

BACKGROUND INFORMATION

for

Cariboo-Chilcotin Region

***Strategies for Cooperative Extension and Research
in the Southern Interior***

*September 8, 1998
Williams Lake*

Prepared by

Jane Perry

Regional History

The first inhabitants of the Cariboo-Chilcotin were the ancestors of the current Carrier, Chilcotin and Shuswap groups, distinguished by their separate languages. It is believed that they arrived over the Bering Strait from northeast Asia in 10,000 B.C. As part of the Athapaskan language family, the Carrier and Chilcotin were widely scattered, semi-nomadic people who traveled with canoes of birch or spruce bark, or by snowshoe in the winter, existing mostly on large game. They ate only minimal amounts of plants, including some species of berries, tree cambium and some types of edible roots and greens. The Shuswap ate more plants, but for all of these peoples, large animals and fish constituted the majority of their diet (Turner, 1978). The population of natives prior to European contact is not known, but for the entire province is believed to be at least 80,000 (Duff, 1980).

After Francis Drake sighted the coast of British Columbia in 1579, early Spanish and English explorers in the 1770's landed and began mapping the rugged coastline of what is now British Columbia. European contact brought disease (mainly smallpox), firearms and alcohol. By the early 1900's the native population had been reduced by three-quarters or more to barely more than 20,000 (Duff, 1980). The availability of guns had the biggest effect on increased fatalities from inter-tribal wars. As well, European contact eventually led to constraints on the practice of native culture through the outlawing of rituals such as potlatches, and later, the negative effects of residential schools and the federal Indian Act. Today, First Nations in the Cariboo-Chilcotin live as a generally scattered population or among established communities and total about 5500 people (Carrier Chilcotin Tribal Council, 1996). This segment of the population has a low median age and a high growth rate relative to the overall provincial population.

European settlement began with explorations by Juan Perez and other Spaniards, followed by James Cook in 1779. This preliminary contact began a vigorous trade in sea otter pelts with natives. Interior explorations by fur traders such as Alexander Mackenzie, who arrived overland to the Pacific Ocean in 1793, and later in the early 1800's by Simon Fraser and David Thompson, helped establish the trade of beaver pelts and expand the Hudson's Bay Company. Access from the Fraser River into the BC Interior was initially developed with the gold rush of the 1860's that began near Yale and progressed north to Barkerville.

The transportation routes of the fur trade and gold rush laid the foundation for today's highways and roads. The Cariboo Waggon Road led from Yale to Cache Creek, north to Quesnel and east to Barkerville with steamer travel on the Fraser River to detour around the Soda Creek rapids north of Williams Lake. This and other routes and the early explorations also led to the establishment of ranches and farms, initially during the gold rush (Roberts, 1987) and then into the Chilcotin in the late 1800's, after the gold rush subsided and new inhabitants sought more stable forms of a livelihood. Road access between Williams Lake and Bella Coola was established when the road was connected west of Anahim Lake in 1953 (Kopas, 1980).

Resource development continued from the early farms and ranches that helped to form an economic base in agricultural and ranching. Logging of forests expanded into a forestry industry that now includes numerous sawmills and processing facilities in the region that constitute the

base of the region's economy. The gold rush that attracted the first settlers later developed into a mining industry that includes copper-molybdenum, clay and shale, and platinum in addition to large-scale gold mining. The variety of landscapes and recreational opportunities in the Cariboo-Chilcotin have helped make it a world-class destination and developed a tourism industry that also contributes significantly to the overall regional economy.

Representative Ecosystems

The Cariboo-Chilcotin region is situated in south-central British Columbia and covers a diversity of climatic zones and ecosystems. The climate is largely affected by the Coast Mountains to the southwest, which produce a rainshadow to the east, and the Quesnel Highland and Cariboo Mountains to the northeast, which create a second band of orographic precipitation in the province. The rolling topography, intercepted by major river valleys, is part of the Fraser Plateau throughout most of the region. Most of the Cariboo-Chilcotin is drained by the Fraser River and its tributaries.

These general bands of precipitation levels create a drybelt in approximately the western half of the region, a transition area through roughly the middle of the region, and a wetbelt in the eastern part of the region when air rises over the higher elevations of the Quesnel Highland and Cariboo Mountains and condenses to produce rain or snow. The drybelt, transition and wetbelt form broad, general climate bands that are modified by elevation and topography. The eight main biogeoclimatic ecosystem classification (BEC) zones of the Cariboo-Chilcotin are based on these differences in climate and the ecological processes and vegetation produced as a result.

The following table, based on Steen and Coupé, 1997 and Meidinger and Pojar, 1991, summarizes the characteristics of the predominant BEC zones of the Cariboo-Chilcotin region. (The Coastal Western Hemlock and Mountain Hemlock zones are omitted due to their very limited occurrence in the region.) The table also includes a general description of the zone's climate, major tree and wildlife species, primary resource values and some current resource management issues. This summary is very general and is designed to give only an approximate overview for comparisons between and among the different zones. Readers are advised to consult Steen and Coupé, 1997 for a more complete reference.

BEC Zone/ Variants	Location	Elevation	Description/ Climate	Tree Species*	Wildlife	Resource Values	Resource Issues
Alpine Tundra (AT) (No subzones or variants defined.)	Above treeline throughout BC	2000-4000 m in Coast Mtns. >1800 m in Quesnel Highland and Cariboo Mtns.	Treeless area dominated by alpine meadows, shrublands, snowfields, glaciers and rock due to a cold, snowy and windy climate with a very short growing season.	Lower elevations may have stunted or krummholz form of Bl, Se, Hw, Pa.	Mountain goat, gyrfalcon, white- tailed and willow ptarmigans, water pipit, rosy finch. Low wildlife diversity and density.	<ul style="list-style-type: none"> • High recreational value for hiking, camping, skiing, snowmobiling, horseback-riding, hunting. • Summer range for cattle and domestic sheep 	<ul style="list-style-type: none"> • Wildlife/livestock interaction • Recreational overuse
Bunchgrass (BG) BGxh3 BGxw2	Grassland areas and Fraser and lower Chilcotin River valleys south of their confluence	<800 m	The warmest and driest zone in the region due to valley topography with warm to hot, dry summers and moderately cold winters with little snowfall. Generally low soil moisture for most of the year. Zonal sites support bunchgrasses, low forbs and small grasses and scattered shrubs. Big sagebrush common at low elevations, along with rabbit-brush and common juniper.	Fd present only on riparian sites and some N- facing slopes.	High wildlife diversity and density with overlap of ranges for northern and southern species. California bighorn sheep and many species of small mammals, birds and reptiles. Several species of provincial or national significance due to their rarity or uniqueness.	<ul style="list-style-type: none"> • High agricultural capacity • Livestock grazing • Water- and land-based recreation (river rafting, hiking) • Wildlife viewing 	<ul style="list-style-type: none"> • Introduction of noxious weeds • Livestock overgrazing • Habitat loss for threatened and endangered species due to agricultural development

* Act Black cottonwood At Trembling aspen Bl Subalpine fir Cw Western redcedar
 Ep Paper birch Fd Douglas-fir Hw Western hemlock Jr Rocky mountain juniper
 Pa Whitebark pine Pl Lodgepole pine Py Ponderosa pine Sb Black spruce
 Se Engelmann spruce Sw White spruce Sxw Hybrid white/Engelmann spruce

BEC Zone/ Variants	Location	Elevation	Description/ Climate	Tree Species*	Wildlife	Resource Values	Resource Issues
Engelmann Spruce- Subalpine Fir (ESSF) ESSFxv1 ESSFxv2 ESSFxc ESSFdc2 ESSFmv1 ESSFwk1 ESSFwc3	Directly below AT, in Quesnel Highland and Coast Mtns. and on high summits on Fraser Plateau (Rainbow, Ilgachuz, Itcha, Chilcotin and Camelsfoot Ranges).	1200-1800 m in Quesnel Highland and wetter parts of Fraser Plateau. 1650-2100 m in Coast Mtns. and drier parts of Fraser Plateau.	Cool and short growing seasons with long, cold winters. Frost can occur in any month. The western ESSF on the leeward side of the Coast Mtns. is much drier and colder than the Quesnel Highland ESSF. Forests of Engelmann spruce and subalpine fir are interspersed with wet meadows, shrublands, avalanche slopes and alpine tundra at higher elevations.	Se predominates at lower elevations with more Bl at higher elevations. Some Pl mixed with Se/Bl especially in western part of region. Some Pa in eastern ESSF at >1850 m elevation.	Ungulates (moose, mountain goat, caribou, mule deer, bighorn sheep) depending on species' ability in heavy snowfall, grizzly bear, some amphibians. Important zone for furbearers (marten, fisher, red squirrel and wolverine), and various seed- eating and breeding bird species.	<ul style="list-style-type: none"> • Timber harvesting • Livestock grazing • Fur harvest • Recreation (skiing, hiking, mountaineering, hunting, camping) • Scenic values 	<ul style="list-style-type: none"> • Loss of arboreal lichen for caribou from clearcutting • Livestock/grizzly bear interaction • Maintaining recreational values
Interior Cedar- Hemlock (ICH) ICHdk ICHmk3 ICHmw3 ICHwk2 ICHwk4	Low to mid elevations in the most eastern portions of the Fraser Plateau including the wet climates of the Quesnel Highland and Cariboo Mtns.	From valley bottoms to about 1250 m in the Quesnel Highland.	Cool, wet winters and warm, moist to dry summers with some of the highest annual precipitation in the region, making it the most productive zone for tree growth in the region. Composition and density of understory vegetation varies according to forest age, tree canopy and moisture.	Cw, Hw, Sxw, Bl, Fd, Pl, Act depending on forest age, wildfire history and site moisture.	Important zone for grizzly and black bear, which avoid the snowy winters by hibernating. Ungulates include mule deer, moose and caribou. The ICH includes wood borers, cavity nesters, owls and breeding birds, and various reptiles and amphibians.	<ul style="list-style-type: none"> • Timber harvesting • Fur harvest • Land- and water-based recreation (hiking, camping, snowmobiling, cross-country skiing, boating, fishing, hunting) • Limited range use 	

