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A PROFILE OF NATIVE AGRICULTURE IN THE CARIBOO/CHILCOTIN

Prepared for B.C. Ministry of Agriculture, Fisheries and Food

By Watt Agriculture Services
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Survey and Technical Assistance Provided by Irene Sure

DEFINITIONS

Acre Foot: The volume of irrigation water that would cover one acre to a depth of one foot.

Animal Unit Month (A.U.M.): The amount of forage consumed by one cow per month. 26 lbs of dry matter based on a 1,000 pound cow, with or without her calf.

Brassicas: Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Turnips

Certificate of Possession (C.P.): Evidence of an Indian's right to possession of the reserve lands described therein.

pH: A measure of acidity-1, or alkalinity -14, with 7 being neutral.

Root Vegetables: Carrots, Turnips, Beets, Parsnips, Onions, Potatoes

WIAC: Western Indian Agriculture Corporation

WILA: Western Indian Lending Agency

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INTRODUCTION

Historically, a number of agriculture studies and reports have been completed on reserve lands within the Cariboo, which for the most part have been poorly utilized due to technical complexity. The intent of this profile is to present summary information on native agriculture producers from throughout the Cariboo/Chilcotin. The profile was compiled with a great deal of input from native ranchers as well as band staff. This profile is intended to provide a useful reference for both natives and non-natives in the agriculture sector as well as by support services.

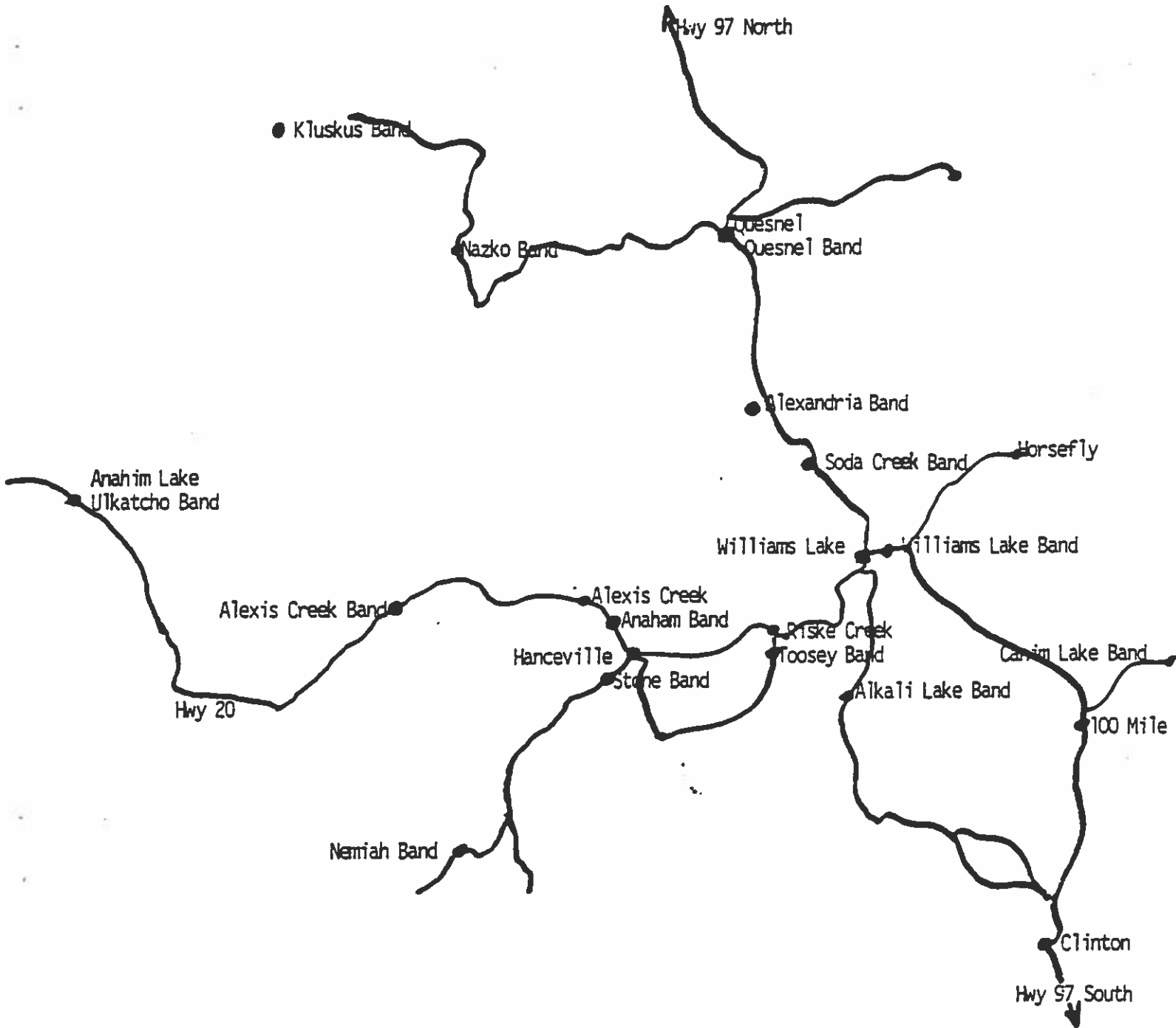
This agriculture profile was initiated to identify the following:

- 1) Current native agriculture production levels in the Cariboo/Chilcotin.
- 2) The opportunities and constraints facing the native agriculture producers.
- 3) Previous agriculture initiatives and the reasons for their success and/or failure.
- 4) Specific educational requirements of local producers with respect to agriculture.

With this information, the B.C. Ministry of Agriculture, Fisheries and Food, Western Indian Agriculture Corporation (WIAC), and the local Indian Bands within the Cariboo/Chilcotin have a starting point from which they can:

- 1) Set realistic goals to improve the economic stability of the agriculture sector.
- 2) Establish a delivery methodology to work toward these goals.
- 3) Measure performance against planned objectives.

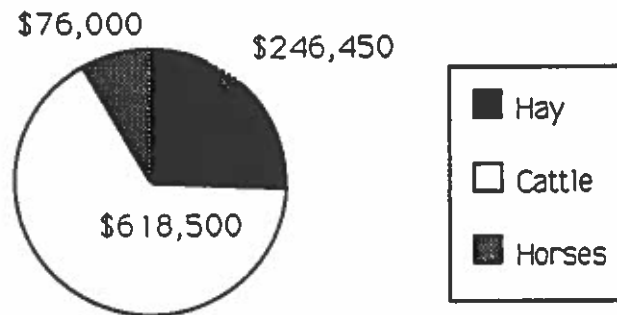
CARIBOO/CHILCOTIN REGION



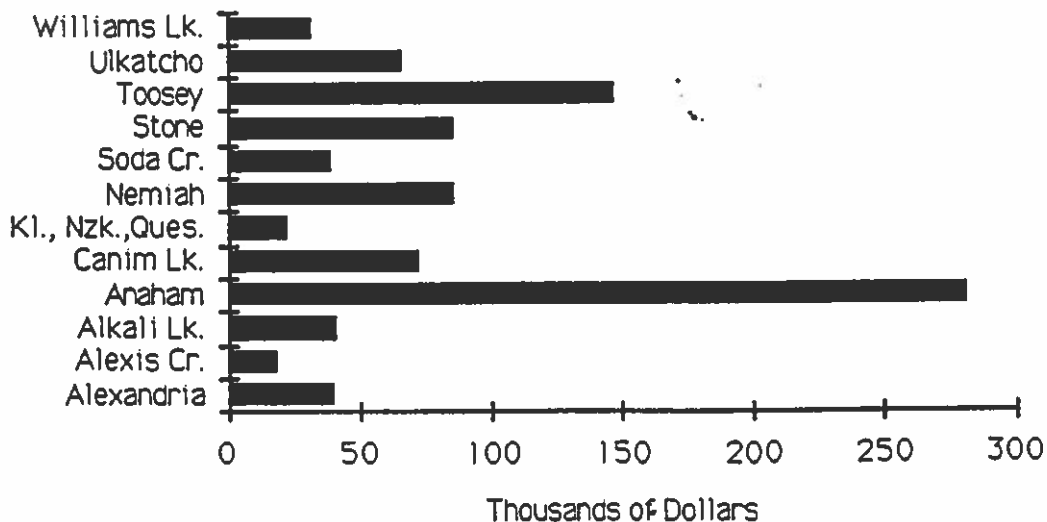
AN OVERVIEW OF NATIVE AGRICULTURE IN THE CARIBOO/CHILCOTIN

Except where specified, the statistics in this profile have been collected through extensive consultation with native ranchers, band staff, and local ranchers. The author's work experience in the Cariboo/Chilcotin insured that the statistical uncertainty was minimized.

