of different path than the entrance. *Big Tree and return same way* refers to the route that takes hikers to the Big Tree and back, which causes hikers to pass the counter for a second time. *Big Tree Loop* refers to the route that takes hikers to Big Tree and around a smaller loop, which causes hikers to pass the counter for a second time. *Other* is included

to account for individuals who did not make a complete trip to the Big Tree, but were still counted twice. This is the first question on the questionnaire as it plays an important role in determining the total number of trail users, a crucial component in calculating the economic benefit of AFT tourism.

The objective of the second question was to determine the profile of a particular individual or group. This question appears second in the questionnaire because distinguishing tourists from local residents is an important element in the economic calculation of tourist impacts. Also, the answer to this question determines if the respondent will be required to answer question number three. In order to classify hikers as Tourists, Recreational Day-Trippers (local residents), or Commuters, the questionnaire asked respondents specific questions relating to the 'usual environment' concept as outlined by the World Tourism Organization (UNWTO, 2011). If, while visiting the AFT, a respondent is within the boundary of their regular/routine life, they will be considered a Recreational Day Tripper. If the respondent is outside of the boundary of their regular/routine life then they are no longer within their 'usual environment' and can be classified as a Tourist. Lastly, respondents who regularly travel Highway 16, for purposes of commuting to work or for other routine travel purposes, will be classified as Commuters. Question 2 is divided into three sections. The goal of section 2a) was to determine if a respondent has hiked the trail before (and if so, how many times), but also to encourage the respondent to consider whether trips to the AFT fall within their routine activities, a crucial component to the tourist definition. The purpose of section 2b) was to determine the profile of each respondent by asking directly if day-trips to the AFT are a

part of the respondent's regular routine. The goal of section 2c) was to determine how the respondent learned about the trail.

Question 3, which is divided into four sections, was asked only of those respondents who have been classified as tourists. The purpose of these questions was to gain insight into the behavior of tourists in relation to their visit at the AFT. The purpose of question 3a) was to determine the amount of additional time each tourist spent in the region as a result of visiting the AFT, another crucial component of determining the economic benefit of AFT ecotourism. The purpose of question 3b) was to determine where (city, town, or AFT) any additional time was spent. The purpose of question 3c) was to determine what the average daily expenditures have been while in the region. Lastly, the objective of question 3d) was to determine how much time the respondent would recommend to a friend if they were to visit the region and were interested in visiting the AFT.

The purpose of question 4 was to determine where respondents go to after hiking the trail, as it may be reasonable to assume that the majority of Prince George residents (Recreational Day-Trippers) who visit the trail do not continue east along Highway 16 towards McBride, but instead return back to Prince George, therefore having no economic impact on the village of McBride. This is important considering that Prince George residents can be classified as Tourists, Recreational Day-Trippers, or Commuters, depending on their particular definition of 'usual environment'. However, crucial to these classifications is the concept that tourists come from outside their usual environment and, as a result of the AFT, spend extra time and money in the region, which can then be measured as direct expenditures. By determining where the majority of recreational day-

trippers go after hiking the trail, the distinction between tourists and day-trippers can be more appropriately applied to local residents. Lastly, in a section entitled Final Profile, data regarding group size, average ages, and origins (home town, etc.) was recorded to help better understand who is using the AFT.

Previous research at the trail has demonstrated two important variables of hiker activity at the trail that have influenced this decision: Firstly, hiker profiles change throughout the season, demonstrating that the hiker season is not homogeneous with regards to the profile of trail users. Secondly, a clear distinction between the make-up of weekend users (proportionally more recreational day-trippers) and weekday users (proportionally more tourists and commuters) was identified. The total sample (the 2012 hiking season) was divided into two 'strata', weekends and weekdays. By dividing the sample into two distinct strata (weekend and weekday), a systematic selection of days was then chosen in order to provide a balanced method for gathering trail user data from the non-homogenous hiking season. This type of sample is considered a stratified systematic sample (Babbie, 2011) and was made possible in part by a 99% response rate with AFT respondents, making a random sample of trail users unnecessary.

The systematic selection of days within a stratum (either weekend or weekday) began with a randomly selected day and progressed daily according to the ordering scheme for the remainder of the hiking season. Within the hiking season, there were 141 days: 97 weekdays and 44 weekends (including civic holidays). In order to fully separate the two stratum, both Monday and Friday were excluded from the weekday stratum as both days have the potential to see weekend-like activity, especially when considering that a number of civic holidays fall on Monday and Friday. Therefore, the first day within

the weekend strata was randomly selected as Saturday May 19, the first day of the Victoria Day long-weekend (also the first official day of the summer hiking season). Once this day had been selected, weekend days were then alternated throughout the hiking season (Saturday, Sunday, Saturday, etc.). Similarly, the first day within the weekday stratum was randomly selected as Wednesday, May 23. Again, once this day had been selected the ordering scheme began moving one day each week (i.e.: Wednesday, Thursday, Tuesday, Wednesday, Thursday, etc.).

Each day spent at the trail was divided between conducting questionnaires with trail users and recording and monitoring data output from the trail counter. Checking the data from the trail counter and cross-referencing it with the number of individuals represented in the questionnaires allowed for the routine testing of the accuracy of the trail counter.

The data from the AFT questionnaire was entered into and analyzed using SPSS analytical software. This software allowed data to be analyzed using statistical methods, including frequencies (percentage of tourists, day-trippers, and commuters) and cross tabs (highlights relationship between any two variables, including hiker profile and month of hiking season), all of which has allow for in-depth analysis of the data regarding AFT trail users.

## 3.1.3 Direct Tourism Expenditure Research

In order to calculate the annual economic benefit of AFT ecotourism, secondary data were combined with questionnaire data to estimate the direct expenditures of tourists using the trail. When considering average daily expenditures in the Robson Valley

region, including McBride and Prince George, a number of publications and studies are available (Intrinsic Tourism Solution, 2009; Tourism Island Vancouver, 2008; B.C. Gov, 1982; Tourism B.C., 2004; PG Tourism, 1998; Forest District; 1995). The average daily expenditure for tourists, as determined from these seven separate studies, is \$108 (see Table 2).

South Peace Region Value of Tourism Study, 2009	\$80
Victoria Visitor Survey, 2008	\$126
The Peace River-Alaska Highway tourism region, 1982	\$150
Value of the Mt. Robson Visitor Info Centre: study results, 2004	\$179.48
Prince George regional tourism development opportunities analysis, 1998	\$54
Tourism product demand and visitor expenditures: Prince George, B.C.	\$72
Pilot study of tourism resource use and economics in the Vanderhoof	\$96
Forest District for Ministry of Small Business, Tourism and Culture, 1995	
Average:	\$108

Table 2: Average Daily Expenditure Figures in Robson Valley Region

Primary data from the on-site questionnaire (question 3c) was gathered in order to confirm the average daily expenditure calculated from the seven sources detailed above. Data from the direct tourism expenditure research was analyzed alongside data from the trail counter and the questionnaire. The total number of tourists was then used alongside the average additional time spent in the region, plus the results from the direct tourism expenditure research in order to calculate the direct economic benefit of AFT tourism.

## 3.2 The Role of Ecotourism Within the Context of Local Economic Diversification

This section of the research was designed to describe the structure and dynamics of the local McBride economy. The first step in this procedure was to use statistics and economic analysis in order to describe the McBride economy in terms of dependence on various basic sectors, its diversity, its vulnerability to economic downturns, and general strengths and weaknesses. Specifically, the following sections provide tables and maps that identify and quantify the sources of income that support the local McBride economy. The analyses are based on detailed employment data obtained from Statistics Canada, including data from 1991, 1996, 2001, and 2006. What follows is a description of how these analyses were conducted and their results, which in turn provides this research the chance to comment on changes and trends within the local economy and how ecotourism impacts local economic diversification. In order to thoroughly analyze the structure and dynamics of the local economy, a combination of methods has been used, including Trade Area analysis, Shift-Share analysis, Location Quotient analysis, and Income Dependencies.

#### 3.2.1. Trade Area

A trade area represents the region from which a community draws the majority of its retail trade. Trade area analysis does not consider manufacturing operations (forestry, mining, etc.), but is designed to determine the maximum and minimum distances that individuals outside the municipal boundaries are willing to travel in order to participate in local retail trade (Hustedde et al., 2005). Trade area analyses are useful when defining the working boundaries of a specific economy, determining the population contained within that boundary, and estimating the 'pull factor' that a particular community has to attract retail trade (Hustedde et al., 2005).

Reilly's Law, an economic equation that provides an estimate of the maximum distance customers travel to shop in a certain community, uses the population of the local economy, the population of the closest cities, and the distance between to calculate a trade area (Hustedde et al., 2005). Reilly's Law can most appropriately be applied to shopping goods (furniture, medical services, and automobiles, etc.), which are the goods and services bought after comparing price, quality, and style. Reilly's Law suggests people are attracted to bigger places to do their shopping, but the time and distance they must travel influences their willingness to shop there.

McBride lays 208km east of Prince George and 167km west of Jasper. The closest city with a larger population is Valemount (population 1,020), which is located 84km east of McBride. This unique location has made Highway 16 McBride's lifeline to the outside world. When considering McBride's trade area, the geographic area from which the town draws the majority of its retail trade, the geography of the valley and the presence of Highway 16 have a large impact on the community's ability to attract retail trade.

Reilly's Law does have general limitations (Hustedde et al., 2005). Population levels between comparative communities must be relativity similar from cultural, economic, and social perspectives. It is best used when defining boundaries of independent communities surrounded by countryside rather than suburbs or urban neighborhoods. Reilly's Law also tends to overestimate the shopping population by assuming that individuals inside the trade area will always shop locally for goods and services. Despite these limitations, Reilly's law can be very useful when generating a definable boundary, based on the 'pull factor' of a particular community to attract retail trade from outside the municipal boundary.

# 3.2.2. Shift Share

When determining the structure and dynamics of a local economy, it is helpful to assess the competitiveness of existing businesses. If existing businesses can increase their competitiveness, they will encourage economic development by generating employment opportunities. Looking closely at the forces that affect growth and/or decline can assess competitiveness. Shift Share (SS) analysis attempts to examine this issue by dividing the changes in employment by industry into three components (Hustedde et al., 2005; Shaffer, et al., 2004). The first source is local growth/decline encouraged by national growth/decline. The second source is local growth/decline encouraged by the concentration of local businesses in either faster or slower growth economic sectors. Lastly, the third source is local growth/decline that accompanies the amount of competitive business locally as compared to the national average for the same sector.

These sources of growth/decline are designed to test if growth/decline in a particular area is 'natural' or the result of larger trends. Essentially, shift share analysis measures the movement (shift) of the local economy into faster or slower growth sectors, and the community's larger or smaller portion (share) of the growth occurring in a given economic sector (Horne, 2009). Employment data for the Shift Share calculations in this research were obtained from Statistics Canada. In order to complete a comprehensive SS analysis, data were obtained for the most recently available years, which includes 2001 and 2006 (employment data for 2011 will only be available in late 2013). By comparing SSs over time, a more complete picture of trends and changes emerges. The employment data are organized according to the North American Industrial Classification System (NAICS). NAICS data are divided into separate codes, including two-, three-, and four-

digit codes. While four-digit code data are the most ideal for examining employment data (as it provides a greater level of detail), there is no four-digit level NAICS data at the national level, a necessary element when completing location quotients which compare the local, regional, and provincial economies against the national economy.

The first step when determining shift share is to calculate the national growth component (NG). The NG is calculated by multiplying the base year employment in each sector by the national average employment growth rate and then summing over all the sectors (Hustedde et al., 2005). The NG measures the change in local employment as a result of national economic trends and is based on the assumption that the local and national economies are identical.

The second step when determining shift share is to calculate the industrial mix component (IM). The IM is calculated by multiplying the local employment in each economic sector by the difference in the national growth rate for that sector and the growth rate for the whole economy (Hustedde et al., 2005). A positive industrial mix indicates that the majority of local employment is in sectors growing faster than national total employment. A negative industrial mix indicates that local employment is in sectors growing slower than national total employment.

The third and final step involved in determining shift share is to calculate the competitive share component (CS), which measures the capacity of the local economy to capture an increasing/decreasing share of a particular sector's growth. The CS is calculated by multiplying the local employment in each economic sector by the difference in the growth rate of that sector nationally and locally (Hustedde et al., 2005). After doing this for all sectors, the results are summed to give the community competitive

share. Once each of the three components is calculated, they are added together to determine the total change in local employment.

Unfortunately, two-digit level NAICS employment data are not available for the Dissemination Areas within Fraser Fort George Electoral Area H, which includes Dome Creek and Crescent Spur. For this reason, DC and CS are not exclusively contained within the data used for the SS calculations, results, and analysis of this study. One possibility around this issue was to conduct the SS calculations using data from the Fraser Fort-George regional district H, rather than the Village of McBride. Although this was a potentially viable option, and has been used in the past to represent the region in similar studies (Horne, 2009), this research is focused on the village of McBride, Dome Creek and Crescent Spur, and not all of regional district Electoral Area H, which includes several communities east of the AFT and McBride, including Valemount, which has a larger population than McBride and could therefore obscure some of the specific details necessary to accurately describe the structure and dynamics of the local McBride economy. The results of the SS calculations will be considered alongside other data, including raw McBride, Electoral Area H, and Fraser Fort George 4-digit NAICS employment data and key informant interviews, which will lend further insight into the economic benefits of ecotourism within Dome Creek and Crescent Spur.

#### 3.2.3. Location Quotient

The location quotient technique is designed to compare the local economy to a reference economy (typically the national economy). Through this comparison,

specializations in the local economy can be identified and examined (Horne, 2009). To calculate any location quotient, the following formula is applied (Hustedde et al., 2005).