* Act Black cottonwood At Trembling aspen Bl Subalpine fir Cw Western redcedar
Ep Paper birch Fd Douglas-fir Hw Western hemlock Jr Rocky mountain juniper
Pa Whitebark pine Pl Lodgepole pine Py Ponderosa pine Sb Black spruce
Se Engelmann spruce Sw White spruce Sxw Hybrid white/Engelmann spruce

BEC Zone/ Variants	Location	Elevation	Description/ Climate	Tree Species*	Wildlife	Resource Values	Resource Issues
Interior Douglas-fir (IDF) IDFxw IDFxm IDFdK1 IDFdK3 IDFdK4 IDFdw IDFmw2	Covers a large area of the southern part of the region over the Fraser Plateau	From the BG zone reaching 800 m up to 1150 m	Warm, dry summers with cool, dry winters and generally low precipitation. Grasslands and non-forested wetlands are common in the IDF.	Fd predominant in climax forests with pinegrass, some shrubs and red-stemmed feathermoss in the understory. Pl with At or Py common in younger forests and cool, moist parts of the IDF.	Important mule deer winter range and a variety of habitat niches for wildlife and birds, such as raptors and seeding-eating or insectivorous species. Grasslands support California bighorn sheep and various small mammals. Numerous lakes and wetlands important for ducks and waterbirds.	<ul style="list-style-type: none"> • Timber harvesting • Cattle grazing and hay production • Recreation (fishing, hunting, hiking, cross-country skiing, snowmobiling, horseback riding) especially with close proximity to population centres. • Tourism • Fur harvest • Water production 	<ul style="list-style-type: none"> • Wildfire control and forest use in rural-urban interface • Conservation of mule deer winter range values • Water quality and availability to municipalities
Montane Spruce (MS) MSxk MSxv MSdv MSdc2	Middle to high elevation in western parts of the region, below the ESSF	1250-1500 m in the Itcha-Ilgachuz area. 1450-1700 m in Coast Mtns. and Marble Range	Transition between SBPS or IDF with the higher ESSF. The cool, continental climate creates cold winters and fairly short, warm summers.	Pl originated from wildfires. Sxw and Bl present in understory. Minimal Fd present above the IDF.	Caribou, moose, mule deer, woodpeckers, fur species from ESSF Riparian areas and waterbodies provide important summer habitat for various mammals, birds and amphibians.	<ul style="list-style-type: none"> • Timber harvesting • Fur harvest • Cattle grazing • Recreation (fishing, camping, hunting, hiking horseback riding, cross-country skiing, snowmobiling) • Water production 	<ul style="list-style-type: none"> • Level of timber harvesting to salvage mountain pine beetle mortality • Resource management practices and habitat maintenance for northern caribou

* Act Black cottonwood At Trembling aspen Bl Subalpine fir Cw Western redcedar
 Ep Paper birch Fd Douglas-fir Hw Western hemlock Jr Rocky mountain juniper
 Pa Whitebark pine Pl Lodgepole pine Py Ponderosa pine Sb Black spruce
 Se Engelmann spruce Sw White spruce Sxw Hybrid white/Engelmann spruce

BEC Zone/ Variants	Location	Elevation	Description/ Climate	Tree Species*	Wildlife	Resource Values	Resource Issues
Sub-Boreal Pine-Spruce (SBPS)	Extensive on the Fraser Plateau and mostly confined to Cariboo- Chilcotin region	900-1250 m in N and E parts of zone	Cold, dry winter and cool, dry summers created by rainshadow and elevation. Wildfires have left a diversity of stands ages dominated by young stands. Low productivity for tree growth due to the harsh climate including the chance of frost in any month.	Pl dominates most sites with some Swx or Sw on zonal sites and some scattered At.	Moose, northern caribou, black (and some grizzly) bear, mule deer, beaver, muskrat, marten, fisher, goshawk, owls, insect-eating birds, waterbirds, white pelican, spruce grouse, porcupine	<ul style="list-style-type: none"> • High value for fur harvest • Mechanized harvesting of even-aged pine stands • Hay production and limited grazing in wetlands 	<ul style="list-style-type: none"> • Timber harvesting and maintenance of arboreal lichens for northern caribou
Sub-Boreal Spruce (SBS)	Covers much of eastern Fraser Plateau as a transition between IDF/SBPS and wetbelt ICH/ESSF.	750-1350 m in S	The SBS dominates the central Interior of BC and in the Cariboo- Chilcotin has a cool continental climate with warm, moist summers and cool to cold, snowy winters.	Swx and Bl, Pl, Fd, At depending on a stand's wildfire history, elevation and successional stage	Moose, mule deer, lynx, porcupine, small mammals, spruce grouse, owls, waterfowl.	<ul style="list-style-type: none"> • Timber harvesting • Livestock grazing • Fur harvest • Recreation (fishing, hunting, camping, cross-country skiing, snowmobiling) 	
SBSdw1		450-1250 m in NE					
SBSdw2							
SBSmh							
SBSmw		750-1500 m in NW					
SBSmm							
SBSmc1							
SBSmc2							
SBSwk1							

* Act	Black cottonwood	At	Trembling aspen	Bl	Subalpine fir	Cw	Western redcedar
Ep	Paper birch	Fd	Douglas-fir	Hw	Western hemlock	Jr	Rocky mountain juniper
Pa	Whitebark pine	Pl	Lodgepole pine	Py	Ponderosa pine	Sb	Black spruce
Se	Engelmann spruce	Sw	White spruce	Swx	Hybrid white/Engelmann spruce		

Demographics

The Cariboo-Chilcotin includes the three main centres of Quesnel, Williams Lake and 100 Mile House with numerous smaller communities and a significant dispersed rural population that comprises just over one-half of the region's total population. The estimated number of residents for the region, based on 1996 census figures, is 76,554 (StatsCan, 1997). The Cariboo-Chilcotin is mainly under the jurisdiction of the Cariboo Regional District with the southernmost portion (including the communities of 70 Mile House and Clinton) covered by the Thompson-Nicola Regional District. Population statistics for incorporated communities and census subdivisions are (BC Stats, 1998a):

Community or Subdivision	Population (1996 census)
Quesnel (city)	8468
Williams Lake (city)	10,472
100 Mile House (municipality)	1850
Clinton (village)	729
Subdivision A (East and west of Quesnel) <i>Includes Wells, Barkerville, Nazko, Kluskus</i>	16,630
Subdivision B (East of Fraser River) <i>Includes Dog Creek, Sheridan Lake, Horsefly, Likely</i>	25,167
Subdivision C (West of Fraser River) <i>Includes Alexis Creek, Tatla Lake, Nimpo Lake, Anahim Lake</i>	1713
Indian Reserves	2175

The population growth rate in the Cariboo-Chilcotin between 1991 and 1996 was approximately 9% (StatsCan, 1997), over double from the last five-year period, and lower than the provincial rate of 13.5%. Average population density in the region is 1.0 persons/km² (StatsCan, 1997), the median age is relatively young at 32.9 years, and there are approximately 25,000 households (BC Min. of Gov. Services, 1995).

BC Stats has been forecasting a substantial decline in the Cariboo-Chilcotin region's growth rate with a small increase in the population density from births rather than from migration to the region. Recent BC Stats figures predict a declining average annual growth rate of only 0.9% to the year 2026 (Vancouver Sun, 1998) due to reduced migration until the resource sectors (mining and forestry) show recovery. The median age in the next 25 years is expected to steadily rise according to the expected provincial trend. By the year 2026, BC Stats predicts that the current population will increase to almost 89,000 residents in the Cariboo-Chilcotin region (BC Stats, 1998a).

Aboriginal people live on Indian reserves and throughout the region. Fifteen Indian bands covering three language groups are affiliated with the five tribal councils – Carrier-Chilcotin, Cariboo, Shuswap Nation, Lillooet and the Tsilhqot'in National Government. Two additional bands are independent.

Regional Economy

The economy of the Cariboo-Chilcotin region is based on resource sectors (forestry, tourism, agriculture and mining), public sector employment and other sources of income. Despite its current slump, forestry remains the region's dominant industry and a sustainable long-term timber supply is considered crucial to the maintenance of the region's job base (BC Stats, 1988b). Provincially, the forest industry produces 55% of provincial exports and directly and indirectly employs 17% of the provincial workforce (Price Waterhouse, 1998). Over half of forestry employment in the Cariboo-Chilcotin is in the primary sector with secondary sectors and indirect employment in contracting, the Forest Service, transportation, consulting, supply sectors and spin-off benefits (Price Waterhouse, 1993). More diversified forest products, such as pine mushrooms, are a small industry with considerable potential for growth.

Income dependencies on forestry in the Cariboo-Chilcotin are almost twice the provincial average. The Quesnel area has the highest reliance, matched by only one other area in BC, with the value for Williams Lake (including the 100 Mile House area and Chilcotin) one of the next highest (Horne and Powell, 1995). Compared to other areas of the province, however, the regional economy is considered well diversified (Min. of Govt. Services, 1995).

Tourism in the Cariboo-Chilcotin includes touring trips, personal visits, outdoor/wilderness experiences, business and conference visits and resort destinations. Tourism grossed \$155 million in 1996 (Cariboo Chilcotin Community Skills Centre, 1998) and the industry is growing at a rate of 15% per year. Expansion of tourism marketing is anticipated to maintain steady growth for this industry.

