

The Arrival of Euro-Canadian Homesteaders and the Emergence of an Agricultural Sector

Chapter 7

Prepared by Brad Stelfox, David Leonard, and Bob Wynes

Contributors

Diana Brierley

Cal Clark

Blair English

Dave Gibbons

Summary Points

- Agriculture has been a foundational landuse practice in northwest Alberta since the early 1900's and its history is largely the history of European settlement in this region.
- The agricultural potential of the "Peace" region was clearly exaggerated by early advocates in an attempt to encourage settlement of the region and attract regional rail and road infrastructure.
- Agricultural practices are largely, but not entirely, confined to the white zone of northwest Alberta. This zone amounts to 16.1% (2,447,300 ha) of northwest Alberta and is distributed primarily along the Peace River mainstem from the British Columbia border to the Fort Vermilion region. The white zone does extend away from the Peace River mainstem north of Keg River, south of Fort Vermilion, and east of High Level.
- Although agricultural crops are a common feature of the white zone of northwest Alberta, tree cover remains the largest cover type. In order of descending rank, cover types are trees, croplands, forage crops, shrublands, wetlands, water, and grasslands.
- Alberta Agriculture has expressed a commitment to significant growth in primary and secondary sectors of the agriculture sector of northwest Alberta. This growth would be most likely accomplished through intensification of existing farmlands (fertilization, fencing, rotational grazing, improved agricultural phytovars), by importing forage crops from other regions, and by expansion of agricultural practices within the white zone.
- Early and late season frosts continue to be a major limiting factor to cereal crop production in the white zone regions of northwest Alberta.
- Average agricultural land area required to raise a cow unit in northwest Alberta is ~4–7 ha; a significant south-north gradient of declining productivity is apparent for animal husbandry.
- Although the energy and forest sectors have grown significantly in recent decades, the agricultural industry remains an important lifestyle and source of income for many people in northwest Alberta.

Table of Contents

Summary Points.....	1
Table of Contents.....	2
List of Tables.....	3
List of Figures.....	3
The History of Homesteading and Agriculture.....	5
The “White Zone”	27
Agricultural Cover Types	30
Livestock Industry	38
Provincial Grazing Reserves.....	43
Three Creeks Provincial Grazing Reserve.....	43
Bear Canyon Provincial Grazing Reserve	43
Fort Vermilion Provincial Grazing Reserve	43
Manning Provincial Grazing Reserve.....	44
Whitemud Provincial Grazing Reserve.....	44
Agricultural Leases.....	45
Deforestation in the Wake of Agricultural Expansion.....	47
Cited References.....	49
General References.....	50

List of Tables

Table 1. Summary statistics of agricultural land-use practices in the Peace River Region. Extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997. Data Source: PFRA-Peace River, 1997. This area is not equal to the region defined as northwest Alberta in this report, but is defined by the administrative boundaries of MD #135, MD #136, MD #23, MD #21, MD #20, MD #22, and ID #17.	38
Table 2. Summary statistics on agricultural production in northwest Alberta (municipalities found wholly or predominantly within 56–60°N and 114–120°W) based on 1991 census data. Land dedicated to livestock includes both pasture and hay land. Total land for agricultural purposes includes pasture, fodder crops, annual crops, and summer fallow. Data Source: PFRA-Peace River, 1997.	39
Table 3. 1997 Grazing statistics on public land in Alberta north of the North Saskatchewan River. Data Source: Alberta Agriculture web site at www.agric.gov.ab.ca/ruraldev/publands/publan20.html	45

List of Figures

Figure 1. Fred Lawrence displaying produce from Peace River, c.1900. Photo Source: Provincial Archives of Alberta; PAA B.3042.	24
Figure 2. Threshing at Spirit River, 1912. Photo Source: Glenbow Alberta Archives; GAA NC-6-2786.	24
Figure 3. Sexsmith in 1923. Photo Source: Glenbow Alberta Archives; GAA NA-1644-131.	25
Figure 4. A Derailment north of McLennan, 1925. Photo Source: Provincial Archives of Alberta; PAA A.10177.	25
Figure 5. A Homestead north of Codesa, 1940. Photo Source: Provincial Archives of Alberta; PAA A.6914.	26
Figure 6. Breaking Land at Hines Creek, 1947. Photo Source: Provincial Archives of Alberta; PAA A.5904.	26
Figure 7. Distribution of the white zone relative to the P1 / P2 FMUs. Data Source: DMI GIS Library.	28
Figure 8. Distribution of the white zone relative to the PRPD FMA. Data Source: DMI GIS Library.	28
Figure 9. Distribution of the white zone in northwest Alberta. Data Source: DMI GIS Library.	29
Figure 10. Distribution of cropland cover (% landbase) in northwest Alberta. Data Source: PFRA (1996).	31
Figure 11. Distribution of forage cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).	32
Figure 12. Distribution of grass cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).	33
Figure 13. Distribution of shrub cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).	34
Figure 14. Distribution of tree cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).	35
Figure 15. Distribution of wetlands (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).	36
Figure 16. Distribution of water (as % of landbase) in northwest Alberta. Data Source: PFRA.	37
Figure 17. Area in different cover types in the white zone townships of northwest Alberta. Data Source: PFRA 1997.	39
Figure 18. Comparison of area (ha) in agricultural and livestock production in Municipal and Improvement Districts of northwest Alberta. Land dedicated to livestock includes both pasture and hay land. Total land for agricultural purposes includes pasture, fodder, annual crops, and summer fallow. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997.	40
Figure 19. Comparison of beef cow units and total cattle populations in Municipal and Improvement Districts of northwest Alberta. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997.	40
Figure 20. Beef cow populations in each municipality of northern Alberta and northeast British Columbia. Data based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997.	41
Figure 21. Percent of land designated for agricultural production in each municipality of northern Alberta and northeast British Columbia used in the production of livestock. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source:	

PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.....	41
Figure 22. Area (ha) required per cow unit raised in each municipality of northern Alberta and northeast British Columbia. Unimproved pasture is given a production value of 25% that of improved pasture. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.	42
Figure 23. Area (ha) in forage production used in the production of livestock in each municipality of northern Alberta and northeast British Columbia. Unimproved pasture is given a production value of 25% that of improved pasture. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.	42
Figure 24. Frequency of grazing leases of different size classes in the Peace River District. Data Source: Alberta Agriculture.....	46
Figure 25. Total area of grazing leases of different size classes in the Peace River District. Data Source: Alberta Agriculture.....	46
Figure 26. Example of agricultural deforestation occurring in northwest Alberta.	47
Figure 27. 1986 Landsat image showing level of deforestation in the white zone north and south of the Peace River near the border with British Columbia. The medium and dark green colors indicate boreal forest. The pink and white colors indicate cultivated crops, and the light green colors indicate pasture and hayland. Regional landscape patterns caused by clearcutting can be seen along southern portions of the Clear Hills. The continuous green patterns in various shades seen in the Clear Hills and along the Peace River indicate boreal forest. Data Source: Alberta Provincial Government.	47
Figure 28. 1986 Landsat image showing level of deforestation in the white zone near the community of Peace River top) and vicinity of Fort Vermilion (bottom). The medium and dark green colors indicate boreal forest. The pink and white colors indicate cultivated crops and the light green geometric patterns indicate pasture and hayland. The continuous green patterns in various shades along the east and north of the image, and along the major river systems, indicate boreal forest. Data Source: Alberta Provincial Government.	48

The History of Homesteading and Agriculture

In the spring 1909, a Dominion Land Office was opened at the village of Grouard, and a Dominion Land Surveyor named Walter MacFarlane began to subdivide quarter-sections just east of Lake Saskatoon on the Grande Prairie of northwestern Alberta. At the same time, road improvements were begun on the winding trail that stretched between Grouard and Peace River Crossing, while government ferries were installed at the Crossing and at Dunvegan. On 16 March, 31 men, women and children belonging to a breakaway Methodist group called the Christian Association began to make their way north from Edmonton to settle on land around the Beaverlodge River. These events constituted the beginning of the settlement period in the Peace River Country, the most northerly extent of the vast continental plain of North America. By the beginning of World War I, over 2,500 applications would be made for homestead in the region, which would be the last on the continent to see agricultural settlement on a large scale.

Agriculture had actually been undertaken in the region since the early 19th century, when fur traders found it possible to grow crops of grains and vegetables on the rich bottom lands on the flats of the Peace River near their posts. Most of the vegetables were root and tuberous, such as potatoes, carrots, beets and turnips. Peas, beans and cabbages were also grown, and the most common grain was barley. These served the needs of the resident traders, and allowed for some shipment from Dunvegan to trading posts upriver into northern British Columbia. There was no market economy for the produce, however, and it does not appear to have been used for trade with the Indians, whose staple food remained meat from big game animals, in particular moose and deer. Fish and wild berries were other food sources of the traders.

In 1867, Father Christopher Tipsier established the St. Charles Mission at Dunvegan and became the first resident priest in the region. He, too, began to cultivate a garden, as would other missionaries, both Catholic and Anglican, who soon followed him. It was the intent of most missionaries to encourage the natives of the region to practice agriculture, the assumption being that their survival would ultimately depend upon it. The efforts of the missionaries largely fell flat, especially among the most prominent culture, the Beaver, who, until well into the 20th century, were strictly a hunting and trapping people. The most ambitious mission farm was begun in 1879, when Erastus Lawrence established the Irene Farm and Training School at Fort Vermilion in concert with St. Luke's (or the Unchaga) Mission. Seven years later, a steam powered threshing machine was brought in to harvest the grain, while a grist mill was installed to grind it into flour. At Dunvegan, a hand mill was introduced in 1882 to make flour from locally grown wheat. As with the Lawrence farm, most of this wheat was Red Fife or White Russian.

Unlike the missionaries, the traders with the Hudson's Bay Company were not keen on turning the Indians into farmers. Nor were they encouraging of Euro-Canadians settlement. Thus, when it was announced that a major farming operation was being planned for the Waterhole district north of Dunvegan in 1882, the Chief Trader there commented that "they would have great difficulties to contend with, as they would be unable to procure implements or provisions of any kind." (McDougall) By now, however, the Peace River district had caught the attention of the Canadian government, and the public in general, as a land in which farming was possible. Much of this was due to reports issued by various government surveyors who had explored the region during the previous decade. These surveyors were part of a concerted effort by Ottawa to populate western Canada with farmers. In the aftermath of the American civil war, the British government had noted the growing settlement on the prairies south of the 49th parallel, while that to the north remained largely bereft of people, save for the Indians. What white population there was consisted largely of American traders. This circumstance had been a major consideration leading to Confederation in 1867, and the acquisition of Rupert's Land and the North West Territory by the Canadian government three years later.

In 1873, the North-west Mounted Police was created and sent west the following year to bring law and order to the region, but also to reinforce a Canadian presence. A Department of the Interior was also created in 1873, and a Homestead Act was passed to facilitate a farming population in the West. To further the cause of national unity, plans were made to undertake a transcontinental railway. Surveyors were then sent out to determine a rail route, to explore for minerals, and to see what lands were best suited for agriculture.

Among the regions to be explored was the vast extent of parkland lying between Lesser Slave Lake and the Rocky Mountains, known earlier as the Grand Prairie, but now simply as the Peace River Country. At the CPR, Sanford Fleming had become familiar with a pamphlet compiled by Malcolm Macleod called *Peace River: A Canoe Voyage from Hudson's Bay to the Pacific*. Macleod had accompanied Fur Trade Governor George Simpson on an excursion through this region in 1828, during which Simpson had noted that the Peace and Pine River Passes seemed suitable for a railway. In the spring of 1872 explorer and photographer Charles Horetzky was dispatched to the region accompanied by botanist John Macoun, and several Metis guides. They were instructed to check on the land

northwest of Fort Edmonton, report on its resources, and examine the terrain through the mountains for the possibility of a railway.

Horetzky and Macoun traveled to Dunvegan and noted the high elevation of Fairview Prairie. They proceeded south to the Spirit River Prairie, west to the Pouce Coupe Prairie, and then entered the Peace and Pine River Passes en route to the interior of British Columbia. Though not visiting the Grande Prairie, they were told stories of its size and extensive grasses. Returning to Ottawa the following October, both men were full of stories about the verdant growth in the Peace River district and its ideal suitability as farm land. In a book called *North West Canada*, released in 1874, Horetzky described the Peace River Country as “a veritable garden of Eden”, and expostulated that, with a railway, “the vast and fertile region south of the Peace River would be within the emigrant’s grasp.” (Horetzky, 17-18) Macoun expressed the belief that “there was no tract to equal it in my estimation between Fort Garry and Edmonton.” (John Macoun, “Botanical Report”, pp. 85)

In 1873, the Peace River Country was visited by another explorer of sorts: the popular adventure writer William Francis Butler. Butler had just become famous for his book, *The Great Lone Land*, in which he argued that the Canadian plains in general were suitable for farming. In 1874, he released *The Wild North Land* in which he echoed the lavish praise of Horetzky and Macoun, averring that “there are ten acres of fertile land lying *north* of the North Saskatchewan for every one lying *south* of it.” (Butler, pp. 364) He too felt that the Peace and Pine River Passes could accommodate a railway, and recommended one for this country, as well as a northern ocean port for British Columbia. If this had come about, the Peace River Country would have been closer to an ocean terminal than any other wheat growing region in western Canada.

Taking note of these reports was Alfred Selwyn of the Geological Survey of Canada, who, in the spring of 1875, undertook a more detailed survey of the region. Selwyn had been exploring mineral deposits in the mountains, and, in August, he ascended the Peace River as far as the mouth of the Smoky River, which was also ascended for about 70km. Though not effusive in praise, Selwyn was also of the opinion that the land could accommodate farming. This was also the case with geologist George Dawson in the summer of 1879. Dawson entered the region from the west by land, and made observations of the Pouce Coupe, Grande and Spirit River Prairies. He made note of the extensive grasses, mostly rough fescue, but varieties of wheat grasses as well. Their extensive height, up to his horse’s neck in some cases, seemed to portend a soil type suitable for domestic grain. He also took pains to examine the soils of the area and test their depths, and concluded that large scale agriculture was possible on these open parklands. According to Dawson, “the luxuriance of the natural vegetation in these prairies is truly wonderful, and indicates, not alone the fertility of the soil, but the occurrence of a sufficient rainfall.” (Dawson quoted in John Macoun, *Manitoba*, p. 126) Another amenity perceived by Dawson was “the immunity of this region from the visits of the devastating locust or grasshopper.”

Traveling part way with Dawson that summer was Anglican Reverend Daniel Gordon, whose popular book, *Mountain and Prairie*, also painted a positive picture of the farming potential of the Peace River Country. Gordon argued, as did Macoun, that the greater extent of sunlight this far north would ultimately compensate for the shortness of the growing season. He maintained that:

While the wheat-crop of the Peace River district may possibly suffer occasional injury from early frosts, barley, rye, and all the ordinary variety of roots may be regarded as a sure crop, and these with the abundant and luxurious pasture would render this country peculiarly well adapted for stock-raising. The winter is severe but apparently not more so than that of the Edmonton district. (Gordon, pp. 219-20)

For a while, the CPR seriously considered extending its line northwest from Brandon, Manitoba, past Fort Saskatchewan, and through the Peace River Country en route to the interior of British Columbia, and down to the port of Vancouver. Other considerations mitigated against this route, however, especially the perceived necessity of populating the southern prairies with people of British sympathies as soon as possible. Not only was the Peace/Pine route rejected, but also the Yellowhead Pass, which, in 1879, had emerged as the favoured one. Instead, the more southerly Kicking Horse Pass was chosen, and, in 1883, the CPR reached the site of Fort Calgary. The fledgling Edmonton Settlement, which had experienced a land boom during 1879-80, now went into a mild recession. On the other hand, Calgary soon became the largest community between Winnipeg and Vancouver.