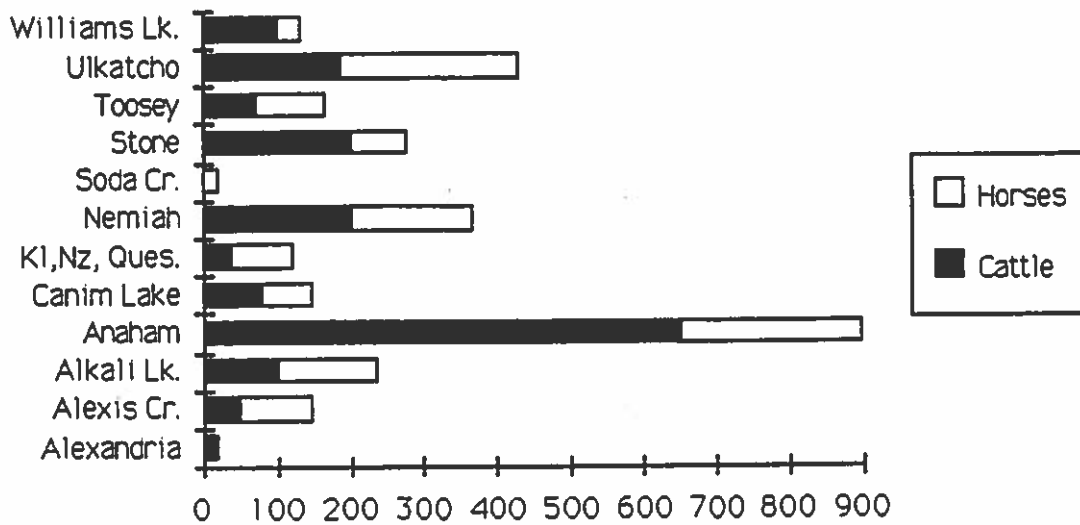
Value of Agriculture Sales By
Commodity



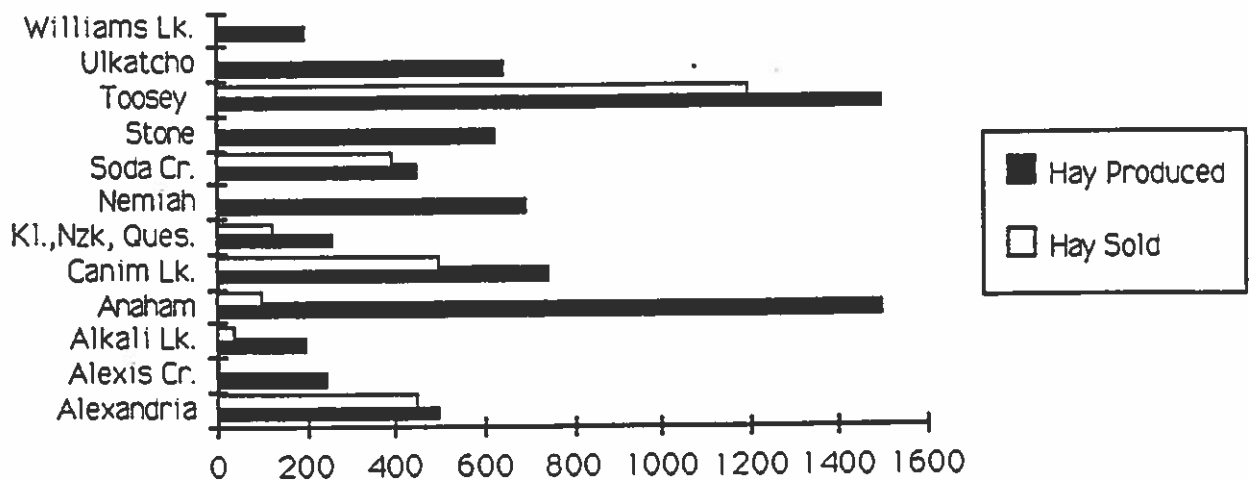
Value of Agriculture Sales By Band



Number of Livestock By Band



Tons of Hay Produced & Sold Off Reserve By Band



AGRICULTURE BY BAND

ALEXIS CREEK BAND

Resources

This band consists of 32 Indian Reserves (IR's) totalling 9,867 acres. The population is listed at 242, with the majority of people living on IR #1. The remaining 73 residents live on IR's 14,17,19, 21, & 34.

The Chilanko River forms part of the Southern Boundary of IR#1, where the elevation ranges from 3,000 to 3,600 ft. The annual precipitation is 12.5 inches and the frost free period is 60 days. (Leskiw et al 1973) IR#1 can be characterized by cold winters, dry summers and a short growing season. A positive factor however is the southern exposure of the arable land.

Agriculture Potential

There are 600 acres of arable land on IR#s 1 and 1A, of which 420 acres could be easily irrigated. (Leskiw et al, 1973) With irrigation and fertilizer, high yields of selected forage crops could be obtained. Oats and barley for hay or silage are also viable alternatives. Cool hardy vegetables could also be grown for local consumption.

Agriculture production on the other reserves is restricted by higher elevations, poorer soils and limited access. These reserves however contain vast areas of organic meadows, where a huge potential for native hay production exists, if management and access problems could be overcome.

History

According to local ranchers, many years ago when the band members lived back on the meadows, they collectively ran approximately 800-1,000 head of cattle. Since the population was moved down onto IR#1, to accommodate formal schooling etc, the hay production on the remote reserves, as well as the cattle numbers have dropped dramatically.

More recently 8-10 Band members have been assisted by Special ARDA to purchase from 10-50 head of cattle, as well as some haying equipment, as at the time, some hay was still being put up loose by horses.

Redbrush Indian Enterprises was formed in 1975 with the development of hay land on IR #1, and the purchase of irrigation and haying equipment. Funding and financing was provided by Special ARDA and WIAC. The irrigation system has been utilized very little since it's early years, consequently forage production on IR #1 has suffered. Cattle numbers have also decreased in recent years. This decline in agriculture production is due to several factors:

- 1) Lack of technical training and expertise in regards to the irrigation and haying equipment.
- 2) Many young people do not have an interest in agriculture due to the limited financial returns.
- 3) Most of the productive hay meadows have very limited access, which is not compatible with the modern lifestyles.

Range & Water Entitlements

The band does have a block of crown range for livestock grazing where the individual ranchers are responsible for renewing their permits and paying their grazing fees. The band has a water licence on Chilanko River for 1,000 acre feet of irrigation water, which should be adequate for any present and future agriculture production on IR#1. There are also 8 or 9 water licence applications currently in process, to facilitate water management on a few of the back reserves.

Present Production Levels and Marketing

There are approximately 50 head of cattle and 100 head of horses owned by the band members collectively. At present, 250 tons of hay are produced on the reserves, with all of this being utilized by band members' livestock. It is estimated that 30 head of calves are sold every fall through the Williams Lake Stockyards for an approximate value of \$15,000. Dollar values for horse sales are very sketchy, however an estimate of 10 horses are sold annually off reserve, which represents a value of \$4,000.

Employment

There are presently 6 band members self employed in ranching on a part time basis. Some of these members also work seasonally for local non-native ranchers. Agriculture enterprises have been family run in the past with no economic employment generated, and it is thought that this trend will continue in the future.

Reserve Land Tenure and Allocation

Land possession is handed down to band members through the tradition of inheritance. Three band members hold Certificates of Possession.

Constraints Identified

- Financing
- Lack of agriculture interest within the younger generation.
- Lack of continuity in agriculture training.

Range And Water Entitlements

The band does have a block of crown land for livestock grazing, which should accommodate both their present and planned grazing needs. Individual ranchers are responsible for renewing their range permits, and paying their grazing fees. The band has a water licence on Minton Creek for 1,228 acre feet of irrigation water, which should be adequate for any present and future agriculture production on IR#1.

Present Production Levels and Marketing

There are approximately 200 head of cattle and 80 head of horses owned by the band members collectively. An estimate of current hay production at Stone is 650 ton, all of which is utilized by livestock on the reserve. 160 head of calves are sold every fall and/or spring through the Williams Lake Stockyards for an estimated value of \$80,000. Most ranchers at Stone are not satisfied with the present marketing system, as they feel both the trucking and stockyard charges are too costly.