As a pioneering influence for the Cariboo, mining continues to play a role in the regional economy, albeit much reduced from the Barkerville gold rush. Placer operations are scattered throughout the region and lode gold is mined in the Wells-Barkerville area. Several large-scale mines are operating or in the development stage.

Cattle ranching and forage production also contribute to the regional economy. The agriculture industry includes milk production, small animal farming, domestic game, honey production and vegetable production. Farmers' markets and local producer groups encourage consumer demand of local produce.

The public sector is the second largest employer in the Cariboo-Chilcotin followed by pension and investment income (Horne and Powell, 1995). The unemployment rate for the Cariboo region (which extends north beyond Prince George) of Human Resources Development Canada is currently 14.3% (HRDC, 1998), over 50% higher than the provincial average.

Trends

Current economic and social trends affecting the present and future for the Cariboo-Chilcotin region include:

Changing Economy

The region's economic foundation has been built on forestry, with approximately 30% dependency on the forest sector. Currently, the poor economic health of the provincial forest industry is due to various sources of uncertainty from the global economy, aboriginal land claims, the Canada-U.S. softwood lumber agreement and European boycotts of old growth lumber, added to long-term increased costs of stumpage and regulation. In 1997, timber harvesting in the BC Interior decreased 12% from the previous year with a 1.9% decrease (provincially) in employment (Price Waterhouse, 1998). Some analysts consider a major structural change in the forest industry necessary to adapt to changing market and regulatory conditions while others feel that this current trend is only part of ongoing cyclical change in the industry.

While resource sectors are in a current downturn, service-based industries are growing. As well, many workers are seeking alternatives to private sector employment that incorporate the land-based culture of the Cariboo-Chilcotin and which can capitalize on future opportunities. Many of these enterprises are home-based or small businesses.

Sustainability of Natural Resources

Increased environmental consciousness among the public has led to recent provincial initiatives in sustainability, protected areas and improved resource management practices. The reliance of over 40% of areas in British Columbia on the forest industry (The Chancellor Partners, 1997) has created a heightened concern over the long-term viability of those resources to maintain local economies. One current example is the reduction of the annual allowable cut in many areas of the province in response to decreased long-term wood supply. Several government-industry technical groups (such as Timber Supply Investment Committees in the Cariboo-Chilcotin) are examining means of maintaining the long-term wood supply through enhanced silviculture treatment scenarios and other methods that will produce the most cost-effective results. Community concerns over the long-term viability of their resource-based economy are growing and many opinions exist.

On a provincial scale, the sustainability of salmon stocks is an important issue. Habitat loss, high water temperatures, management practices in riparian zones and over-fishing, along with the broader issues of weather systems and climate change, will influence the long-term health of salmon stocks. The region's contribution to salmon habitat will likely remain a significant provincial issue.

Employment

The global corporate trend in the last decade has created reduced numbers of employees to regain corporate economic competitiveness and fiscal control. Downsizing has descended on government and the private sector at all levels. Governments concerned with annual deficits and increasing debt are reducing programs through lower staff and operating budgets. Industries with

reduced revenues similarly require lower output costs to address the imbalance. This scenario creates a level of concern for most workers at all levels over the nature and security of their employment. In reaction to downsizing, the number of self-employed individuals and small businesses has increased.

Value Added

Over time, the increased mechanization of forestry operations has reduced the number of jobs created per cubic metre of wood processed. In 1997, 4.3 direct and indirect jobs were dependent on every 1,000 cubic metres of wood harvested in BC (Price Waterhouse, 1998). Value Added is the maintenance and enhancement of economic benefits to obtain more value from each cubic metre of wood harvested. It is considered a prime means of enhancing regional employment through the increased local processing of natural resources, particularly of wood, and commonly involves small businesses. Examples of value added include log home construction, various specialty wood products, wood pellet fuel, musical instruments, wood crafts and showcase furniture. There are three value-added societies in the Cariboo-Chilcotin working to meet the increased demand for specialized forest-based products. One example is the Wood Enterprise Centre in Quesnel, a multi-agency partnership created to support the art, business and culture of wood products manufacturing through workforce training, enterprise development and research.

Community Role in Resource Management

Stemming from the recommendations of the Pearse Report of 1976 and Forest Resources Commission reports in 1991 and 1992, British Columbians have sought more public participation and community-based control over the management and processing of their resources. Control by multi-national companies has centred many corporate decisions outside British Columbia or even Canada, often with the potential or realization for negative results to the economic stability of small, resource-based communities. Communities want more input in how they are affected by resource management policies, planning and management.

Land use planning in the Cariboo-Chilcotin has seen the involvement of the Commission on Resources and Environment, the 1994 release and subsequent implementation of the Cariboo-Chilcotin Land Use Plan, and several Land and Resource Management Plans (LRMP's) at the planning stage. As well, community forest agreements are now enabled through new legislation to initiate pilot projects that will allow communities to plan for allocating and maximizing a wider range of local forest resource values beyond the traditional timber emphasis.

First Nations

Aboriginal peoples have been increasingly concerned with, and involved in, management of, and access to, the province's natural resources. In the Cariboo-Chilcotin, First Nations have entered into joint ventures with industry to generate employment for them and increase their economic opportunities while promoting their culture and supporting a livelihood. With the inclusion of aboriginal knowledge in post-secondary resource management education, programs such as the University of British Columbia First Nations House of Learning, and requirements for traditional use studies in Forest Practices Code planning requirements, resource planners and managers are considering aboriginal values and knowledge in management practices.

Since the Delgamuukw decision of late 1997 and other court decisions, resource management regionally and provincially has been infused with a high level of uncertainty over aboriginal rights to resources, treaty costs and the time to resolve all remaining land claims in BC. The recent signing of the Nisga'a treaty and the remaining uncertainty over the numerous other land claims in British Columbia indicate that resource management and economic stability could remain unstable for some time longer.

Ranching

Trends for the ranching industry include the current uncertainty of grazing and hay tenures on Crown range in relation to land claims and treaties, increased regulation in range management through tighter environmental standards and Forest Practices Code requirements, and the marginal economics of the cattle industry. Ranching has a century of history in the Cariboo-Chilcotin region but currently there is low stability of the industry's attractiveness from increasing legal requirements without a corresponding increase in revenue to offset input costs.

References

- BC Ministry of Government Services. 1995. *British Columbia Regional Index*. Prov. of British Columbia, Victoria, BC
- BC Stats. 1998a. Web site <www.bcstats.gov.bc.ca> Ministry of Finance and Corporate Relations, Victoria, BC.
- BC Stats. 1998b. *Quarterly regional statistics, first half, 1998*. Ministry of Finance and Corporate Relations, Victoria, BC.
- Cariboo Chilcotin Community Skills Centre. 1998. *Monitor*. May. Unpub. newsletter.
- Carrier Chilcotin Tribal Council. 1996. Unpub. pamphlet. Williams Lake, BC.
- The Chancellor Partners. 1997. *The economic impact of the forest industry on British Columbia and metropolitan Vancouver*. Dec. Vancouver, BC.
- Duff, Wilson. 1980. *The Indian history of British Columbia, Vol. 1. The impact of the white man*. Anthropology in Brit. Col., Memoir No. 5. Prov. Museum of BC, Victoria, BC.
- Forest Resources Commission. 1991. *The future of our forests*. April. FRC, Victoria, BC.
- Forest Resources Commission. 1992. *Providing the framework: a forest practices code*. July. FRC, Victoria, BC.
- Human Resources Development Canada. 1998. Web site <www.bc.hrdc-drhc.gc.ca/lmi/lfs/pg20798.htm#Tab5>.
- Horne, Garry and Charlotte Powell. 1995. *British Columbia local area economic dependencies and impact ratios*. BC Min. of Finance and Corp. Relations, Analysis and Evaluation Branch, Victoria, BC
- Kopas, Cliff. 1980. *Bella Coola*. Douglas & McIntyre Ltd., Vancouver, BC.
- Meidinger, Del and Jim Pojar, comp. and ed. 1991. *Ecosystems of British Columbia*. B.C. Min. For., Victoria, BC Special Rep. Series No. 6.
- Price Waterhouse. 1993. *Economic value of the forest industry to the Cariboo region*. Vancouver, BC.
- Price Waterhouse. 1998. *The forest industry in British Columbia, 1997*. Vancouver, BC.
- Roberts, John A. 1987. *Cariboo, a brief history*. Unpub. doc.
- Statistics Canada. 1997. *A national overview. Population and dwelling counts. 96 Census*. 93-357-XPB.
- Steen, Ordell and Ray Coupé. 1997. *A field guide to forest site identification and interpretation for the Cariboo Forest Region*. B.C. Min. For., Victoria, BC Land Mgmt. Handb. 39.
- Turner, Nancy J. 1978. *Food plants of British Columbia Indians. Part 2/Interior peoples*. BC Prov. Museum, Victoria, BC. Handb. No. 36.
- Vancouver Sun. 1998. *Mega-projects affect where newcomers go*. Aug. 22: A15
- Woodcock, George. 1980. *A picture history of British Columbia*. Hurtig Publishers, Edmonton.

Summary of Research Projects

This draft summary of research conducted in the Cariboo-Chilcotin region is current to August 1998 from summaries provided by the UBC Alex Fraser Research Forest, Ministry of Forests, Forest Renewal BC, Canadian Forest Service and Ministry of Environment, Lands and Parks. Project numbers are preceded by the agency reference for direct reference. In the 'Status' column, inactive projects may be abandoned, scheduled for future re-measurement or completed. Researchers are encouraged to provide further information to make this summary table a more useful and informative reference.