In Edmonton, the *Bulletin* noted that a number of the recent arrivals there now intended to go to the Peace River Country to farm. In town at the time was the Dominion Land Surveyor, William Ogilvie, who confided to Ottawa that:

I thus determined to proceed direct to the Peace River district as soon as possible and there survey that part of the country that was best suited for settlement, and which will inevitably in the course of a year or two be settled as all, or nearly all of the farmers around Edmonton have been in that district and would not remain where they are, were there any facilities for utilizing farm produce in the Peace River district, the opinion of all being that it is far superior to any other part of the country.

Ogilvie and his crew then headed northwest to join another crew led by William Thompson to survey the geographic base lines, in anticipation that large scale settlement was at hand. As they set out, preparations were already underway to establish a major farm north of Dunvegan in the district known as Waterhole on the trail between Dunvegan and Peace River Crossing. This was a project initiated by three recent migrants from Ontario named Milton, Lloyd and Hayes. At the same time, at Dunvegan, the Anglican missionary John Gough Brick was also making plans to establish a farm on the flats of the Peace River downstream from this post, on land where George Garrioch had attempted a small farming operation in 1880. To Brick's concern, this land was now occupied by a Metis named Benjamin LaPretre who refused to give it up. Brick therefore decided to attempt a farm beyond the river banks at Old Wives Lake which was on the east end the Dunvegan-Peace River Crossing trail. In the spring of 1883, Brick's sons, Allie and Bertie, began to cultivate the land and plant wheat.

The initial results of the two farming operations north of the Peace River were not promising, as, in the early fall of 1883, both crops failed due to little rain and early frost. Ogilvie, who was about to depart for Ottawa, reported that:

It is much to be hoped that next season will prove more favorable; should it not, it will divert a great deal of attention that is now directed to that part of the country, and of which (aside from the climactic conditions) is in every way worthy. (Ogilvie Report, 1884, pp. 55)

Despite Ogilvie's optimism, the years that followed were not fruitful. At both Waterhole and Old Wives Lake, crop after crop proved substandard or succumbed to early frosts. In the spring of 1889, Ogilvie returned to undertake further survey work and observe the progress of the farms. The previous year had seen the release of a Senate report which spoke glowingly of the "fertile belt" that existed between Hudson's Bay and the Rocky Mountains. This time, however, Ogilvie's opinion of the region was changed, and he no longer viewed the land as potentially bountiful. The venture at Waterhole was now abandoned, while that at Old Wives Lake was left mostly to haying. In his report published in 1891, Ogilvie presented the first negative account of the region by a government official, declaring that he:

would not advise any one seeking a home in our great North-West to think of Peace River. There is only a limited area in the valley which is the only place where success can reasonably be expected.... I regret to have to present such an unfavorable account of a region of which so much has been said and written. The soil is excellent and much of it available for immediate use cannot be denied, but the occurrence of severe frosts on the plateau where the grain is not far enough advanced to resist its effects may be as far as our experience goes considered a certainty in the majority of the seasons. It may be that when the necessities of settlement require it, early seeding and other varieties of grain may materially alter conditions, but at present I would advise no one to think of farming there except in the river bottom, in which there are flats extensive enough to locate a few score homes. (Ogilvie, "Report", 1892, p. 37)

Ogilvie's second visit had coincided with the beginning of another farming operation by John Gough Brick and his sons, this time on the flat of the Peace River 20 km upstream from Peace River Crossing, at a spot he called Shaftesbury after the English patron of the Church Missionary Society. In 1888, a steam powered threshing machine was brought in, and, in the fall of the following year, Brick reported that he had harvested eight bushels of barley, eight bushels of oats and eight to ten bushels of wheat. (Leonard, *Delayed Frontier*, pp. 183-93) The fall of 1890, however, saw 108 bushels of wheat and 142 of barley. Subsequent yields were also high, and, by the time Brick retired to the East in 1894, he could justifiably call his operation a success. By this time, the Anglican mission at Dunvegan was closed and a new one called Christchurch opened at Shaftesbury.

With Brick's retirement, the Church farm at Shaftesbury was carried on by his sons, Fred and Allie. Soon, Allie would begin his own farm just upstream from Shaftesbury, while the former Hudson's Bay Company trader Alex MacKenzie began another farm further downstream. The largest farm along the Shaftesbury Trail was begun in 1893

at the Roman Catholic St. Augustine Mission, 15 km upstream from Peace River Crossing. Here, a grist mill and threshing machine were brought in by Father Le Treste. By the turn of the century, about ten separate farms of varying size were scattered along the Shaftesbury Trail, including that of William Carson, upon which a community threshing machine operated.

However, development of the prairie districts of the Peace River Country was still on hold. The early 1890's had seen the release of two widely read books which served to dampen enthusiasm: the first was by geologist Wharburton Pike called *The Barren Grounds of Northern Canada*, which scolded the early promoters and declared:

These farms and all the spots in which the grain ripens are in close proximity to the bed of the river, and here the amount of arable land is limited. Climb the steep banks and take a look over the millions of fertile acres which the philanthropic politician wishes to see cultivated; notice the frost on a summer's morning, and make the attempt, as has often been made already, to raise a crop on this elevated plateau. In ten year's time this may be a cattle country, although the hay crops are insufficient to ensure enough food for the long winter; but let us have no more talk of sending poor settlers to starve in a land unable to supply food to the Indian, who is accustomed to a life of continual struggle with a relentless nature. (Pike, p. 224)

The other was *The Land of the Muskeg* by the British writer H. Somers Somerset, which asserted that:

I have heard many ignorant people aver that this is great farming country, that I think these facts cannot be too often reported. It is a dreadful thing to think of the emigrants who toil this land only to find a useless country.... In a land where the native starves, what chance is there for the white man? (Somerset, pp. 31 and 98)

By the end of the decade, public opinion about the area was perhaps best summed up by the noted poet and journalist Charles Mair, who reported on his journey of 1899, and disclosed that Allie Brick:

was of the opinion that along the rim of the upper prairie level wheat would ripen, but further back he thought it unsafe, and so no doubt it is for the present. Mr. Brick's fine farm, opposite the six Islands, and other farms also were a success, but, of course, all of these were along the river. With regard to the upper level, I heard opinions adverse.... (Mair, p. 90)

Mair was a member of the Half-breed Scrip Commission which was then traveling through the region in the wake of the Commission negotiating Treaty 8, led by David Laird. The preceding years had seen several developments in northwest Canada which had persuaded the government that a treaty with the native peoples was advisable. Foremost among these was the Klondike gold rush which, beginning in the summer of 1897, was bringing hordes of prospectors into the region. Much disruption was caused as the Klondikers had no stake in the northern communities, and were pressed by the harsh conditions of their journey. Stories of theft and violence were common. Few of those Klondikers who took the 'all Canadian' route ever reached the goldfields of the Yukon, but a number of them did enter the Peace River Country and were impressed by the parklands as having potential for farming. Most Klondikers were Americans who were entering the Yukon from Alaska. In the Department of the Interior, Minister Clifford Sifton sensed a growing urgency to settle the Northwest with people sympathetic to Canada, much as the government of John A. Macdonald had sensed the urgency to settle the western prairies with such people in the 1870's. Unlike the Conservatives, the Liberals under Wilfred Laurier favored a more open door immigration policy, and, with the urging of Sifton, the government was now openly soliciting eastern Europeans to migrate to western Canada.

With the securing of Treaty 8 in the summers of 1899 and 1900, and the allotment of scrip to northern Metis, the government felt safe in declaring that all the land from Athabasca Landing to Great Slave Lake, and from Lake Athabasca to the Rocky Mountains, could be open for development by new settlers. This included all the land constituting the Peace River Country. Anticipation of settlement was high, and it even appeared that a railway would soon enter the district. 1899 saw the incorporation of the Edmonton, Yukon and Pacific Railway which was to extend from Edmonton all the way to Dawson City through the Peace River Country. In the meantime, a change was taking place in the northern economy. With so much cash brought in with the Treaty adhesions and scrip allotment, as well as by the Klondikers, a cash economy was coming to replace the old barter system employed by the fur trade.

Taking advantage of this was the partnership of Bredin & Cornwall. Formed in 1899, this general merchandizing venture would soon rival the Hudson's Bay Company for economic dominance in the Peace River Country. In the space of two years, Bredin & Cornwall would have posts at the Lesser Slave Lake Settlement, Dunvegan, Peace River Crossing, Spirit River, Sturgeon Lake, Lake Saskatoon and Fort St. John. Posts would later be established at Fort Vermilion and Hay River. Recognizing the time of transition, the firm combined barter with cash exchange.

Thus, circumstances at the turn of the century were ripe for a renewed interest in the Peace River Country as a land suitable for large scale settlement. As early as 1893, Peace River wheat had been presented at the International World Exposition in Philadelphia, and, according to John Macoun, the delegates professed "they had never seen such wheat before." (John Macoun, p. 36) By 1899, Charles Bremner was demonstrating that wheat could be grown successfully on the Spirit River Prairie. In 1902, two more farming operations were begun on the Grande Prairie by Louis Calliou and Alex Monkman. Other squatters, estimated to be about 20 in number, were also on the Grande Prairie investigating the potential of the soil.

In the spring of 1903, it was decided to make a detailed scientific investigation of the region and come to a conclusion about its suitability for farming on a broad scale. A Geological Survey party traveled to the region, accompanied by a young botanist named James Macoun. James was the son of the former Peace River promoter John Macoun, and the government had every reason to believe he would echo his father's position on the richness of the land. Indeed, so respected were the views of the elder Macoun that he had been appointed Dominion Botanist.

That summer James Macoun traveled throughout the area, talking to settlers, assessing the vegetation, and testing the soil. He returned to Ottawa that fall to present his work, *The Report on the Peace River Region*. In the spring of 1904, James Bell of the Geological Survey decided to have it published, but not with the consent or knowledge of the Minister responsible for the Survey, Clifford Sifton. The report detailed Macoun's findings and, within the separate accounts of the several prairie districts of the country, the evidence was presented in a positive, though matter-of-fact, manner. For example, Macoun commented that "there is practically none of the Grande prairie that is unsuited to agriculture." However, in his summation, Macoun was blatant in his denigration, referring the Peace River region as "emphatically a poor man's country." (James Macoun, p. 40) In his opinion:

After a perusal of all published reports on the Peace River Country, an examination of almost every acre of cultivated land in that region and a careful study of the natural vegetation, soil and climatic conditions, I have been forced to the conclusion that, notwithstanding the luxuriant growth that is to be seen almost everywhere, the upper Peace River country, to which so many eyes are now turned, will never be a country in which wheat can be grown successfully. (James Macoun, p. 35)

His main point overall was that, although large quantities of black loam soil were in evidence, its depth was not sufficient in many areas to sustain farming over an extended period of time.

Sifton was taken aback by this, and reprimanded Bell over the public release of the report. More offended was the Member of Parliament for Edmonton, Frank Oliver, whose riding included the Peace River Country. Oliver had long been a supporter of northern development, and his paper, the *Edmonton Bulletin*, carried numerous stories about the crops grown in the region and of the potential of the land for settlement. On 6 April 1904, the *Bulletin* carried an editorial which declared:

After Canadians have been satisfied for one hundred years by proofs that continually increased in assurance as well as numbers, that the Peace River was one of the country's most valued assets, comes forward an young government employee, who on the strength of a visit of a few months, and with all the authority which official standing can give behind him, proclaims loudly and widely that it is all a mistake, and that the Peace River is not at all desirable country for agriculture, if indeed for any settlement.... Whatever may be said of his facts, there is no doubt whatever that his conclusions are absolutely erroneous: and as injurious as they are erroneous.

The issue spilled over into the House of Commons and rekindled the debate over the viability of the Peace River Country for large scale farming. It was decided to turn the matter over to the Select Standing Committee of the Commons on Agriculture and Colonization. When the Committee next met on 4 April, it was specifically to review the Macoun report.

The first witness before the Committee was James Macoun's father John who was now retired. Though not directly critical of his son, the elder Macoun stood by his own earlier position that the Peace River region could accommodate farming. His theory all along had been that the extensive summer sunlight in the northerly latitude would compensate for the shortness of the growing season, and that the Peace region would benefit from its low lying prairies. Other witnesses were then called until finally, on 14 April, James Macoun faced the Committee that included Frank Oliver. From the outset Oliver was abrasive, affirming that Macoun "has set his opinions against every man I have ever met that has been in the Peace River." Oliver accused Macoun of being political, and stated flatly that he believed he had "deliberately and purposely caused inferences to be drawn which are absolutely and utterly misleading and injurious to the last degree to the best interests of this country." Macoun replied, "I have no politics," and maintained that, as a result of his study, "there was no more disappointed man in Canada than James Macoun."

Oliver was censured for his comments, but the Committee was mostly Liberal, and their polite conclusion was that it was "unreasonable to suppose that any man could, within that time, acquire sufficient knowledge to enable him to make the report and give the evidence which Mr. Macoun did." (Canada, Committee on Agriculture, p. xiv) It was recommended that Macoun's report be suspended until the resources of the Peace River Country could be further assessed. The matter was turned over to the Senate which established a Select Committee on northern resources in general. As the majority of those called in to testify before this Committee were known northern promoters, it was not surprising that the overwhelming extent of the testimony was supportive of farming in the Peace River Country. Testifying as to the fertility of the North were Jim Cornwall, Fletcher Bredin, Fred Lawrence of Fort Vermilion (Figure 1), Indian Commissioner H.A. Conway and the elder Macoun. The official government position on the matter was perhaps best summed up in the title chosen for the eventual publication of the testimony, *Canada's Fertile Northland*.

While James Macoun's report was suppressed, Frank Oliver purchased 500 copies of a booklet just released called *The Peace River Trail*. This well illustrated and laudatory account of the Peace River region was written by a young adventurer named Maynard Bezanson who was planning to establish a townsite on the Smoky River. Despite the fact that it was published by the newly established and Conservative *Edmonton Journal*, a rival newspaper to Oliver's Liberal *Bulletin*, Oliver made sure that every Senator and Member of the House received a copy.

That the Laurier government was determined to settle the Peace River Country was given proof in April 1905 when, with the resignation of Sifton over the Manitoba School question, Frank Oliver was appointed Minister of the Interior. With Oliver's urging, Laurier decided that the time was ripe for provincial autonomy for the southerly portions of the North West Territories, and legislation setting out the parameters of the new provinces of Saskatchewan and Alberta was passed. In what became Alberta, the demography had shifted considerably during the previous decade, and the majority of the people were no longer Conservative southern ranchers who favored tariff protection for their beef. Instead, the majority were now northern farmers who favored lower tariffs for cheaper American equipment and supplies, as well as an American market for their grain. This, along with open door immigration, was the policy of the Liberals, as well as the boundaries of the new provinces running north and south, rather than east and west as favored by the Conservatives.