 Location quotient
 =
 Local Employment
 /
 National Employment

 Total Local Employment
 Total National Employment
 Total National Employment

When analyzing location quotients, the local economy is compared to the national economy. A location quotient (LQ) less than one suggests that the local economy is below average in terms of its concentration in a given industry, and/or that goods or services are being imported from other communities (Hustedde et al., 2005). Local employment within an industry is shown to be less than was expected and is not meeting local demand for a given good or service. This employment is considered non-basic by definition. A LQ equal to or close to zero suggests that local employment is sufficient to meet the local demand for a given good or service (Hustedde et al., 2005). Again, this employment is considered non-basic because none of these goods or services are exported to non-local areas. Lastly, a location quotient greater than one suggests that the region exhibits concentration in that, and that the good or service is being exported to other communities (Hustedde et al., 2005). These extra jobs must then export their goods and services to non-local areas, which, by definition, makes them basic sector employment. Basic income refers to income that flows into the community from the outside world, either in the form of employment or non-employment income. Basic employment income, which flows into a community in the form of wages and salary, includes industries like forestry and associated manufacturing, agriculture, mining, and

tourism (Horne, 2009). These industries represent an important link to outside economies. Location quotients typically fall within a range of 0.05 to 10.00. However, the use of the range .75 to 1.25 recognizes potential data imperfections. For example, a LQ should exceed 1.25 before it represents a strong export activity (Shaffer, et al., 2004).

Employment data for the location quotient calculations in this research were obtained from Statistics Canada. In order to complete a comprehensive LQ analysis, data were obtained for all available years, which includes 1996, 2001, and 2006 (Employment data for 2011 will only be available in June 2013). By comparing LQs over time, a more complete picture of trends and changes emerges. The employment data are organized according to the North American Industrial Classification System (NAICS). NAICS data are divided into separate codes, including two-, three-, and four-digit codes. While fourdigit code data are the most ideal for examining employment data, there is no four-digit level NAICS data at the national level, a necessary component when completing location quotients which compares the local, regional, and provincial economy against the national economy (Statistics Canada, 2010). The results of the LQ calculations will be considered alongside other data, including raw four-digit NAICS employment data and key informant interviews, which will lend further insight into the economic benefit of ecotourism within DC and CS.

In order to identify specializations within the McBride economy, location quotients were calculated for McBride (site), the Fraser Fort-George Municipal District (region), and British Columbia (province), using the nation of Canada as a constant point of comparison. The results will help to highlight the differences in the import and export industries between McBride, its regional district and the province of British Columbia.

Additionally, one has to be careful in making hasty conclusions from location quotients. For example, a location quotient of less than one does not mean the community should strive for self- sufficiency in that activity. Each community should not be completely self-sufficient in all sectors (e.g., steel mills or shoe manufacturers). However, if the location quotient is less than one in a trade or service activity, it suggests there may be a gap in the local economy, because most trade and service activities are expected to be present in most cities and villages (Hustedde et al., 2005). Just like any other tool, location quotients need to be used with caution because some elemental assumptions can lead to errors if they are violated. The technique requires you to assume local and nonlocal demand and productivity are similar. It is necessary to keep in mind that these location quotients have not used local employment by industry data; rather they consist of employment by local residents in different industries data. Therefore, the results relate only to the types of jobs that McBride residents work in and not the types of jobs in McBride.

### 3.2.4. Income Dependencies

Income dependency is one way in which a regional economy can be measured by looking at the sources of base employment income within a specific community as they related to specific industries (Horne, 2009). NAICS employment data are divided into two-, three-, and four-digit level data. As was previously outlined in this report, two-digit level data were used in the base economic analysis calculations (shift share and location quotient) as it best represented the geographic area of McBride (excluding Valemount) and contained data spanning the largest available period of time (1996 – 2006) for long

term analysis. Four-digit level data were also obtained from Statistics Canada for use in this study. However, because no four-digit level data exists on the national scale, the base economic analyses were not able to make use of this data, which rely on national data as a point of comparison. In addition, the four-digit level data only covers 2001 and 2006, making long term analysis difficult. Nevertheless, four-digit level data provide valuable insight into specific industries and can be analyzed alongside the results of the base economic analysis in order to more completely describe the structure and dynamics of the local economy.

Following the methods outlined by Horne (2009), this study examines the fourdigit level employment data for McBride, Electoral Area H, the Fraser Fort George district, and the province of British Columbia for the years 2001 and 2006. Because the four-digit level data contain a greater degree of detail within each industry, Horne was able to restructure industry sectors by choosing which specific codes best represented that sector. For example, the Forestry sector was assembled by combining the following NAICS four-digit codes: 113-Forestry and Logging; 1153-Support activities for forestry; 3211-Sawmills and wood preservation; 3212-Veneer, plywood and engineered wood manufacturing; 3219-Other wood product manufacturing; 332-Paper manufacturing; 327-Furniture and related product manufacturing (Statistics Canada, 2011). Together, these seven separate codes combine to provide a reliable and accurate representation of the Forestry industry separate from Agriculture, Hunting, and Fishing.

Tourism is perhaps

the most difficult industry sector to construct. While all industries in the province were considered for inclusion in the tourism sector, it is assumed that goods-producing

industries (like Agriculture and Forestry) do not deal directly with tourists (B.C. Statistics, 2009). Rather, service-producing industries, such as Retail Trade, Information and Culture Industries, Administrative and Support Services, Arts, Entertainments and Recreation, and Accommodation and Food Services are much more closely related to tourism activity throughout the province (B.C. Statistics, 2009).

Horne (2009) combined particular NAICS Industry Definitions and isolated the tourism industry by combining NAICS 7211 (Traveler Accommodation) and 7212 (RV parks and recreation campgrounds) as well as with "parts of Retail Trade, Food Services, Transportation Services, and Personal Services" (pg. 62).

Again, the employment data for Dome Creek and Crescent Spur as independent localities is not available. However, Dome Creek and Crescent Spur, as well as the other dissemination areas contained within Area H, are included in the Area H employment data. Because Area H also includes Valemount, analysis of the Area H results will have to take this into consideration, as Valemount is not included in the parameters of this study.

Income dependencies and the total active labour force have both changed between 2001 and 2006. Therefore, following Horne's method (2009), percentages were calculated in order to show the relative increase or decrease in income dependencies over time at the local, regional, and provincial levels.

# 3.2.5. Growth Share Matrix

A Growth Share Matrix (GSM) is a method used to examine three data sets at once on a single graph. Depending on the available data, a GSM will plot the first data set along the X-axis, the second along the Y-axis, while the third data set is represented by the size or shape of the individual data points on the graph. One way in which multiple results from economic analysis can be measured is to plot them on a GSM graph. By combining results from the location quotients analysis, the national growth component of the shift share analysis, and income dependencies, a GSM representing the local McBride economy was generated. The GSM shows industry clusters, geographic concentrations of regional industries that obtain a competitive advantage as results of co-localization (Meyers Norris Penny, 2008).

Meyers Norris Penny (2008) outline how GSM can help assess economic activity as well the steps to create the model. The method for assessing whether a given industry represents a true cluster is to first calculate three values. The first is the growth of employment within the industry relative to the industry's employment at the national level. These data were calculated by subtracting the national growth rate from the regional growth in order to determine the relative rate of industry growth at the local level.

The second value is the concentration of the regional employment in the industry relative to the same industry at the national level. These data were calculated as a necessary step for location quotient analysis, which also used 2001 and 2006 NAICS two-digit data. The regional employment concentration was compared with the national concentration by dividing the regional percentage by the national percentage.

Lastly, employment share in the region, based on historical employment was calculated by determining the income dependencies for the local McBride economy. On the GSM chart, the industries percent share of the total local employment is depicted by

the size of the data point. Larger data points represent a larger proportional share of employment within an industry.

The location and size of an industry data point, or clusters, reveals particular insight into the role that industry plays within the local community as compared to the national economy. 'Pre-clusters' are industries that are characterized by slow to negative growth and an employment concentration that is not significantly different to the national employment level. Pre-clusters have low location quotients and negative growth rates, placing them in the lower left quadrant of the GSM. "Seed and emerging clusters" are characterized by small concentrations of interconnected companies that show rapid growth compared to the national average and have a potential to be economic drivers in the long term. These clusters may have low location quotients, but have high growth rates, placing them in the lower right quadrant of the GSM. "Performing clusters" are local concentrations of inter-related companies that display robust growth and a high employment concentration relative to the national employment for that particular industry. Performing clusters typically have high location quotients and relatively high growth rates, placing them in the upper right quadrant of the GSM. "Transforming clusters" are characterized by slow to no growth, yet still show an above average concentration of employment at the local level. These clusters typically have high location quotients, but a negative growth rates, placing them in the upper left quadrant of the GSM. Lastly, the size of clusters demonstrates the industries percent share of the total regional employment.

# 3.3 Local Knowledge Regarding AFT Ecotourism and Local Economic Diversification

#### 3.3.1. Key Informant Interviews

In order to determine the role that ecotourism plays within the context of local economic diversification, a number of economic analyses were conducted to analyze the structure and dynamics of the local McBride economy, including trade area, shift share, location quotient, income dependency and growth share matrix. While these methods provide insight into the complex relation between local industry, natural resources, and larger external pressures, they do not address local knowledge regarding Ancient Forest Trail ecotourism, ecotourism related economic opportunities, or the impact of ecotourism on economic diversification

The purpose of the key informant interviews (KII) was to gain specific insight into the social, economic and environmental impacts of ecotourism development. The supplementary perspective provided by known experts, whose personal or professional experience provides them with relevant ecotourism-related knowledge, was considered alongside the results of the economic analysis.

The first step was to identify potential respondents. An original list of 22 respondents was created based on personal and professional experience as it relates to the McBride economy, ecotourism, the AFT, forestry, economic development, and economic diversification. The final 18 respondents represent a range of backgrounds, professions, and opinions (See Table 3). Represented within the responses are local outdoor groups, local tourism operators, local government tourism organizations, Prince George and McBride community forests, local forest districts, Prince George and McBride recreation

officers, McBride economic development officers, the McBride chamber of commerce, timber supply analysts, local mill operators, and local government economic development projects.

Interviewee A	Caledonia Ramblers
Interviewee B	Northern B.C. Tourism
Interviewee C	Local Economic Development Officer
Interviewee D	McBride Community Forest
Interviewee E	Dunster Community Forest
Interviewee F	Prince George Forest District
Interviewee G	Local Recreation Officer
Interviewee H	McBride Chamber of Commerce
Interviewee I	Northern B.C. Tourism Association
Interviewee J	The Outdoor Life Adventure CO.
Interviewee K	Regional Timber Supply Analyst
Interviewee L	Local Recreation Officer
Interviewee M	Alternative Forestry / Community Forestry
Interviewee N	Omnicacolalition
Interviewee O	Development at UNBC (Previous Initiatives PG)
Interviewee P	Barriere to McBride Pilot Project
Interviewee Q	Touchwood Tours
Interviewee R	Midget Mills McBride

Table 3: List of Anonymous Key Informants and Corresponding Affiliations

The principle method for data collection was the use of semi-structured interviews (Sebele 2010, Moyer, Duinker, and Cohen, 2010, Almeyda et al., 2010, and Weinberg et al, 2002). The interview was divided into four sections (A,B,C, and D). Section A (see Appendice B) was designed to start the interview with a focus on current local economic conditions and to introduce the topic of ecotourism. The goal of section A was to

determine a respondent's opinions regarding the current state of the McBride economy, including perceived strengths and weaknesses. Section A also determined the initial attitude of respondents towards ecotourism in the Upper Fraser Valley and its relation to economic diversification. By focusing on the current state of the local economy at the start of the interview, respondents were positioned to envision future economic scenarios in section C. No specific mention of the AFT was made at this point, allowing respondents to speak about the local economy and ecotourism as their experience dictated.

The goal of section B was to introduce the Ancient Forest Trail and to determine the respondent's knowledge of the trail and its relation to the local ecotourism sector as well as its potential impact on local economic diversification. These two questions in Section B require respondents to describe the trail within the context of local ecotourism as well as to describe any potential impact AFT tourism might have on local economic diversification. All respondents were familiar with the trail and provided detailed insight into the trail's relation with the local economy and ecotourism sector.

Section C shifted away from the current time frame by focusing on potential future (10-15 years) economic conditions, specifically the future of local economic diversification. After respondents commented on their view of how economic diversification might look in the future, including roadblocks to diversification, the topic of ecotourism and the AFT were reintroduced within the context of future economic diversification. The goal of section C was to provide respondents with an opportunity to comment on the role that they would like to see and believe will develop regarding
ecotourism and its potential contribution towards the economic diversification of the local McBride economy.

Section D, the final section of the interview, contained summarizing questions regarding the overall themes presented during the course of the interview. The goal of section D was to provide respondents with a final chance to comment directly on the role of ecotourism, including the AFT, on the current and future economic development of the local McBride area. The final questions required respondents to decide if ecotourism should be an economic priority for the McBride economy, allowing respondents a chance to clearly state their position and knowledge regarding tourism and ecotourism's ability to provide a positive economic stimulus to the McBride economy.

The methods chosen to conduct the key informant interviews were dictated in part by the geographic nature of the region. Respondents were situated throughout McBride and Prince George, so that the majority of interviews were conducted via telephone. This interview process allowed for convenient audio recording as well as real-time note taking. The interviews were recorded digitally through a recorder. All information collected was stored electronically in a database that was only accessed by researchers associated with the study.

After respondents agreed to participate, a date and time were scheduled, at the participant's convenience, for the interview. Respondents were then contacted via telephon

e on the scheduled date and the interview would commence. The interviews varied in term of length, with the average interview lasting just over 25 minutes. Once the interview was completed, the audio recording was uploaded and the transcription was

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reviewed and compared against the audio to insure no discrepancies between the audio and the transcription existed. Following the method of analysis used by Moyer, Duinker, and Cohen (2010) and Azumah et al., all completed interviews were compiled and entered into NVivo 9.

While the identity of respondents is presented in the results of this research (Results 3.2.2.a), no connection is made between individual participants and their responses. Participation in the interview was completely voluntary and participants maintained the ability to withdraw from the study at any time.