Biodiversity

Title	Organization	Investigators	Project #	Location	Status	Products
Multi-scale landscape interactions	UBC Faculty of Forestry	Mark Perdue	AFRF 97-09		Active	
Natural and managed disturbance patterns and their implications for biodiversity management in the IDF zone	MOF Cariboo region	Harold Armleder Michaela Waterhouse	AFRF 94-15	IDF	Active	
Impact of logging activity on local ant populations	UCC	Rob Higgins	AFRF 94-12		Active	
Fire periodicity, stocking and regeneration in the IDF	MOF Cariboo region	Rick Dawson Ordell Steen	AFRF 94-10	IDF	Active	
Effects on vegetation of prescribed fire on Interior Douglas-fir – lodgepole pine forests	UBC Faculty of Forestry UBC AFRF UBC Faculty of Forestry	Jerry Dobry AFRF staff Michael Feller Claudia Hanel	AFRF 94-04		Active	
Biodiversity in Interior Douglas-fir zone	MOF Cariboo region	Rick Dawson	AFRF 92-07	IDF	Active	
Biodiversity in lodgepole pine managed stands	UBC Faculty of Forestry	Tom Sullivan	AFRF 92-02		Active	
Effects of brushing on wildlife diversity and abundance	UBC Faculty of Forestry	Martin Gebauer Dale Seip	AFRF 88-01		Inactive	
Coarse woody debris dynamics in the IDF	MOF Cariboo region	Rick Dawson		IDF		
Stand and landscape attributes and breeding bird relationships in the IDFdk3	MOF Cariboo region	Rick Dawson Ordell Steen Michaela Waterhouse		IDFdk3		
Grassland seral ecosystems descriptions	MOF Cariboo region	Ordell Steen Ray Coupé				

Title	Organization	Investigators	Project #	Location	Status	Products
The role of woody debris in soil, forest floor and long-term site productivity in the SBPS biogeoclimatic one	MOF Cariboo region	Bill Chapman		SBPS		
Bats and birds in the grassland/IDF interface	MOF Cariboo region	Michaela Waterhouse Harold Armleder				
Effects of <i>Lepista praemagna</i> on IDFXm grasslands	MELP Cariboo region? MOF Cariboo region	Rick Dawson Bill Chapman Ordell Steen	MOF CR004	Doc English Pasture		
Assessing impacts of forest and range management practices on identified wildlife species in the Cariboo Region	MOF Cariboo region	Michaela Waterhouse	FRBC CC96023-RE	Cariboo Forest Region	Complete	Final report
Effects of forest management on biodiversity of riparian ecosystems in Interior forests of the Cariboo-Chilcotin	SFU	Fred Cooke	FRBC CC96029-RE	Riske Creek	Ongoing	Progress report
Natural disturbance patterns in the Cariboo Forest Region	MOF Cariboo region	Rick Dawson	FRBC CC96022-RE	Cariboo Forest Region	Complete	Final report

Communities

Title	Organization	Investigators	Project #	Location	Status	Products
Researching a shared use manufacturing facility as a test model for forest dependent communities in BC	Community Futures Development Corporation of the North Cariboo	Chris Hartridge	FRBC CC97124-1RE	BC, Canada, Washington, USA	Ongoing	Progress report

Ecosystems

Title	Organization	Investigators	Project #	Location	Status	Products
E-MAN Ecological Monitoring and Assessment Network	UBC Malcolm Knapp Research Forest	Susan Leech	AFRF 97-06		Inactive	
Acid rain monitoring plots	CFS	CFS staff	AFRF 92-05		Inactive	
Identification of frost prone areas in the Cariboo Forest Region	MOF Cariboo region	Ray Coupé Ordell Steen	AFRF 88-04		Inactive	

Title	Organization	Investigators	Project #	Location	Status	Products
Biogeoclimatic ecosystem classification of the ESSF _{xv2} in the Cariboo Forest Region	MOF Cariboo region	Ray Coupé Ordell Steen	MOF EP822.04	ESSF _{xv2}		
Wetland ecosystem classification for the SBPS _{mk} in the Cariboo Forest Region	MOF Cariboo region	Ray Coupé Ordell Steen	MOF EP822.04	SBPS _{mk}		
Ecosystem classification for the BG and ID _{Fxm} in the Cariboo Forest Region <ul style="list-style-type: none"> Grasslands Wetland/moist shrubland Forested ecosystems 	MOF Cariboo region	Ray Coupé Ordell Steen	MOF EP822.04	BG, ID _{Fxm}		
Ecosystem classification of deciduous forests of the SBS _{dw1} and SBPS _{mk} in the Cariboo Forest Region	MOF Cariboo region	Ray Coupé Rick Dawson	MOF EP822.04	SBS _{dw1} , SBPS _{mk}		
Grassland ecosystem classification	MOF Cariboo region	Ray Coupé Ordell Steen		BG _{xh} , BG _{xw} , ID _{Fxm} grasslands		

Extension

Title	Organization	Investigators	Project #	Location	Status	Products
Transfer of forestry research information: a pilot project	FCSN UCC	Tom Rankin Lynda Wilson	AFRF 96-10		Active	
An extension strategy for the UBC/Alex Fraser Research Forest	UBC AFRF	Ken Day	FRBC CC96015-RE	UBC AFRF Gavin Lake block	Ongoing	Self-guiding trail with pamphlet

First Nations

Title	Organization	Investigators	Project #	Location	Status	Products
The effect of forest development on some plants with high First Nations traditional use values	UBC AFRF Williams Lake Indian Band	AFRF staff Jean Williams	AFRF 97-08		Active	
First Nations program	CFS	Nello Cataldo		Province-wide		

Fisheries

Title	Organization	Investigators	Project #	Location	Status	Products
Sport fisheries – adaptive management	University of Calgary MELP Cariboo region UBC Dept. of Zoology	Francois Landry Jack Leggett Carl Walters	AFRF 96-02		Active	
Radio tagging of Chilcotin River steelhead	MELP Cariboo region	Rob Dolighan			Active	
Sturgeon in the Fraser River	MELP Cariboo region	Maurice Lirette			Active	
Fraser River suckers in response to effluent discharge	MELP Cariboo region	Maurice Lirette			Active	

Forest Health

Insects

Title	Organization	Investigators	Project #	Location	Status	Products
Dynamics of spruce weevil attack in Interior spruce plantations	CFS UBC Faculty of Forestry	Rene Alfaro John McLean Lara Payne	AFRF 98-09		Active	
Growth loss in weevil attacked spruce plantations	UBC AFRF British forestry exchange student	Claire Trethewey Daniel Barker	AFRF 97-01		Active	
Spruce weevil permanent sample plots	MOF Cariboo region	Leo Rankin	AFRF 95-05		Active	
Relationship between incidence of aphid tending ants and spruce weevil attack levels	UCC	Rob Higgins	AFRF 95-01		Active	
Control of spruce terminal weevil with neem seed extract	UBC AFRF Phero Tech Ltd. MOF Cariboo region	AFRF staff Ken Naumann Leo Rankin	AFRF 94-09		Active	
Weevil-attacked spruce stem analysis	UBC AFRF CFS MOF Cariboo region	AFRF staff Rene Alfaro Leo Rankin	AFRF 94-01		Inactive	
Control of spruce weevil damage in spruce plantations by introduction of alternate commercial species	UBC AFRF UBC Faculty of Forestry	Ken Day John McLean	AFRF 91-03		Active	

Title	Organization	Investigators	Project #	Location	Status	Products
Douglas-fir beetle mortality – foliage colour change	MOF Cariboo region	Alana Murray	AFRF 90-13		Inactive	
Bt for control of <i>Pissodes strobi</i>	UBC Faculty of Forestry	Aileen Wardle	AFRF 90-10		Inactive	
Spruce terminal leader clipping for <i>Pissodes strobi</i> control	CFS	John Harris	AFRF 90-08		Inactive	
Gypsy moth trapping	Agriculture Canada	Owen Croy	AFRF 90-07		Inactive	
Operational perspectives on management of Douglas-fir bark beetles and mule deer winter range in the Cariboo	UBC AFRF	Ken Day	AFRF 90-06		Inactive	
Lethal trap logs for Douglas-fir bark beetle	MOF Cariboo region	Leo Rankin Von Vickers	AFRF 90-05		Inactive	
Douglas-fir beetle: management with trap logs and the anti-aggregation pheromone MCH	UBC AFRF Phero Tech Ltd.	Ken Day Staffan Lindgren	AFRF 90-04		Inactive	
Risk/hazard rating for mountain pine beetle and a link to GIS	UBC Faculty of Forestry	John Kwa Jerry Maedel John McLean Peter Murtha	AFRF 89-09		Inactive	
Comparative efficiency of Lindgren funnel traps and traditional traps for Douglas-fir beetle census at Beaver Valley	UBC AFRF	Ken Day	AFRF 89-02		Inactive	
Overwinter survival of Douglas-fir bark beetle at Knife Creek	UBC AFRF	Ken Day	AFRF 89-01		Inactive	
Spruce weevil surveys in the Cariboo Forest Region	MOF Cariboo region	Leo Rankin				
Lethal trapping systems for Douglas-fir bark beetle	MOF Cariboo region	Kornelia Lewis	AFRF 88-12		Inactive	
Colour IR photography of Douglas-fir bark beetle infestations	UBC Faculty of Forestry	John McLean	AFRF 88-09		Inactive	
Effect of frontalinal on trap trees for Douglas-fir beetles	UBC Faculty of Forestry	N. Krajci Peter Murtha	AFRF 88-07		Inactive	
Poplar mites	UBC AFRF Phero Tech Ltd. CFS	Ken Day Staffan Lindgren B. Callan	AFRF 88-02 CFS 5902		Inactive	
Bark beetle management	CFS	A. Carroll		ESSF		
Decision support systems for reducing	CFS	T. Shore	CFS 6601	ESSF		