It is interesting to note that Edmonton, and not the larger Calgary, was made the capital of Alberta, and that six of the new provincial electoral ridings were made to touch upon Frank Oliver's home city of Edmonton; Calgary received but one. In the first election held in November 1905, the Liberals under Alexander Cameron Rutherford of Strathcona swept the polls, taking 23 out of 25 seats. The cause of northern development was given a decided boost, and before long, Rutherford had his government committed to railway development to Waterways and to the Peace River Country.

In the election, the greatest number of votes in the vast Peace River riding were gained by the Liberal Lucien Dubuc. The results, however, had to be annulled due to irregularities. November was a poor time to travel with rivers not yet frozen, but icy enough to make crossing treacherous. The election party was two months late, and several polling stations were missed. In the by-election held the following February, the victor was the Liberal, Allie Brick, who was now a successful farmer on the Shaftesbury Trail. His opponent, Jim Cornwall, had also run under the Liberal banner. In the adjacent riding of Athabasca, the victor, by acclamation, was Cornwall's business partner, Fletcher Bredin, also a Liberal. In the years that followed, Bredin would become a staunch advocate of northern development. Brick was more subdued in his advocacy, but his farm stood as proof of the richness of the soil along the Peace River. (Leonard, *Lure of the Peace*, pp. 35-55)

Jim Cornwall had lost the election, but he too went on to become an ardent promoter of the Peace River Country, gaining the nickname 'Peace River Jim'. In 1905, the firm of Bredin & Cornwall was proving very successful, and,

when it sold out to the Revillon Freres the following year, the price tag was \$150,000. By this time, Cornwall was directing his efforts mainly to northern transportation, with steamboats on the Athabasca and Lesser Slave Rivers. In a few years, his Northern Transportation Company would become the principal means of travel from Edmonton to the Peace River Country. Cornwall himself was a highly visible promoter, presenting lectures on the North and soliciting for transportation improvements. Other leading advocates of the same cause at this time included Maynard Bezanson, Fred Lawrence and of course, the Minister of the Interior, Frank Oliver.

Until this point, except for the church farms, all attempts to cultivate land in the Peace River Country had been on an individual basis with no government assistance. 1907, however, saw the first attempted realization of group settlement. The project had begun in 1899, just after the signing of Treaty 8, when an obscure priest from Marieville, Quebec named Father J.A. Lemieux contacted the Department of the Interior with a proposal to locate a number of Francophone settlers on a 32 km² tract of land south of Peace River Crossing. Many of these settlers were intended to be expatriate Quebecers who had migrated to the eastern United States years ago. For this project, Lemieux had incorporated the Peace River Colonization & Land Development Company. He proposed to settle 50 farmers within three years of the tract's survey, 150 within the next five, 300 within the next ten, 600 within the next twenty, 1,200 within the next thirty, and 2,400 total if a railway was brought to the district. In return, if the first 50 settlers were located on time, the Company could purchase one third of the tract at \$1.00 per acre.

The government was compliant, and an order-in-council was passed setting out the parameters of the project. In the summer of 1902, the concession was surveyed. However, by April 1904, there was no settlement activity, and Lemieux wrote to Clifford Sifton asking for an extension. This was granted, but by the end of 1906, there was still no development, and even Frank Oliver, now the new Minister of the Interior, confided, "I do not think the scheme a workable one." By this time, Lemieux had retired to France, and the Company had been sold to the Kent Realty & Investment Corporation of St. Paul, Minnesota which vowed to see the project begun. By terms of the agreement, 50 settlers were to be located on their holdings by 1 October, 1907. With lavish advertising and extravagant claims in newspapers and special pamphlets, 52 deluded but hopeful settlers paid the Kent company \$50 each for the privilege of being a part of the plan. On 20 July, the first party set out to the concession, led by H.H. Lampson of the Kent Company.

When they arrived at the concession, the hopeful farmers saw nothing but heavily wooded hills just east of the Smoky River, virtually impossible for farming. Bracing for hostility, Lampman and his associates, who were armed, attempted to get the would-be settlers to sign a petition declaring that the land was totally unfit. This, the Kent Company wanted to use in a court case against the government for having allowed the project to take place on land which the government should have known was unsuitable. Baffled and angry, the prospective farmers refused to sign, and that night Lampson and his men disappeared. The farmers then made their way up to Peace River Crossing and back to Edmonton as best they could. The scandal became public and the press had a field day, as did the Official Opposition in the Commons, which berated the government for three full days.

The failure of the PRC&LDC reinforced, in many minds, the pitfalls of encouraging people to settle in the Peace River Country without the benefit of a railway. At the Immigration Branch, and, in spite of the boosterism of the Liberal politicians, officials began to warn prospective settlers about the dangers of locating in this area. In April 1906, for example, the Superintendent of Immigration, D.W. Scott, replied to one inquirer that "Squatters claims, though sometimes recognized, are not encouraged." (NAC, RG76, Vol II). Next year, with the failure of the PRC&LDC in mind, he replied to another:

I am not aware that the Peace River district will be thrown open for settlement at an early date, and I might point out to you that there are no transportation facilities and are not likely to be any satisfactory arrangement made in this way possible for some little time to come. Under these circumstances I have not thought it wise to encourage settlers to go so far from railroads, as considerable hardship might be caused them.

Noticing Scott's letter on file, Frank Oliver, reminded him that "it would create a wrong impression to say that the Department was discouraging the settlement of that country."

In the spring of 1909, having secured lucrative bond guarantees from the provincial government, the Canadian Northern made preparations to start building a line which would reach the site of Sangudo in 1912. Although it would never extend beyond Whitecourt, which it would eventually reach in 1919, most people in 1909 thought the Canadian Northern was at last on its way to the south Peace River Country. Feeling safe in assuming this, the federal government gave its approval to the establishment of a Dominion Land Office at Grouard, and the subdivision of the prairie lands of the Peace River Country into quarter-sections for homestead. By this time, it was estimated that

there were about 75 squatters on the Grande Prairie alone ready to begin cultivating farms. The news of a land office meant that homesteads could now be applied for in the region. In the summer of 1910, with the backing of several newspapers, Jim Cornwall, undertook a major fact finding excursion to the Peace River Country. Included were some 18 promoters, journalists and scientists. Details of his excursion were widely reported, and a settlement wave quickly ensued. By February 1911, the Provincial Publicity Commissioner could report:

From two-thirds to three-quarters of the communications I receive at the present time have to do with the new northwest. Some days I receive from thirty to fifty letters from people who are anxious for information about the country. Most of those writing are intended homesteaders. Some want to buy land tracts not knowing that there is not land in the Peace River district in Alberta which may be purchased.

The inquiries are from all parts of the world. I have received letters from India, South Africa, Germany, Belgium, Holland and Sweden. The majority of the letters are from the United States and eastern Canada.

Some of hopeful settlers took a chance and filed for a homestead at the new land office in Grouard without having seen the holding of their choice. Others preferred to see the land, select several promising sites, and then return to Grouard to file, hoping that their choice would not have already been selected by someone else. In 1910, the head of the survey party, Walter MacFarlane was provided with the necessary forms so that he could approve homestead applications on site. At Lake Saskatoon, around which the first quarter-sections were marked out, a 'scrip house' was set up where applications could be formally made. With their applications for homestead approved, the homesteaders would then usually return to Edmonton to secure the equipment and supplies needed to begin a farm. Many now brought back families, as well as cattle and horses, to assist in the momentous task of building a cabin and other rudimentary farm buildings, sinking a well, clearing the land, breaking it, planting a garden and, eventually, a grain crop.

There were a number of incentives attracting these first settlers, in addition to the lavish publicity campaign carried on by the press and the provincial and federal governments. One was the belief that a railway was imminent, which would mean vastly improved communication with Edmonton, as well as a market for farm produce. Another was the publicized full development of marquis wheat by the Dominion cerealogist, Charles Saunders, which was achieved in 1909. Marquis was a particularly hardy variety which seemed ideal for the harsh northern climate. A third was the fact that, with so much land being thrown open for homestead at once, group settlement could be facilitated. People of the same ethnic and/or religious background could take up land next to each other and so continue to share their common values and traditions. It was the homesteaders who came in groups who would prove to be the most successful among the first settlers. Not only were they assured comparative social harmony, they also had the benefit of collective activity when establishing their farms. All of the first settlers required assistance from their neighbours, and work bees for harvests and barn raisings were a common feature of the Peace River Country both before and after World War I.

The first case of successful group settlement was the Christian Association, or Burnsites, a group of Methodists which had recently broken away from the Methodist Church in Ontario. Espousing the principles of the first Methodist, John Wesley in the 1740's, they eschewed the formal order of affairs the Church in Ontario was perceived to be adopting. They preferred to recognize no specially ordained ministers of the gospel, for all people were, supposedly, equal in the eyes of God. Nor did they hold formal church services, but instead held 'meetings' where all participants were equal. In the spring and summer of 1909, in what was called the 'Bull Outfit', as it was driven by oxen, 31 members of this group made their way to lands near the Beaverlodge River and carved out farms.

Three years later, led by Halvor Ronning, a group of Norwegian Lutherans settled on lands north of the Burnsites, in the district around Hythe and Valhalla. That same year, Father Jean-Baptiste Giroux began to settle a number of Roman Catholic 'colons', or colonists, from Quebec in the district of present day Falher and Donnelly. It was also in 1912 that Peter Gans from Westphalia in Germany began to settle a number of Roman Catholic citizens from his homeland in the vicinity of Friedenstal just south and east of present day Fairview. Today, these districts all retain trappings of the culture brought in by the first agricultural settlers.

The greatest incentive for these first homesteaders, however, was probably the prospect of owning large farms. It had been under the Homestead Acts, both American and Canadian, that, for the most part, the western prairies had been settled in the latter nineteenth century. Though subject to various alterations over the years, this legislation basically provided that, for a small registration fee, an applicant for homestead could receive title to 160 acres of land, or one quarter-section, if, within three years after filing, he cleared it, built three buildings on it, put in an

access road, and resided on it six months of the year. The process had resulted in thousands of successful family farms (see Figure 2). However, by the early years of the twentieth century, with so much production keeping the grain prices low, it was difficult for a standard quarter-section homestead to sustain a family of any size, and many foreclosures resulted.

To remedy this in Canada, an amendment was made to the Homestead Act in 1908, which provided that, in addition to a quarter-section, a homesteader could receive additional adjoining land for a total of 160 acres of arable land overall. Also available was South African scrip. Every veteran of the Boer War was presented with a certificate which entitle him to two quarter-sections of Crown land in the West, provided he identified it and filed for it under the normal land disposition process. Few veterans wanted to settle in the West, however, and provision was made for them to sell their entitlements to others who did. A homesteader in the Peace River Country, therefore, could have his farm expanded to as much as two quarters, and add to it two more of South African scrip purchased at the Dominion Land Office. Additional quarters could be had if a friend or family member also filed on an adjoining quarter as a surrogate. Across the southern prairies, farmers feeling the strain of their undersized holdings were now encouraged to sell out to equally cramped neighbors and seek new and larger holdings in western Canada. Where was all of this new farmland to be found? Much of it in the Peace River Country.

By the end of 1914, over 2,500 applications for homesteads were made in the region, despite the absence of a railway. Though less than half of the applications would be proven up, there was enough settlement to make the Peace River Country unique to North America as a land which was essentially 'settled' by farmers, but not served by a railway. This included the Peace River Block of British Columbia which was subdivided for settlement in 1912. Here, settlers anticipated the eventual arrival of the Pacific Great Eastern Railway from the west, which, Premier MacBride promised, would soon be extended into the district from Fort (now Prince) George.

The land rush between 1909 and 1914 resulted in the evolution of a number of rural communities which served as service centers for the agricultural hinterland. In 1909, the only communities as such were at Peace River Crossing, along the Shaftesbury Trail, Dunvegan, Spirit River, Lake Saskatoon, Flyingshot Lake, Sturgeon Lake, and along the south Bear Creek. Within the next five years, a number of other rural hamlets would spring up across the countryside, most consisting of little more than a store and post office, and possibly a church or a community hall. In 1909, the largest community was Peace River Crossing, which had lately been experiencing some growth due to its position as the terminus of the Grouard Trail. It then held the trading posts of the Revillon Freres and the Hudson's Bay Company, an Anglican church, a North-west Mounted Police Barracks, and several residences. With the settlement period growth continued, and, in June 1914, with a population exceeding 200, Peace River was incorporated as a village.

In November 1909, several speculators in Edmonton, led by William Rae, incorporated the Argonauts Company and acquired land east of Bear Creek near Flyingshot Lake. Here, the following spring, they subdivided a townsite and began to sell lots. Almost immediately, a community called Grande Prairie City appeared. When a bank was located there in the spring of 1911, and a Dominion Land Office the following July, the status of the community as a district metropolis was assured. By this time, a crude government trail extended from Edson to Grande Prairie City on the Grand Trunk Pacific Railway line, over which most of the prospective settlers for the south Peace River Country now preferred to travel (Figure 4). In April 1914, with its population exceeding 200, Grande Prairie was also incorporated as a village. Other communities containing more than 50 residents at this time included Beaverlodge, Spirit River, Waterhole and Rolla. The telegraph had now arrived, and, in both Grande Prairie and Peace River, bi-weekly newspapers were being published.

In the speculative atmosphere of the time other communities were envisioned which never materialized. One was the ambition of Maynard Bezanson, the first settler to cultivate a farm on the flat of the Smoky River. He had traveled through the region in 1904 and returned in 1907 to establish a holding on the flat some 14 km southwest from present day Bezanson. This was just past the confluence of the Simonette and Wapiti Rivers with the Smoky, and in proximity to where the Canadian Northern Railway surveyors had recently been taking measurements. Bezanson was certain that, when the railway came, it would have to cross the Smoky next to his holding. He then returned to Edmonton and published *The Peace River Trail* which urged adventurous and ambitious people to seek their fortune in the wonderful Peace River Country. The following year, he was back at his holding with his wife and her sister, and together they began to clear land.

Though the Canadian Northern did not arrive, Bezanson remained convinced that some railway would soon penetrate the region, and, due to the growth of Grande Prairie City, it would have to extend near his holding which he now held as a homestead. He therefore subdivided a townsite on his flat which he called Bezanson. With neighbors now involved, he also built a sawmill and a grist mill. A tiny community began to evolve. Bitter

disappointment was their eventual lot however when, in 1914, the Edmonton, Dunvegan & British Columbia Railway chose to cross the Smoky 90km downstream at Watino.

Bezanson had made an honest attempt to establish a town which he thought could become a metropolis. Not so honest were the Dunvegan Townsite and Northstar Land Companies which acquired land east of the trading post at Dunvegan and began to subdivide a townsite on the rugged banks of the Peace River, with some lots sloped at angles as much as 45 degrees. In Edmonton and eastern Canada, they advertised these lots in the beautiful and fertile Peace River Valley for between \$200 and \$400 apiece. In the *Edmonton Capital* (18 May, 1912), it was postulated that “when the Panama Canal is completed... Dunvegan will then be the assembling grain centre for a district greater than Edmonton, Winnipeg, St. Louis, Omaha or Kansas City.” Many ambitious speculators fell for the scheme and purchased lots, only to find, upon their arrival, no town, nor prospect of one, on such inhospitable terrain.

The war years brought continued settlement to the Peace River Country, as an increasing number of eastern Europeans began to take up land in the area. The population level remained relatively constant, however, as other people left the region for various reasons concerning the war. By this time, the Peace River Land Office at Grouard had been transferred to Peace River.