An average of 15 head of horses are sold annually off reserve. Assuming they are mostly sold for fox meat and their average weight is 1,000 lbs, this represents a total income of \$6,000. These horse sales occur both through private treaty and the stockyards. A small commercial vegetable enterprise at Stone reports gross annual sales at \$1,000. The produce is marketed directly to other Indian Bands as well as to a local store.

Employment

There are presently 7 band members self employed in ranching on a year round, part time basis. During the haying season, the labor requirement increases, however it is mostly filled by family members and therefore few wages are actually paid. One producer is self employed part time during the summer months on a commercial vegetable operation. This enterprise generates a small amount of employment during the harvesting season, however with growth in this sector, a greater potential for employment exists.

Reserve Land Tenure and Allocation

Most of the agriculture lands are handed down through the tradition of inheritance. In recent years, agriculture producers have had their land possession formalized through a Band Council Resolution.

Constraints Identified

- Financing: Problems with Western Indian Lending Agency (WILA)
 - 1) Interest rates too high
 - 2) In some instances, cheques for cattle purchases have been sent directly to the stockyards, where old or low quality cows have been bought for the native rancher. The ranchers want the opportunity to select their cows for themselves.
- Lack of Capital investment - a recently developed area requires irrigation, and the ranchers do not have the finances to purchase the mainline. (This is also due to the constraint listed below)
- Lack of continuity in quality agriculture advisory services.

In 1991 a community garden was planted with the help of a Canadian Executive Service Organization (CESO) consultant. The Band's irrigation equipment was used and all the produce was utilized by band members.

Range And Water Entitlements

The band does not have any crown grazing land. According to the range agrologist for the B.C. Ministry of Forests, years ago, two band members did have grazing permits for a short time, but they were probably lost through not completing their application for permit renewal. One rancher in particular would like to increase his herd, but according to him, the present stocking capacity on Toosey Reserve is saturated, so that he requires crown grazing land to accomodate an expansion in his cow herd. According to the range agrologist for this area, the crown range around Toosey is presently permitted to capacity with very few new opportunities likely in the future. Under the present system, where new opportunities arise, priority is given to ranchers who presently or recently have had a permit in the area.

Toosey presently has a licence on Riske Creek and Davis Creek for 681 acre feet and 90 acre feet of irrigation water, respectively. The band apparently had a licence for twice this amount in the past, however it was reduced, because at the time the band was not utilizing it.

Present Production Levels and Marketing

Current hay production at Toosey is 1,500 tons per year. Based on their current irrigation capacity, they have reached their potential for forage production (Leskiw et al, 1973). Band members utilize 300 ton of this hay, with the remaining 1200 ton sold off reserve with a potential value of \$108,000. There are approximately 70 head of cattle and 100 head of horses owned by the band members collectively. 60 head of calves are sold every fall through the Williams Lake Stockyards for an estimated value of \$30,000. The main cattle rancher at Toosey feels that the current marketing method is unsatisfactory for two reasons:

- 1) Because there are so many small ranchers, natives are often treated unfairly. e.g.: Indian cattle are left until last when all the buyers have left, regardless of whether they were hauled in early or not.
- 2) Stock yard charges are extremely high, therefore the natives are faced with both high marketing costs and lower than average selling prices.

An average of 25 head of horses are sold annually off reserve, for an estimated value of \$10,000. These horse sales occur both through private treaty and the stockyards.

Employment

There are presently 2 band members self employed in cattle ranching on a part time year round basis and 5 seasonal workers who are paid through the hay production enterprise.

TOOSEY BAND

Resources

Toosey Band consists of 4 Indian Reserves (IR's) totalling 6,381 acres. The population is listed at 67 with all but one of the members living on IR#1. Riske Creek flows across IR#1 in a south east direction. The elevation of this reserve ranges from 2300 feet at the creek bottom to 3500 feet in the uplands. The annual precipitation is 11 inches and the frost free period ranges from 75 days (Riske Cr) to 100 days on the upper slopes. (Leskiw et al, 1973) The upland area of IR#1 has a warmer climate than the Riske Cr. Valley, which tends to act as a frost pocket. Unfortunately, the irrigable land lies in this frost pocket area.

Agriculture Potential

According to a previous study (Leskiw et al, 1973) and Bruce Watt (pers. comm.), with the present irrigation capacity, IR#1 contains approximately 300-500 acres of land suitable for forage production. These acreages vary depending on the amount of summer rainfall, which dictates the irrigation requirement for that growing season. If the water storage capacity at Toosey could be increased, forage yields on these areas would increase sharply, and an additional 300 acres of upland could be brought into production. The remaining land on IR#1, as well as the other reserves holds some grazing potential, depending on range condition and land use policies within the band.

Particularly on the southern facing slopes of IR#1, root crops and other cool loving vegetables could be grown for local consumption.

History

Over the past five years there has been significant advances made in agriculture development and Toosey:

- 1) Two major dams have been built for irrigation water storage.
- 2) 100 acres of alfalfa fields developed.
- 3) A new irrigation system installed.
- 4) Fields have been fenced and cross fenced.

Funding and financing for the above projects was provided by Special ARDA, First Citizens and the Band. These projects have all been successful to date and are ongoing. Plans for the future are to expand the water storage for irrigation and to explore the feasibility of growing alternate crops. The success of Tooseys' agriculture initiatives is largely a result of the band hiring a very competent agriculture manager, who has remained with the band long enough to realize some results. In addition, this band markets their hay directly, rather than through a cow/calf enterprise, where dollars are often lost due to management inefficiencies.

STONE BAND

Resources

Stone Band consists of 5 Indian Reserves (IR's) totalling 5,304 acres. The population is listed at 161, with all of the band members residing at IR #1 for the greater part of each year. The Chilcotin River forms the northern boundary of IR's 1 and 1A, where the elevation ranges from 2,250 to 3,250 ft. The annual precipitation is 11.5 inches and the frost free period on the lower bench is 75-80 days. (Leskiw et al, 1973)

Agriculture Potential

IR#1 and 1A contain approximately 700 acres of arable land (Leskiw et al,1973). With irrigation, this reserve is well suited to the production of forage and cereal crops for livestock, as well as root vegetables and brassicas for human consumption.

Soil salinity has proven to be a limiting factor for crop production on IR#4, however with proper fence maintenance, it provides significant grazing value. Located along the Big Creek Road, IR#2 shows good grazing potential, however without water controls, the meadow area has limited value for hay production. Although access is somewhat restricted, IR#3 has great potential for livestock grazing as well as native hay production.

History

The ranching sector at Stone has evolved into three main groups, each of which run their cattle separately. There have been a large number of agriculture development projects completed by both the band and individual producers over the past 10 years. These projects include:

- hayland development
- purchases of farm machinery and irrigation equipment
- purchases of cattle
- perimeter fencing

Funding and financing for these initiatives was provided by Special ARDA, WIAC and Employment and Immigration Canada.

With the exception of IR#4 with it's salinity problems, most of the land that was developed is still in production. The farm machinery and irrigation equipment has been well utilized, however depending on the owner, the life of this equipment may have been somewhat reduced due to poor maintenance and repair practices. Again, depending on the individuals, retention of cattle numbers vary dramatically. Where rapid sell down of cattle herds have taken place, it can usually be attributed to a lack of business management skills, combined with social and economic problems.

The perimeter fences have been useful grazing management tools and are maintained annually during a week long spring work bee that most band members take part in.

Reserve Land Tenure and Allocation

Most of the agriculture lands are handed down through tradition. One of the cattle ranchers acquired his land through a Band Council Resolution.

Constraints Identified

- Financing: Commercial banks inaccessible
- WILA's interest rates are far higher than chartered banks.
- Need for a Ranch Management Committee to be set up
- Funding organizations aren't staffed by people who have knowledge in the ranching industry.

KLUSKUS, NAZKO AND QUESNEL BANDS

Due to the similar geography and limited agriculture activity of these bands, they have been grouped together for discussion purposes.

Resources

Kluskus Band consists of 17 reserves totalling 4,083 acres.

The population of 69, are distributed over 5 of these reserves.

Nazko Band consists of 18 reserves totalling 4,556 acres.

The population of 108 reside on 6 of these reserves.

Quesnel Band consists of 4 reserves totalling 1,690 acres.

The population of 21 all reside on IR#1, which is located within the City of Quesnel.