Title	Organization	Investigators	Project #	Location	Status	Products
Development of management systems for major soft- and hardwood defoliators	CFS	I. Otvos	CFS 6806	IDF, ESSF		

Diseases

Title	Organization	Investigators	Project #	Location	Status	Products
Biological vs. mechanical control of Armillaria after harvesting	UBC AFRF	AFRF staff	AFRF 98-01		Active	
Armillaria ring barking trial	MOF Cariboo region	Bill Chapman	MOF CR003	Felker and Young Lakes, Hawks Creek		
Armillaria inoculation trial	MOF Cariboo region	Bill Chapman	MOF CR002	UBC AFRF, Long and Ruth Lakes, Boas Creek		
Clonal structure of Armillaria	UBC Faculty of Forestry	Jeremy Dettman, Bart van der Kamp	AFRF 97-05		Active	
Spread and incidence of <i>Inonotus tomentosus</i> in various planted tree species after logging	UBC AFRF	AFRF staff	AFRF 94-18		Inactive	
Biological control of Armillaria	MOF Cariboo region UBC Faculty of Soil Science	Bill Chapman Guoping Xiao	AFRF 93-09		Active	
Armillaria and juvenile spacing in IDF	UBC Faculty of Forestry	Bart van der Kamp	AFRF 93-02		Active	
Armillaria in the Alex Fraser Research Forest	UBC Faculty of Forestry	Bart van der Kamp	AFRF 89-06		Inactive	
Schlerophoma dieback of Douglas-fir	UBC Faculty of Forestry	Richard Reich Bart van der Kamp	AFRF 87-02		Active	
Evaluation of a biocontrol technique for root disease caused by <i>Armillaria ostoyae</i>	MOF Cariboo region	Bill Chapman	FRBC CC96018-RE	Cariboo Forest Region	Ongoing	Progress report

Small Mammals

Title	Organization	Investigators	Project #	Location	Status	Products
Pinosylvin animal repellent trial to reduce small mammal damage	UBC AFRF Phero Tech Ltd. UBC Faculty of Forestry	AFRF staff Pontus Lindgren Tom Sullivan	AFRF 95-09		Active	
Vole damage control with alternative food sources	UBC AFRF UBC Faculty of Forestry	AFRF staff Don Reid Tom Sullivan	AFRF 94-17		Inactive	
Limiting vole population size by predation enhancement	UBC Faculty of Forestry	Maria Leung Don Reid	AFRF 94-13		Inactive	
Integrated management of forest mammal pests: mustelid semiochemicals and diversionary foods	UBC Faculty of Forestry	Tom Sullivan	AFRF 93-10		Inactive	
Effects of animal damage on spacing trials in natural stands of lodgepole pine	UBC Faculty of Forestry MOF Cariboo region	Tom Sullivan	MOF EP845	Palmer Lake Road		

Other

Title	Organization	Investigators	Project #	Location	Status	Products
Biological control of mistletoe	UBC Faculty of Forestry CFS	Tod Ramsfield Bart van der Kamp Simon Shamoun	AFRF 98-02		Active	
Treatment response of lodgepole pine to juvenile spacing when infested with dwarf mistletoe	UBC AFRF UBC Faculty of Forestry	AFRF staff Bart van der Kamp	AFRF 90-09		Inactive	
An unusual case of winter bud damage in BC Interior conifers	UBC Faculty of Forestry	Bart van der Kamp John Worrall	AFRF 89-10		Inactive	
Lodgepole pine – dwarf mistletoe trial	MOF Cariboo region		MOF SX82409C	Mile 7.5 Palmer L. Rd		
Forest health network activities	CFS	Eric Allen	CFS 5801	Province-wide		

Forest Planning

Title	Organization	Investigators	Project #	Location	Status	Products
Integrating First Nations into resource planning with GIS			AFRF 98-07		Active	
Archeological overview of Alex Fraser Research Forest using GIS	UBC Faculty of Forestry	Damon Oriente	AFRF 94-06		Inactive	
Applications of the PlanTS yield simulator to the UBC/AFRF	UBC AFRF UBC Faculty of Forestry	Ken Day Jordy Tanz	AFRF 90-01		Inactive	
Landscape analysis of Chilcotin Plateau and Quesnel Highland forest ecosystems	MOF Cariboo region	Rick Dawson Ordell Steen Ray Coupé Susan Dakin				
Experiential methods in landscape assessment for forest resource planning and management			FRBC CC96013-RE	100 Mile House district and area	Complete	Final report

Forest Productivity

Title	Organization	Investigators	Project #	Location	Status	Products
Composting animal and wood waste for forest fertilizer	UBC AFRF	Dave Fernie	AFRF 98-08		Active	
Nitrate and ammonium uptake in forest seedlings – preferences and site interactions	UBC Faculty of Forestry	Rob Guy	AFRF 97-02		Active	
Road and landing restoration – an access management strategy	UBC AFRF	AFRF staff Ken Day	AFRF 95-02		Active	
RTI fertilizer trials	UBC AFRF RTI	AFRF staff Neil Anderson	AFRF 94-11		Active	
Whole tree harvesting and the sustainability of forest ecosystem productivity – FORCYTE calibration	UBC Faculty of Forestry	Hamish Kimmins Xiaohua (Adam) Wei	AFRF 94-05		Inactive	
Ecological effects of slash burning	UBC Faculty of Forestry	Michael Feller	AFRF 91-06		Inactive	
Forest land disposal of sewage solids (sludge) for forest fertilization	UBC Faculty of Forestry	Hamish Kimmins	AFRF 90-12		Inactive	
Productivity of interior spruce in the SBSdw subzones	UBC Faculty of Forestry	Karel Klinka	AFRF 89-07		Inactive	

Title	Organization	Investigators	Project #	Location	Status	Products
Long-term productivity trial	MOF Cariboo region	Bill Chapman	MOF EP1148	Skulow L.		
76 Mile demonstration site	MOF Cariboo region	Bill Chapman	MOF CR001			
Rehabilitation of landings	MOF Cariboo region	Bill Chapman				
Arnews acid rain plot	CFS		For Can 1			
Seedling performance on severely disturbed soils	MOF Cariboo region	Bill Watt	MOF EPC8303	Buxton Lake		
Effect on the nutrition, growth and yield of immature, thinned PI	MOF Cariboo region		MOF EP886.01	Locker Fire		
Effect of fertilization on the nutrition, growth and yield of immature, thinned PI	MOF Cariboo region		MOF EP886.01	Spokin, Raven and Longjohn Lakes Vunder Fire		
Effect of fertilization on the nutrition, growth and yield of immature Interior Df	MOF Cariboo region		MOF EP886.01	Hazeltine Creek		
Range fertilization	MOF Research Branch	Brian Wikeem	MOF EP861	Beaverdam and Holden Lakes, Fly Creek		
Effect of deep and shallow ripping of landings on the establishment of seeded grass	MOF Cariboo region		MOF EP777.03	Lyne Creek Road		
The role of woody debris in soil, forest floor and long-term site productivity in MS, SBPS and SBS biogeoclimatic zones in the Central Interior of British Columbia	MOF Cariboo region	Bill Chapman	FRBC CC96019-RE	Chilcotin district		

Forest Products

Title	Organization	Investigators	Project #	Location	Status	Products
Pulping, pulp and fibre properties of Interior BC spruce/pine/fir mixtures	Paprican	Paul Watson	AFRF 96-01		Active	
Development of Canadian plantation hardwoods	Paprican	Ken Hunt	AFRF 95-12		Active	
Suitability of using under-utilized species for pulp and paper – subalpine fir	Paprican	Paul Watson	AFRF 95-10		Active	

Title	Organization	Investigators	Project #	Location	Status	Products
Characterization of the wood quality of lodgepole pine with respect to wood composites	UBC Faculty of Forestry	Simon Ellis	AFRF 94-14		Inactive	
Spruce weevil effects on lumber recovery	UBC AFRF UBC Faculty of Forestry West Fraser	AFRF staff Stavros Avramidis Bruce McLean	AFRF 94-07		Inactive	
Biotechnology and lodgepole pine	UBC Faculty of Forestry	Linda Abraham Colette Breuil	AFRF 91-07		Inactive	
Pine mushroom ecology and distribution	MOF Cariboo region	Bill Chapman				
Investigation into the cultivation of <i>Hericium</i> as a commercial enterprise	MOF Cariboo region	Bill Chapman				

Genetics

Title	Organization	Investigators	Project #	Location	Status	Products
Forest genetics – realized gain demonstration planting	UBC Faculty of Forestry	Sally Aitken	AFRF 97-07		Active	
Genetic diversity in trees and forest pathogens	CFS	Eleanor White	CFS 5905	Province-wide		

Growth and Yield

Title	Organization	Investigators	Project #	Location	Status	Products
Calibration of ‘Prognosis’ for IDF forests	MOF Research Branch	Catherine Bealle	AFRF 92-09		Active	
Uneven-aged Interior Douglas-fir stand development and factors influencing tree and stand growth	CFS	Mike Bonnor Paul Boudewyn	AFRF 92-06		Active	
Survival, growth and yield of three native hardwood, lodgepole pine and interior spruce on five sites in the Cariboo	MOF Cariboo region	Nola Daintith	AFRF 91-08		Active	
Volume loss due to <i>Armillaria ostoyae</i> in the Moffat Supply Block	MOF Cariboo region	Don Doidge	AFRF 90-03		Inactive	