The Research Ethics Board at UNBC approved this study. All participants were read a consent form and gave verbal consent as required by the Research Ethics Board (see Appendice C) that included a description of the project and the nature of their involvement.

## Chapter 4

#### RESULTS

## 4.1 The Economic Impact of AFT Ecotourism

### 4.1.1 Trail Counter

Data from the trail counter were used to determine the total number of trail users for the 2012 summer hiking season (May 28, Victoria Day – October 8, Canadian Thanksgiving). The data from the trail counter were considered alongside data from the on-site questionnaire in order to determine the number of visiting tourists and the annual economic impact of AFT ecotourism (see Section 4.2.4).

Counter readings were collected on a regular basis (approximately two or three times a week). A total of 43 readings throughout the 2012 hiking season were recorded and entered into Microsoft Excel. Visitation levels rose steadily throughout May, June, and into July. Visitation peaked in August with close to 5,000 recorded trail users. September saw visitation levels similar to July, but began to drop off near the end of the month, and continued to decline in October (see Figure 11). It should be noted that May (12 days) and October (eight days) contained fewer 'days' than June (30 days), July (31 days), August (31 days), and September (30 days).

The counter functioned optimally for 118 of the 143 days in the summer season, missing 25 days due to the two isolated unplugging events. Accounting for the missing data, the unadjusted total (including double counts) for the summer hiking season is 16,872. Data from the on-site questionnaire reveals that 35.3% of hikers elected to hike

either the small Big Tree Loop or the Big Tree Return, and were double counted as a result. Therefore the final adjusted total, accounting for the 35.3% double count, is 12,470. This figure represents a 24.6% increase from 2011 (an increase of 2460 visitors) and a 62% increase since 2008 and continues the trend of increasing visitation at the AFT (see Figure 12) (Connell and Shapiro, 2012).



Figure 11: 2012 Hiking Season Monthly Visitation at the AFT





During the 2012 hiking season (May 28 – October 8), the counter functioned largely without error or disruption. On June 1st, a lightning storm above the Ancient Forest Trail caused the counter to reset back to zero; no data were lost, as the count had been recorded the previous day. However, two instances occurred in which an unknown hiker forcibly removed the cable connecting the sensor to the electronic display box. This resulted in two periods of time (ten days in July and 15 days in Sept-Oct) when the counter was not recording hikers.

In order to fill the first of these two gaps (July 16 - 25), a regression model was constructed using the first 58 days (May 19 - July 15) of trail counter data (see Figure 13). The regression model demonstrated a polynomial line of best fit. The equation contained within the line of best fit was then used to calculate the proximate 10 days of missing data (July 16 - 25). The resulting increase was 865 for the ten missing days, a figure consistent with levels of use prior to and after the period of missing data.





Unfortunately, the second gap (September 21 – October 8) occurred at the end of the hiking season. Previous research at the trail has demonstrated a seasonal decline as the season comes to a close, making the use of a regression model based on previous summer data inadequate, unable to predict the seasonal decline. In order to fill this data gap, data from the 2011 summer season were examined and considered alongside firsthand testimony from the Caledonia Ramblers, a team of volunteers who spent several weeks at the trail during September and October. The resulting calculation continued the count by 90 per weekday and 150 per weekend. In order gain confidence that this estimation corresponded with known trail user behavior at the end of the hiking season, a final regression model was created using data from September and the estimation for the final missing 15 days (see Figure 14). The model demonstrates a gradual decline in the daily increase of visitors, accurately reflecting the season decline experienced at the AFT.

Figure 14: Regression Model: September 1 – October 8



Once the two gaps had been filled, the entire summer was then plotted on a graph in order to examine the changes in trail user frequency throughout the season (see Figure 15). This graph shows an initial climb in July, increasing most rapidly in August (days 80-100), before decreasing the rate of growth towards the end of the season throughout September and October (days 100-143). As demonstrated by Figures 13 and 14, the two periods of missing data (days 60-70 and days 126-143) have been completed by estimates based on previous 2012 summer counts, seasonal trends, and first-hand observations. The estimates were assimilated with recorded trail counter data to complete a season-long model (see Figure 15) that provides a consistent, smooth seasonal pattern without fluctuations or major gaps that agrees with the recorded trail counts as well as the known AFT seasonal changes. These results for the number of trail users were considered along side on-site questionnaire data in order to determine the economic impact of Ancient Forest Trail ecotourism.



Figure 15: Complete 2012 AFT Hiking Season

# 4.1.2 On-Site Questionnaire

A total of 31 days were spent conducting on-site questionnaires at the AFT trailhead. These days were split evenly amongst weekend days and weekday days (15 weekend days and 16 weekday days). Within the weekend strata, six Saturdays and nine Sundays were spent at the trail. Within the weekday strata, six Tuesdays, four Wednesdays, and six Thursdays were spent conducting questionnaire at the AFT. With close to a 100% response rate, a total of 527 questionnaires were completed over the 31 days. Represented within these surveys are 1,738 individuals, including 864 Tourists, 789 Recreational Day-Trippers, and 82 Commuters (see Figure 16).





*Question 1*: Data from Question 1 revealed the routes hiked by trail users. 64.7% of trail users hiked the full Loop and were therefore counted once. The remaining trail users hiked the Big Tree Return, Big Tree Loop, or Other, which resulted in a double count of 35.3% (see Figure 17). The route chosen by hikers also varied between Tourists,

Recreational Day-Trippers, and Commuters (see Figure 18). The vast majority of all trail users elected to hike the Full Loop (59% of Tourists, 71% of Recreational Day-Trippers, and 68% of Commuters) making the Big Tree loop the second most popular route (32% of Tourists, 25% of Recreational-Day Trippers, and 16% Commuters) (see Figure 18).





Figure 18: Route Hiked by Hiker Profile



*Question 2*: The second question and its three sub-questions provided data on the profile of hikers, which was useful when dividing all the questionnaire data into the Tourist, Recreational Day-Tripper, and Commuter categories. In response to question 2a, 70% of all AFT visitors were at the trail for the first time, while 30% had visited at least once before (see Figure 19). Following this question, respondents were then asked about their AFT visit with regard to their usual environment in order to determine the profile of trail users. During the 2011 summer hiking season, 39% of trail users were classified as tourists. During the 2012 summer hiking season, it was determined that 49.7% of hikers are classified as tourists, 45.4% as recreational day-trippers, and 4.7% as commuters (see Figure 20).



**Figure 19: Frequency of AFT Visitation** 





When hiker profiles are examined throughout the hiking season, a fluctuation between Tourists and Recreational Day Trippers can be observed (see Figure 21). Recreational Day Tripper trail use peaks in June while Tourists are at their lowest level of trail use. These figures gradually reverse as the season progresses, with Tourist trail use peaking in August (also most visitor heavy month of the season). By the end of the summer, Tourist levels began to decline as Recreational Day Tripper levels again began to raise. Commuter levels remain low throughout the summer, but show a marked increase in July.



Figure 21: Hiker Profile at the AFT by Month

According to question 2c, respondents were asked how they first learned about the AFT (see Figure 22). The majority (25.8%) learned of the trail by seeing the AFT Highway signs on Highway 16 (two are placed 1km before the trail heading in each direction, with one larger sign leading into the parking lot). Friends and word of mouth were the second most popular means by which individuals learn about the trail. A cross-tab analysis of this data with hiker profiles reveals that Tourists and Recreational Day-Trippers learn about the AFT in different ways (see Figure 23). While the highway sign remains the single most important educator of the trail, Tourists, far more than Recreational Day-Trippers, learn about the AFT from visitor information centers, either in Prince George, McBride, or Mt. Robson.



**Figure 22: Point of AFT Awareness** 

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Figure 23: AFT Awareness by Hiker Profile



*Question 3*: Question 3 was only asked to Tourists, who are trail users that had answered 'no' to the previous 'usual environment' question (Q2b). Question 3a represents a step in calculating the annual economic impact of tourism by asking how much additional time was spent in the region as a result of stopping to visit the AFT (see Figure 24); 40% answered 'half a day' and 32% answered 'an hour or two', suggesting that the majority of tourists spend between a few additional hours and half a day longer in the region as a result of visiting the AFT. When asked where that additional time was/would be spent (Q3b), respondents were typically vague (54.6% answered N/A) 36.6% answered that they would be spending that additional time at the trail itself, and 6.1% answered they would be spending it in McBride.



Figure 24: Additional Time in AFT Region

Question 3c revealed a number of different groups based on daily expenditures (see Figure 25). The average daily expenditure of tourists at the trail was \$138 per day. Question 3d asked respondents how much additional time they would recommend to a friend making a similar trip in Northern B.C. Figure 26 demonstrates that, although most respondents only spent half a day in the region themselves, they typically recommended spending more time in the region. 21.3% recommended spending a full day and 17.9% recommended spending more than a day.



Figure 25: Average Daily Expenditures by Tourists Using the Trail

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Figure 26: Additional Time Recommended By Trail Users



B.C., Ouestion 4 asked respondents to identify their post-trail destination (see Figure 27). The majority of hikers were headed west on Highway 16 to Prince George. While many Recreational Day-Trippers have originally come from Prince George, many Tourists have come up from Jasper and are headed to Prince George as they continue to drive north.



**Figure 27: Post-trail Destination of AFT Users** 

The last section of the Questionnaire was designed to gather general information from trail users, including group size, ages, and origin. With the exception of Commuters, groups of two people were the most common at the trail (see Figure 28). Almost half of all tourist groups were groups of two, followed by four, and three. A similar pattern is seen in Recreational Day-Trippers as well.



**Figure 28: Group Size of AFT Users** 

Like group sizes, the ages of trail users across hiker profiles are similarly grouped (see Figure 29). The average age for each of the three hiker profiles was between 36-50 years of age. However, 32% of tourists were between the ages 51-65, suggesting that tourists were typically older than recreational day-trippers.



Figure 29: Age of AFT users

## 4.1.3 – Direct Tourism Expenditure Research

As noted in the Literature Review, local tourist expenditure research, between 1995 and 2009, suggests that tourism expenditures varied between \$54 and \$180 per day. Averaging studies, the average daily expenditure is \$108 for visiting tourists in the Prince George/McBride region. As detailed in Section 6.1.2, results from the questionnaire suggest that the average daily tourist expenditure is higher at \$138. Using these two figures, a range was calculated to represent average daily expenditures (see Table 4).

**Table 4: Daily Expenditure Estimations** 

Daily Expenditures Estimations:				
Low	Daii			
Lowagw Daii				
Log	Daii			

## 4.1.4. Annual Economic Benefit of AFT Ecotourism

During the 2012 summer season (May 19 - Oct 8), a total of 12,470 individuals hiked the Ancient Forest Trail. Of those trail users, 49.7% were tourists, suggesting that approximately 6,200 traveling tourists stopped and spent time hiking the AFT. Data suggest that the number of tourists at the trail outnumbers both local trail users (45.4%) and commuters (4.7%) suggesting that the trail now operates equally as a recreational day site for locals and as an ecotourism destination for tourists.

Survey data reveal that the majority of tourists (73.3%) who stop at the AFT spent between 'a few additional hours' and 'half a day' longer in the region as a result of visiting the AFT. This suggests that the average additional time spent in the region by tourists is approximately six hours, or a quarter day. The average daily expenditure of \$120 was then divided by four (representing the six additional hours) to arrive at a \$30 per-person daily expenditure attributable to tourism activity at the trail.

6,198	Total Tourists
\$120	Average Daily Expenditure
6 hours	Average Additional Time

**Table 5: AFT Annual Direct Economic Benefit** 

Using this information (see Table 6), it was then possible to calculate the direct economic impact of AFT ecotourism for the 2012 summer hiking season. Following the equation outlined by Crompton (1993), Stynes (2006), Job (2008) the steps for calculating the economic impact are as follows:

Number of Tourists × (Average Daily Expenditures ÷ Additional Time in Region)

= Annual Economic Benefit

**Table 6: Annual Economic Benefit Calculations** 



This calculation reveals a direct annual economic benefit (derived exclusively from tourism activity) of \$185,928 (see Table 6). Using the 'low' estimate of a \$100 daily expenditure, the annual direct economic impact is reduced to \$154,940. Using the 'high' estimate of a \$140 daily expenditure, the annual direct economic impact is raised to \$216,916, suggesting a range of \$155,000 – \$217,000.

# 4.2 - The Role of Ecotourism within the Context of Local Economic Diversification

In order to properly assess the potential contribution of AFT ecotourism to economic diversification, a specific combination of descriptive tools was used to describe the structure and dynamics of the local McBride economy. Focusing on the analytical tools outlined by Shaffer (2004), a combination of trade area analysis, shift-share analysis, location quotients, income dependencies, and growth share matrixes were conducted. The results demonstrate a local McBride economy in a period of transition, moving away from resource dependence and towards a more diversified economy.

#### 4.2.1 Trade Area

Using Reilly's Law, an economic equation that provides an estimate of the maximum distance customers travel to shop in a certain community, the trade area for the community of McBride was calculated. The two sites used to construct McBride's trade area were Prince George and Valemount, which are the two closest sites to McBride along Highway 16. The necessary data for completing this analysis included the population of all three sites, including the road distance between McBride and Prince George and Valemount (see Tables 7 and 8).

Table 7: Prince George and McBride Trade Area Calculation

	PG is 208km from McBride	
	PG population is 71,030	
	McBride population is 586	
$1 + \frac{20\%}{5}$	$\frac{\overline{1,030}}{86} = 1 + \sqrt[208]{121.21} = 1 + \frac{208}{11.00} = \frac{208}{12.00} = 17.$	.00km

	Valemount is 84km from McBride
	Valemount population is 1,018
	McBride population is 586
1+	$\frac{\sqrt[84]{1,018}}{586} = 1 + \sqrt[84]{1.73} = 1 + \frac{84}{1.31} = \frac{84}{2.31} = 36.36 \text{ km}$

# **Table 8: Valemount and McBride Trade Area Calculations**

According to Reilly's Law, the average distance that an individual would be

willing to travel from the east, heading towards McBride, is 36.36km (See Figure 30). Similarly, the average distance that an individual would be willing to travel from the west, heading towards McBride, is 17km (see Figure 30). The four communities that fall within this trade area are, Legrand, Lamming Mills, Eddy, and Dunster.