Agriculture Potential

Little information is available on the agriculture potential of these bands, although it is thought to be limited largely by the short growing season. The Kluskus and Quesnel Bands are both exploring the viability of Fallow Deer Farming on their reserves. Nazko Band is more interested in pursuing tourism, through a trail riding business from Nazko to Bella Coola. They currently run trail rides along the Grease Trail (Lower Blackwater area).

History

According to band members, agriculture activity at Kluskus and Nazko has been limited in the past, with very little or no funding agency involvement. Quesnel Band recently developed 130 acres of hayland, partially funded by Special ARDA. The land is still being utilized for hay production although the yields appear relatively low.

Range and Water Entitlements

The three bands do not have any crown grazing land and of those interviewed, there was no recollection of band members holding range permits in the past. Nazko Band is currently making application for a trail riding permit along the Grease Trail for grazing their horses. The Range Agrologist for the Quesnel District Ministry of Forests is aware of their interest, but said she has not yet received an application. She was not able to comment on whether this permit will be issued as it will depend on:

- The Band's proposal (number of horses and duration)
- The forage available in the application area.
- Other permit applications in the same area

Nazko Band has water rights on Michelle Creek for 125 acre feet of irrigation water. Kluskus and Quesnel Bands have no water licences currently and are not aware of holding any in the past.

Present Production Levels and Marketing Livestock

There are approximately 30 head of cows and 85 horses owned by Nazko and Kluskus Band members collectively. There is apparently no livestock currently on the Quesnel Reserves. Approximately 24 calves are sold annually by Nazko and Kluskus band members through the Williams Lake Stockyards for an estimated value of \$12,000. Very few horses are sold annually off these reserves with no reported revenues from this source.

Hay

Hay production at Kluskus is 100 tons and at Nazko is 40 tons, all of which is utilized by livestock on those reserves. Quesnel Band presently produces 125 tons of hay per year, all of which is sold off reserve to local ranchers for an estimated value of \$11,250.

Employment

- | | |
|---------|--|
| Kluskus | - 2 individuals ranching on a year round, part time basis. |
| Nazko | - 1 individual ranching on a part time basis. |
| Quesnel | - 3 to 4 seasonal workers employed in hay production. |

Reserve Land Tenure and Allocation

On Kluskus and Nazko Reserves, the land is handed down through the traditional system of inheritance. The Quesnel Band make verbal agreements with those members who wish to use the land.

Constraints Identified

- Kluskus - Young people are not interested in the agriculture way of life.
- Agriculture is low on the band priority list.
- Shortage of hay land.
- Nazko - Financing: require assistance in accessing funds for start up capital.
Reserve Land Tenure Problems: older people have most of the agriculture land and it isn't being passed down to the younger generation so a lot of land is not being utilized.
- Quesnel - Financing - lack of collateral
Funding - very hard to obtain

ALKALI LAKE BAND

Resources

This band consists of 19 Indian Reserves (IR's) totalling 9,786 acres. The population is listed at 290 with the majority of people residing on IR#1. The remaining 30 residents live on IR#s 2, 4, 13 and 18.

Alkali Creek flows through IR#1 where the elevation varies from 2,300 ft. at the valley bottom, to 3,000 ft. The annual precipitation is 14.5 inches and the frost free period is 70 days. (Leskiw et al 1973) The weather at IR#1 is characterized by cold winters and hot summers. The elevation of IR#s 4 and 4a range from 3,000 ft. to 5,833 ft. and the frost free period is 75 - 89 days. (Ross et al 1987)

Agriculture Potential

IR#1 includes approximately 600 acres, of which 190 acres are suitable for agriculture development. (Leskiw et al 1973) Of the 862 acres on IR#s 4 and 4a, 113 acres are potentially arable. (Ross et al 1987) With adequate irrigation and fertilizer, high yields of forage crops could be realized on all three of these reserves. IR#1 is suitable for both vegetable and berry production, providing a reliable market can be established. The irrigation water from Alkali Creek carries enough mineral elements to potentially cause salt problems for some crops. This matter should be taken into account in planning future agriculture initiatives.

History

Approximately 8 years ago, 225 acres of land was developed on IR#s 1, 4 and 4a for the production of alfalfa hay. This project was funded through LEAP and Special ARDA. These fields are still being hayed today by livestock owners and their families. In the past

band members voted that the hay off these fields should not be sold off reserve, as the land is traditionally owned.

One band member has received a WIAC loan for the purchase of cattle, while 7 other applicants have not been approved.

There was some range seeding completed by the Department of Indian Affairs in the past, but it was largely unsuccessful. This is thought to be due to:

- 1) improper seeding practices or
- 2) improper post seeding management.

Range and Water Entitlements

In 1975 the Band obtained a grazing permit for 140 head of horses. A few years later it was reduced to a 75 head permit. The band has since had a confrontation with the Ministry of Forests and the grazing permit was not renewed. The chief feels this loss of range rights was partially due to the band fencing off their reserves.

Band members also held hay cutting permits in the past, which were probably lost through lapse of payment or their failure to make reapplication.

The Band currently holds irrigation water licences on Alkali Creek and Alixton Lake for 380 acre feet and 34 acre feet respectively. The chief of Alkali, thought they also held water licences on Kirpatrick Creek and Ferd Lake, however these were not listed on the Water Management Branch records.

Present Production Levels and Marketing

There are approximately 100 head of cattle and 140 head of horses owned by the band members collectively. Approximately 70 head of calves are sold every fall through the Williams Lake Stockyards for an estimated value of \$35,000. One band member usually buys 40 feeder heifers in the spring and sells them in the fall, however net value figures on this enterprise were not available. An estimate of current hay production at Alkali is 200 ton, of which 160 ton is utilized by livestock on reserve. The remaining 40 ton is sold to local ranchers for an estimated value of \$3,200. An average of 10 horses are sold annually off reserve for an estimated value of \$4,000.

The Chief feels that greater profits could be realized on both the cattle and the horses if the native ranchers could get organized and market their livestock directly to the feedlots and the horse brokers.

Employment

In the past more band members worked off reserve for local ranchers. Presently, few band members are employed on ranches off reserve. There are 4 band members currently self employed in ranching on a year round part time basis.

Reserve Land Tenure and Allocation

Most of the land at Alkali is handed down through the tradition of inheritance. Two agriculture producers hold Certificate of Possession on their land.

Constraints Identified

- Financing: Commercial bank loans are inaccessible for most native ranchers living on reserves.
- Reserve Land Tenure Conflicts: A policy needs to be established for allocating hay and range rights on reserve which will determine each rancher's capacity for livestock production.

CANIM LAKE BAND

Resources

This band consists of 6 Indian Reserves (IRs) totalling 5,095 acres. The population is listed at 276, with the majority of people living on IR #1. The remaining 38 residents live on IR#s 2 and 4.

Bridge Creek flows through IR #1 where the elevation varies from 2,500 ft in the valley to 3,500 ft on the upper slopes. The annual precipitation is 25 inches and the frost free period is 62 days. (Leskiw et al, 1973)

Agriculture Potential

Of the 4,600 acres on IR#1, 1,000 acres are more or less suitable for agriculture development. (Leskiw et al, 1973) With irrigation, the short frost free period on IR #1 limits the agriculture potential to the production of forage crops. Root crops and brassicas can also be grown for domestic use, however commercial vegetable production does not appear viable. (Leskiw et al, 1973) Berry production may be an alternative, in which the band could capitalize on the local tourist market.

History

Recent agriculture initiatives at Canim Lake include the construction of an improved water storage facility and the purchase of an irrigation system, both were funded through Special ARDA and the Band. Over the past five years, one rancher has purchased cattle and farm equipment and developed 100 acres of hayland to expand his herd from 4 cows to 59. Funding and financing for this expansion was provided by Special ARDA, First Citizens and WILA. The First Citizens Loan was paid off in 1991. Retention of cattle numbers and current production levels on this hayland indicate that this project was highly successful.

Range and Water Entitlements

Presently, neither the Canim Lake Band nor its members hold any crown grazing permits. According to those band members interviewed, the band had a block of range approximately 20 years ago which ran from Horse Lake to 105 miles, but they are not sure how this was lost. A Range spokesman for the Ministry of Forests in 100 Mile said the only permit they can find in their history records was for 15-30 horses in the Hawkins Unit from 1969 - 1972. It is unknown as to how or why this permit was not renewed.

As the current level of grazing on reserve is at capacity, the band members will need to obtain crown range rights to accommodate any future increases in cattle numbers. One band member is slowly expanding his herd and thus is interested in obtaining a 40 head range permit. According to the Ministry of Forests, there is a new opportunity currently available in the area and more are likely in the future. If the native ranchers make application, their chances of obtaining crown range appear favorable.