Title	Organization	Investigators	Project #	Location	Status	Products
Lodgepole pine provenance trial	UBC Faculty of Forestry	Oscar Sziklai	AFRF 88-13		Inactive	
Growth and yield plots located in the Gavin Lake block	MOF Cariboo region	MOF staff	AFRF 88-08		Active	
Potential growth of Interior Douglas-fir stands managed for timber and mule deer winter range	UBC Faculty of Forestry	Peter Marshall Albert Nussbaum	AFRF 88-03		Active	
Old Growth Site Index project	MOF Inventory Branch MOF Cariboo region	Albert Nussbaum Sam Davis		Province-wide	Complete	Report to Chief Forester
Permanent sample plots	MOF Inventory Branch Industry	Sam Davis		Province-wide	Ongoing	Growth prediction models Variable Density Yield Projections completed
Permanent sample plots in Gaspard and targeting missing information in MS and SBPS	MOF Cariboo region	Sam Davis		Gaspard, Satah	Ongoing	
Volume and decay in Chilcotin pine	MOF Cariboo region	Ron Osland		Chilcotin district	Complete	
Operational trial of superior provenances of interior spruce	MOF Silviculture Branch	Ralph Winter	MOF SX84118Q	Weaver and Mary Creeks		
Growth and yield of spaced residual stands of drybelt Douglas-fir	MOF Cariboo region		MOF EP987.03	Anderson Rd., Meldrum Cr., ST92P11JS		
Douglas-fir progeny	MOF Cariboo region		MOF EP976	Mitchell Bay, Skulow Lake		
Interior spruce growth and yield trial	MOF Kalamalka Research Station	Wayne Johnstone	MOF EP946.13	Gavin Lake		
Growth and yield Df trials	MOF Kalamalka Research Station	Wayne Johnstone	MOF EP922.9	Veith Lake		
Growth and yield Pl trials	MOF Kalamalka Research Station	Wayne Johnstone Rob Brockley	MOF EP922.3 MOF EP922	Ramsey Cr., Deserters Island, Raven Lake		
Maximizing the productivity of lodgepole pine in the Interior of BC	MOF Cariboo region		MOF EP886.13	Sheridan Creek		
Effect of optimum and conventional fertilization on the growth and yield of immature Pl	MOF Cariboo region		MOF EP886.13?	Crater Lake		
Progeny test site	MOF Cariboo region		MOF EP819			

Title	Organization	Investigators	Project #	Location	Status	Products
Lodgepole pine wind-pollinated progeny trial	MOF Cariboo region		MOF EP 770.20	Moffat Creek, Bowron Lake		
Douglas-fir provenance trial	MOF Cariboo region		MOF EP688.03	Mile 11 Wells Highway		
Interior spruce genetics	MOF Kalamalka Research Station	Gyula Kiss	MOF EP670.71.08	Frye Creek		
Interior spruce progeny trial	MOF Kalamalka Research Station	Gyula Kiss	MOF EP670	Mile 2 500 Road		
Lodgepole pine provenance trials	MOF Research Branch	Keith Illingworth	MOF EP657.06	13 sites throughout region		
Growth of uneven-aged Interior Douglas-fir stands	UBC Faculty of Forestry	Peter Marshall	FRBC CC97123-2RE	Vicinity of Williams Lake	Ongoing	Progress report
A commercial thinning trial in young lodgepole pine	West Fraser Mills Ltd.	Tom Turner	FRBC CC96028-RE	Quesnel	Ongoing	Progress report

Inventory and Mapping

Title	Organization	Investigators	Project #	Location	Status	Products
Remote sensing – landscape modeling	UBC Faculty of Forestry	Wolfgang Vrzal	AFRF 95-14		Active	
Regression analysis with remote sensing data	UBC Faculty of Forestry	Peter Murtha	AFRF 95-08		Inactive	
Vegetation inventory system for BC – pilot study	Timberline Ltd.	John Johnson	AFRF 93-08		Inactive	
Large scale photography digital frame cameras for forest inventory	MOF Inventory Branch	Verne Sundstrom				
	MELP Habitat Inventory Section	Dave Clark	AFRF 93-07		Inactive	
Global positioning system field testing	MOF Inventory Branch	Xiaoping Yuan				
	Durfeld Geological Management Ltd.	Rudi Durfeld	AFRF 92-12		Inactive	
Permanent sample inventory plots – Knife Creek	MOF Cariboo region	Sam Davis	AFRF 91-10		Active	
Assessment and monitoring of revegetation in forest clearcuts using Landsat data	UBC Faculty of Forestry	Arun Bansal Peter Murtha	AFRF 87-01		Inactive	

Operations

Title	Organization	Investigators	Project #	Location	Status	Products
Logging load recorder	FERIC UBC AFRF	Marv Clarke Ken Day	AFRF 96-09		Active	
Log measuring accuracy of cut-to-length harvesters and processors	FERIC	Bjorn Andersson	FRBC CC97139-ORE		Ongoing	Progress report
Commercial thinning in Douglas-fir near Quesnel, Williams Lake and Adams Lake using ground-based systems	FERIC	Janet Mitchell	FRBC CC96030-RE	TFL 5, Quesnel and Horsefly districts	Terminated	Progress report

Recreation

Title	Organization	Investigators	Project #	Location	Status	Products
Recreation site use study – Dorsey Lake	UBC Faculty of Forestry	P.J. Dooling	AFRF 87-04		Inactive	

Reforestation

Title	Organization	Investigators	Project #	Location	Status	Products
Biological control of fireweed	UBC Dept. of Zoology	Sam Hicks Judy Meyers	AFRF 98-04		Active	
Bioherbicide for <i>Rubus – Fusarium avenaceum</i>	CFS CFS	Simon Shamoun Simon Shamoun	AFRF 96-07		Active	
Relationship between forking and planting depth in young lodgepole pine plantations	UBC AFRF	AFRF staff	AFRF 96-06		Active	
Monsanto herbicide/conifer damage trial	Monsanto	Guy Paquette Jim Weston	AFRF 96-03		Inactive	
Regeneration performance on inverted humus and mineral mounds on wildlife in MSxv	MOF Cariboo region	Nola Daintith	MOF SX95102	Kloa Fire		
Comparison of Pli copper treated and untreated plug seedling growth within the SBS	UBC AFRF	AFRF staff	AFRF 94-08		Active	

Title	Organization	Investigators	Project #	Location	Status	Products
Douglas-fir release in the IDF	UBC Faculty of Forestry	Karel Klinka	AFRF 94-03		Inactive	
NIVMA installation – Fd/PI planting density trial in the SBS	Oikos Ecological Services	Harry Williams				
NIVMA installations – vegetation response to clump vs. mixed bag planting regimes	UBC AFRF	AFRF staff	AFRF 94-02		Active	
Planting microsite selection and conifer seedling performance	UBC AFRF	AFRF staff	AFRF 93-15		Active	
Shade tolerance of Douglas-fir and lodgepole pine in the IDF zone	UBC Faculty of Forestry	AFRF staff	AFRF 93-14		Active	
Effects of rapid on-site thawing of planting stock on seedling quality and establishment success	UBC Faculty of Forestry	Gordon Kayahara Karel Klinka	AFRF 93-13		Inactive	
Tree tubes: comparison of several types for vole damage	UBC Faculty of Forestry	Rob Guy Salim Silim	AFRF 93-11		Active	
	UBC AFRF	AFRF staff	AFRF 93-06		Inactive	
	CFE Crosby Supplies	CFE Crosby Supplies				
NIVMA installation – Tredegar brush blankets field trials	UBC AFRF	AFRF staff	AFRF 93-05		Active	
Aquamend polymer field trials	CFE Crosby Supplies	CFE Crosby Supplies				
Planting prescriptions to reduce spruce weevil damage	UBC AFRF	AFRF staff	AFRF 93-04		Inactive	
Palatability to mule deer of Douglas-fir seedlings from different latitudes	AquaMarket Corporation	Jack MacDonald				
	UBC AFRF	AFRF staff	AFRF 93-03		Active	
	Utah State University	Dawn Vernon	AFRF 92-10		Inactive	
Arbortech brush blankets for control of competing vegetation in conifer plantations	UBC AFRF	Bev Atkins Ken Day	AFRF 92-03		Inactive	
Bacterial inoculation of conifer seedlings with five different strains	UBC Faculty of Forestry	Chris Chanway Greg O'Neill	AFRF 91-05		Inactive	
Assessment of bacterial strains for effectiveness in promoting the growth of conifer seedlings on a forest site	BC Research	Paige Axelrood Reed Radley	AFRF 91-02		Inactive	
Effects of cold storage on physiology	UBC Faculty of Forestry	Al Balisky Phil Burton	AFRF 90-14		Inactive	