The local newspaper that serves McBride, the Valley Sentential, which is published in Valemount, claims to have subscriptions as far away as the North West Territories. However, the majority of their subscriptions are located within the Fraser Fort-George area, including Prince George, suggesting that the majority of the commercial traffic is from the small communities that fall within or close to McBride's trade area. The McBride trade area serves to demonstrate the nature of commerce in the valley as well as the reach and pull that McBride has on surrounding localities.



Figure 31: McBride Trade Area and Surrounding Communities

While one goal associated with calculating the McBride trade area is to inform a definition for the local economy, the local economy is not limited to McBride's trade area. As Figure 31 illustrates, Dome Creek and Crescent Spur are two small communities closely situated to the Ancient Forest Trail. Because of their proximity to the AFT, these two communities are potentially impacted by the ecotourism industry (Shapiro, 2012), which in turn is connected to the trail and to the village of McBride. A small number of tourism operators are located in Dome Creek and Crescent spur and, as a result of routine visits to the McBride trade area for services, have an economic connection to McBride (Shapiro, 2012). While Dome Creek and Crescent Spur are not included within the

McBride trade area, it would be incorrect to exclude them from the assessment of AFT ecotourism and its impact on local economic diversification. For these reasons, Dome Creek and Crescent Spur is included within the definition of the local economy despite lying approximately 50km outside the trade area in the direction of the Ancient Forest Trail (see Figure 32).

When conducting the base economic analysis on the local economy, specific attention was paid to incorporate Dome Creek and Crescent Spur when possible. Because of their small size, Dome Creek and Crescent Spur data are included within the larger Fraser-Fort George and Regional District Area H data. Because those divisions contain areas not included within the local economy, care was taken when analyzing the results of the economic impact analysis.





Because no population data exist for the small localities contained within the Fraser Fort-George Electoral Area H, the local economy population was estimated by

combining the communities and villages contained within (see Table 9). Therefore, the

population of the local economy is 705, a combination of McBride's population, Dome Creek and Crescent Spur as well as the four small villages within the McBride trade area.

LocationL	LocatationL
Village of McBride	Vi I
Vol e Vreeag	IV
Vrescee fpMrg	W
McBride orade r rea	Vi
LotatL	LocL

**Table 9: Local Economy Population** 

\* Estimates from Shapiro (2012)

# 4.2.2. Shift Share

Using NAICS two-digit level employment data and by using Canada as a constant point of comparison, shift share (SS) analyses were calculated for McBride (site), the Fraser Fort-George Municipal District (regional), and British Columbia (provincial). The shift share results help to determine the competitiveness of existing businesses by measuring the movement of the local industries into faster or slower growth sectors and by calculating the number of gained and lost jobs within a specific sector. Through this analysis, one can assess the competitiveness of tourism-related sectors within the local economy.

The results for the National Growth Component (NG) indicate that the local McBride economy benefited positively as a result of national economic growth (see Table 10). If the economies of McBride and Canada were the same, then 31 new jobs would have been created between 2001 and 2006. The majority of this growth would have occurred in the Manufacturing sector (8 new jobs), which Statistics Canada (http://www.statcan.gc.ca) defines as: "establishments primarily engaged in the physical or chemical transformation of materials or substances into new products". This influence on jobs within the manufacturing industry at the local level was mirrored on the regional level (represented by the Fraser-Fort George region) (see Table 10).

Table 10: National Growth Component by Industr	y and Region (2006)
--	---------------------

National Growth Results: 2006				
Industry	McBride	F.F.G.	B.C.	
Agriculture, Forestry, Fishing and Hunting	2	296	6,486	
Manufacturing	8	624	16,029	
Retail Trade	5	510	19,212	
Transportation and Warehousing	3	283	9,417	
Educational Services	1	294	11,518	
Health Care and Social Assistance	4	410	16,499	
Arts, Entertainment and Recreation	1	71	3,806	
Accommodation and Food Services	3	336	13,783	
Other Services	1	221	8,106	
Public Administration	2	242	9,302	
Mining and Oil and Gas Extraction	0	19	1,158	
Utilities	0	26	960	
Construction	1	247	9,790	
Wholesale Trade	0	148	6,801	
Information and Cultural Industries	0	101	5,128	
Finance and Insurance	0	125	6,649	
Real Estate and Rental and Leasing	0	51	3,425	
Professional, Scientific and Technical Services	0	200	11,298	
Management of Companies and Enterprises	0	2	113	
Administrative and Support	0	129	6,664	
Total	31	4,336	150,115	

The positive NG at the local level is offset by McBride's negative average

industrial mix (See Table 11). Local results for the Industrial Mix Component (IM) are

primarily affected by two industries that show negative results. Both Agriculture, Forestry, Fishing and Hunting (-3) and Manufacturing (-16) have negative IM results, indicating that local employment is engaged in sectors that are growing slower than national levels. The regional and provincial IM results mirror this situation with comparably low IM results for both agriculture, forestry, fishing and hunting and manufacturing (see Table 11). However, the provincial total IM (12,345) is a positive figure, while both the McBride total (-14) and the regional total (-564) are negative figures (see Table 11).

Industrial Mix Results: 2006				
Industry	McBride	F.F.G.	B.C.	
Agriculture, Forestry, Fishing and Hunting	-3	-5/4	-12,584	
Manufacturing	-16	-1,210	-31,074	
Retail Trade	1	62	2,331	
Transportation and Warehousing	-1	-79	-2,636	
Educational Services	1	158	6,198	
Health Care and Social Assistance	3	264	10,624	
Arts, Entertainment and Recreation	1	50	2,642	
Accommodation and Food Services	0	-22	-897	
Other Services	0	35	1,282	
Public Administration	0	-1	-57	
Mining and Oil and Gas Extraction	0	74	4,528	
Utilities	0	12	428	
Construction	1	400	15,842	
Wholesale Trade	0	-10	-462	
Information and Cultural Industries	0	-101	-5,123	
Finance and Insurance	0	3	147	
Real Estate and Rental and Leasing	0	54	3,646	
Professional, Scientific and Technical Services	0	146	8,247	

Table 11: Industrial Mix Component by Industry and Region (2006)

Management of Companies and Enterprises	0	5	352
Administrative and Support	0	173	8,910
Total	-14	-564	12,345

The third and final component of Shift Share, the Competitive Share Component (CS), also shows a negative influence at the local and regional level (see Table 12). The negative CS for McBride at the local level (-32) demonstrates that the industries within McBride are not very competitive when compared against national averages (see Table 13). When examined individually, the local CS figures highlight McBride's strongest industrial sectors. The Agriculture, Forestry, Hunting, and Fishing sector has the strongest influence (22) while the Manufacturing sector also showed a positive influence (13) (see Table 12). The sectors that show the least competitiveness in securing growth are Transportation and Warehouse (-27), Health Care and Social Assistance (-22), and Public Administration (-12). This is not the case at the regional level. The Fraser Fort-George district shows a positive CS in very few industries, most notably in Agriculture, Forestry, Hunting, and Fishing. The Manufacturing sector, which showed strong job growth, has a negative (-159) CS component. This negative CS component is mirrored on the provincial level, however the loss is much lower in comparison (-1304).

1 a Dic 12. Competitive Share by Industry and Region (2000)
---

Competitive Share Results: 2006			
Industry	McBride	F.F.G.	B.C.
Agriculture, Forestry, Fishing and Hunting	22	143	3,938
Manufacturing	13	-159	9,805
Retail Trade	-6	-917	-5,548
Transportation and Warehousing	-27	-9	-6,051
Educational Services	8	-277	-4,811

Health Care and Social Assistance	-22	-299	-14,104
Arts, Entertainment and Recreation	4	-121	-1,234
Accommodation and Food Services	-3	-229	38
Other Services	-16	-431	2,227
Public Administration	-12	-285	-11,450
Mining and Oil and Gas Extraction	0	72	299
Utilities	0	-113	-1,388
Construction	8	-362	21,759
Wholesale Trade	0	357	3,216
Information and Cultural Industries	0	-330	-3,280
Finance and Insurance	0	-263	-3,206
Real Estate and Rental and Leasing	0	-16	2,119
Professional, Scientific and Technical Services	0	-286	5,901
Management of Companies and Enterprises	0	28	-465
Administrative and Support	0	-37	931
Total	-32	-3,531	-1,304

These changes in jobs serve well to demonstrate the role that each industry plays within an economy and how communities perform as industries move into faster or slower growing sectors by calculating the total change in local employment. The local level stands out as having a negative job loss (-15), which contrasts both the regional (241) and provincial (177,185) results (see Table 13).

While McBride has a net loss of 15 jobs, there were five sectors that saw an increase, including Agriculture, Forestry, Hunting and Fishing, Manufacturing, Educational Services, Arts, Entertainment and Recreation, and Construction. McBride saw an increase of 20 jobs in Agriculture, Forestry, Hunting, and Fishing. This increase is not seen at the regional (-135) and provincial levels (-2,160), both of which lost jobs in this sector between 2001 and 2006. The local economy also saw an increase in Manufacturing jobs (5), again an increase which was not experienced at the regional (-

745) and provincial (-5240) levels. The increase in Construction at the local level (10) was also seen at the regional (285) and the provincial (47,390) level.

The biggest job losses at the local levels were seen in Transportation and Warehousing (-25), Health Care and Social Assistance (-15), and Public Administration (-10). Local job losses in Transportation and Warehousing and Health Care and Social Assistance stand alone as both the regional and provincial results show job increases in these two sectors. Public Administration, however, experienced job losses throughout the province, represented by losses at the local (-10), regional (-44) and provincial (-2,205) levels.

## **Table 13: Employment Figures 2006**

Employment F	igure	s: 2006		
Industry		McBride	F.F.G.	B.C.
				······
Agriculture, Forestry, Fishing and Hunting		20	-135	-2,160
Manufacturing		5	-745	-5,240
Retail Trade		0	-345	15,995
Transportation and Warehousing		-25	195	730
Educational Services	1	10	175	12,905
Health Care and Social Assistance		-15	375	13,020
Arts, Entertainment and Recreation		5	0	5,215
Accommodation and Food Services		0	85	12,925
Other Services		-15	-175	11,615
Public Administration		-10	-44	-2,205
Mining and Oil and Gas Extraction		0	165	5,985
Utilities		0	-75	0
Construction		10	285	47,390
Wholesale Trade		0	495	9,555
Information and Cultural Industries		0	-330	-3,275
Finance and Insurance		0	-135	3,590
Real Estate and Rental and Leasing		0	90	9,190

Total
Administrative and Support
Management of Companies and Enterprises
Professional, Scientific and Technical Services

-15	241	177,185
0	265	16,505
0	35	0
0	60	25,445

The shift share analysis and Statistics Canada employment data highlight the competitiveness of tourism-related sectors within the local economy. Accommodation and Food Services remained at its current level of competitiveness at the local level while rising at both the regional and national level, suggesting McBride has been unable to compete in that industry as successfully as the region and the province. In addition, Transportation services, another tourism-related sector, saw a decrease in competitiveness, another development contrary to the positive gains made at the regional and national level. Lastly, Retail Trade, at the local and provincial level, was able to stay equally competitive between 2001 and 2006 while the Fraser Fort-George region experienced a loss of competition, again highlighting the structural difference between the McBride economy and surrounding economies.

#### 4.2.3. Location Quotient

Using NAICS two-digit level employment data and by using the nation of Canada as a constant point of comparison, location quotients (LQs) were calculated for McBride (site), the Fraser Fort-George Municipal District (regional), and British Columbia (provincial). The results help to highlight the level of self-sufficiency of McBride, its regional district and the province of British Columbia. From the results we gain insight to which industry sectors are meeting local needs, selling to non-local markets, or importing from outside the economy to meet local needs. Through this analysis, one can also assess

the self-sufficiency of tourism-related sectors within the local economy.

Table 14: 2006 Location Q	uotients (Light	gray = Exports.	Dark grey = In	nports)

				-	
2006 L	ocal,	Regional,	and	<b>Provincial</b>	LQ

Loc	ation Quoti	ent
McBride	F.F.G.	B.C.

Industry
Agriculture, Forestry, Fishing and Hunting
Manufacturing
Retail Trade
Health Care and Social Assistance
Construction
Transportation and Warehousing
Information and Cultural Industries
Real Estate and Rental and Leasing
Educational Services
Arts, Entertainment and Recreation
Accommodation and Food Services
Public Administration

3.5	2.13	1.11
2.39	1.09	0.73
1.55	0.97	1.00
0.93	1.00	0.96
0.85	0.98	1.20
	1.42	1.09
1.11		1.07
1.53		1.30
1	1.04	1.03
1.98	0.79	1.14
1.42	1.19	1.23
	0.95	0.88

Table 14 compares McBride LQs to regional and provincial LQs in order to highlight differences and similarities in the structure of the local McBride economy as compared to the regional and provincial economies. Of the twelve industry categories included in the data, four of these categories (Agriculture, Forest, Fishing and Hunting, Manufacturing, and Retail Trade, and Real Estate and Rental and Leasing) have a much higher level of export than is seen in those same industries at both the regional and national level.

The primary export industry in the McBride economy (3.5) is Agriculture, forestry, fishing, and hunting. This result is higher than the regional (2.13) and provincial (1.11) figures (see Table 14). The second highest export industry in McBride is
Manufacturing with a LQ of 2.39. While not exclusively concerned with forestry related manufacturing, Statistics Canada (http://www.statcan.gc.ca) defines Manufacturing as comprising "establishments primarily engaged in manufacturing from wood.
Manufacturing establishments are known by a variety of trade designations, such as plants, factories or mills." This figure is also comparatively higher than regional (1.09) and provincial (0.73) levels. The third highest exporting industry in McBride is retail trade (1.55), which is, again, above the regional figure (.92) and the provincial (1.00) figure.