The band currently holds water licences on Bob's Brook and Webb Lake for 54 acre feet and 138 acre feet of irrigation water, respectively.

Present Production Levels and Marketing

There are approximately 81 cows and 70 horses owned by the band members collectively. Due to predator problems and herd expansions, only 28 calves were sold in 1991. On an average year however, calf sales would represent an approximate value of \$25,000. An estimate of 20 horses are sold annually off reserve, which represents a total income of \$8,000. Most of the livestock is marketed through the Williams Lake Stockyards with no concerns voiced by those ranchers interviewed.

Current hay production at Canim Lake is 750 tons. Band members utilize 250 tons of this hay, with the remaining 500 tons sold off reserve for an approximate value of \$40,000.

Employment

Presently there are 2 full time seasonal and two part time seasonal workers putting up the Band hay. There are 2 band members self employed in cattle ranching on a year round part time basis.

Reserve Land Tenure and Allocation

Agriculture land on the Canim Lake reserves is handed down through the tradition of inheritance. One band member currently holds a B.C.R. formalizing his possession of the land, which was recently developed for hay production. One of those members interviewed had concerns about the current system of land tenure, as some agriculture land does not get utilized.

Constraints Identified

- Financing is hard to access from commercial bank therefore WILA loans are the only alternative.
- Land Tenure: If good agriculture land is not being utilized, it should be put under temporary Band control and given to one band member to meet individual development needs.

SODA CREEK BAND

Resources

This Band consists of 2 Indian Reserves (IR's) totalling 5,185 acres. The population is listed at 100 with the majority of people living on IR #2 (Deep Creek). The remaining 32 residents live on IR #1 (Soda Creek).

The following ratings are based on the Canada Land Inventory Climatic Classification and are taken from the report by Steve Crudge and Dale Martin, 1986.

Deep Creek IR.: Without Irrigation- Class 4, limiting factor is moisture.
 With Irrigation- Class 3, limiting factor is frost free days.

Soda Creek Reserve: Without Irrigation- Class 4, limiting factor is moisture.
 With Irrigation- Class 1, limiting factor is number of heat units.

Agriculture Potential

According to the main hay producer at Soda Creek, there are approximately 1500 acres on both reserves that are potentially arable. There are currently no sprinkler irrigation systems present on either reserve. The hay producing areas are either dryland farmed or subirrigated. Modern irrigation systems could dramatically increase hay production and water efficiency on these reserves. In respect to a market, band members cannot fill the local demand for their hay, as they usually run out by mid winter and have to turn customers away. If irrigation systems could be purchased and more hay land brought into production, both reserves have a tremendous potential for alfalfa hay production and sales.

If irrigation could be provided, the growing of corn is a possibility on the Soda Creek Reserve. The production of vegetable and berry crops on a commercial scale is another viable alternative on IR #1. Suggested vegetables include the Brassicas, peas, spinach, lettuce and root crops. The high pH of the soil may not be conducive to large scale potato production however, due to the risk of potato scab. (Crudge et al, 1986)

History

There have been no agriculture development projects undertaken in recent years by Soda Creek Band or its members. Both in the past and at present, band members have been exclusively involved in hay production and sales. The Soda Creek Band hay producers would like to develop some more hay land and purchase irrigation systems, but are presently having problems acquiring financing.

Range & Water Entitlements

Neither the Band nor its members currently hold any crown grazing permits. They do however, have water rights on Rose Lake Dam for 885 acre feet of irrigation water.

Present Production Levels and Marketing

Soda Creek Band members collectively own 25 horses and no cattle. There are no annual sales reported from livestock. Current hay production at Soda Creek is 450 ton, of which 50 ton is utilized by the horses on reserve. The remaining 400 ton is sold directly to local ranchers and horse owners for an estimated total value of \$40,000. A small portion of this hay is put up by local ranchers, for 50% of the yield.

Employment

Numbers were not available on people involved in hay production, however they are all self employed on a seasonal basis.

Reserve Land Tenure and Allocation

Most of the land is handed down through the tradition of inheritance, although at least one agriculture producer purchased the rights to his land from other band members.

Constraints Identified

- Financing : Very difficult to borrow money. Suggestion that the Band Council set some agriculture money aside to assist the ranchers.
- Fencing Conflicts: Outsiders come in on snowmobiles, cutting fences and damaging property. Suggestion that livestock owners should be responsible for fencing in their own stock.

ULKATCHO BAND

Resources

Ulkatcho Band consists of 20 Indian Reserves (IRs) totalling 7,940 acres. The population is listed at 318, with the majority of people residing on IR#2, which is located in the rural community of Anahim Lake. The remaining 68 residents are spread out over 11 reserves.

At IR#2, the elevation is approximately 3,900 ft, the annual precipitation is 16.5 inches (Environment Canada 1975-1980) and the frost free period is estimated at 15-30 days. (Pers. Comm. Environment Canada)

Agriculture Potential

To their knowledge, Ulkatcho Band has had no soil or agriculture studies completed in the past. Therefore, no information was available on the number of acres of reserve land that are potentially arable.

The long cold winters and relatively short frost free period severely limit the range of crops that can be grown in this area. The limited access to a large number of the reserves presents some unique problems as well.

Anahim Lake is historically a cattle ranching area, characterized by extensive, low input forage production. Native hay accounts for the largest forage output in this area, with some tame forage species being harvested off the more recently developed lands. Sprinkler irrigation systems are non-existent in Anahim Lake. Effective water control structures, however, are essential for obtaining consistent hay production on these meadow areas.

History

There have been a few agriculture development projects completed by band members over the past 10 years. These include:

Cattle Purchases

Machinery Purchases

Hay Land Development

Funding and financing for these initiatives was provided by Special ARDA, First Citizens and WIAC. Depending on the individuals, retention of cattle numbers vary dramatically, as does the use and maintenance of the farm machinery. The land development projects have been largely successful, according to the person interviewed. Where cattle numbers have decreased, and or production is low, it is thought to be mainly due to a lack of knowledge on livestock health and nutrition.

Range and Water Entitlements

Rather than the Band being allocated a specific block of crown range, each native rancher has his own range permit area. Currently running 100 head of cattle, the main rancher at Ulkatcho is held back from expanding his herd due to insufficient crown range.

With local ranchers holding permits on either side of his range area, there is apparently no room for expansion, and little hope of increasing the carrying capacity of his existing range.

The Band does not currently hold any irrigation water licences, however the Water Management Branch is currently reviewing an application.

Present Production Levels and Marketing

There are approximately 188 head of cattle and 244 head of horses owned by the band members collectively. Approximately 113 head of calves are sold every fall through the Williams Lake Stockyards for a value of \$56,500. An estimate of 25 horses are sold annually off reserve, which represents a total value of \$10,000. Current hay production at Ulkatcho sits at 650 ton, which is all utilized by the livestock on reserve.

Employment

There is presently one rancher self employed on a year round, full time basis and 2-3 ranchers self employed year round, part time. In addition, 1-2 people are hired seasonally by the above ranchers.

Reserve Land Tenure and Allocation

The agriculture lands are handed down through the tradition of inheritance. Those band members who have undertaken agriculture development projects have had their tenure formalized through a Band Council Resolution.

Constraints Identified

- Crown Range: the limiting factor on cattle numbers for the most successful rancher at Ulkatcho.
- Advisory Services: There is a real need for quality agriculture advisory services on a long term basis.
- Areas of concern: Animal Health and Nutrition and Farm Business Management.
- Marketing: The stockyard fees and especially the trucking costs to Williams Lake, make the current marketing system far too costly, especially for the smaller producers. A suggestion was made that the native ranchers should coordinate their marketing with the Anahim Lake Livestock Association, and set up a field sale every fall. The buyers could then be flown into Anahim Lake to bid on truck loads of cattle.

NEMIAH VALLEY BAND

Resources

Nemiah Band consists of 8 Indian Reserves (IRs) totalling 3,418 acres. The population of 171 is evenly distributed over 5 of these reserves. The elevation in this area is approximately 4,000 ft. No climatic information was available, however a short growing season is very likely the limiting factor on agriculture production.

Agriculture Potential

Similar to Ulkatcho Band, the agriculture potential of this area lies largely in the harvesting of native forages for livestock consumption. Sprinkler irrigation systems are not common in this area, whereas good water control is required to obtain consistent yields off the hay meadows.