Title	Organization	Investigators	Project #	Location	Status	Products
Ecophysiological assessment of embryogenesis-derived seedlings (emblings) vs. seedlings	BC Research	Steve Grossnickle John Major	AFRF 90-11		Inactive	
Vision efficacy demonstration	MOF Cariboo region	Jane Perry	MOF SX89703	Tasse Creek	Inactive	
Monitoring of Velpar-damaged spruce	MOF Cariboo region		MOF SX89702	E of Quesnel		
Comparison and growth of container spruce seedlings	MOF Cariboo region		MOF SX89128	Deerhorn Creek		
Comparison of spring and summer planting	MOF Cariboo region		MOF SX89128	3 locations in WL district		
Field trials comparing survival and growth of container seedlings of different species	MOF Cariboo region		MOF SX89122C	Enterprise Rd., Gravel Cr., Tyee L.		
Browsing on seedling Ani-pel trial	MOF Cariboo region		MOF SX89121	Churn, Hazeltine Cr., Jacobie L.		
Plantation of Douglas-fir seedlings on a frost-prone site in the ICHe2	UBC AFRF UBC Faculty of Forestry	Ken Day Bart van der Kamp	AFRF 88-06		Inactive	
Effect of plant growth regulators and photoperiod upon the vigor of seedlings	UBC Faculty of Forestry	Dennis Lavender	AFRF 88-05		Inactive	
Growth of container spruce seedlings trial	MOF Cariboo region	Teresa Newsome	MOF SX88101C	Deacon, Sutherland & Prairie Creeks		
Stocktype trial: comparison of high and low elevation families three stock types of lodgepole pine	MOF Kalamalka Research Station	Mike Carlson Kalamalka staff	AFRF 87-06 MOF EP770.54		Inactive	
Comparisons of spruce and pine performance on a heavily burned ICHe site (demonstration)	UBC AFRF MOF Cariboo region	Ken Day Jane Perry	AFRF 87-03		Inactive	
Hardwood girdling at three phenological stages	MOF Cariboo region	Jane Perry	MOF SX87704C		Inactive	
Performance of interior spruce on D8 moulder prepared, V blade and untreated sites	MOF Cariboo region	Nola Daintith	MOF SX87506	Bosk Lake		
Fertilization of spruce plantations one or more years following planting	MOF Cariboo region		MOF SX87104C	MacKay River		

Title	Organization	Investigators	Project #	Location	Status	Products
Spruce plug seedlings survival and growth with slow release fertilization trial	MOF Cariboo region		MOF SX87103C	Whiskey Bridges		
Sheep grazing as a vegetation management tool in the Cariboo Forest Region	MOF Cariboo region	Teresa Newsome	MOF SX86711 SX85701	Horsefly district		
Sheep grazing on mixed species plantations	MOF Cariboo region	Teresa Newsome	MOF SX86711 SX85701	Horsefly district		
Velpar herbicide spot application trial	MOF Cariboo region		MOF SX86706C	Alice Creek		
Cooperative chemical root prune trial	MOF Cariboo region		MOF SX86124Q	Walker Mtn.		
Comparison of copper carbonate treated PI PSB 211 stock	MOF Cariboo region		MOF SX86108Q	Chezicut		
RGC trial	MOF Cariboo region		MOF SX86104C	Hendrix Lake		
Root culturing effects on the field performance of lodgepole pine	MOF Cariboo region		MOF SX86103Q	Moore Creek		
Comparative study of three herbicides and a manual brush control in the ESSFh	MOF Cariboo region		MOF SX85702C	MacKay River		
Comparison of interior Df PSB 313 stock from three nurseries	MOF Cariboo region		MOF SX85113C SX82113C	MacKay River, McKusky and Collins Creeks		
Effect of deep ripping on the performance of PI and Fd	MOF Cariboo region		MOF SX85112C	Skulow Lake		
Outplanting performance of interior spruce with different root growth capacities	MOF Cariboo region		MOF SX85110C	Lodi Lake		
Effect of screefing and scarification on growth and survival of seedlings in heavy grass	MOF Cariboo region	Nola Daintith	MOF SX84503	Beedy Creek		
Fertilizing interior spruce at time of planting	MOF Cariboo region		MOF SX84115Q	Nikwit Lake		
Lodgepole pine plug pruning trial	MOF Cariboo region		MOF SX84102Q	Skulow Lake		
Effect of container size on the field	MOF Cariboo region		MOF	Research Cr., Benny L.		

Title	Organization	Investigators	Project #	Location	Status	Products
Comparison of interior Df PSB 313 stock						
Stock quality monitoring trials	MOF Cariboo region		MOF FRDA 3.9	Gotchen Lake, Molybdenite Creek		
Herbicide rate and timing trial	MOF Cariboo region		MOF FRDA 3.41	Boss Creek		
The effect of mounding on spruce establishment and early growth	MOF Cariboo region	Warren Mitchell	MOF EPC8003	Matthew River		
Shelter cone trial	MOF Cariboo region		MOF EPC8002	TFL 5		
Blackwater prescribed burning trial	MOF Cariboo region		MOF EPC7802	Blackwater Road, km 55		
Direct seeding of encapsulated PI seed	MOF Cariboo region		MOF EPC7702	Tzenzaicut Lake		
Frost hardiness as a predictor of post-storage root growth capacity in conifer species	MOF Cariboo region		MOF EP964.7	Skulow Lake		
Comparison of slow release and soluble fertilizer applied at planting to interior spruce	MOF Cariboo region		MOF EP946.04	Benny Lake		
Seedling quality trials	MOF Cariboo region		MOF EP869.09	Bendixon Lake, Mary and Boss Creeks		
Frost hardiness as a predictor of post-storage ??	MOF Cariboo region		MOF EP869.07	Skulow Lake		
Interior spruce planting delay trials	MOF Cariboo region	Alan Vyse	MOF EP859.11	24K Road, Antoine Lake		
Response of Interior spruce to long delays between burning and planting	MOF Cariboo region	Teresa Newsome	MOF EP859.11	McKuskey Creek		
Hot planting Interior spruce on freshly logged and burned sites	MOF Cariboo region	Alan Vyse	MOF EP859.10	5 sites in Quesnel and Horsefly districts		

Title	Organization	Investigators	Project #	Location	Status	Products
Early growth and survival of Interior spruce	MOF Cariboo region	Alan Vyse	MOF EP859.06 EP859.04	9 sites in Quesnel and Horsefly districts		
Interior spruce stock types and fertilization trials	MOF Cariboo region		MOF EP858.04	McKusky Creek		
Undercutting nursery seedling trial	MOF Research Branch	Bob van den Driessche	MOF EP846.03	3500 Road		
Improving plantation performance of Df and Pl with mechanical site preparation and fencing	MOF Cariboo region		MOF EP841.07	Hances Timber, Sheridan Creek		
Site preparation options for improving plantation performance in low precipitation areas	MOF Cariboo region		MOF EP841.06	Beedy and Sheridan Creeks, Em Fire, Axe Lake		
Direct seeding trial	MOF Cariboo region		MOF EP841.05	Blue Lake		
Patch scarification trials	MOF Cariboo region		MOF EP841.04	CP "X", Third and Sto Fires		
Seedling assessment trials	MOF Cariboo region		MOF EP836	Fritz Creek		
Outplanting of Nibex spaced stock	MOF Cariboo region		MOF EP786.06	McKusky Creek		
Cariboo region stock trial	MOF Cariboo region		MOF EP697	Gavin and Boscar Lakes		
Toppling pine stability trial	MOF Cariboo region		MOF EP1169.01	Jackson Lake		
Native hardwood reforestation trials	MOF Cariboo region		MOF EP1136 EP1136.01	5 locations in 4 districts		
Legume and grass seeding for brush control in the ICH and ESSF zones	MOF Cariboo region	Ordell Steen	MOF EP1105 FRDA 3.68	5 sites in Horsefly district		
Frost prone sites in the Central Interior plateau: recognition and management	MOF Cariboo region	Ordell Steen	MOF EP1103			
Photoperiodic cultural treatments to induce dormancy of spruce in northern nurseries	MOF Cariboo region		MOF EP1042.03 EP1042.02 FRDA 1.36	Doreen Creek, Antoine Lake		
Seedling quality frost hardiness trials	MOF Cariboo region		MOF EP869.07	Skulow Lake		

Title	Organization	Investigators	Project #	Location	Status	Products
Root form of planted PI: effect of container, planting technique and microsite	MOF Cariboo region	Teresa Newsome Bill Chapman				
Post-logging treatment options for natural regeneration of lodgepole pine	MOF Cariboo region	Ordell Steen Ray Coupé	MOF EP1144			
Legume and grass seeding for brush control on mechanically prepared backlog brushfield sites in the ICH and ESSF	MOF Cariboo region	Ordell Steen Ray Coupé				
Forest seedling health clinic	CFS	J. Dennis	CFS 3005	Province-wide		

Riparian and Hydrology

Title	Organization	Investigators	Project #	Location	Status	Products
Stream benthos response to riparian management	UBC Faculty of Forestry	John Richardson	AFRF 96-04		Active	
Modeling riparian corridors as linkages	UBC Faculty of Forestry	Susan Glenn	AFRF 95-06		Inactive	
Blue Lead Creek suspended sediment monitoring	MOF Cariboo region	Patrick Teti		Blue Lead Cr, Horsefly	Inactive	
Horsefly River suspended sediment monitoring	MOF Cariboo region	Patrick Teti		Horsefly R.		Progress report
Effects of logging roads and road deactivation on surface erosion and hydrology	MOF Cariboo region	Patrick Teti Bill Chapman	FRBC CC96020-RE	Williams Lake and Horsefly districts, UBC AFRF	Complete	Final report
Coliform bacteria in drinking water	MOF Cariboo region	Patrick Teti			Inactive	Pilot study completed
Pilot study of riparian biological communities in the MSxv – a first look at vegetation, breeding bird and amphibian communities	MOF Cariboo region	Michaela Waterhouse Harold Armleder Rick Dawson Ray Coupé				
Riparian corridors	Lignum Ltd.	Dave Conly	FRBC CA-60-96-005	Cariboo Forest Region	Complete	Final report
Stream temperature monitoring of Horsefly River	MELP Cariboo region	Rob Dolighan			Active	