Following the railway extension to Peace River and Grande Prairie in 1916, much demographic change took place. To make money, it was the practice of the ED&BC, as it was with other railway companies, to bypass established communities where land was of higher value, and instead acquire land at nearby locations along the rail line. Here, a railway siding, or station, would be built, and here the government would choose to locate a post office. Before long, the older communities would go into decline while new ones would emerge where the ED&BC had sub-divided townsites. After 1916, centers such as McLennan, Falher, Girouxville, Culp, Tangent, Eaglesham, Belloy, Codesa (see Figure 5), Manir, Wanham, Rycroft and Clairmont evolved, while High Prairie, Donnelly, Spirit River and Sexsmith were made to shift location.

With the railway, new lands were opened up for homestead, in particular between Girouxville and Peace River, and from Watino west to Rycroft. Some of the new homestead lands would not be proved up as the Railway occasionally altered its intended course. This was the case west of Spirit River where the Railway had surveyed its line straight through to the Pouce Coupe Prairie. Instead, the ED&BC decided to defer this line in favor of one straight south from Rycroft into the more populated Grande Prairie, with a spur line extended to Spirit River.

With the railway, a market economy was now possible, and the phenomenon of co-operative grain marketing was brought to the Peace River Country. Encouraged by the rapidly growing United Farmers of Alberta, which would soon have several locals in the Peace region, the co-operative Alberta Wheat Pool and the farmer owned United Grain Growers both constructed grain elevators in communities along the rail line. At Valhalla, another effort in co-operative marketing was begun with the Valhalla Creamery.

The end of the war was a time of prosperity in the Peace River Country. Via the Soldiers' Settlement Act, returning war veterans were given land grants and other incentives to establish farms in the area. Further survey work was thus undertaken, and a number of the more remote districts began to open up. South from Wanham, farms were carved out around Peoria, Heart Valley, Bad Heart and Teepee Creek. South of Beaverlodge, settlement now took place near Elmworth, Halcourt, Rio Grande and Hinton Trail. East of Peace River, farmland was extended out to Harmon Valley. In 1919, a traffic and railway bridge was built across the Peace River at Peace River, and settlement began to expand beyond the Grimshaw district to Weberville in the north and Warrensville in the west. Other lands within the settled portion of the Peace River Country were also cleared for expanded farming operations.

In 1919, the debt ridden Canadian Northern and Grand Trunk Pacific Railways were effectively bailed out by the federal government and reconstituted as the Canadian National. That same year, a line was extended northwest from Sangudo to Whitecourt. Although no promises were made, there was anticipation that the CN would be pushed through to Grande Prairie. For the first time, homesteads were taken east of the old Bezanson Townsite on the Smoky River, where a government ferry was now installed. Hamlets such as Goodwin, Debolt, Crooked Creek, Clarkson Valley and Sturgeon Heights soon emerged along the trail between Bezanson and Sturgeon Lake.

Due largely to a brief flurry of oil exploration west of Peace River, the population of this village grew to over 1,500 in 1919, and the village was incorporated as a town. With an equal population, Grande Prairie also became a town that year, while, with over 500 people, Spirit River gained status as a village. Both Grande Prairie and Peace River had active boards of trade, newspapers, hospitals, courthouses and detachments of the Alberta Provincial Police. Prognostications for future transportation developments were also presented at this time as the first air flights to the region were begun by bush pilots Wop May and Punch Dickens.

Farmers in the Peace region were now receiving professional advice from the Dominion Experimental Station which had been established by Donald Albright at Beaverlodge in 1914, and in 1923, he was joined by a provincial 'district agriculturalist' in Grande Prairie. In addition, six local agricultural societies were serving to disseminate advice and conduct fall fairs, while several women's institutes were providing training and advice to farm women. Locals of the United Farmers of Alberta at Grande Prairie, Beaverlodge, Spirit River, Waterhole and Peace River were beginning to provide political solidarity for the region. For local government, rural municipalities had now become an administrative format for Alberta, and, in the Peace region, they were now set up for Grande Prairie, Bear Lake, Spirit River, Fairview and Peace (River) to build and maintain roads and undertake other local improvements. For the children of the region, there were now 56 school districts dispensing elementary education in the Peace River Country. Larger communities also had high schools.

The flurry of activity, however, came with a price, and court records disclose a high level of lawlessness in the area during this time. The annual report of the Peace River Division of the Alberta Provincial Police for 1918 noted that "there has been an increase in the number of offences dealt with," and maintained that "the strength of this Division must be increased to keep pace with the changing conditions if vice and crime are to be effectively dealt with.... It is impossible to give prompt attention to all complaints." It was in June of 1918 that the biggest unsolved mass murder in Alberta's history took place on two small farms outside Grande Prairie.

In 1920, the Peace River Division of the APP was split between Peace River and Grande Prairie. Increasing criminality, however, continued to be an issue. That year, the APP report from Grande Prairie argued that "the main reason for the increase is undoubtedly the increase in population, many of the new comers being foreigners from the Old Country or the U.S." Some of the crime was due to prohibition, begun in 1917, and some, no doubt, to the dislocation felt by recently arrived settlers, including some war veterans. One such veteran who was fond of gun play was George Frederick "Nobby" Clarke of Bad Heart. Now a local legend, Clarke was in court six times over the space of two years for various assault and weapons infractions before being incarcerated at the provincial jail in Fort Saskatchewan.

Like the rest of rural Alberta, the concerns of the people of the Peace River region in the 1920's were focussed primarily on agriculture and transportation. At the Beaverlodge Research Station, and with his "Timely Tips" in the Grande Prairie *Herald*, Donald Albright encouraged farmers to diversify and concentrate more on raising cattle. He now began to experiment with feed grains and forage grasses such as alfalfa and sweet clover. The Research Station also conducted soil surveys and charted weather patterns. In 1926, the Grande Prairie Cooperative Livestock Marketing Association was formed and headquartered in Sexsmith while two years later, the Peace River Co-operative Seed Growers Association was formed, and a seed cleaning plant set up at Grande Prairie. Soon, seed grains from the Peace River Country were selling throughout western Canada. Experimentation with grain also began to take place at Fort Vermilion as an agricultural sub-station was now opened there on the flats of the Peace River.

If agriculture was the attraction, transportation was the main headache. Freight rates, the condition of rail transport, and the perceived need for an all purpose road to Edmonton dominated the local editorial columns, and were the main topics at any political rally. Every electoral candidate since 1909 had made improved transportation their number one cause. Some, like the editor of the *Peace River Record*, Charles Frederick, felt that the port of Vancouver and the Pacific held brighter prospects than Edmonton and the Lakehead, and consideration was urged for a road through the Rockies into the interior of British Columbia. In 1921, Alex Monkman of Lake Saskatoon traveled through the pass that now bears his name and determined that it was lower than the Yellowhead Pass. With Frederick's blessing, Monkman approached the British Columbia government with the proposition that a road be built from Prince George, where the Pacific Great Eastern now was extended, through the Monkman Pass from the west to the Alberta border. Monkman's plan however, which naturally had little support in Edmonton, was politely shelved.

Though the post war period was a time of relative prosperity, boom invariably gave way to bust in rural North America, and, with the overproduction of grain during the early 1920's, the national and international market was met and surpassed. In Alberta, the circumstance was compounded by the advent of prohibition, which meant a steep drop in the demand for barley. The result was a dramatic slide in grain prices from 75 cents per bushel of wheat in 1920, to 40 cents in 1924. Farmers in the Peace region were hit especially hard, and foreclosures began to mount. Indeed, for the first time ever, the region experienced depopulation. In 1920, there were 2,700 applications for homestead; in 1924, only 300. In fact, between 1921 and 1925, there were more homestead cancellations in the region than applications. In 1921, census divisions 15 and 16 held 3,578 occupied farms totaling 879,945 acres, in 1926 there were but 2,796 farms totaling 857,154 acres. During this time, the population of Grande Prairie fell from

over 1,500 to about 1,200, while, with oil exploration coming to an end, that of Peace River dropped all the way from over 1,600 to about 700.

To counterbalance the decline in grain prices, many farmers in the Peace region began to rely on raising cattle and hogs this was partially inspired by the Livestock Encouragement Act of 1917 and its subsequent amendments. It was during this time that several large ranches were established in the region, such as the Egg Lake Ranch near Eaglesham, and the Patterson Ranch near Goodfare. The largest of all was the Kleskun Lake Ranch near Sexsmith, which employed upward to 40 men and covered almost an entire township.

Cream and poultry production was also high at this time. Many farmers also supplemented their income by trapping in winter, or working in one of the region's several lumber camps. The lumber industry, which was then strictly domestic, had receded somewhat because of the recession, however the coal industry had recently expanded due to the coming of the railway, with small open pit mines appearing south of Grande Prairie and Wembly.

By the spring of 1926, the financial outlook was brighter throughout much of rural Alberta. New peace accords in Europe brought expanded trade, and there were new markets for Canada's grain, as was reflected in rising prices. In Alberta, the end of prohibition in 1924 created a renewed demand for barley. Wheat was now the principal crop, however, and by 1926, it had overtaken oats as the principal grain by 128,735 bushels to 73,001. The fame of Peace River wheat had been boosted in 1923 by the Lake Saskatoon farmer Herman Trelle, when he was named world wheat king at the international exposition in Chicago. He would go on to win the award three more times in the 1930's, while his neighbor, Joseph Alsopp, would win the prize for best Canadian wheat in 1933. The Peace country was highly publicized at this time by such positive accounts as F.H. Kitto's *The Peace River Country of Canada* and John Imrie's *Peace River; An Empire in the Making*. Imrie was the publisher of the *Edmonton Journal* which featured a number of positive articles on the lands northwest of Edmonton.

In 1924, the railway in the south Peace country was extended 20 km west from Grande Prairie (see Figure 4). The communities of Dimsdale and Wembly were born, while that of Lake Saskatoon began to die. In 1928, the Railway was extended further west and north to Hythe, and more farmland was opened up in the wooded parklands south of the rail line around Halcourt, Hinton Trail, Rio Grande and Elmworth, and farms were opened around Goodfare. Along the rail line, small communities with grain elevators, such as Albright, Lymburn and Demmitt were created to service the new agricultural hinterland. The established communities of Beaverlodge and Hythe shifted locations to be adjacent to the railway stations.

North of the Peace River, the Central Canada Railway was extended as far west as Whitelaw in 1924, and to the site of Fairview in 1928. This resulted in extensive settlement, in particular on lands north of the Railway and west of Fairview towards Scottswood and Highland Park. Near Grimshaw, the larger portion of Duncan's Cree Reserve was sold to make more land available for Euro-Canadian farmers. This was also the case with the large Beaver Reserve north of Fairview, which was largely unsettled as the Beaver preferred the wooded areas to the northwest where they could trap and hunt. Along the rail line, the communities of Roma, Grimshaw, Berwyn, Brownvale, Whitelaw and Bluesky were born. When the Canada Central put up a station at the end of steel in 1928, most of the 200 or so people of Waterhole packed up and moved to the new instant railway village of Fairview, many of them moving their houses and business offices, as well.

The largest district to be opened up for homestead in the late 1920's was around the Battle River from Deadwood up to Hotchkiss. This period also saw extensive settlement in the more remote parklands on which farming had begun at the beginning of the decade. North of Grimshaw, farms were now arising around Dixonville, while Fort Vermilion also saw a great influx of settlers. North of Fort St. John the Beaver Reserve was also sold for farmland, and the resulting settlement proved so extensive that the community of Fort St. John was moved from the trading post site on the Peace River to its present location to better serve the farmers. At the north end of the Fort St. John Prairie, the communities of North Pine, Montney and Rose Prairie emerged. From Wanham south to Bezanson, the townships which had seen the start of three or four farms apiece during 1919-21 were now more than 50% under cultivation. This was also the case south of the rail line between Watino and Rycroft, and in the regions west of Beaverlodge.

Northwest of Spirit River, farming was now taking place around Blueberry Mountain. Likewise, north of Valhalla, La Glace and Buffalo Lakes new farms were now being carved out. South of Rycroft, the more rugged terrain surrounding Northmark, Woking and Webster also began to be settled. Indeed, much of the land being cleared during the late 1920's had earlier been bypassed by homesteaders as unsuitable. With the prices for number 1 wheat rising as high 90 cents a bushel, however, the extra work of clearing thick bush and pockets of aspen were

considered to be worth the effort. By this time, summer fallowing was being practiced in the areas that had been settled during 1909-1914.

By 1930, virtually all of the parklands of the Peace River Country were settled. Not all was under cultivation, as some of it was set aside for cattle, and countless pockets of bush and forest dotted the countryside. The land was also covered by many lakes and creeks, around which extensive shrubbery grew. Indeed, it was probably wrong for the early promoters to describe the low lying districts as prairies, for the grasslands were not as open as that on the southern plains. Nonetheless, the land was proving relatively bountiful and its farmers relatively well off, although few could be described as prosperous. Wheat was the preferred crop on farms near the rail line, mainly the early maturing “garnet” and “reward” types while, out in the fringe districts, feed crops like oats and barley were preferred.

By 1930, most of the initial homesteads had long since been proved up, although considerable debt existed in the area, as most farming operations had been mortgaged. The region featured a distinct ethnic and cultural mix. In addition to the Francophones, Norwegians and Westphalians who had settled around Donnelly, Valhalla and Friedenstal respectively before the war, there were now pockets of Ukrainians near Rycroft, Eaglesham and Highland Park, and Poles around Webster and Woking. Scandanavians, Germans and other eastern Europeans were scattered throughout the region. The majority of the people were still of British stock however. During the late 1920's, many of these British settlers were brought in from the drought regions of southeastern Alberta and re-settled with government assistance. Others came via the British Family Settlement Scheme initiated by Lord Lovat. Throughout the region, the ratio of men to women remained relatively constant at approximately 130 men to 100 women.

Like the successful homesteaders of the 1909-14 period, many of the settlers of the late 1920's had come in groups to take holdings in proximity to each other, such as the Mennonites who settled south of La Glace and near Fort Vermilion. With the demise of the Kleskun Lake Ranch in 1927, the government entertained a scheme to settle about 100 families of Boukovinians on the abandoned grazing lands. The land was considered too marshy, however, and, instead, homesteads were made available for many of these people around Luebec, Royce and Highland Park.

The communities of the Peace River Country had also grown during the late 1920's, and, by the end of the decade, the population of Grande Prairie had risen to 1,700, while that of Peace River stood at 900. Attaining village status by this time, with populations exceeding 200 were Falher (400), Hythe (400), Spirit River (290), Fairview (250), Sexsmith (250; see Figure 3), and Beaverlodge (200). High Prairie then contained about 300 people but was not incorporated, while Grimshaw (131) and Clairmont (125) were prosperous hamlets. In British Columbia, Rolla, Pouce Coupe and Fort St. John all had village status.

These communities existed for their rural population, and, on Saturdays, most would be filled with district farmers. Quintessential was Sexsmith. Although holding but 250 people in 1929, the village contained a railway station, a post office, a bank, two schools (elementary and high), two hotels (one with tavern), a rooming house, a restaurant, a grocery store, a bakery, a drug store, two meat markets, two general stores, two hardware stores, two lumber yards, two blacksmith shops, four implement dealerships, a tinsmith, a harness shop, two livery and feed stables, two bulk oil dealerships, a drygoods store, a jeweler, a tailor, a beauty salon, a barber shop (with pool hall and news stand), three real estate and insurance dealers, a doctor, a maternity hospital, a lawyer, an Alberta Provincial Police officer, a community Hall (which also served as a theatre), two social clubs, two churches, seven grain elevators, two livestock dealerships, and a flour mill. Most of the other villages in the region had similar amenities, but few as all-encompassing as those in Sexsmith.