According to the LQ results, McBride has two industries that rely heavily on importing goods and services. Most notably, these include Transportation and Warehousing as well as Public Administration, both of which fall below the regional and provincial figures (see Table 14). McBride's LQ for Transportation and Warehousing, defined by Statistics Canada (http://www.statcan.gc.ca) as a "sector that comprises establishments primarily engaged in transporting passengers and goods, warehousing and storing goods, and providing services to these establishments", is significantly lower (.56) than the regional LQ (1.42). McBride's LQ for Public Administration, which is defined by Statistics Canada as a sector that "comprises establishments primarily engaged in activities of a governmental nature" is also significantly below (.7) the regional average (.95), which in turn is higher than the provincial LQ for Public Administration (.88) (see Table 14).

Drawing from all available two-digit employment data years (1996, 2001, 2006), results show changes over time at the local, regional, and provincial levels (see Tables

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15-17). Of particular interest is the self-sufficiency of tourism-related sectors within the local economy. Beginning in 1996, Accommodation and Food Services (3.24) and Transportation and Warehousing (2.14) were both strong export industry categories. Each of these industry sectors had a higher LQ in 1996 than was calculated at the regional and provincial levels (see Tables 16 and 17).

A number of changes took place between 1996 and 2001, both within the McBride economy and in comparison to the regional and provincial economies. McBride Retail Trade experienced an increase from 0.84 to 1.56, which did not occur at the regional and provincial level. Transportation and Warehousing, a strong export industry with the 1996 McBride economy, experienced a decreased LQ from 2.14 to 1.91, a drop which was equally experienced in the regional economy (1.52 to 1.31), but not the provincial economy, which remained stable between 1996 and 2001. Accommodation and Food Services, a strong export industry in the 1996 McBride economy saw a significant decrease from 3.24 to 1.41, a suggesting that the industry sector became less self-sufficient.

A number of changes continued during the period from 2001 to 2006, some of which continued trends between 1996 and 2001 and some which reversed and made a return to 1996 figures. Retail Trade decreased slightly between 2001 and 2006 at the local level, regional level, and provincial level. Transportation and Warehousing continued its decline at the local level dropping from 1.91 to 0.56. Once again, this trend was not mirrored at the regional level, which saw an increase from 1.31 to 1.42, but did match the provincial decrease from 1.13 to 1.09. After experiencing a strong drop between 1996 and 2001 in Accommodation and Food Services at the local level, no change was experienced between 2001 and 2006 at the local level. A similar stability was experienced at the regional level and provincial levels.

Forestry, a primary export in the McBride economy, has a much higher location quotient than is found at the regional and provincial level, again suggesting a specifically unique structuring of the local economy. This location quotient, representing a valuable local export, has fluctuated greatly over the past ten years, dropping significantly in 2001 before rising above original levels in 2006, suggesting the self-sufficiency of the forestry sector is unstable over time. Of particular interest is the self-sufficiency of tourismrelated sectors within the local economy. Accommodation and Food Services became less self-sufficient between 1996 and 2001 and has remained even since that time. Retail Trade has increased in self-sufficiency, however, suggesting that McBride is developing into a more successful retail market.

McBride (local economy)		
Industry		
Agriculture, Forestry, Fishing and Hunting		
Manufacturing		
Retail Trade		
Health Care and Social Assistance		
Construction		
Transportation and Warehousing		
Information and Cultural Industries		
Real Estate and Rental and Leasing		
Educational Services		
Arts, Entertainment and Recreation		
Accommodation and Food Services		
Public Administration		

Loc	Location Quotient		
1996	2001	2006	
2.36	1.48	3.5	
	1.95	2.39	
0.84	1.56	1.55	
0.91	1.4	0.93	
0		0.85	
2.14	1.91		
-	0	1.11	
0	0	1.53	
		1	
-	1.41	1.98	
3.24	1.41	1.42	
1.93	1.18		

 Table 15: McBride Location Quotients (Light gray = Exports. Dark grey = Imports)

# Table 16: Fraser Fort-George Location Quotients (Light gray = Exports. Dark grey =

Imports)

Fraser Fort-George (regional economy)	Location Quotient		
	1996	2001	2006
Industry			
Agriculture, Forestry, Fishing and Hunting	1.87	1.87	2.13
Manufacturing	1.07	1.03	1.09
Retail Trade	-	1.04	0.97
Health Care and Social Assistance	-	0.97	1.00
Construction	1.14	1.01	0.98
Transportation and Warehousing	1.52	1.31	1.42
Information and Cultural Industries	-	0.87	
Real Estate and Rental and Leasing	-		
Educational Services	-	1.03	1.04
Arts, Entertainment and Recreation	-	0.84	0.79
Accommodation and Food Services	-	1.15	1.19
Public Administration	-	0.97	0.95

# Table 17: British Columbia Location Quotients (Light gray = Exports. Dark grey =

Imports)

British Columbia (provincial economy)		
Industry		
Agriculture, Forestry, Fishing and Hunting		
Manufacturing		
Retail Trade		
Health Care and Social Assistance		
Construction		
Transportation and Warehousing		
Information and Cultural Industries		
Real Estate and Rental and Leasing		
Educational Services		

Location Quotient					
1996	2001	2006			
1.10	1.06	1.11			
1.01	1.02	1.00			
0.96	1.02	0.96			
1.30	1.05	1.20			
1.12	1.13	1.09			
-	1.14	1.07			
1.28	1.22	1.30			
0.98	1.06	1.03			

Arts, Entertainment and Recreation	-	1.15	1.14
Accommodation and Food Services	1.22	1.23	1.23
Public Administration	0.94	0.97	0.88

## 4.2.4. Income Dependencies

Using NAICS four-digit level data, percent income dependencies were calculated for the years 2001 and 2006 at the local (McBride), sub-regional (Area H), regional (Fraser-Fort George Regional District), and provincial (British Columbia) level. The results help highlight which specific industry sectors contribute most to the income of residents and how these dependencies have changed over time. Through this analysis, one can also assess the relative importance of tourism-related sectors within the local economy.

Table 19 compares McBride income dependencies to sub-regional, regional and provincial dependencies in order to highlight economic differences and similarities between the four geographic areas. McBride has the highest income dependency on Forestry amongst the four economies included in this analysis. Forestry in this instance includes the manufacturing of wood related products. The McBride level of dependency on Forestry is much higher than the sub-region of Area H, more than double that of the Fraser Fort George region, and is vastly higher than that of the province as a whole (see Table 18). While Agriculture and Food plays virtually no role in the McBride economy, it plays a substantial one within Area H, although this is not the case for the entire Fraser Fort George region or for the province. The Tourism industry has the strongest income dependency at the local level at 2.67%. This figure drops slightly at the sub-regional, but plays a more comparable role at the regional and provincial level. The Public Sector plays a strong role within all four economies. Construction dependency is relatively even as well, although highest within Area H (see Figure 33).

Industry	Income Dependency - 2006			
	McBride	Area H	FFG	B.C.
Forestry	33.33%	18.64%	15.61%	4.16%
Mining	0.00%	0.00%	0.94%	1.16%
Fishing	0.00%	0.00%	0.03%	0.46%
Agriculture and Food	0.00%	14.09%	1.39%	2.64%
Tourism	2.67%	×160	1.57%	:1.70%
High Tech	0.00%	0.00%	0.14%	0.77%
Public Sector	18.67%	17.73%	23.77%	22.87%
Construction	5.33%	8.18%	6.13%	7.46%
Film Production	0.00%	0.91%	0.07%	0.64%

Table 18: Income Dependency by Industry and Region (2006)

Figure 33: Percent Income Dependencies 2006


In the five years between 2001 and 2006, McBride saw a number of changes with regard to the role played by certain industry sectors related to income dependency. Forestry, the sector with the highest level of income dependency at the local level increased 4.39% from 28.95% to 33.33% of the labour force between 2001 and 2006 (see Table 19). While not a massive increase, this change was unique to McBride, as a decrease was experienced within Area H, the FFG district, and at the provincial level for the Forestry sector (see Table 19).

Forestry			
MoBrido	Income Dependency Change	15	
	% Labour Pop. Change	4.39%	
Area H	Income Dependency Change	-20	
Altali	% Labour Pop. Change	-1.36%	
FFG	Income Dependency Change	-655	
	% Labour Pop. Change	-1.13%	
BC	Income Dependency Change	-11200	
	% Labour Pop. Change	-0.88%	

 Table 19: Income Dependency Change 2001-2006: Forestry

Tourism, the sector with a relatively low income dependency across all localities, largely saw decreases in dependency between 2001 and 2006 (see Table 20). Tourism dependency dropped the most at the sub-regional level (-8.42%), which likely impacts the smaller localities contained within its boundaries, including McBride, which also saw a decrease (-3.91) (see Table 20). The regional level, however, saw a slight increase.

Tourism			
McBride	Income Dependency Change	-15	
	% Labour Pop. Change	-3.91%	
Area H	Income Dependency Change	-95	
	% Labour Pop. Change	-8.42%	
FFG	Income Dependency Change	45	
	% Labour Pop. Change	0.09%	
B.C.	Income Dependency Change	1110	
	% Labour Pop. Change	-0.09%	

## Table 20: Income Dependency Change 2001-2006: Tourism

### 4.2.5. Growth Share Matrix

Using a combination of NAICS two-digit level data for the year 2006, a Growth Share Matrix (GSM) was generated using location quotients, relative growth, and employment share (see Table 21). The results help demonstrate the growth/decline of particular local industries relative to national averages while simultaneously showing their importance as a source of employment within the local economy. Table 21 lists the industries contained within the GSM and the three data sets that comprise the GSM chart. Location quotients are displayed on the Y-axis, relative growth on the X-axis, and employment share is represented by the size of each cluster, or data point.

	Location	Relative	Employment
INDUSTRY	Quotient	Growth	Share
Agriculture, Forestry, Fishing and Hunting	3.50	99.40%	10.70%
Manufacturing	2.39	4.40%	28.00%
Retail Trade	1.55	-0.86%	17.30%
Health Care and Social Assistance	0.93	-71.78%	9.30%
Construction	0.85	65.06%	5.30%
Transportation and Warehousing	0.56	-31.84%	2.70%
Information and Cultural Industries	1.11	48.05%	2.70%
Real Estate and Rental and Leasing	1.53	-0.59%	2.70%
Educational Services	1.00	-40.67%	6.70%
Arts, Entertainment and Recreation	1.98	95.34%	4.00%
Accommodation and Food Services	1.42	0.00%	9.30%
Public Administration	0.70	-2.90%	4.00%

 Table 21: 2006 Employment Data for the Growth Share Matrix (Figure 34)







Pre-clusters are characterized by slow to negative growth and an employment concentration that is not significantly different to the national employment level. Transportation and Warehousing is the most notable pre-cluster with the lowest growth rate and lowest location quotient (LQ) (see Figure 34). Transportation and Warehousing is also tied with Real Estate for having the lowest share of employment at only 2.7% of the total employment force. Health Care and Educational Services do not show negative

LQs, but they have the highest negative growth decline of all industries included in the GSM. Public Administration, with a low LQ, does not show such a negative growth rate, but rather a growth rate more comparable to the industries contained in the transforming clusters group.

Seed and emerging clusters are industries that show rapid growth compared to the national average, yet do not export at the level that a high performing industry might. Information and Cultural industries, represented by a small data point, and demonstrating a very low percentage of local employment, are growing faster than the national average. Art, Entertainment and Recreation, which has a slightly larger share of the local employment (4.00%) shows even more growth compared to the national average, but also has a lower LQ.

Transforming clusters are characterized by slow to no growth, yet were still capable of capturing an above average concentration of employment at the local level. Here is where the majority of the local McBride industries are located, or clustered together. However, the four industries included in this cluster do not show negative growth rates, but equal growth rates to the national averages. The smallest of these industries is Real Estate, which only captures 2.70% of the local employment. Accommodation and Food Services is the second largest at 9.30%. Retail Trade is significantly larger, capturing 17.30% and Manufacturing, the largest single industry data point, captures 28.00% of the local employment share. Each of these industries, especially Manufacturing, represents a strong export business with higher than average LQs.

Lastly, performing clusters refers to industries that display robust growth and high employment concentration relative to the national employment. Agriculture, Forestry, Hunting and Fishing has the third highest local employment share at 10.70%, while simultaneously demonstrating the highest growth rate of all industries compared to the national average, which shows a decline in this industry, not a growth. Agriculture, Forestry, etc., also shows a high LQ, suggesting it plays a strong role as an export industry. Construction, while not as strong an export (and with a smaller share of the local employment at 5.30%) likewise shows a very high growth rate compared to the national average.

Through the GSM, we can assess the relative significance as an employment source of tourism-related sectors within the local economy. Transportation and Warehousing is the most notable pre-cluster with the lowest growth rate and lowest location quotient. This suggests that the industry sector has negative growth and a drastically smaller employment share compared to the national level. Retail Trade is characterized as a transforming cluster, but captures a share of the local employment comparable to Manufacturing, a mainstay of the local economy, suggesting a prominent role despite its slightly negative growth rate. Lastly, Accommodation and Food Services, also considered a transforming cluster, plays a significant role locally as it is both selfsufficient and a considerable source of employment at 9.30%.