History

One rancher has purchased farm equipment and developed hay land in the last few years, and is planning on buying some cattle in the near future. The funding and financing source for this project was unknown. There are at least 10 families currently involved in the cattle business with the largest ranch running about 60 head of cows. Most of these families would like to expand their herds in the future.

Range and Water Entitlements

According to those interviewed, the Band has taken over the surrounding crown land management and the livestock owners pay the Band to graze cattle. This revenue apparently goes into fence repairs and range seeding. The Band felt that the Ministry of Forests at Alexis Creek were not helping the native ranchers, so the Band took over the range. Nemiah Stockmen's Association was formed to look after this range. The position taken by the Range Agrologist with the Ministry of Forests in Alexis Creek is that the loss of revenue from grazing fees in this area, does not warrant the potential expenditures to properly administer this area. The situation therefore, is currently being left as is.

The band holds water licences on Nemiah Creek and Elkins Creek for 400 acre feet and 100 acre feet of irrigation water, respectively.

Present Production Levels and Marketing

There are approximately 200 cows and 170 horses owned by the band members collectively. Approximately 150 head of calves are sold every fall through the Williams Lake Stockyards for an estimated value of \$75,000. An average of 30 horses are sold annually off reserve for an approximate total value of \$12,000. The ranchers do have problems trucking

their cattle the long distance to Williams Lake. If the ranchers could group all their calves together at one facility, one or two buyers would likely be interested in travelling to Nemiah to view the calves and quote a price.

An estimate of current hay production on the reserves is approximately 700 ton, all of which is utilized by the band members' livestock.

Employment

There are 10 band members currently self employed in ranching on a year round part time basis. Family members may also work seasonally on these operations, however no wages are actually paid.

Reserve Land Tenure and Allocation

The agriculture land is handed down through the tradition of inheritance.

Constraints Identified

Horse Numbers - Horses have in the past deteriorated the range condition, the livestock association is hopeful that a sell down of 75% of the horses will be completed this spring.

Range Improvements - Fencing and seeding is required to create spring, summer and fall pastures, so that rotational grazing can be implemented to improve range condition and increase the carrying capacity of the range.

Agriculture Advisory Services - Require an agriculture worker to oversee the development projects, and assist the ranchers by keeping them up to date on new technologies, put together workshops and coordinate the Stockmen's Association Marketing- Require a better system.

ANAHAM BAND

Resources

Anaham Band consists of 19 Indian Reserves (IRs) totalling 13,976 acres. The population is listed at 593 with the majority of people living on IR#1. The remaining 31 residents live on IR#2. The Chilcotin River forms the southwest border of IR#1, where the elevation ranges from 2,500 to 3,000 ft. The annual precipitation is 11.5 inches and the frost free period is approximately 80 days. (Leskiw et al, 1973)

Agriculture Potential

IR#1 includes approximately 7,500 acres, of which 1,500 acres are suitable for agriculture development. (Leskiw et al, 1973) The nonarable portions of this reserve are best utilized for livestock grazing. They contain 1,400 acres of grassland and 3,700 acres of forest range with potential stocking rates of 2 acres/AUM and 5 acres/AUM respectively. If properly managed, this reserve alone could support approximately 700 animals per season. (Leskiw et al, 1973)

No arability figures are available on the other reserves, however their agriculture potential lies largely in native hay production and livestock grazing. The Anaham Band Reserves then, are well suited to cattle production and the cultivation of forage crops. Irrigation is required on IR#1, for the more intensive alfalfa hay production. On the back reserves where native hay is harvested, water control structures are a useful management tool.

History

Approximately 5 years ago, there was a major land development and irrigation project undertaken. Approximately 600 acres of hay land was developed and there are presently 15 ranchers using the land. Although this project was successful, there are presently a few problems with administration of the pump and mainlines. In addition, a few land holders are not properly managing their developed parcels of land, thus their irrigation equipment is being wasted. Funding and financing for this project was provided by Special ARDA, First Citizens, D.I.A, and LEAP (A Canada Employment Centre initiative).

Individual ranchers have also undertaken several agriculture development initiatives which involve the purchasing of farm equipment and cattle. Special ARDA, WIAC and First Citizens provided a large part of the funding and financing for these projects. Although one rancher in particular expanded his cattle herd from 4 to 150 head through the financing of a commercial bank. It is unfortunate that, due to the bank's recent change in policies and despite his good credit history, this rancher's standard operating line was recently turned down by the bank and he is now forced to obtain financing through WILA, at a higher interest rate.

Range and Water Entitlements

The Band currently holds a block of crown range for livestock grazing. The individual ranchers are responsible for renewing their permits and paying their grazing fees. According to those interviewed, the area of crown range is adequate for both present and future plans. The Band holds water rights on Anahim Creek and the Chilcotin River for 5,000 acre ft. and 1,710 acre ft of irrigation water respectively.

Present Production Levels and Marketing

There are approximately 650 head of cattle and 250 head of horses owned by the Band members collectively. An estimated 520 head of calves are sold every fall through the Williams Lake Stockyards for a value of \$260,000. An average of 35 horses are sold annually off reserve for a total value of \$14,000. There was little said by those interviewed regarding the efficiency of this present marketing system, other than "the fees are too high." The cattle herds at Anaham tend to be larger however, thus the ranchers perhaps obtain better service than the smaller cattle producers from other bands.

Employment

There are presently 2 band members self employed in cattle ranching on a full time basis, each with approximately 150 head of cattle. The remaining 13 ranchers at Anaham are self employed on a part time, year round basis, with herds ranging from 5 to 50 head. Most of the additional labour is supplied by family members, and no wages are paid. 2 people however, are paid for wages on a seasonal basis by the 2 larger ranchers.

Reserve Land Tenure and Allocation

Most of the traditional hayland is handed down through inheritance. Prior to the recent agriculture development project however, the hayland was split into 32 acre parcels and allocated to the ranchers based on their present and planned cattle numbers. The tenure was then formalized through Band Council Resolutions. The land tenure system needs some improvement, as some of these parcels are no longer being properly managed by the land holders, (e.g. reseeding, use of irrigation equipment etc.)

Constraints Identified

- Land Tenure System (as above)
- Financing: WILA's interest rate is too high, but ranchers operating on reserve can no longer obtain commercial financing.
- Need for Band ranchers to increase cattle numbers and hire a range rider, as there are too many animals being lost on the range.

WILLIAMS LAKE BAND

Resources

This band consists of 8 Indian Reserves (IRs) totalling 4,767 acres. The population of 182 all live on IR#1. The San Jose River flows through the south west corner of IR#1 and meets Williams Lake on the Reserve's west boundary. The elevation on this reserve varies from 2,000 to 2,500 ft. The annual precipitation is 16.5 inches and the frost free period is 81 days. (Leskiw et al, 1973)

Agriculture Potential

IR#1 contains 4,070 acres, of which 230 acres are arable and irrigable.(Leskiw et al, 1973) This area is suitable for the production of high quality forages such as alfalfa, as well as cool season vegetables and berries. Another area on IR#1 of 200 acres is suitable for tame forages such as clovers, timothy and reed canarygrass.(Leskiw et al, 1973) Spring flooding on this piece precludes any other crops, but also makes irrigation unnecessary. An additional 450 acres on IR#1 is well suited to native forage production.(Leskiw et al, 1973) The total yield from these areas recommended for forage production is 3,000 tons per year.(Leskiw et al, 1973)

The remaining area on IR#1, as well as IR#s 3, 3A, 15, and 2, are best suited for live-stock grazing. In a report completed by Dr. M. Pitt in 1985, grazing capacity on all these reserves is estimated at 1,032 AUMs, 777 AUMs of which should occur on IR#1. Assuming that the grazing season lasts for 7 months, these AUMs translate to 147 cows if all the above reserves are grazed, and 111 cows if only IR#1 is utilized. These numbers are quite generous, as they do not include any utilization by horses.

The potential hay base then could support at least 1,000 head of cattle, however the bands' grazing capacity has been estimated at between 100 and 150 cows, for 7 months.

History

From 1986 to 1990, there was some equipment purchased and hay land developed on the bottom land at IR#1. The project was funded by Special ARDA and WIAC. The band administration actually took control of the hayfields, and put up the hay, the money from the hay sales went back into paying off the machinery loan and operating expenses. The Band administration currently has this operation on hold, to reevaluate it's viability, as it has not recently made a profit.