For greater variety in shopping, and for specialized medical treatment, people would travel to the larger centers of Peace River or Grande Prairie. For entertainment, most villages ran motion pictures regularly, many served by itinerant one man moving picture companies. Baseball and hockey leagues also flourished. Dances were now a standard form of entertainment in the outlying rural communities, and almost every community would put on a summer sports day or a fall fair. Picnics were common events at places like Lake Saskatoon, Dunvegan, or Lac Cardinal, while rodeos at Waterhole, Teepee Creek and Rio Grande attracted cowboys from all over the Peace.

By the end of the 1920's, though living in stable times, the people of the Peace River Country could hardly have been described as content with their lot. Freight rates continued as a persistent source of grief, as did communications in general.

The Member for Parliament for the Peace River Country since 1921 had been the Waterhole farmer Donald Kennedy. His riding, however, encompassed the entire northwestern quarter of Alberta, and until 1925 even included part of Edmonton. The people of the Peace also felt under-represented in the Alberta Legislature, as the

entire region had only one Member, the Beaverlodge farmer Hugh Allen. It was noted that Peace River was the largest provincial riding in the Dominion. People west of the B.C. border felt equally neglected, being part of the large federal riding of Skeena which was headquartered in Prince Rupert, and the large provincial riding of Skeena, headquartered in Terrace. Both B.C. ridings included all of the northern part of the province, and there was much talk in the western part about joining Alberta. Indeed, during the late 1920's, there was also a feeling that northwestern Alberta should join with all of northern British Columbia to become a separate province. In the *Peace River Record*, Charles Frederick openly promoted this cause.

On the Alberta side of the Peace region, both Kennedy and Allen represented the United Farmers of Alberta. Although there were only 11 UFA Members in Ottawa, the UFA held power in Alberta. They had come to office in 1921 in a surprising victory over the Liberals. Indeed, they had only contested the election that year to obtain representation for their movement in the Legislature. This had been opposed by the party's leader, Henry Wise Wood, who now refused to carry the mantle as a politician. Desperate for direction, they asked the defeated Liberal premier, Charles Stewart, to continue running the government. Stewart refused, and finally the Westlock farmer Herbert Greenfield agreed to become the UFA premier.

Greenfield, however, needed to be elected. To the consternation of the people of the Peace River riding, their lone representative, Donald Kennedy, was now asked to step down in order that Greenfield could become elected to serve as premier. Both the *Grande Prairie Herald* and the *Peace River Record* expressed outrage. Tensions were only eased when it was learned that the UFA would select Kennedy to run for them in Edmonton West in the federal election to be held later that year. In a surprise victory, Kennedy defeated none other than the Liberal standard bearer Frank Oliver. Kennedy would represent the Peace River Country in Ottawa until 1935. As a UFA man however, his influence could hardly have been strong.

At the beginning of 1930, there appeared to be hope for the farmers of northwestern Alberta: the region was given two provincial representatives as a Grande Prairie riding was carved out of the southern portion of the Peace River riding. As well, Premier Brownlee had managed to dispose of the ED&BC, Canada Central and Alberta & Great Waterways Railways to the Canadian National and Canadian Pacific lines which would henceforth operate them together as the Northern Alberta Railway. News of this was greeted with applause as it was felt the provincial government simply did not know how to run railways. Air transport was gaining momentum at this time, as Commercial Airways under Wop May was now making regular excursions to the region. 1930 saw the transfer of control of Crown land and natural resources from Ottawa to Alberta. To facilitate this, a new Department of Lands and Mines was created, and at its helm was placed Hugh Allen, Member for Grande Prairie, who had been returned in the election of 1930 by acclamation.

However, by the time Allen took control, the effects of the great depression were being felt throughout the world, even in the Peace River Country. With prices tumbling and unemployment beginning to soar, developments in transportation were put on hold. Seen as particularly vulnerable were the people who had taken farms on the frontier edge of the province, particularly the Peace Country. In 1931, the government passed legislation which forbade the acquisition of homesteads in Alberta by anyone who was not an Alberta citizen. Although a few people from the drought ridden southeast continued to re-settle in the Peace River Country, immigration to the region mostly came to a halt. In 1931, the population of census divisions 15 and 16 stood at 44,122; in 1936, it was at 45,309.

The depression in the Peace River Country was severe, as elsewhere, for people had little money to spend. Outright hunger, however, was not common, and there were not the breadlines which became a standard feature in the cities. Virtually all farms maintained gardens, as did most households in the towns and villages. Hunting, fishing, trapping and even berry picking were carried on extensively to provide food. Sometimes, game wardens would turn a blind eye when extra wild meat was secured by families in need. Occasionally, this would be used as barter for other commodities. Most farms had not been mechanized, and so there was little urgent need to buy farm equipment or parts, save to maintain ploughs, rakes, harrows and the like. Horse and ox power was still the main source of energy for transportation and farm work. Much of the necessary equipment was shared between farmers, especially during harvest.

Clothes were at a premium during the depression, and many patches were sewn during these years. Luxury items were few, although radio could now be picked up in the region at night from stations in Edmonton and even the western United States. Motion pictures were less costly now, and so they continued to be seen by many people. Rural entertainment, however, was still mostly home grown, particularly sports and country dances. Leisure at this time was usually a rare luxury, as most of the daylight hours were spent at hard work. Carl Dawson, a sociologist, made a survey of the region during 1929 and 1930, and reported on the seasonal work cycle of a typical Peace River farmer:

Break-up during the last two weeks of March to the tenth of April. It is a wet, sloppy time; moving about is difficult. It is the time for thoroughly overhauling harness, machinery and other equipment. During this time seed grain is carefully cleaned in the granary, treating material made ready, seed bins moved and general preparations made. The seeding period takes place between the twentieth of April and the end of May.

From the middle of May to the middle of July successive tasks confront the farmer. After the barley is sown, there is spring ploughing for green feed (oats); somewhat later there is surface cultivation of summer fallow to cause germination of weed seeds. These reach the blossom stage about the third week in June and are ploughed under. Breaking goes on from the first of June to the end of July.

The haying period extends from the middle of July to August the first for tame hay, and for a still longer period on the wild meadows. The wild hay crop is light.

The harvest period begins the middle of August and lasts well on through September.

Threshing goes on from the middle of September to the Middle of October. This is the time too for taking up the garden products and "mudding" log buildings against the winter's cold.

This is followed by wood chopping, slashing brush for tractor breaking. It is cut 8 inches from the ground so that the tractor may pass over it. By the middle of November snow is expected.

Then comes the winter period, when a large percentage of wheat and other grains are hauled to the shipping points by sleighs, wagons or trucks, depending upon road conditions. There is also the feeding of the stock, cutting wood, drawing lumber and coal, and putting up ice.

The summer daily routine followed this general pattern:

Farmer rises at 5 a.m., starts the fire and brings in the horses for feeding and the cows for milking. The wife rises at 5:30 and attends to her duties.

Breakfast at 7 a.m.

On the way to the field at 7:30.

Stop at 12.

In the field again at 1:30.

Leaves the field at 6:30.

Supper at 7.

Chores till 8 p.m.

Incidentals later. (Carl Dawson, pp. 40-41)

Though outright hunger was not evident in the Peace River Country during the depression, the economy stood near collapse. With the price of number 1 wheat falling to \$0.38 a bushel in 1932, many farmers throughout Alberta recognized that they would lose money by shipping their wheat east, and so fields lay bare with the granaries and community elevators full. The same circumstance held true for 1933 and 1934. By 1935, prices began to rise somewhat, and, in 1936, cultivation of land in the Peace River Country was resumed to its normal level. As so much land had lain fallow for so long, the resulting yields were very high, and, although the return was not great, increased productivity brought some financial gain to the farmers of the region. In 1936, wheat constituted 90% of the freight carried out of northern Alberta on the NAR. There were also no homestead cancellations between 1936 and 1939, and it was at this time that Sexsmith began to lead all inland terminals in the British Empire in the export of wheat, thus gaining for itself the proud sobriquet, 'Grain Capital of the British Empire'.

However, people had come to look askance at the political and economic structure of the country. The same feeling of distrust of the eastern establishment, and in particular the banks, which had led to the success of the UFA in 1921 now reappeared. The UFA was largely discredited in rural Alberta by years of depression during which the only rectifying measure taken was to continue to re-adjust the Debt Adjustment Act, making it somewhat easier for farmers to pay off their debts. The Brownlee sex scandal disgusted many rural people, and the situation was ripe for a new political movement. And so, when William Aberhart began to espouse the doctrine of Social Credit, he had many willing listeners in the Peace River Country. As most farmers were heavily in debt, the theory that the depression had been caused by the world's bankers drew much attention. The promise of \$25 for every household was also well received. With the election of 1935, Social Credit was swept into office in Alberta, largely on the strength of the rural vote. Eager for a political readjustment, the people of the Peace River riding chose William Lampley, while those of Grande Prairie elected William Sharpe, both on the Social Credit ticket.

As it turned out, few social credit measures were ever implemented. In 1937, Alberta defaulted on its debt, and, with a government committed to dissolving banks, few banks were anxious to bail out the government. Hat in hand, Aberhart appealed to Ottawa, and federal assistance was forthcoming on the promise of provincial fiscal restraint. Economically, the Peace River Country began to ease back towards the good times of the late 1920's. The railway had extended to Hines Creek and Dawson Creek in 1931, and as a result more farmland was opened for cultivation. Pouce Coupe and Dawson Creek grew, and the larger center at the time, Rolla, uncharacteristically did not disappear, but continued as a northern prairie village serving mainly its agricultural population, even though the railway was some distance away.

By the end of the decade, a noticeable distinction could be made between the fringe areas of the Peace River Country and the earlier settled districts. As noted in a study by B.K. Acton and C.C. Spence, the earlier settled areas were now removed from the pioneer stage. The farms were larger, averaging 429 acres apiece, of which about 70 % was under cultivation. In the fringe districts, the farms averaged 317 acres, of which about 38% was broken. Yields were higher on the black soil of the settled areas, averaging 20 bushels per acre of wheat and 37 of oats, while, on the newly developed fringe, the average was 17 for wheat and 30 for oats. Invested capital in the longer settled areas averaged \$12,000 per farm, while, on the fringe, the average was \$4,400. Naturally, the farm buildings in the settled areas were of higher quality as well. The earlier settled areas were usually closer to the rail lines and to the amenities of nearby towns or villages, and were usually served by better local roads.

Acton and Spence classified the 400 farms they surveyed as either commercial or subsistence, a commercial one producing enough to meet operating and living expenses, a subsistence one being where income from outside the farm was necessary. They found that almost all of the farms in the older settled areas were commercial, while only a slight majority of those in the fringe were commercial. Another difference was that, while most farmers in the settled areas maintained some livestock, this was largely incidental to their grain crops, which were, by far, their largest source of income. Cattle was far more common on the fringe. However, regardless of livestock, the most successful farms were those with the largest amount of land cleared for crop, and, regardless of location, 150 acres of crop were necessary to make the farm profitable.

Most farms had several horses and some equipment, such as a breaking plough, a tillage plough, tooth and disc harrows, a mower, a rake, a seed drill and possibly some seed cleaning equipment. Some farmers had binders and a few had threshing machines, although most threshing was done co-operatively or by custom threshing outfits. Power equipment was rare. In 1936, less than 3% of all Peace country farmers had trucks, and less than 14% tractors. Work was still undertaken mostly by hand or with animals.

Commercial farms sometimes employed farm laborers. Much of the farm labor was seasonal, at seeding and harvest, and some of these farm laborers were themselves part time farmers. Some of the farmers were pensioners, usually military, and many engaged in trapping, lumbering, road maintenance for the municipal districts, or casual employment in towns or villages to supplement their income. Sometimes, the additional income would allow small farmers to expand their cultivated acreage and purchase equipment. During the depression however, extra work had been scarce, and many who could not eke out a living from a substandard farm traveled to Edmonton or elsewhere in search of other employment. Little was to be found, and the breadlines grew as a result.

The outbreak of World War II jolted Alberta out of the depression, and, with Britain cut off from European farm produce, there was an instant demand for more agricultural products. Beef in particular was in short supply, and, during the first years of the war, the amount of livestock raised in the Peace River Country was doubled. Extra income resulted in greater mechanization, for the war created a labor shortage. Indeed, with the building of the Alaska Highway, virtually anyone in the Peace River Country who wanted a job had one.

Agricultural production was high throughout the war, and the Peace country prospered. In 1944, the provincial government released the report of its Post War Reconstruction Committee, which had been set up to address the anticipated problem of war veterans returning en masse to the labor force. Plans were made to further extend the agricultural fringe of the Peace River country. The broad geographic extent of the forests in the region also garnered attention. The production of lumber had greatly increased during the war, and was expected to continue. Until this time, what lumbering had been undertaken was strictly for the domestic market. Homesteaders received a free allowance to take timber off Crown land if that on their homestead land was insufficient for farm use. Modest cuts were consequently made. The government, however, now saw the forests of the region as having great market value outside of Canada.

Following the war, the northern forests continued to be used extensively for lumber. While in 1941, lumber had constituted but 3.4% of the NAR's export freight, by 1946 this had risen to 19.3%. Two years later, the Board of

Railway Commissioners significantly reduced the rates on lumber from northern Alberta. Though most of this was outside the settled areas of the Peace River Country, major lumber mills did open up near Grande Prairie and Hines Creek. Unlike the earlier mills, where the product was unfinished, these new mills could produce finished lumber.

The greater concern in the Peace River region following the war was still agriculture, and it was mainly for agriculture that the lighter forested areas within the region had been cleared. A common practice for new farmers was to fell trees and uproot the stumps with their horses as they established agricultural fields. Acton and Spence estimated that, in the wooded fringe districts, there were about 4.5 acres of clearing per year over a 14 year period per farm. This amount was greater in the less wooded areas. Change was evident with increased wartime mechanization, and in 1945, the provincial government contracted the Hartman Brothers of Seattle to begin clearing and breaking 100,000 acres in the region using bulldozers and other heavy equipment. This new farmland was to be made available first for war veterans, next for children of Alberta farmers, and then for general settlement. The greatest extent of this clearing was to take place north of Wanham and east of Eaglesham near main roads and the NAR. These regions had recently experienced large forest fires.

The project was described as “the most ambitious scheme of planned settlement ever attempted on the public lands of the province.” Soil surveys indicated that much of the soil was suitable for farming, while other areas would be best left forested. The project was intended to be self-liquidating, and was linked with the new lease system of homesteading now practiced in the province. The holdings were to be selected by lottery, and, for their half-section holdings, each settler was made to sign a ten year lease. For three years the land would be tax free, with one-eighth of the profits to be directed towards administrative costs, provided that the grain yields exceeded five bushels per acre. Title would be granted after ten years.

The Hartman Brothers backed out of the project, as did a Texas outfit, and finally a Lethbridge construction firm run by O.B. Lassiter was awarded the contract. Using heavy equipment, some from the War Assets Disposal Corporation, Lassiter began work in the spring of 1947. By the end of the year, 11,000 acres were cleared, 10,000 broken, and 4,000 ready for cultivation (see Figure 6). The project was fraught with difficulty however, and Lassiter’s debts began to mount. His contract was renegotiated and other contractors brought in, and eventually most of the land was cleared. By 1955, 230 families were settled on the land. The first yields were not high and over the course of the next decade, many of the farmers gave up and went elsewhere. Many held the belief that the initial clearing had taken away too much of the fertile topsoil.