Silvicultural Systems

Title	Organization	Investigators	Project #	Location	Status	Products
Silvicultural systems windfirmness pilot study	UBC Faculty of Forestry	Steve Mitchell	AFRF 93-12		Inactive	
Development of stand goals for small group selection management systems on mule deer winter range	UBC AFRF UBC Faculty of Forestry	Ken Day Peter Marshall Gordon Weetman	AFRF 93-01		Active	
Seedbed ecology in shelterwood sites	UBC Faculty of Forestry	Phil Burton	AFRF 92-04		Active	
Uniform shelterwood systems for even-aged Douglas-fir/lodgepole pine stands in the SBSdw1 subzone	Weldwood of Canada Ltd. UBC AFRF MOF Cariboo region	Chris Burger Ken Day Michaela Waterhouse	AFRF 89-03 MOF EP1104.01 FRBC CC96027-RE	Gavin Lake, UBC AFRF, Beedy Creek	Active	Self-guiding trail with pamphlet MOF Extension Notes
Group selection systems to maintain caribou habitat in high elevation forests in the Cariboo Forest Region	MOF Cariboo region	Michaela Waterhouse Harold Armleder Teresa Newsome Ordell Steen Patrick Teti	MOF EP1104.02 FRBC CC96027-RE	Blackbear and Grain Creeks (ESSFwc3)	Active	Self-guiding trail with pamphlet MOF Extension Notes
Group selection systems pilot project	MOF Cariboo region	Michaela Waterhouse	MOF EP1104.02	Blackbear Creek, CP113		
Silvicultural systems to maintain northern caribou habitat in lodgepole pine forests in the MSxv and SBPSxc subzones	MOF Cariboo region	Michaela Waterhouse Harold Armleder Teresa Newsome Ordell Steen Bill Chapman	MOF SS067 FRBC CC96027-RE	Satah Mtn.	Active	
Northern caribou silvicultural systems adaptive management block	MOF Cariboo region	Michaela Waterhouse	MOF SS067	Satah Mtn. Chezacut	Active	
Alternative silvicultural systems for Douglas-fir stands on heavy snowfall mule deer winter range	MOF Cariboo region	Michaela Waterhouse Harold Armleder	MOF SS525 FRBC CC96027-RE	Viewland Mtn.		
Natural regeneration in managed uneven-aged Douglas-fir stands in the Cariboo Forest Region	MOF Cariboo region	Michaela Waterhouse	FRBC CC96027-RE	IDF	Complete	Final report

Social

Title	Organization	Investigators	Project #	Location	Status	Products
Forensic entomology – burial	SFU Dept. of Biol. Sciences	Gail Anderson	AFRF 95-04		Inactive	
Forensic entomology – above ground	University of Arkansas SFU Dept. of Biol. Sciences	Sherah VanLaerhoven Gail Anderson	AFRF 95-03		Inactive	
Art in the forest	Society for Public Art Projects	Leigh Dillon Rick Gibson	AFRF 92-11		Inactive	

Soils

Title	Organization	Investigators	Project #	Location	Status	Products
Evaluation of new methodology for measuring soil disturbance	MOF Cariboo region	Bill Chapman	FRDA II 3.3 BC-IR33			
Development of soil degradation indices for small tractor skidroads	FERIC MOF Cariboo region	Bill Watt	FERIC 409	Cariboo Lake		

Stand Management

Title	Organization	Investigators	Project #	Location	Status	Products
Suitability of native hardwoods for reforestation and their effect on long-term soil nutrient status	MOF Cariboo region	Teresa Newsome				
Mixedwood issues in the ICH	MOF Cariboo region	Teresa Newsome				
Siberian larch growth and performance trial	UBC AFRF	AFRF staff	AFRF 97-03		Active	
Douglas fir underplant trial	MOF Cariboo region		MOF EP841.08	6 sites in 3 districts		
Effect of aspen density and stocking on the performance of coniferous stands	MOF Cariboo region		MOF EP1152.02	6 sites		
Treatment development for rehabilitating ESSF backlog brushfields	MOF Cariboo region		MOF EP1021 FRDA 1.17	13G Road		
Pine ingress study	MOF Cariboo region	Ordell Steen	MOF EP1144	5 sites		

Title	Organization	Investigators	Project #	Location	Status	Products
Hardwood and mixedwood research in the Cariboo Forest Region	MOF Cariboo region	Teresa Newsome	FRBC CC96025-RE	Cariboo Forest Region	Ongoing	Progress report

Stand Tending

Title	Organization	Investigators	Project #	Location	Status	Products
Growth response to juvenile spacing in uneven-aged Interior Douglas-fir stands	UBC AFRF	AFRF staff	AFRF 98-05		Active	
Multi species spacing trial	UBC Faculty of Forestry	Peter Marshall				
Height repressed lodgepole pine rehabilitation trial	UBC AFRF		AFRF 98-03		Active	
	MOF Cariboo region		MOF SX97403C	Rosita Fire		
Incremental silviculture in Interior Douglas-fir stands	UBC AFRF	AFRF staff	AFRF 96-05		Active	
Juvenile spacing lodgepole pine by girdling (demonstration)	UBC AFRF	Ken Day	AFRF 89-05		Active	
Spacing regimes for maintenance of habitat diversity	MOF Cariboo region	Harold Armleder	AFRF 89-04		Active	
Spacing regimes to develop mule deer winter range habitat	MOF Cariboo region	Harold Armleder	AFRF 88-11		Active	
	UBC AFRF	Ken Day				
Christmas tree culture for School District 27	UBC Faculty of Forestry SD 27	Peter Marshall Brent Cheek	AFRF 88-10		Inactive	
Assessing aspen-pine competition in young stands in the Cariboo Forest Region	UBC AFRF	Ken Day				
	MOF Cariboo region	Teresa Newsome				
Treatment options of repressed pine stands in the Cariboo Forest Region	MOF Cariboo region	Teresa Newsome				
Pine spacing trial	MOF Cariboo region		MOF SX87407C	100 Road		
Spacing trials for interior Douglas-fir	MOF Cariboo region		MOF EP922.14	Doreen Lake		
Interior PI spacing trials	MOF Cariboo region		MOF EP964.18 EP964.17 EP 922.11	Chilko Newton, Kloakut Lake, Lower Pantage Creek		

Title	Organization	Investigators	Project #	Location	Status	Products
Douglas-fir spacing trial	MOF Kalamalka Research Station	Wayne Johnstone	MOF EP922.13	Joes Lake	Active	
Comparison of cottonwood whips with rooted naturals to restock wetter NSR strata	UBC AFRF	AFRF staff	AFRF 95-11			
Survival and growth of Siberian larch versus five native species	MOF Cariboo region		MOF SX87110C	Palmer L. Rd.; Deacon, Sutherland & Prairie Creeks		
Species trial, including white pine, in the ICHb subzone	MOF Cariboo region		MOF EP904.1	Research & Hazeltine Cr.'s, Clearbrook Wet		
White pine trial	MOF Cariboo region		MOF EP904.01	Clearbrook Dry, McKusky Low, Benny L.		

Visual Quality

Title	Organization	Investigators	Project #	Location	Status	Products
Visual quality modeling of partial cutting near Gavin Lakes	UBC AFRF	Ken Day	AFRF 98-06		Active	
Visual impact modeling – Gavin Lake	UBC Faculty of Forestry	Stephen Sheppard Jennifer Morrison	AFRF 95-07		Inactive	

Wildlife

Title	Organization	Investigators	Project #	Location	Status	Products
A comparative study into wildlife use of leave strips within juvenile spaced blocks in central Interior BC	Exchange student, Bangor, UK	Rob Eldred	AFRF 97-04		Inactive	
Bat research – Gavin Lake	Consulting Naturalist	Anna Roberts Gina Roberts	AFRF 95-13		Inactive	
Wildlife diversity in shelterwoods	MELP Cariboo MELP Cariboo region	Jim Young Dagmar Keisker Herb Langin	AFRF 92-01		Inactive	

Title	Organization	Investigators	Project #	Location	Status	Products
Diversity of small mammals in the IDFb2: preliminary survey on mule deer winter range at the Knife Creek block	MOF Cariboo region	Harold Armleder	AFRF 91-09		Inactive	
Relationship of small mammal populations to uniform even-aged shelterwood systems	UBC Faculty of Forestry	Thomas Friese Tom Sullivan Charlotte von Trebra	AFRF 91-04		Inactive	
Integration of timber and mule deer management on the Gavin Lake block: a case study in integrated management	UBC AFRF	Ken Day	AFRF 91-01		Inactive	
Cariboo fisher transplant study	SFU	Alton Harestad	AFRF 90-02		Inactive	
Mule deer pellet group transects in the Knife Creek winter range	MELP Cariboo region	Darryl Hebert	AFRF 89-08		Inactive	
Mule deer/forest management research	MOF Cariboo region	Harold Armleder Rick Dawson Michaela Waterhouse	AFRF 87-00 MOF EP903	UBC AFRF Knife Creek block	Active	
The effects of spacing on wildlife in IDF sands in the central Interior of BC	MOF Cariboo region	Harold Armleder	MOF EP1149			
Habitat use of northern caribou in relation to harvesting activities	MOF Cariboo region	Harold Armleder				
Timber and mule deer management coordination	MOF Cariboo region	Harold Armleder				
Mule deer habitat mapping	MOF Cariboo region	Rick Dawson Harold Armleder				
	MELP Cariboo region					
The relationship of forest stand attributes to snow interception on mule deer winter ranges	MOF Cariboo region	Rick Dawson Harold Armleder				
Integrated forestry – mule deer management	MOF Cariboo region		MOF EP903.01	Beaver Valley, Knife and Churn Creeks		
Mule deer forestry study	MOF Cariboo region		MOF EP903	Big Lake TFL 5		

Title	Organization	Investigators	Project #	Location	Status	Products
Effects of spacing on wildlife habitat in IDF	MOF Cariboo region	Harold Armleder	MOF EP1149	Knife Creek		
Research supporting caribou habitat conservation	MELP Cariboo region	Jim Young		ESSF, MS	Active	