Presently this land is hayed by the band ranchers who have farm equipment, for a 50% share. The other hay fields that are handed down through tradition, are harvested again by those rancher who own farm equipment for a 50% share. A good portion of the hayfields are not hayed on an annual basis, depending on need. In the future the Band administration would like to set up a co-op within the Band to continue hay sales.

One couple has recently purchased 70 head of cows and a full line of harvesting equipment through loans from WILA and First Citizens Fund. The project began in the spring of 1991, and is doing well so far. The couple plans to increase their herd to a viable size of approximately 200 head.

Range and Water Entitlements

Neither the Band, nor its members hold any range permits for crown land. As livestock grazing is a limiting factor at Sugar Cane, some work needs to be done in this area, either by obtaining some crown land for grazing or developing some intensive grazing pastures on IR#1.

The Band holds irrigation water licences on Asahal Creek, Borland Creek and Five Mile Lake for 57.4, 180 and 90 acre feet respectively.

Present Production Levels and Marketing

There are 100 head of cattle and 35 head of horses owned by Williams Lake Band members collectively. Due to a herd expansion, only 50 head of calves were sold last fall for an estimated value of \$25,000. According to those interviewed, 20 horses were sold off reserve last year for an estimated value of \$8,000. Most of the calves were sold privately to a feedlot, as the rancher feels that the present stockyard system is too costly and it needs more competition from other marketing sources.

In 1991 only 200 tons of hay was put up, all of which was utilized by the livestock on reserve. In 1990 however, 400 ton of hay was harvested and approximately 300 ton of this was sold off reserve.

Employment

In the past, the agriculture program had 10 seasonal employees and 1 person hired on a full time, year round basis.

Presently, there are 2 band members self employed in ranching on a year round, part time basis. Additional labor is required during the haying season, however it is mostly supplied by family members and no wages are actually paid.

Reserve Land Tenure and Allocation

Land possession is handed down through the tradition of inheritance. There are three pieces of land that are legally allocated by Certificates of Possession.

Constraints Identified

- Financing: Because commercial financing is not accessible, the native ranchers have to depend on WILA, whose interest rates are far higher than the commercial banks'.

- Reserve Land Use: Ranchers need more hayland, and often the current land holders do not utilize their land.
- Band Politics: The Band Administration's lack of communication and support for the agriculture sector, and the jealousies of other band members when one family becomes successful in agriculture.
- Grazing Land: Is not adequate to accomodate an increase in cattle numbers.

ALEXANDRIA BAND

Resources

Alexandria Band consists of 13 Indian Reserves (IRs) totalling 2,823 acres. The population is listed at 47, with the majority of people living on IR#s 3, and 3A. The remaining 11 residents live on IR#1. The elevation at IR#s 3 and 3A ranges from 1,500 to 2,000 feet. The frost free period is 90-119 days and the precipitation is estimated at 9 inches. (Hart Mayall, 1985) The climate in this area then, is relatively warm for the Cariboo/Chilcotin.

Agriculture Potential

Alexandria IR#s 3 and 3A have excellent agriculture potential. With irrigation, 825 acres of this land is suitable for growing a wide variety of crops. (Hart Mayall, 1985) Along with the standard alfalfa and cereals for forages, corn and a wide range of vegetables may be grown. A good market garden potential exists here with the following possibilities: potatoes, asparagus, carrots, beets, leeks, the brassica family, swiss chard, lettuce, peas, beans, spinach, strawberries and raspberries.

History

Approximately five years ago, the Band developed 250 acres of hayland, and purchased irrigation equipment and farm machinery. Funding and financing for this development project was provided by Special ARDA, First Citizens, WIAC, and the Band itself. In 1991, the Band experienced difficulties with the intake system on the pump, and the irrigation system therefore did not operate. Plans are currently underway however, to have the intake system redesigned so that the irrigation equipment will be functioning for the 1992 growing season.

Range and Water Entitlements

The Band does not hold any crown grazing rights, however this is not a major concern as they are more likely to specialize in hay sales, rather than beef production. The Band presently has a water licence on the Fraser River for 740 acre feet of irrigation water.

Present Production Levels and Marketing

There are 20 head of cattle and 5 horses owned by the Band members collectively. Approximately 10 head of calves are sold every fall through the Williams Lake Stockyards for an estimated value of \$5,000. No revenues were reported from annual horse sales. An estimate of current hay production at Alexandria is 500 ton, this number could likely double in 1992 however, with the irrigation system operable. 50 ton of this hay is utilized by the livestock on reserve, while the remaining 450 ton is marketed directly off reserve. The hay is sold to local ranchers and horse owners for an estimated total value of 36,000.

Employment

2-3 people are hired by the Band on a seasonal basis to manage the hay production and harvesting.

Reserve Land Tenure and Allocation

The hay land at Alexandria is administered by the Band. It is presumed by the author that a portion of the arable land on the reserve is also handed down through the tradition of inheritance.

Constraints Identified

- Financing: very hard to access, WILA's interest rates are too high.

SUMMARY

Agriculture Potential

Due to climatic factors and the extensive rangelands in the Cariboo/Chilcotin, beef production is the main agriculture activity of the 14 Indian Bands. A couple of the more centrally located bands specialize in hay production and sales, which has proven to be a very viable alternative. In terms of both beef production and hay sales, most of these bands are currently operating far below their potential. Although the most common constraints are outlined below, each band has its own unique problems, which limit both beef and hay production to a level far below the potential.

Particularly on the Alexandria and Soda Creek Bands, great potential exists for a market garden and/or commercial berry enterprise. Again, certain constraints have to be overcome in order for the band members to work towards this potential. Although the other bands are not as well suited to commercial vegetable production, most of them certainly have the resources to produce enough cool season vegetables to supply their domestic needs.

The viability of fallow deer farming is currently being explored by the Kluskus and Quesnel Bands. Caution should be exercised with this enterprise however, as it is very capital intensive and marketing training would be required.

Constraints

The most common constraints identified by those people interviewed, are listed below in order of prevalence.

- 1) **Financing** - Financing was identified as the greatest problem facing the native agriculture sector. Native ranchers operating on reserve cannot access commercial financing and their only alternative is to finance through WILA at a high (currently 14%) less competitive interest rate. Other comments regarding WILA are outlined under the individual band summaries.
- 2) **Lack of Continuity in Quality Agriculture Advisory Services** - The native agriculture sector expressed a real need for a permanent central agriculture extension/advisory service that they can work with on a continual basis, to strengthen their industry.
- 3) **Reserve Land Tenure Problems** - Much of the prime agriculture land on the reserves is not being utilized by the traditional land holders. The more progressive producers would like to use this land to increase their production, but without a formal tenure, they are reluctant to make any capital improvements. It is due to this hurdle, that a great deal of prime agriculture

land on reserves, remains unimproved and not utilized.

Because so much of the agriculture land was historically garden plots, it is often handed down in small, segmented pieces. One rancher therefore, may have to farm several 5 acre pieces, which creates great inefficiencies in hay production, as well as making fencing the areas for grazing use, impossible.

4) ***Crown Range or Grazing Land*** - Five of the bands surveyed identified insufficient grazing land as their limiting factor on cattle numbers.

5) ***Financing*** - Several individuals interviewed thought acquiring financing was difficult, however this may be due to lack of assistance in business plan development (see #2 constraint above). Another problem mentioned is that the financing organizations are staffed with people who have insufficient agriculture knowledge or background.

6) ***Marketing*** - Most of the ranchers surveyed thought that they need to improve on their present marketing practices. Two of the more remote bands identified their current marketing problems as a constraint to herd expansion.

Training Needs

The following training needs were identified, in order of priority.

1) ***Livestock Production*** - basic herd health, veterinary skills and nutrition.

2) ***Business Management*** - record keeping to allow business planning, implementation and evaluation

3) ***Forage Production*** - soil fertility, irrigation management, and forage quality.

4) ***Equipment Maintenance*** - Maintenance and basic repairs of farm machinery, general farm welding.

5) ***Vegetables and New Enterprises*** - vegetable production and marketing. New enterprises, such as Ginseng, and game farming.

Opportunities For Co-management Projects

Most of the constraints identified by the native agriculture sector could be reduced by the implementation of a quality Co-managed extension program that is specifically designed to meet the needs of native agriculture producers and will provide consistent long term support. Once in place, such an extension network could provide:

- 1) Organizational assistance to address traditional reserve land tenure problems, and other band-specific concerns such as grazing and formation of producer associations.
- 2) Co-ordination within and between commodity groups to address such concerns as marketing.
- 3) Assistance in business plan development and assessment of financial feasibility.
- 4) Quality planning and delivery of demonstration projects to foster implementation of appropriate technologies.
- 5) Agriculture information and guidance on a day to day basis.
- 6) Delivery of the ongoing extension programs of the BCMAFF, such as the Cattle Improvement Program, the Farm Business Analysis Program, forage analysis and ration formulation, soil analysis and fertilizer recommendations, as well as forage specie and variety information.
- 7) Seminars on the subject areas which are best covered by this means of delivery.