The post war years brought other activity to the area. Construction of the Mackenzie Highway began in 1947 which increased the agricultural output in the Dixonville-Notikewin area, and saw the beginning of the village of Manning. Other road improvements were occurring, but not as fast as the residents would have liked. To serve the Lassiter Project, the road from Donnelly to Rycroft was upgraded and a ferry installed at Watino.

By 1951, all of Alberta Highway #2 was graveled, with stretches of pavement laid near Grande Prairie and Peace River. In 1949, a bridge spanned the Smoky River near Bezanson. In addition to the incorporated communities, the region was now administered by four large municipal districts headquartered at Grande Prairie, Fairview, Falher (Smoky) and Peace (River). In 1951, Grande Prairie headquartered the first county to be established in Alberta.

The early 1950’s saw the beginning of the oil age in the Peace River Country. The war had created a strong demand for oil, and although the Peace country contained no known metal deposits, its gas and oil reserves were well known. Following the war, exploration activity was concentrated around Girouxville, Whitelaw, Bonanza and Three Creeks. Soon, seismic crews were everywhere, billeted in hotels as well as private homes, adding much to the local economy. In 1955, a major strike was made at Valleyview, with others occurring near Tangent and south of Belloy. The extensive gas reserves also began to find a market, as many homes in urban centers were now having gas lines installed. In rural areas, propane was becoming common. The completion of the TransCanada Pipeline in 1952, followed by the development of a provincial system, would eventually result in the inundation of the Peace region with gas wells.

Things were also beginning to change on farms, as new forage crops like alfalfa and sweet clover were bringing high returns. For a while in the early 1950’s, fescue also proved a popular crop. As the decade wore on, other changes inexorably took place, in particular consolidation, as the small family farms began to disappear in favor of larger ones. The main reason for this was improved mechanization. As tractors rapidly replaced horses for power, and more farmers came to own binders, combines and trucks, the capacity for a single farmer to raise large crops grew. With this, the larger farms that could afford the equipment survived and bought out the smaller ones who could not. The more prosperous farmers could also afford to electrify their farmyards and send their children to the newly opened Agricultural College at Fairview. Most farms now had telephones, albeit most on rural party lines,

while radio, which had arrived in Grande Prairie in 1938, now reached almost all farm homes. Among the more popular programs in rural areas was the agriculture information feature "Call of the Land". District agriculturalists were also scattered throughout the region to provide on-site assistance.

Consolidation was the trend in other facets of life. In education, the small rural schools almost disappeared during the 1950's in favor of larger school divisions centered in the towns and villages. The district school bus was now a familiar sight. The main highways were paved during the decade, and by 1959, Grande Prairie and Peace River had supermarkets. The year before, Grande Prairie and Dawson Creek had become cities with populations of over 7,000 each. At the time, the towns in the region included Peace River (2,293), High Prairie (1,743), Fairview (1,448), Grimshaw (1,051), Beaverlodge (1,046), Fort St. John (1,022), Valleyview (997), Spirit River (834) and Falher (802). The villages included Rycroft (535), Hythe (482), Berwyn (383), Hines Creek (373), Sexsmith (345), Wembly (319), Girouxville (314), Donnelly (295), Pouce Coupe (283), Rolla (260), Wanham (254) and Nampa (245). Having lost people due to consolidation and improved roads were Sexsmith and Donnelly, as well as the hamlets of Clairmont, Dimsdale, Brownvale, Bluesky and Whitelaw.

The political leanings of most Peace country farmers remained Social Credit. The federal Social Credit leader at the time was Solon E. Low who represented the Peace River riding but lived in Cardston and was not regarded as a strong Peace River promoter. There were also complaints of under-representation in the provincial legislature, as no MLA from the region had held a cabinet post since Hugh Allen was defeated in 1935. To compensate, the government created the Northern Alberta Development Council in 1963, naming as its first head Ira McLaughlin of Grande Prairie. The Council was to monitor economic conditions and make recommendations to cabinet. One of its recommendations was that the Alberta Resources Railway be extended from Grande Cache to Grande Prairie, which was done in 1967, opening up more territory for mining and lumbering activity, although none for agriculture.

The industrialization of the Peace River Country began in earnest during the early 1970's, when the surrounding forested hills saw the first of several major pulp mills: the Proctor & Gamble plant south of Grande Prairie. By the middle of the decade, Grande Prairie was producing 50% of Alberta's pulp. This would be followed by the Daishowa-Marubeni pulp mill near Peace River a decade later. The other area of extensive industrial growth at this time was in the exploration and drilling for natural gas, spurred on by the completion of the Peace Pipeline in 1969, which extended from Zama Lake past Falher, Valleyview and Fox Creek. Before long, the region would be covered with even more gas wells, with Fox Creek emerging as the biggest natural gas field in Canada.

This did not draw attention away from agriculture. 1971 saw a change in government, with the Socreds falling to the Progressive Conservatives, and the new administration dominated by Members from urban ridings. However, the political ideology of the new government was essentially no different from the previous one, and before long, it found its roots in rural Alberta. With the prosperity of the oil age at its disposal, the Loughheed administration was able to address some of the grievances of Peace country farmers. In 1973, an Agricultural Development Corporation was set up to provide low interest loans to Alberta's farmers. In Sexsmith, backing was provided for a major canola crushing plant, canola having become a favoured crop in the region. Marketing issues were also addressed as the government sponsored a major grain terminal at Prince Rupert, intended mainly for the farmers of the Peace River Country. Dedication to agriculture resulted in the opening up of new lands for farming, most by vast clearcutting projects, especially around Valleyview and west of Hines Creek, where Highway #64 was now open and paved to Fort St. John.

In the early 1980's, an energy war with Ottawa and a surprising glut on the international oil market brought a recession to Alberta. This included rural Alberta, as grain prices were falling along with oil prices. With foreclosures mounting, farmers in the Peace River Country began to demand bailouts much in the manner that the government of Don Getty was bailing out large corporations, such as that which owned the canola plant in Sexsmith. The government did introduce a \$2 billion low interest loan plan for farmers, but for many, this was not enough as the price of most grain was at a 25 year low. Concern was also expressed about marketing, in particular the long delays in exporting grain. The capacity of the region to store grain was also an issue, as the traditional wood frame elevators began to disappear. In 1986, there were but 67 of them left in the area, compared to 108 in 1971. The holding capacity overall declined from 355,000 tonnes to 311,000.

One area that burgeoned economically during the 1980's was that of paper products. As the computer, intended to facilitate the paperless office, and the photocopy machine produced a growing international demand for paper, the government saw a way to offset its mounting debt in the boreal forests. Between 1984 and 1986, the forest reserve south of Grande Prairie saw its output quadruple from 273, 506 cubic meters to 1,205,741. East of Peace River, the production increase from Daishowa-Marubeni was equally dramatic.

In the Peace country, the concerns of the growing number of environmentalists were off-set by the prospects of more jobs, and politically the region approved of these developments, and would remain staunchly Conservative, as would most of rural Alberta.

Recent years have brought growing urbanization to the Peace River Country, especially in Grande Prairie where the population stands at nearly 33,000. Change is also occurring on the rural face of the region, as large concrete storage bins are replacing most of the earlier wood frame grain elevators. At the same time, major international grain companies, in particular Cargill, are coming to challenge the collective Alberta Wheat Pool and the farmer owned United Grain Growers for marketing. Despite the concentration of oil and gas wells and the continuing growth of the forest sector, agriculture is still the main source of many regional incomes, and, as in the past, the rural economy continues to fluctuate with the weather and the international economy.



Figure 1. Fred Lawrence displaying produce from Peace River, c.1900. Photo Source: Provincial Archives of Alberta; PAA B.3042.



Figure 2. Threshing at Spirit River, 1912. Photo Source: Glenbow Alberta Archives; GAA NC-6-2786.

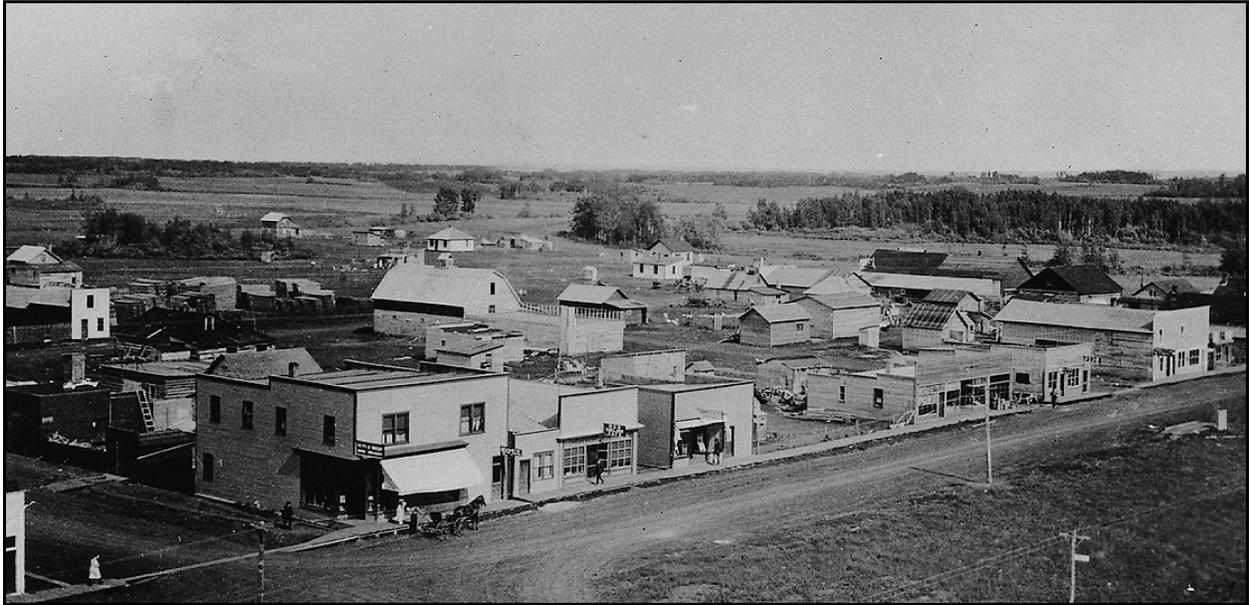


Figure 3. Sexsmith in 1923. Photo Source: Glenbow Alberta Archives; GAA NA-1644-131.



Figure 4. A Derailment north of McLennan, 1925. Photo Source: Provincial Archives of Alberta; PAA A.10177.



Figure 5. A Homestead north of Codesa, 1940. Photo Source: Provincial Archives of Alberta; PAA A.6914.



Figure 6. Breaking Land at Hines Creek, 1947. Photo Source: Provincial Archives of Alberta; PAA A.5904.

The “White Zone”

Consistent with government policy, agricultural activities in northwest Alberta occur, for the most part, in the administrative “white zone” or “white area” region. Exceptions to this generalization include various grazing leases and range improvement projects scattered within the green zone. The distribution of the white zone relative to three spatial scales (P1/P2, the PRPD FMA, and northwest Alberta) are illustrated in Figure 7, Figure 8, and Figure 9, respectively. The white zone borders the P1 and P2 FMUs to the south and east, whereas the PRPD FMA is bisected by a north-south belt of white zone area paralleling the western bank of the Peace River. The white zone currently occupies none of the P1/P2 FMU or the PRPD FMA, and 16.1% (2,447,300 ha) of northwest Alberta (15,223,007 ha). The Alberta Department of Agriculture has outlined a growth mandate for the agricultural sector in Alberta, including the doubling of primary production and quadrupling value-added production by 2005 (Toma and Bouma 1997). Achieving this growth mandate will prove challenging and will likely involve intensification of existing grain and forage production practices (greater dependency on fertilizers, improved phytovars, rotational grazing, enhanced fencing), reliance on other regions (e.g., Saskatchewan) for forage production for the livestock industry, and expansion of the area used by agriculture that is currently in native tree cover (Toma and Bouma 1997). The remoteness of the Peace River region from large beef markets suggests that feedlot operations are unlikely to grow significantly; rather, emphases would be placed on expansion of grain and forage crops and cow/calf operations (Toma, personal communication).

An examination of deforestation across Canada by Turner (1991) identified the Peace River lowlands natural region as undergoing the highest rate of forest cover loss (20% loss in 20 years) as this landscape is converted to agricultural landuses. Turner estimated that ~50% of the area of the Peace River region best suited for forestry had been converted to various agricultural uses.

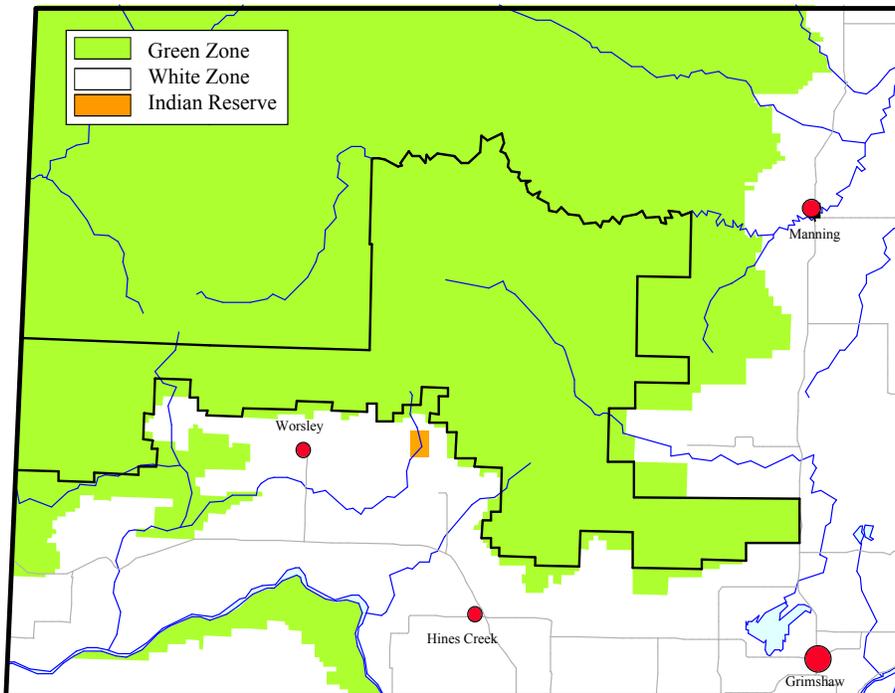


Figure 7. Distribution of the white zone relative to the P1 / P2 FMUs. Data Source: DMI GIS Library.