# 4.3 Local Knowledge Regarding AFT Ecotourism and Local Economic Diversification

## 4.3.1. Key Informant Interviews

From an original list of 22 potential respondents, 18 individuals responded and participated in the interview, generating a response rate of 82%. Interviews began on June 22 and were completed on August 31, during the peak of the 2012 summer hiking season. By examining the questions and responses contained within the interviews, a set of broad subjects was developed. These subjects, including local tourism, community issues, economic diversification, etc., were used as a base from which to create specific nodes. Nodes allow for specific sections of text to be coded according to their content, which ultimately resulted in the creation of five primary themes (see Table 22). NVivo software helped to create a more efficient mode of analysis by organizing and classifying all interview data according to nodes. Because not all responses were exhaustive and mutually exclusive, some responses were coded into more than one node. Although it is convenient for categories to be exhaustive and mutually exclusive, it is clear that due to the intertwined nature of human experiences, this is not always possible. Sentiments were coded into more than one node where it was applicable (Moyer, Owen, and Duinker, 2008).

Table 22:	Key	Informant	Interview	Themes
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Transitional Economy in Need of Diversification	·
Ecotourism Potential to Improve Local Economy	
AFT Potential to Impact Local McBride Tourism Industry	
Connecting McBride to Regional Tourism Marketing Plan	
Local Disagreement over Role of Ecotourism in Economic Developme	ent

The 18 participants expressed a range of attitudes, opinions, and concerns regarding the impacts of ecotourism on local economic diversification. In the following section, the findings from the key informant interviews are described by theme, including relevant quotations from each participant. The five prominent themes uncovered through the coding process include the transitional nature of the local economy, the potential for ecotourism to improve the local economy, the potential of the AFT to impact the local tourism industry, the need to increase local and regional marketing efforts, and lastly, local disagreement over the role of ecotourism within the context of future economic development.

#### 1) Transitional Economy in Need of Diversification

Key informant participants expressed a unanimous understanding that the local economy is currently in a period of transition, driven largely by the declining nature of the local forestry industry: "In 60 years, I've never seen it so bad. So little prospect of getting better. Timber is all sold out of the valley, no chance to establish industry here" (Interviewee R). Participants noted that in light of the declining forestry sector, new industries would need to be developed to allow for diversification and economic stability: "We're in a state of transition, we look for new opportunities to take the place for the declining forestry industry." (Interviewee H). Respondents were divided, however, on the potential paths to diversification. Some mentioned that the incoming power lines would help attract larger industries and that forestry would continue to play a major role in the local economy. Others noted that tourism has a strong growth potential and could play a valuable role in the diversification process: "There is an incredible decline in the forest

industry no jobs available. I think general commercial recreation would have a greater opportunity". (Interviewee M)

2) Potential for Ecotourism to Improve Local Economy

Another prominent theme throughout the key informant interviews was the potential for ecotourism to improve the local economy during this transitional time. Despite the general disagreement over the level of priority that should be placed on developing ecotourism at the local level (final theme), key informants generally noted a strong potential for ecotourism to develop and expand as a local industry, positively impacting the McBride economy: "Clearly the whole valley is suffering from the downturn in forestry. Local employment is drying up. Tourism could be seen as a saving grace." (Interviewee P). Participants spoke positively of the economic potential of tourism at the local, and provincial level:

I would like to see tourism as an understood economic driver of our communities, a valued contributor. I want for tourism to be a valued contributor to land use decisions, not an afterthought. The benefits of travel in this province, the biggest growth with the lowest impact could be here in Northern B.C. (Interviewee I)

Considering the transitional nature of the McBride economy, many local participants identified tourism and ecotourism as playing vital roles within the local diversification process: "One of the best assists we have is the outdoors. Its what we need to focus on. Tourism is valuable, a huge asset. Its vital to economic diversification." (Interviewee N) 3) Potential for the AFT to Positively Impact McBride Tourism Industry

All 18 participants were personally familiar with the AFT and expressed a wide range of opinions and perceptions of the site with regards to having a positive impact on the local tourism industry, and by extension, the local economy. Participants generally noted that the AFT represents a success story in terms of local ecotourism development: "The AFT is the most popular place to stop between McBride and PG." (Interviewee A). Others felt the trail represents the ideal ecotourism site, acting as an anchor for future tourism development, noting: "The AFT is a major feature for Northern B.C., not just for that area. It's a remarkable place. The number of visitors, its remarkable" (Interviewee I). Generally, respondents felt that it has and can continue to have a positive impact on local economic diversification: "The AFT has a big role in diversifying the economy and helping McBride. It's a chain, they stay longer, then they sleep over and you really make good money." (Interviewee G).

Despite a unanimous consensus that the AFT represents a successful ecotourism site, several participants remained doubtful of the trail's ability to keep people in the McBride area for an extended period of time: "The AFT is too far right now. We are only one hour from Mt. Robson, anyone passing through McBride would rather stay in Prince George." (Interviewee C). Because the trail is not generating direct income, some participants believe that the trail's potential impact on local economic diversification is severely limited: "Lots of people go from McBride to PG and the see the forest. It doesn't necessarily generate economic activity per say. You don't have to go to McBride to see the trail." (Interviewee F). Participants mentioned the lack of any direct income associated with the trail as a prohibiting factor regarding the trails ability to help local

diversification: "The AFT is unique, but you can't spend much time there. It could be a destination, but no ability to spend money there" (Interviewee B).

## 4) Connecting McBride to Regional Tourism Marketing Plan

Despite a disparity over the level of priority that should be placed on developing ecotourism at the local level, almost all participants noted that an increased regional marketing effort would be needed to fully develop McBride's tourism and ecotourism potential: "If its well managed and marketed, it can help, and to look in a regional perspective, not just a stand alone McBride place." (Interviewee N). A number of respondents noted that McBride could try to become a tourism destination and align itself with the other tourism hubs in the valley in order to increase the number of visitors and length of visitation:

Connect themselves [McBride] more with Mt. Robson and Prince George. Connect with the destination hubs as they exist now. Make it easy for the tourist coming through there. They should work with Tourism PG. They have lots of marketing money. It will help Prince George, if they make McBride a sleep over destination. (Interviewee O)

Participants noted that, once informed of the AFT, including its location and ecological rarity, traveling tourists may alter their plans and could decide to seek out similar ecotourism opportunities and spend extra time and money in McBride as a result: "Tourists are looking for somebody to tell them where to go. It [the AFT] should add another day or half day to their itinerary. That will really help the McBride economy." (Interviewee K).

5) Local Disagreement Over Role/Priority of Ecotourism in Future Economic Development

While participants agreed that the local economy is in a period of transition, driven largely by a declining forestry sector, and that ecotourism has a potential to grow and develop at the local level, key informant data revealed an underlying disagreement over the priority that tourism and ecotourism development should take within the context of future economic development. Approximately half of the participants agreed that tourism development should be an economic priority, specifically while the forest industry is declining and there are few alternative options. These participants cite the natural environment of the area, its location, its ability to help the social community, and economic potential as reasons why tourism should be an economic priority. However, a second group of respondents suggested that tourism should not be a priority, that it represents another boom bust cycle, that its wages and job possibilities are too small and too few, and that it is too expensive to maintain.

Both tourism and forestry in the McBride region make direct use of the surrounding forest as the primary natural resource of the area. This relation has led many to frame the issue of tourism development against the backdrop of forestry (Nepal, 2008; Graine, 2010; Millier Dickinson, 2010; Stamm, 2004). At the local political level, economic development decisions and priorities often reflect this frame of thinking, as illustrated in the following comment a participant: "The politicians, the community forest, the forest itself could be thriving and diversifying in so many ways, but the forest isn't functioning as it should. Everyone in town is battling this debate." (Interviewee E).

Of the participants who viewed tourism as a sector deserving of local economic focus, many noted that tourism and ecotourism have a large role to play, a role that focuses on their natural assets and location in the valley, as well as the sustainable use of their resources. Many of these participants viewed tourism as a serious alternative to the declining forestry industry:

I would [like to] see government serious about putting money that they get from cutting trees not for planting more trees, but in ecotourism development. We have to get off the cycle of causing problems, so we can have jobs. Recreation and ecotourism are ideas for that. We have to focus there. (Interviewee J)

However, local ecotourism operators voiced concern that the local economic focus remains on forestry and big industry. In addition, participants cited poor political leadership and conflict between resource use as road blocks to diversification. Several respondents noted that decision makers continue favor resource extraction over development of other industries like tourism.

The way things are around here lately, the push is still for industry, not for ecotourism. We had a mill open up down the road from us. Industry is more important for decisions makers. McBride and the valley will be stuck in a rut of old school thought. I haven't seen anything suggesting otherwise. (Interviewee J)

These local ecotourism companies are looking towards McBride for political support in growing the tourism industry: "Ecotourism has a presence, but not the support it needs. It's there, it's set up, in regards to options. But we don't have the city support from McBride." (Interviewee J)

These participants identified ecotourism as "a vital component in the economic diversification of the area." (Interviewee D). According to this group of participants, tourism and ecotourism, by virtue of their ability to help diversify the local economy,

should be an economic priory: "It should be a big economic priority for the McBride economy. McBride has everything it needs to develop ecotourism. The only thing it lacks is awareness and facilities" (Interviewee K).

The half of respondents who didn't believe that tourism and ecotourism should be local economic priorities voiced concern that the tourism industry will not provide enough local jobs, high paying wages, or longer-term employment: "Tourism doesn't generate enough revenue because its quite expensive to maintain" (Interviewee C). Again, the comparison to forestry persists: "The reality is, there isn't much money in tourism. It doesn't pay half as much forestry" (Interviewee Q).

While some respondents noted that local ecotourism companies are good, they added that they are small and few in numbers: "It could be a seasonal employment, but couldn't be [a] long term sustainable life for a family. You could keep students busy in the summer time, people that have other jobs in the winter, but I'm not sure what ecotourism entails". Participants also cited concern that tourism will be unable to grow with time, to capture tourists overnight, and to remain strong throughout the year: "In winter, they are building a destination snow machine tourism. Its not as strong in the summer yet. Some traffic through the Rockies, but they aren't benefiting from that. People aren't staying in the area a whole lot" (Interviewee M).

# Chapter 5 DISCUSSION

The purpose of this research was to calculate the AFT's potential economic benefit as a tourism attraction and to assess the AFT as a contributor to the economic diversification of the McBride economy. Over 520 on-site questionnaires were conducted with AFT trail users, a series of economic impact analyses were completed, and eighteen key informants were interviewed in order to answer these questions. Data from these sources revealed a rich and varied perspective surrounding the potential for AFT ecotourism to impact local economic diversification. The results describe a local economy in a period of economic transition, an emerging ecotourism attraction with significant drawing power and expanding economic benefits, as well as a community disagreement over tourism as a local economic priority. These issues are important in the context of the ongoing efforts in the McBride area to diversify its local economy.

The local McBride economy is in a period of transition, moving away from resource dependence towards a more diversified economy. Like many rural communities in Canada and around the world, the historical use of McBride's abundant natural resources has led to a strong economic base approach to local economic development, which relies heavily on the surrounding forest. Currently, McBride has a higher percentage of its labour force employed in forestry and manufacturing than the surrounding region and the province, and has managed to create jobs in these industries while the region and the province experience job losses in these sectors. This development has created a heavy dependence on these two export industries (which together employ more than 30% of the local labour force) and has led to a low level of economic diversity and a high level of forest sector vulnerability.

The recent economic turmoil in some of B.C.'s resource-dependent peripheral regions, including McBride, suggests the need for more stability in volatile economic times (Opinion 250, January 2012; McBride B.C. Economic Development Action Plan, 2010; Valley Sentential, January 2012). Based on the results of this research, tourism and ecotourism have shown signs of growth within the McBride area and have the potential to impact the local economic diversification process unfolding in McBride. Between 1996 and 2001, local income dependency on the tourism sector rose from 8% to 15%. Simultaneously, forestry income dependency dropped from 39% to 30% and the local McBride economy experienced a relative increase in economic diversity during that time. While this trend of increasing tourism dependency and decreasing forestry dependency has since begun to reverse, this economic shift demonstrates the potential for tourism and ecotourism to not only grow within the local economic structure, but to increase diversity as it reduces the pressure placed on the forestry sector. This interpretation of the local economy was frequently mentioned during the key informant interviews, as respondents identified the need to find a new economic focus as forestry continues to decline within the McBride economy.

The results of the key informant interviews revealed a unanimous understanding that the local economy lacks economic diversification and many identified ecotourism as a vital component in achieving economic diversification in the area. While respondents raised concerns about the nature of tourism jobs and low tourism wages, others expressed that tourism and ecotourism have a large role to play in diversifying the local economy, specifically as an industry that focuses on McBride's natural assets and location in the valley as well as on the sustainable use of their natural resources.

The results of this research suggest that the potential economic benefits to the McBride economy provided by the AFT as an emerging ecotourism attraction are significant and expanding. The direct annual economic benefit range of \$155,000 – \$217,000 represents a significant economic contribution to the local economy and provides a preliminary understanding of the current economic role the AFT plays within the local tourism and ecotourism industry. The increasing volume of hikers at the AFT demonstrates the appeal of the site as a unique and impressive ecotourism destination. Potential exists for McBride to take advantage of this unique ecosystem by capitalizing on travellers' desire for novel, outdoor-oriented experiences. This desire is demonstrated by the majority of tourists that elected to hike the Full Loop (the longest available AFT route), the high-levels of tourists seeking local information by making use of Visitor Information Centers (in Mt. Robson and McBride), and by the average half-day that tourists felt was necessary for friends and family to properly experience the ecotourism opportunities that the trail has to offer.

As a primary feature of the local ecotourism industry, the AFT has potential to positively impact the economic diversification process. However, the potential impact of the trail is limited by a few factors, including distance from McBride and the reasonably restricted impact that a single site can provide. This interpretation of the AFT's limited potential was expressed by several key informants, who identified the AFT as playing a large role in diversifying the economy and helping McBride.

As a highly visible and easily promotable attraction, the AFT can most effectively impact local diversification by being leveraged for its globally unique ecological value as a marketing tool to promote tourism and ecotourism in the McBride area. This concept of

using the AFT as a drawing card to increase overall tourism in the region was mentioned by several key informants who referred to the AFT as an anchor point for all other ecotourism attractions in the area.