Many native agriculture advisory initiatives have been unsuccessful in the past due to their short term, one project approach. The most important elements in planning native agriculture extension service is that it must be consistent, reliable and long term as production and economic improvements in this sector do not come about over night.

APPENDIX I: SUMMARY OF BAND LANDS

	Total Acres	Tame Hay	Native Hay	Pasture	No Specific Use/Non. Pr	Forestry Mgmt	Commercial Residential
Alexandria	2823						
Alexis Cr.	9867	150	1000	1000	7617	—	100
Alkali Lk.	9786	125	150	1000	7861	150	500
Anaham	13976	800	1300	1410	9986	—	480
Canim Lk.	5095	300	100	1800	2665	150	80
Kluskus	4084	—	800	—	3264	—	20
Nazko	4556	167	215	—	4112	—	62
Nemiah	3418	250	775	710	1000	—	680
Quesnel	1690	60	—	—	1505	75	50
Soda Cr.	5185	225	—	1595	1295	1295	775
Stone	5304	260	255	260	3754	695	80
Toosey	6381	470	—	1200	4611	—	100
Ulkatcho	7940	311	630	1900	800	4254	45
Wms Lk.	4767	60	970	—	2852	95	790

APPENDIX II: FARM BUSINESS ANALYSIS

Five of the more prominent native ranchers in the Cariboo/Chilcotin participated in this survey. The size of these cow/calf operations varied from 58 to 150 head. Three financial statements were completed for each operation:

- 1) Net Worth Statement - Measures the **financial structure** at one point in time.
- 2) Income & Expense Statement - Measures the **profitability** over a period in time (one production cycle).
- 3) Herd Performance Summary - Measures **physical production performance**.

Financial Structure

Ratios to measure the effectiveness of the financial structure include:

1. Debt - Equity Ratio; is a measure of solvency, it shows the amount of debt per dollar of equity. The lower the ratio the more stable the operation.
2. Equity To Total Assets; is another measure of solvency, it shows the percentage of the business which is owned by the operator(s).
3. Debt per Cow; is a measure of the risk of the ranch related to the earning capacity of a brood cow. The higher the debt per cow the more difficult it will be to continue meeting the obligations of the ranch unit.

Table 1 Measures of Financial Position

	High	Low	Average
1. Debt Equity Ratio	4.64	.01	.99
2. Equity as % of Total Assets	99	18	78
3. Debt Per Cow	2169	37	551

Profitability

Table 2 Relationship of Income and Expenses to Value of Production

	High	Low	Average
Net Income as % of Value of Production	59	28	45
Expenses as % of Value of Production	66	27	42
Interest Expenses as a % of Value of Prod.	10	0	5
Average Off Farm Income	40,000	0	20,670

Physical Production Performance

The physical production performance of the farm units is shown in Table 3.

1. Pounds of Calf weaned per Cow overwintered; is an overall measure of the efficiency of the cowherd as it combines the impact of calving percentage and calf weaning weight. Cows overwintered is used as the basis as this is the most expensive production period.
2. Weaning Percent; is the percentage of the cows overwintered who weaned a calf in the fall. It is a measure of the efficiency of the culling procedures (no open cows kept over the winter), calf health (low calf death loss) and a low number of abortions.
3. Replacement Percentage; is the percent of the herd which was replaced during the year. An increase in the culling rate from one year to the next may indicate a fertility problem in the herd. A continuously low culling rate will result in a herd made up of a high percentage of old cows.
4. Cow Death Loss; the number of cows which died as a percentage of those on beginning inventory.
5. Average Weaning Weight; the average weight of calves at weaning.
6. Average Calf Price; the average price/pound received for calves in the fall.
7. Bull per Cow Ratio; the number of cows on range, for every bull.

Table 3 Summary of Performance Factors

	High	Low	Average
1. lbs of Calf Weaned Per Cow Overwintered	459	352	400
2. Weaning %	97	79	88
3. Replacement Percentage	40	5	19.4
4. Cow Death Loss	8	0	3.4
5. Average Weaning Weight	500	400	455
6. Average Calf Price	1.03	.88	.96
7. Bull Per Cow Ratio	30	13	22

APPENDIX III: A SUMMARY OF AGRICULTURE REPORTS COMPLETED FOR INDIAN BANDS IN THE CARIBOO REGION

1) Completed For: (*) Alexis Creek (IR #1) Anaham (IR#1) ,
Stone (IR #1 & 1A), Canim Lake (IR#1),
Toosey (IR #1), Williams Lk (IR#1),
Alkali Lake (IR #1)

Name of Report: *A Soil Resource and Land Use Survey of The * Indian Reserve*
Produced By: L. A. Leskiw & L. Fastad & J.I. Sneddon, (Agriculture Canada) 1973
Available From: Agriculture Canada
Vancouver Research Station
6660 NW Marine Dr.
Vancouver, B.C.
V6T 1X2
Phone 224-4355

Report Objectives:

- To assess the soil resources of the reserve.
- To group the soils into management areas with management suggestions for each area.
- To outline irrigation water and fertilizer requirements
- To suggest crops adaptable to the soils and climate as well as estimate possible yields.

2) Alexandria Indian Band

Name of Report: *Agriculture Capability and Soil Management of Alexandria Indian Reserves 3 and 3A*
Produced By: Hart Mayall Consultants, Tatla Lake, B.C., October, 1985
Under the Auspices of Western Indian Agricultural Corp. Ltd.
Prepared For: Alexandria Indian Band
Available From: Hart Mayall Consultants
PO Box 31
Tatla Lake, B.C.
VOL 1V0

3) Alkali Lake Indian Band

Name of Report: *Agronomic Evaluation - Alkali Lake Indian Reserves 4 & 4a*
Produced By: Timothy J Ross, P.Ag. & F.B. Holl PhD, P.Ag. for WIAC, January 1987
Available From: Western Indian Agriculture Corporation
302A-383 Oliver St., Williams Lake, B.C. V2G 1M4
Phone 392-4418

Name of Report: *Agricultural Potential of the Wetlands of Alkali Lake Indian Reserve 5*
Produced By: Hart Mayall Consultants, Tatla Lake, B.C., September 1985
Under the Auspices of: Western Indian Agricultural Corp. Ltd.
Prepared For: Alkali Lake Indian Band
Available From: Hart Mayall Consultants
PO Box 31, Tatla Lake, B.C. V0L 1V0

Name of Report: *Agricultural Potential of the Wetlands of Alkali Lake Indian Reserves 9 and 9A*
Produced By: Hart Mayall Consultants, Tatla Lake, B.C., September 1985
Under the Auspices of: Western Indian Agricultural Corp. Ltd.
Prepared For: The Alkali Lake Indian Band
Available From: Hart Mayall Consultants (as above)

4) Soda Creek Indian Band

Name of Report: *Soil Resources and Agricultural Recommendations For The Deep Creek and Soda Creek Indian Reservations*
Produced By: Steve Crudge and Dale Martin for WIAC, March 1986
Available From: WIAC (as above)

5) Quesnel Indian Band

Name of Report: *Feedlot Operation For Quesnel Indian Band (A Feasibility Study)*
Produced By: John DePape, P.Ag., Agriculture Instructor, Fraser Valley College
Available From: WIAC (as above)

Name of Report: *Quesnel Indian Band Preliminary Land Use Analysis*
Produced By: P.S. Ross and Partners, May 1980
Available From: Quesnel Indian Band

6) Toosey Indian Band

Name of Report: *Irrigation Water Supply for Toosey I.R.1*
Produced By: Hart Mayall Consultants, Tatla Lake, B.C., June 1986
Prepared For: Toosey Indian Band
Available From: Hart Mayall Consultants (as above)

7) Williams Lake Indian Band

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In addition to the reports listed on the previous pages, the following references were utilized in the compilation of this profile.

- 1) Agriculture Canada (C. Hamlen - Regional Development Branch) and Indian & Northern Affairs Canada (M. Deacon - Economic Development Branch)
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- 3) William Kerr and Associates Inc. *A System For The Preparation of Band Agricultural Profiles. 1991.*