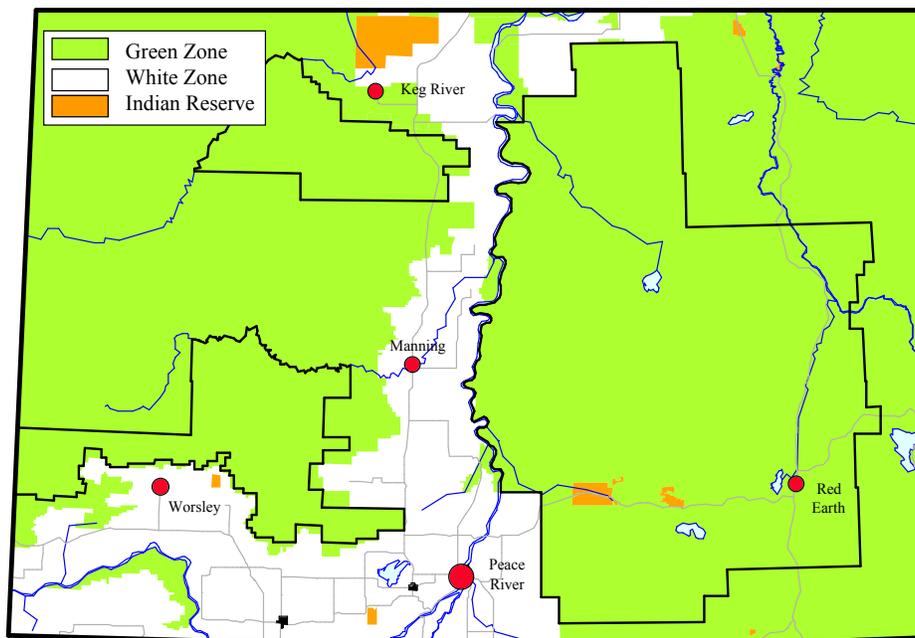


Figure 8. Distribution of the white zone relative to the PRPD FMA. Data Source: DMI GIS Library.

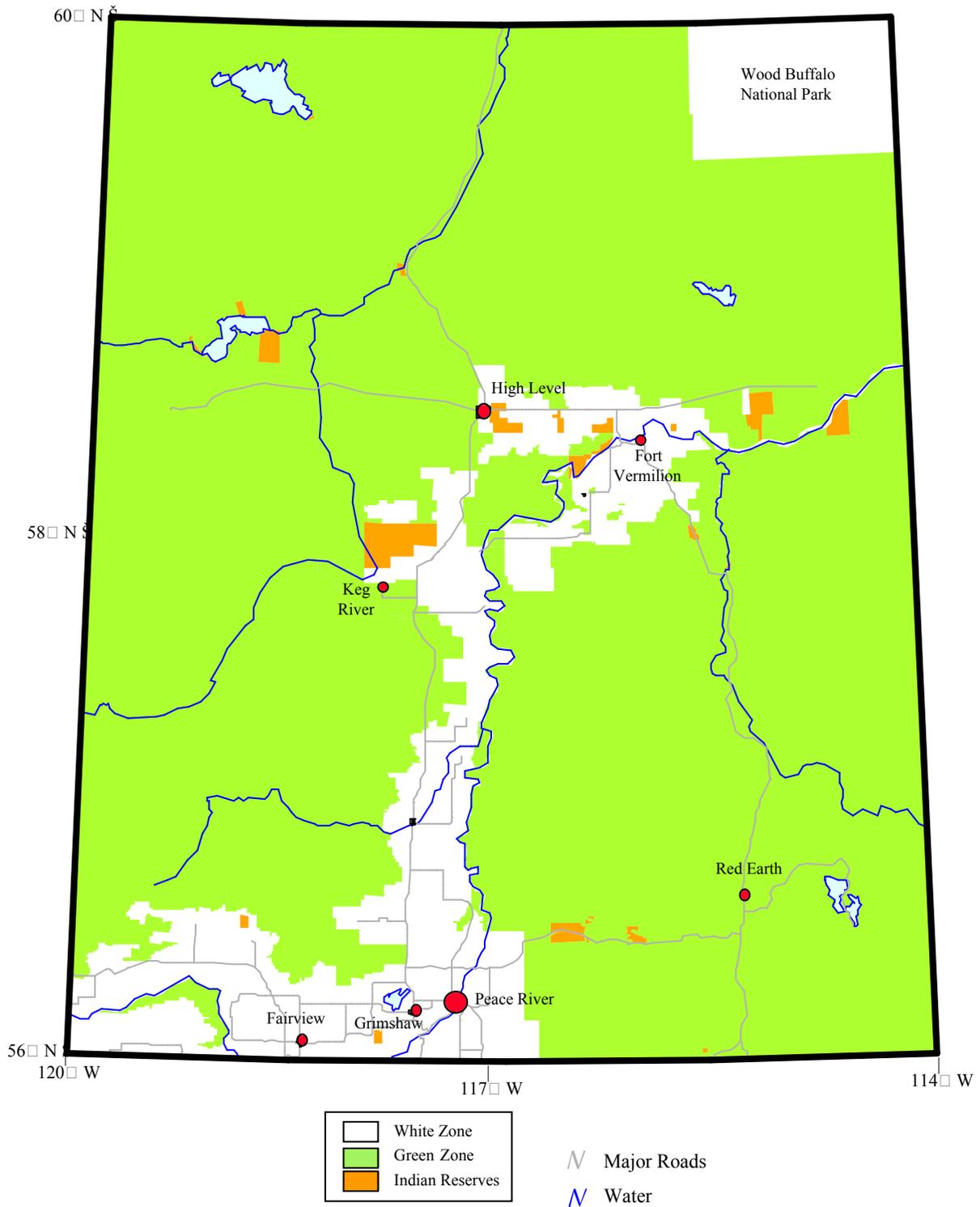


Figure 9. Distribution of the white zone in northwest Alberta. Data Source: DMI GIS Library.

Agricultural Cover Types

In association with the loss of the Crow Rate transportation subsidies, the Prairie Farm Rehabilitation Administration (PFRA) acquired 1994 LandSat satellite imagery (30 m pixel resolution) to evaluate the extent of agriculture-related plant community types throughout the prairie provinces. These images were subsequently analyzed by the PFRA to provide estimates of aerial cover on a township (9.6 x 9.6 km) grid for the following categories: cropland, forage, grass, shrubs, trees, wetlands, and water. At the request of DMI, the PFRA provided coverages for each cover category for that portion of the white zone located within northwest Alberta (Figure 10–Figure 16).

Croplands are distributed throughout the white zone with the majority of townships containing <10% cover. Highest cover of crops are 71–80% of the township, with concentration areas occurring in the Fort Vermilion region and along the Peace River between Dunvegan Bridge and the Peace River townsite (Figure 10).

Forage crops are distributed throughout the white zone with the majority of townships containing <10% cover. Highest cover of forage crops are 41–50% of the township, with concentration areas occurring near Manning and Dixonville and in the Fairview region. Other region of high forage crop cover occurs in the far southwest region of the study area in the vicinity of Silver Valley (Figure 11).

Grass cover is generally of low throughout the white zone of northwest Alberta, with few townships having greater than 10% aerial cover. Geographic pockets of high grass cover occur west of Cleardale, west of Manning and east of Paddle Prairie (Figure 12).

Shrubs are widely distributed in the white zone with cover varying from less than 10% to higher than 50%. Areas of highest shrub cover occur north of Fairview and west of Cardinal Lake. A noticeable east-west belt of high shrub cover occurs along the southern reaches of the Clear and Whitemud Hills (Figure 13).

Trees are widely distributed in the white zone though their covers vary from low (less than 10%) to high (>90%). Highest cover of trees is generally found proximal to the Peace River mainstem, whereas areas of low tree cover generally coincide with regions where agricultural cover types (crops, forage) are prevalent (Figure 14). A noticeable north-south band of high tree density is found between the Peace River townsite and Carcajou and in the Naylor Hills region.

Relative to other plant community types (except grasslands), wetland complexes (bogs, fens) are poorly represented (generally less than 5%) in the white zone of northwest Alberta, although wetland cover exceeding 5% is found along the Peace River mainstem and in several townships east of the Peace River townsite (Figure 15).

Standing water is the lowest of the surface cover types measured in the white zone of northwest Alberta and few townships have water cover exceeding 10% (Figure 16). Isolated townships containing 10–30% water cover occur intermittently along the Peace River mainstem and in the townships bordering Cardinal Lake.

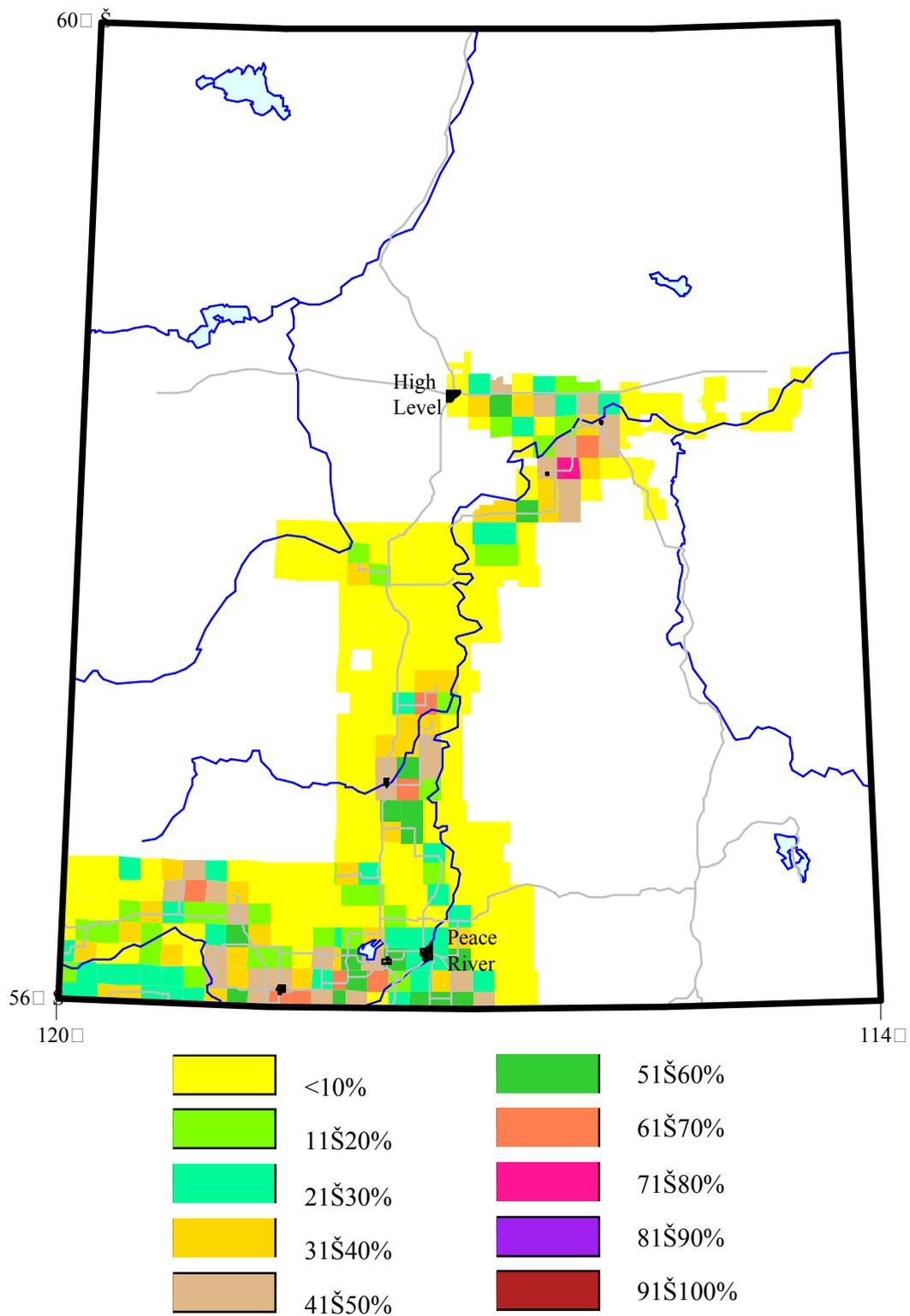


Figure 10. Distribution of cropland cover (% landbase) in northwest Alberta. Data Source: PFRA (1996).

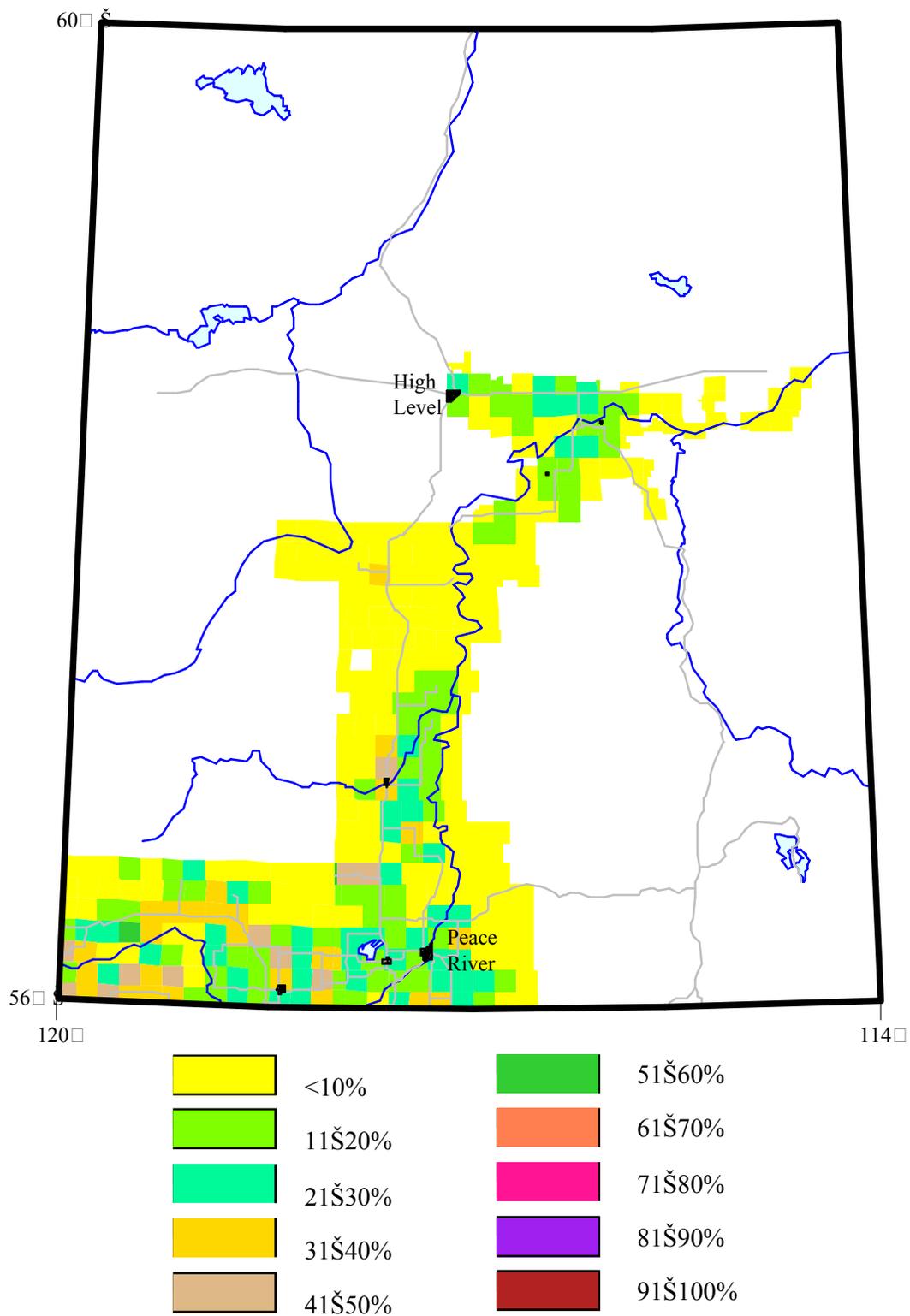


Figure 11. Distribution of forage cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).