The limitations of the AFT to impact local economic diversification are primarily based on the distance between the trail and McBride. It is likely that uniformed tourists will continue to drive past McBride without spending extra time or money if the trail, as well as other attractions, is not effectively marketed to travelers. In addition, despite McBride being the closest sizable community to the trail, there is no direct link between the two requiring a visit to McBride, an issue that respondents identified as limiting the trail's potential impact on the McBride economy. In addition, the trail is a single attraction, and does not require any set amount of time to complete.

For a number of rural and peripheral communities with significant problems due to their economic structure (Nepal, 2008; Urry, 1995; Jenkins et al., 1998), the success of tourism and ecotourism sites like the AFT can significantly contribute to their economic development. In large part, the drive for diversification is connected to the downturn in forestry, which several key informant respondents identified as being a clear cause of local economic hardship. This realization that tourism and ecotourism can help with the local diversification process was mentioned throughout the key informant interviews.

Despite the AFTs limited potential to impact diversification directly, the trail plays a pivotal role within the tourism and ecotourism industry in the McBride area, which in turn has a strong potential to positively impact the local economic diversification process, as evidenced by changing economic conditions and key informant responses. Currently, tourism in north and central B.C. is a major generator of jobs, with

an estimated 15,600 jobs generated by the industry according the Council of Tourism Association of British Columbia (2006). The report notes the total wages associated with tourism-related employment were \$275 million, representing an average annual salary of \$25,500 per person year of employment. The top employers within the tourism industry included accommodations, restaurants, retail, transportation, and outdoor/adventure tourism businesses, all of which have footholds in the McBride economy. The tourism industry in the region provides a wide range of employment opportunities, from entrylevel customer service positions to high-skilled/management positions. Approximately 17% of people employed in tourism in northern B.C. earned in excess of \$40,000 per annum, and a third earned over \$30,000 per annum, on a full-time basis.

Results from the on-site questionnaire and the key informant interviews suggest that a more concerted marketing effort aimed at informing travellers about the region's attractions prior to their arrival would greatly increase the potential for tourists to spend extra time and money in McBride. As demonstrated by the on-site questionnaire results, a large majority of tourists learn about the AFT from the highway sign located at the site. This demonstrates a lack of awareness amongst tourists regarding the trail prior to departing McBride, which in turn prevents them from including the trail in their earlier plans. The discrepancy between recommended time (half day) and actual time spent in the region (six hours) highlights a missed opportunity to capitalize on tourism activity. High tourism use of the Visitor Information Centers in both Mt. Robson and McBride suggests that travelers are actively seeking out information on attractions. If information about the AFT were more accessible at these centers, it can be assumed that tourists

would be better prepared to spend the additional half a day they themselves recommended in the surveys.

A more concerted regional marketing strategy would help address the issue of uninformed travellers driving past McBride. The need for an enhanced marketing effort was echoed in key informant responses. Once informed of the AFT, including its location and ecological rarity, travelers will be better prepared to alter their plans, seek out similar ecotourism opportunities, and spend extra time and money in McBride (the closet sizable community with amenities and services) as a result. Key informants reiterated the need for creating a more connected, robust marketing/information network in order to increase tourism activity.

As a tourist attraction, it has been demonstrated that the AFT has a significant annual economic benefit, as well as a strong potential to grow and to continue impacting the local economy. Increased AFT tourism activity corresponds with the economic development initiatives of the Village of McBride, which has recently identified tourism as being one of three areas deserving of specific economic focus (The Robson Valley Land and Resource Management Plan, 1999; A Socio-Economic Profile of the Robson Valley, 2004; Valley Sentential, 2012; Opinion 250, 2012). However, the economic development focus seems to remain, in large part, on promoting forestry.

In 2007, Tourism British Columbia, in conjunction with Tourism PG and the Village of McBride, released a document that included a regional tourism marketing strategy aimed at having tourists spend extra time and money within the local economy. However, at this point, only an informal promotional network, almost exclusively used by the Visitor Information Centers, is used to promote sites like the AFT. Regarding that

2007 tourism plan, a representative from a tourism organization noted, "From a tourism point of view, we [Tourism PG] did a tourism plan for McBride, but they haven't embraced it. From an economic point of view, decisions are made by local governments. They had a change of elections, and they didn't see tourism as a new priority. We gave them a plan, expected them to come to the table, and they didn't." The potential for sites like the AFT to benefit the McBride economy depends in part on the cooperation of multiple localities, including political figures and economic development officers. Regarding the tourism industry development in McBride, one respondent stated, "We're very disappointed, it's almost the opposite of what has happened in every other community."

Tourism, as the second largest industry operating within the region, is often compared directly to forestry when considering issues of economic development, diversification, and priorities. Both tourism and forestry in the McBride region make direct use of the surrounding forest as the primary natural resource of the area. This relation led many to frame the issue of tourism development against the backdrop of forestry (Nepal, 2008). At the local political level, economic development decisions and priorities often reflect this frame of thinking, a sentiment mentioned by several key informants.

Results from the key informant interviews reveal an underlying disagreement between participants regarding tourism as a local economic priority. This division regarding the amount of focus that community members want to place on developing tourism as an industry within the local McBride economy highlights to the inherent difficulty of incorporating new industry sectors during periods of economic transition

(Budowski, 1976; Douglas and Harpman, 1995; Wunder, 1999; InterVISTA, 2008). According to key informants and Tourism PG, the McBride government has passed on opportunities to support and develop the local tourism and ecotourism industry, often times in favour of supporting forestry.

Despite identifying the need to move away from forestry dependency, results from the key informant responses and a recent economic forum held in Valemount suggest that the local economic priority still remains focused on forestry. The forum, hosted by the B.C. Minister of Jobs, Tourism and Innovation, identified a power and fibre theme, including the construction of a new transmission line, investments by B.C. Hydro and the opening of a pellet plant and sawmill in the village as a means to local economic development in McBride. Local ecotourism and tourism operators voiced a concern that economic focus remains on forestry and big industry. These local companies are looking towards McBride for political support in growing the tourism industry.

Comparing local forestry and tourism directly, forestry shows signs of negative long-term growth prospects, where tourism and ecotourism show positive long-term growth prospects, as outlined in a 2010 report by Millier Dickinson Blais Inc. entitled *Robson-Canoe Valleys Economic Opportunities Plan.* The report shows the forest industry as sustaining a major decline. The report notes that the region has experienced mill closures within the last two years that have had negative effects on suppliers. This sentiment is mirrored by the comments of a local mill operator, who describes the economic condition of forestry at the local level. The report identified the tourism sector as having a strong one to three year growth potential, as well as a strong current impact on the local economy, and revealed a moderate to high municipal capital investment

required to attract investment. The tourism sector is shown to be growing in Valemount and adding stability in McBride.

#### 5.1 Limitations of the Research Design

Attempts were made to ensure methods used in this study provided valid and reliable estimations of the economic benefit of AFT ecotourism as well as an accurate depiction of the current structure and dynamics of the local economy. However, as is common in academic research, limitations exist in relation to the choices made for gathering data on trail users and key informant participants.

The on-site trail counter had technical and practical limitations. Lightning strikes in the region had the affect of resetting the counter to zero. While this limitation was mitigated by frequent counter readings, it created the need to generate models to fill missing data gaps. Practically, the accuracy of the counter was limited by the location of the counter in relation to passing hikers. Throughout the multiple seasons of counter use, various locations have been tested, each time reducing the double-count phenomenon caused by hikers lingering in front of the sensor.

The on-site questionnaires were primarily designed to determine hiker profiles and their average daily expenditures. A supplementary section could have been added including questions regarding the types of tourism attractions travelers expected to find in the region, why they choose to travel through northern B.C., what attractions they would have liked to find, and their own impressions of how the communities along Highway 16 might better serve their specific ecotourism interests. Such insights would have

strengthened this project's understanding of regional tourism behavior and how best to market and capitalize on the growing ecotourism industry.

Limitations exist by using an economic impact equation to calculate the annual direct economic benefit of AFT ecotourism. While this method is common within tourism impact literature and fits well within the scope of the study, the resulting economic benefit range is only an estimation, representing the number of tourists, their average daily expenditures, and the additional time they spent in the region. It is difficult to measure the exact economic benefit of AFT ecotourism as no revenue is directly generated by tourism activity at the trail (the trail is free to use). For this reason, the direct annual economic benefit range represents an estimation based on a new understanding of AFT ecotourism and common economic impact analysis.

The specific set of impact analysis chosen for this study exclude the use of inputoutput analysis and the multiplier effect, two common impact analyses used to study the indirect and induced effects of economic stimuli. An Input-Output model can provide a highly detailed snapshot picture of an economy, highlighting the connections inherent between the many sectors of an economy and does well to describe the economy as a whole by drawing attention to its smaller components. Multipliers track new income as it is injected into and then filtered through the local economy, which in turn can serve to determine the secondary impacts or backwards linkages of a given economic stimulus. While these two methods are commonly employed by economic development offices for use in similar research reports, they can often be expensive, impractical, and unable to account for change over time when studying tourism related impacts. In addition, the indirect and induced benefits of ecotourism are beyond the scope of this particular research project.

#### Chapter 6

#### CONCLUSION

Peripheral regions are typically characterized by economies that are geographical isolated, lack access to external markets, and are overly dependent on singular industries for economic growth. The economic prosperity of peripheral regions in British Columbia continues to be linked to the economic base approach: the natural resource is captured, local employment rises, income enters the local economy, and, depending on market conditions, economic stability can be achieved. However, a high dependence on a single industry, combined with a low level of economic diversity, increases vulnerability to external market fluctuations. Academics and economists associate a diverse local economy with a more stable and resilient local economy. An important challenge for policy makers, economic development officers, and politicians in peripheral communities is to reduce their dependence on natural resources through successful diversification of economic activity.

Tourism and ecotourism are recognized as important factors for regional economic diversification, most notably in peripheral regions. As an important aspect of the B.C. government's "heartland strategy," which attempts to revitalize the dwindling economies of northern B.C. communities, tourism and ecotourism have been identified as a principal option for economic diversification. Accordingly, the Village of McBride has identified economic diversification as a priority and local tourism as a focus area for future economic development. Growing tourism activity at sites like the Ancient Forest Trail suggests a potential for local economic diversification as visiting tourists contribute to the local economy through direct expenditures and extended visits. As an emerging tourist

attraction, the AFT represents a unique opportunity to study the connections between local ecotourism growth and economic diversification within the local McBride economy.

Results from the economic impact analysis reveal a local economy in a period of transition. McBride has a very high dependence on the forestry industry and a very low level of economic diversity. Together, this makes the local McBride economy highly vulnerable to external fluctuations in the forestry sector. The forest industry currently employs more than 40% of the McBride labour force, a much higher percentage than is found at the regional and provincial scale. While forestry has experienced a recent resurgence, several indicators suggest the industry demonstrates low long-term growth prospects. The recent closure of several local mills has forced McBride to consider developing alternative industries in an effort to move away from resource dependence towards a more diversified economy.

Methods used in this research were successful in determining the annual economic benefit of AFT ecotourism and in assessing the role of ecotourism within the process of local economic diversification. An on-site trail counter and on-site questionnaires were used to determine the number of tourists at the AFT during the summer of 2012, their average daily expenditures, and the amount of additional time they spent in the region. A combination of economic impact analysis methods, including trade area analysis, shift share analysis, location quotient analysis, income dependencies and growth share matrices, were used to assess the structure and dynamics of the local economy. Lastly, key informant interviews, which included tourism operators, economic development officers, recreational officers, mill owners, and local politicians were

conducted to account for local perspective when assessing the potential benefit of tourism and ecotourism to impact the local diversification process.

Results from this research revealed a direct annual economic benefit of Ancient Forest Trail ecotourism range of \$150,000 – \$217,000. Increasing tourism activity at the trail suggests a potential for the annual economic benefit to grow over time. Key informants generally viewed the AFT as an emerging local ecotourism attraction with strong drawing appeal, but were divided on its ability to benefit the McBride economy. Despite the increase in tourism activity at the AFT, a new understanding of how tourists move through the valley and learn about sites like the AFT suggests that local tourism potential would be greatly assisted by an increased regional effort to promote tourism activities associated with the Village of McBride. As a single site, the AFT is limited in its ability to have a positive affect on the tourism industry in McBride. However, as an emerging component of a growing tourism industry, tourism activity at the AFT has demonstrated a significant potential to positively impact the McBride economy.

For a number of rural and peripheral communities with significant problems due to economic structure, the success of tourism and ecotourism sites like the AFT can significantly contribute to their economic development. Currently, tourism in north and central B.C. is considered a major job producer, with an estimated 15,600 jobs generated by the industry. The top employers within the tourism industry include accommodations, restaurants, retail, transportation, and outdoor/adventure tourism businesses, all of which have footholds in the McBride economy. While the AFT represents a single ecotourism attraction, its continued growth and estimated annual economic benefit of \$155,000 – \$217,000 suggests that tourism, and specially ecotourism, has a strong growth potential

and is therefore able to play a significant role in the local economic diversification process.

#### 6.1 Ecotourism as an Economic Priority

Based on the results of this research, tourism and ecotourism should be a higher economic priority for the Village of McBride. Tourism has been demonstrated to have a significant economic impact in rural communities across Canada, including northern B.C., and has as a strong foothold in the McBride-Valemount region. Recent economic downturns and the uncertain economics of forestry are driving forces behind McBride's stated desire to move away from their province-high dependence on the forest industry and to diversify their economy. During the decline in forestry dependence between 1996 and 2001, tourism demonstrated a specific ability to expand within the McBride economy, helping increase diversity during that time. The AFT, a locally designed and volunteer operated hiking trail, has seen a marked increase in tourism activity without the aid of any official marketing campaign aimed at increasing visitation or connecting the trail and the Village of McBride, demonstrating the power of the natural environment around McBride to attract tourism business.

Several strategic trends in northern B.C. point to tourism industry growth potential over the next ten years (COTA, 2007). This includes general tourism projections, demand for adventure tourism, and strategic transportation changes impacting the area. The report analyzed a number of trends relevant to the North Central region and its opportunities, particularly relating to ecotourism and adventure tourism. The report projects that ecotourism will grow an average of 20% per year compared with

a 4% projected growth in overall tourism. Tourism is projected to grow internationally, nationally, and provincially. Locally, the volume of visitors to Prince George increased by 115.7% between 2001 and 2007. The majority of Regional Districts posted room revenue growth in 2008 (comparing to 2007) with Fraser-Fort George generating 26.6% of the region's room revenue. The report identifies several strengths of the local tourism sector, including the pristine environment, a network of hiking, mountain bike, and snowmobile trails, backcountry and cross-country skiing, excellent fishing and hunting areas, location along Highway 16, close proximity to Jasper National Park, regularly organized social events, and affordable hotel rates.

Tourism, like any industry, needs the support of local politicians and economic development officers in order to reach its full potential. While other projects, including power and fibre, also play important roles in the diversification process, McBride has yet to demonstrate a long-term commitment to developing their tourism industry, as evidenced by their choice to avoid the Tourism PG plan designed for McBride and by the opinions voiced by local tourism operators regarding local political support. The results from the AFT annual economic benefit analysis, plus the specific structure and dynamics of the local economy, as well as the perspectives supplied by local politicians, mill owners, tourism operators, and business owners, all demonstrate the need for economic diversification and can be used to promote tourism as an economic priority.

Key informant results revealed that respondents see the potential for tourism to grow and develop at the local level, but are largely divided over the role of tourism as an economic priority. This tension is consistent with literature examining resident attitudes to potential tourism development (Wang and Pfister, 2008). A study of resident attitudes

in Valemount, B.C. (the neighboring village to McBride), demonstrates both a focus on the negative impacts of tourism as well as a prevalent positive attitude towards local tourism development (Nepal, 2008). Similar tension had been documented at the provincial and national level (Rich, 2004; Sirakaya, Teye, and Sonmez, 2002; Andereck, et al., 2000) and can be considered a barrier to tourism development, particularly in communities where the direct economic benefits from tourism are not yet noticeable for residents (Andereck, et al., 2005). Research suggests that communities should place equal emphasis on both the potential economic contribution of tourism as well as enhancing residents' perceptions of tourism development as a means to assist local tourism potential (Johnson, Snepenger, and Akis, 1994). This community tension suggests a complex relationship between local economic development priorities and the excepted perceived economic impacts by residents resulting from tourism (Hudson and Miller, 2005; Rich, 2004).

Prior to this study, the economic benefit of AFT ecotourism was largely unknown. By providing new information on the types of tourists who use sites like the AFT, how they travel through the valley, and what they expect to get out of their experience in the region, the results of this study can provide guidance for future tourism-related development decisions, including how to inform tourists and ultimately retain travellers in McBride for longer.

The results from this study have implications for economic development decisions as they highlight the current role and potential contribution of AFT ecotourism to benefit the local McBride economy and the diversification process. Results show that the AFT has a significant direct annual economic benefit and outline the potential for tourism and

ecotourism to positively impact economic diversification. These results can provide guidance for future tourism-related development decisions by providing new information on the types of tourists who use sites like the AFT, how they travel through the valley, and what they expect to get out of their experience in the region. The results from this study can also be used to help inform land use policy, as the AFT represents an economically beneficial use of ancient cedar stands.

## **6.2 Future Research**

This study's investigation into the economic benefit of AFT ecotourism was largely based on a combination of economic impact analysis and resident attitudes, opinions, and insights into the local economy and the potential of ecotourism and tourism to impact diversification. Several studies, completed by private firms and government organizations, have assessed both the regional economic situation as well as the potential for tourism to grow in northern B.C. and throughout the Robson Valley. While these studies take into account several crucial elements necessary to understand the economic impact of new industries in resource depended communities, this study represents to first report focused on the Ancient Forest Trail, an emerging ecotourism attraction within the local tourism sector. While the results of this study are limited in part by the chosen focus of the AFT, the results demonstrate a local economy in need of economic diversification, and the potential for ecotourism and tourism to grow and positively impact the diversification process, a view supported by several residents involved in various sectors of the local economy. While this study provides a baseline from which to develop tourism at the AFT and increase the connection between the trail and the Village of McBride, further research into the larger role of ecotourism and tourism throughout the valley should be considered. Interested parties in McBride, including the McBride Economic Development Office, the McBride Chamber of Commerce, and the McBride Recreational Officer could benefit from further research into how tourists move through the valley,

Often, difficult choices arise when deciding which natural resources should be used for human consumption and which should remain undisturbed (Daily, 1997). Ecosystems with high levels of biodiversity often pose a heightened challenge; they can simultaneously possess an economic potential while playing an indispensable role within a particular environment (Chapin at al., 1997). British Columbia's Inland Temperate Rainforest (ITR) falls in this category. The Interior Cedar Hemlock (ICH) subzone, which occurs almost exclusively within the ITR, is a globally unique ecosystem that supports high levels of biodiversity, including stands of ancient cedar trees that are estimated to be over 1000 years old (ILMB, 2008; SFF, 1992; Stevenson, 2011). Traditionally, however, the models used to determine the optimal harvest age for a particular stand of trees have focused almost exclusively on the economic value of timber and lumber while non-timber considerations, including tourism, have largely been excluded from the equation (Hartman, 1976). The implications of future research will weigh heavily into decisions regarding land use policy and regional choice regarding the best and highest use of their natural resources, including the Inland Temperate Rainforest.

Tourism and ecotourism alone will not replace a declining forestry sector, which has acted as the pillar of local economic development in McBride for decades. However,

as forestry shows signs of diminished growth, McBride should continue their stated objective of achieving a more diversified local economy. Tourism and ecotourism, industries that have strong regional presence, a demonstrated growth potential, and economically beneficial characteristics, have established the potential to help peripheral, resource-dependent communities like McBride diversify their economies by shifting away from resource-dependent industries towards a more varied array of economic contributors.

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# **Appendice A: Ancient Forest Trail Questionnaire**

General objectives:

- Determine hiker profile (i.e. tourist, recreational day-tripper, commuter, other)
- Determine direct tourist expenditures
- Determine previous visits, future visits, and next destination
- 1. What part of the Trail did you hike today?

□ Loop (in and out different access points)

- □ Big Tree and return same way (in and out the same way)
- □ Big Tree Loop (in and out same way)
- □ Other \_\_\_\_\_

2. a) Is this your first time hiking the Ancient Forest Trail?

- □ Yes
- $\square \text{ No} \rightarrow \text{How often in the past?}$ 
  - $\Box$  Once every few years
  - $\Box$  Once per year
  - $\square$  2 or 3 times per year
  - $\square$  More than 3 times per year

b) (Accordingly...) would you consider day-trips like this to the AFT as part of your regular routine?

No	= Tourist (AFT outside usual environment)
YES	= Recreational day-tripper (AFT within usual environment)
YES	= Commuting
Other	

c) How and when did you first learn about the Ancient Forest Trail (e.g., info centre, friend, website, association, media)?

IF TOURIST...

- 3. a) Because of the trail, did you / will you spend additional time in the area?
- $\hfill\square$  An hour or two
- □ Half of a day
- □ Full day

 $\Box$  More than a day

b) IF YES: Where did / wh	ere will you spend that extra time?
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- c) While in the region, what would you say your average daily expenditure has been / will be?
- d) If you were back home and talking to a friend or neighbour who was doing the same trip, how much additional time would you recommend that they spend in the region in order to hike the Trail?
- $\square$  No extra time
- $\Box$  An hour or two
- □ Half of a day
- □ Full day
- $\Box$  More than a day

### FOR ALL RESPONDENTS...

4. Where will you be heading to after you hike the trail (what city)?

## **FINAL PROFILE:**

Residence (e.g., McBride): \_\_\_\_\_ Total number is group: \_\_\_\_\_

Ages of member of party:

- \_\_\_\_ Children (below rail height; not being counted)
- \_\_\_\_ Children/young teens
- \_\_\_\_\_ 16 20 years
- \_\_\_\_\_ 21 35 years
- \_\_\_\_\_ 36 50 years
- 51 65 years
- \_\_\_\_ 66 or older

## **Appendice B: Key Informant Interview**

# ASSESSING THE ECONOMIC BENEFITS OF ANCIENT FOREST TRAIL ECOTOURISM IN MCBRIDE, BRITISH COLUMBIA:

**KEY INFORMANT INTERVIEWS** 

**Introduction**: Hello. My name is John Hall and I am a graduate student at UNBC working on a study of the economic potential of ecotourism in the Robson Valley, specifically focusing on the village of McBride. I am interested in determining the annual economic impact of the Ancient Forest Trail as well as assessing the Ancient Forest Trail's potential as a basis for economic diversification within the local economy.

Would you be willing to take part in a short telephone interview? The interview will take 15 to 30 minutes.

Would you like to schedule a day and time that works best for you? What day and time would work best for you over the next few weeks?

This project is not tied to any particular political or economic agenda. It is an academic study that will help inform future policy decisions.

<u>Goal of Study</u>: to assess the AFT's potential economic benefit as a tourist attraction and as a basis for economic diversification in the local economy

<u>Goal of Key Informant Interviews</u>: The purpose of these key informant interviews is to examine individual attitudes towards ecotourism-induced economic opportunities and to the future of ecotourism with regard to economic diversification

<u>Consent Form</u>: Do you have any questions before we start? Do you mind if I use a tape recorder so I don't miss anything you say?

[review the main points in consent form with the participant]

A – Present

[Objective: Determine respondent's attitude regarding the current state of the local economy plus strengths and weaknesses. Determine initial attitude of respondent towards ecotourism in the Valley and its relation to economic diversification]

- 1) How would you describe the current state of the local economy [McBride economy]?
  - Answer... 0
- 2) What would you say are some strengths of the local economy? Answer... 0
- 3) What would you say are some weaknesses of the local economy? Answer... 0
- 4) [Note: Interviewer may need to explain to respondent the difference between tourism and ecotourism] How would you describe the current role of Ecotourism in the Valley / local economy? 0 Answer...
- 5) How would you describe the potential for ecotourism to impact local economic diversification?
  - Answer... 0

**B** – Ancient Forest Trail

[Objective: Determine attitude of respondent regarding the Ancient Forest Trail as an emerging element in local ecotourism and its potential impact on local economic diversification]

6) Are you familiar with the Ancient Forest Trail [Note: if no, provide explanation]? How would you describe the Ancient Forest Trail in relation to the local ecotourism development / sector? 0

Answer...

How would you describe the Ancient Forest Trail's potential to impact local 7) economic diversification?

> Answer... 0

### C-Future

[Objective: Shift focus away from present economic situation towards future economic situation, specifically economic diversification. Determine what role the respondent feels ecotourism and the Ancient Forest Trail can play within future economic diversification]

8) Thinking now to the future [10-15 years], how would you describe your vision for economic diversification?

> 0 Answer...

9) [Note: If not already mentioned...] Where does ecotourism fit within that vision?

0	Answer
Q	1 MILO VV VI

- **10)** [Note: If not already mentioned...] Where does the Ancient Forest Trail fit within that vision?
  - 0

D-Summary

Answer...

[Objective: Recap main themes of interview]

0

- 11) Overall, how would you describe the role of the Ancient Forest Trail with regard to local ecotourism development?
  - Answer... 0
- 12) Overall, how would you describe the role of ecotourism with regard to local economic diversification?

Answer...

13) How would you describe the role of the Ancient Forest Trail with regard to local economic diversification? 0

Answer...

14) Do you feel ecotourism should be an economic priority for McBride / local economy?

> 0 Answer...

# The End Thank you for your participation!

# **Appendice C: Key Informant Interview Consent Form**

#### CONSENT FORM Assessing the Economic Benefits of Ancient Forest Trail Ecotourism in the Robson Valley of Northern British Columbia: Key Informant Interviews



Dear Participant:

The Robson Valley is a region that has long relied on forestry as the primary sector of its economy. However, in the face of shrinking employment, demand, and timber supply, the local economy may need to consider opportunities for economic diversification. Recently, ecological and recreational values have brought attention to the non-timber uses of the **area's** forests. Ecotourism, as a non-timber use, has the potential to play a role within the economic diversification of the local economy through direct expenditures and induced benefits. The Ancient Forest Trail (AFT) represents an emerging element in the region's tourism potential. The purpose of this research is to assess the AFT's potential economic benefit as a tourist attraction and contributor to economic diversification of the local economy

In this part of the project I am asking informed people like yourself to participate in an interview. You have been identified as a 'key informant' who current or past employment or community participation has provided you with knowledge of the structure and dynamics of the local economy. Your participation in this project is **completely voluntary** and **you may** withdraw your participation at any time during the project without penalty or risk of any kind. You may choose to answer only the questions you are comfortable with. Should you choose to withdraw then your information will also be withdrawn.

All information you provide will be recorded, with your consent, by written notes and/or by audiotape. The information I collect will be stored electronically in a database that can only be accessed by the researchers of the project team. All personal identifying information will be removed from this database. In addition, any hard copy interview notes will be stored in a secure locked filing system. All data will be destroyed within five years.

You may direct questions about the study to David J. Connell, Associate Professor, UNBC, at 250-960-5835 or connell@UNBC.ca. Complaints about the project should be directed to the Office of Research, UNBC, at 250-960-5650 or reb@UNBC.ca. Thank you for your participation.

I have read and understood the above and I voluntarily agree to participate in this study. I understand that I can ask questions and withdraw my participation at any time.

I AGREE that identifying information (e.g., name, title, and organization) may be used in the case study produced for this project under the condition that I have reviewed and approved of specific use of my identifying information and information attributed to me.

I DO NOT AGREE that identifying information (e.g., name, title, and organization) may be used in the case study produced for this project.

Participant name (please print)	Participant signature	Date

Researcher name

Researcher signature

Date