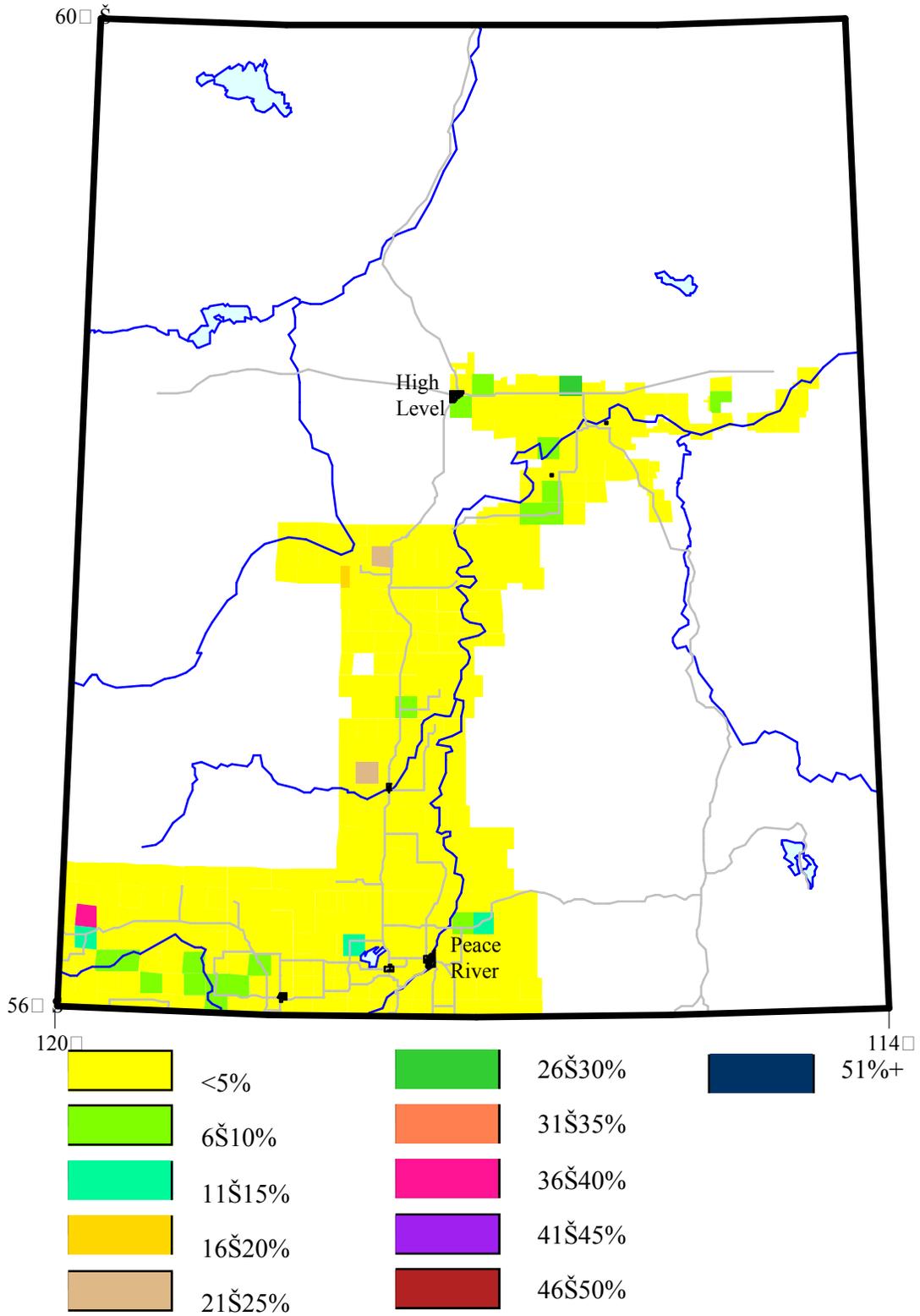


Figure 12. Distribution of grass cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).

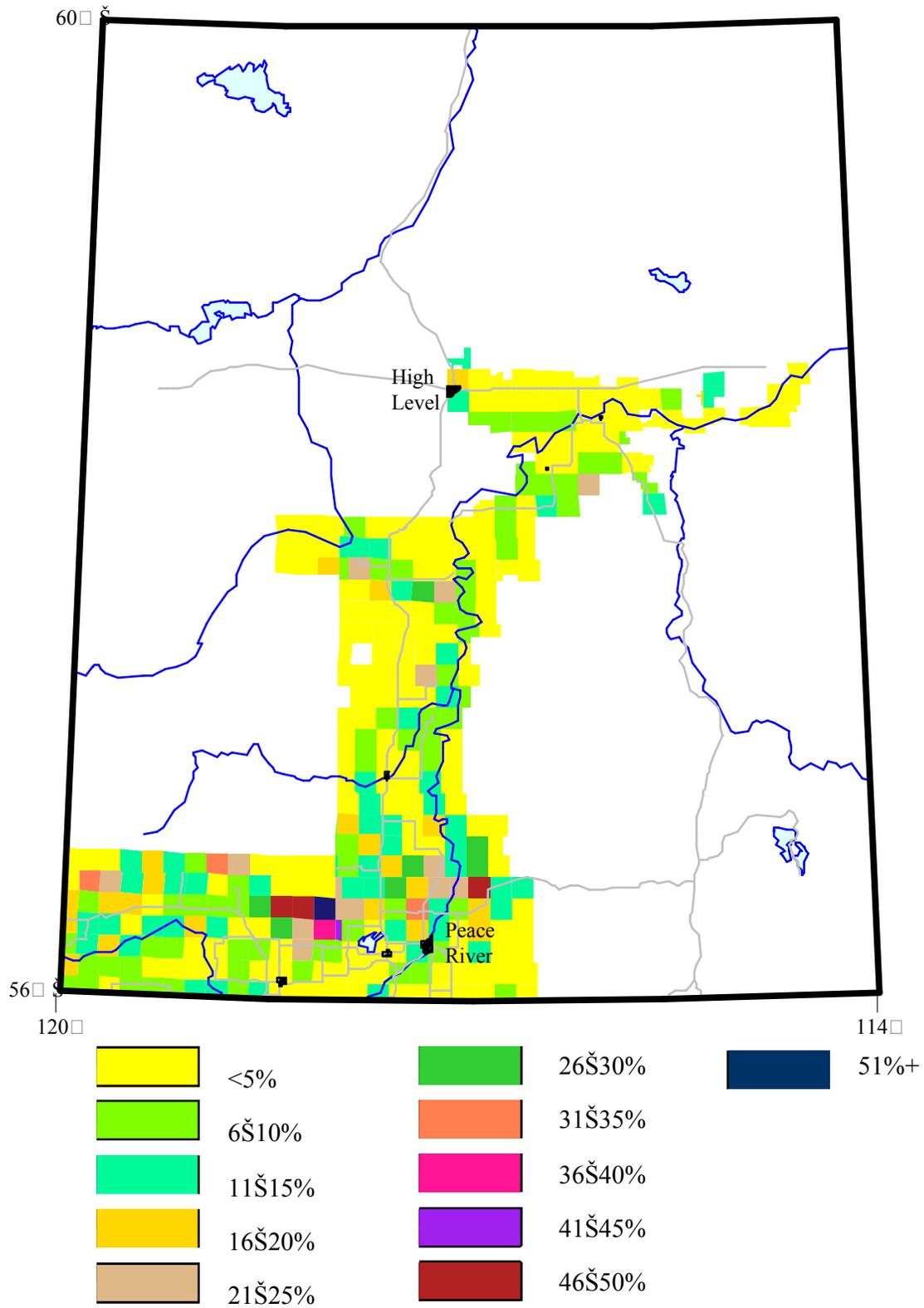


Figure 13. Distribution of shrub cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).

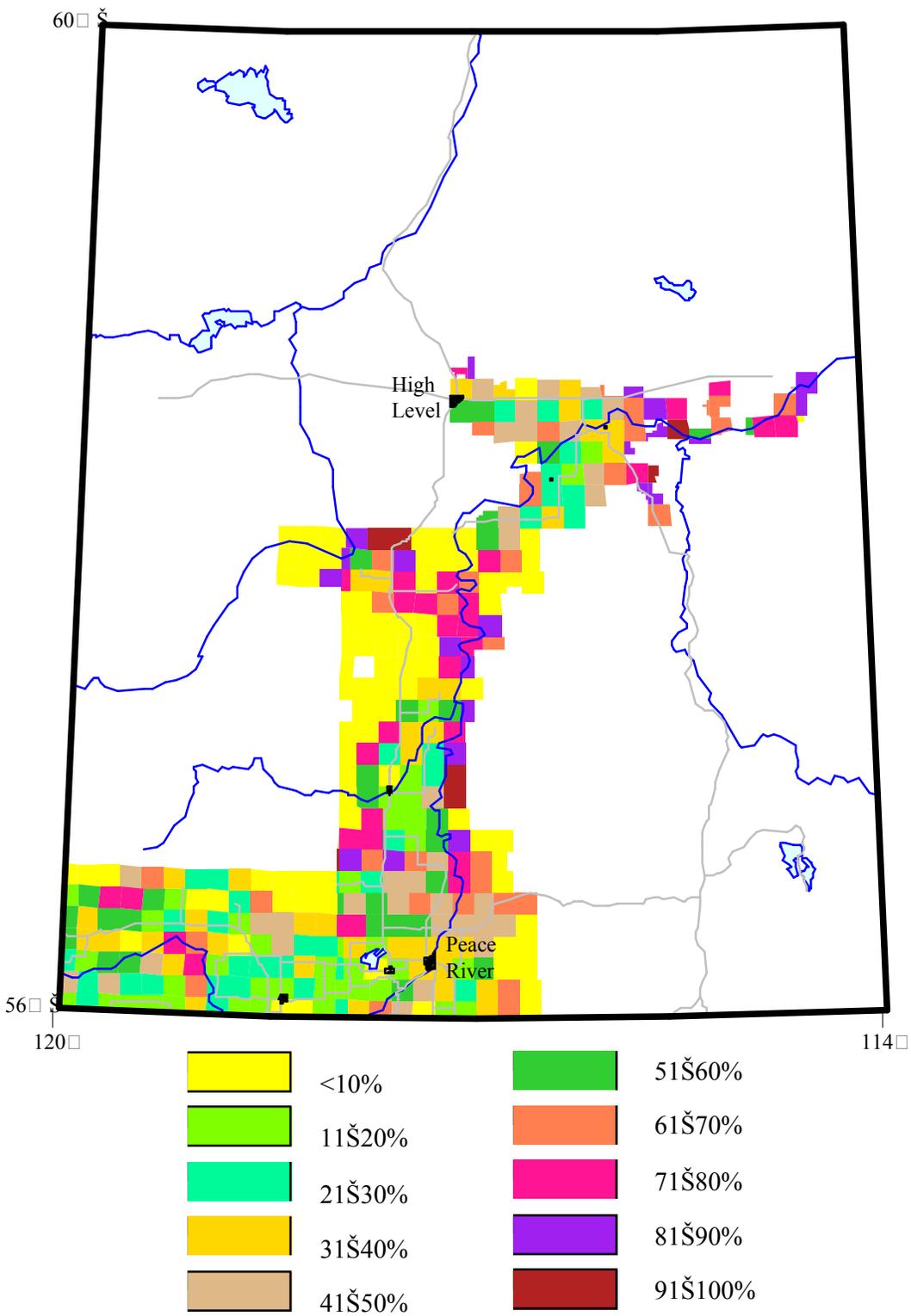


Figure 14. Distribution of tree cover (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).

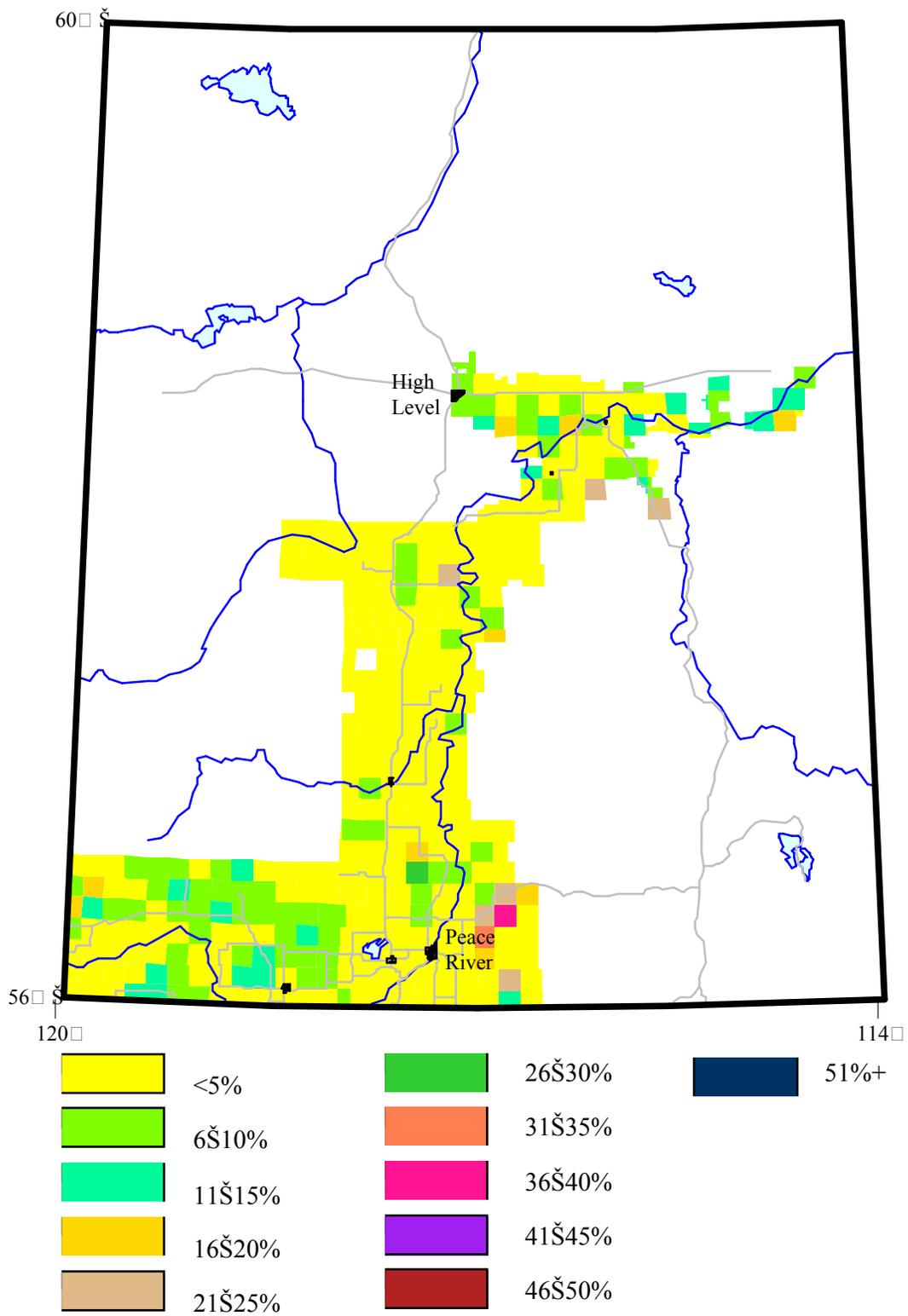


Figure 15. Distribution of wetlands (in % of landbase) in northwest Alberta. Data Source: PFRA (1996).

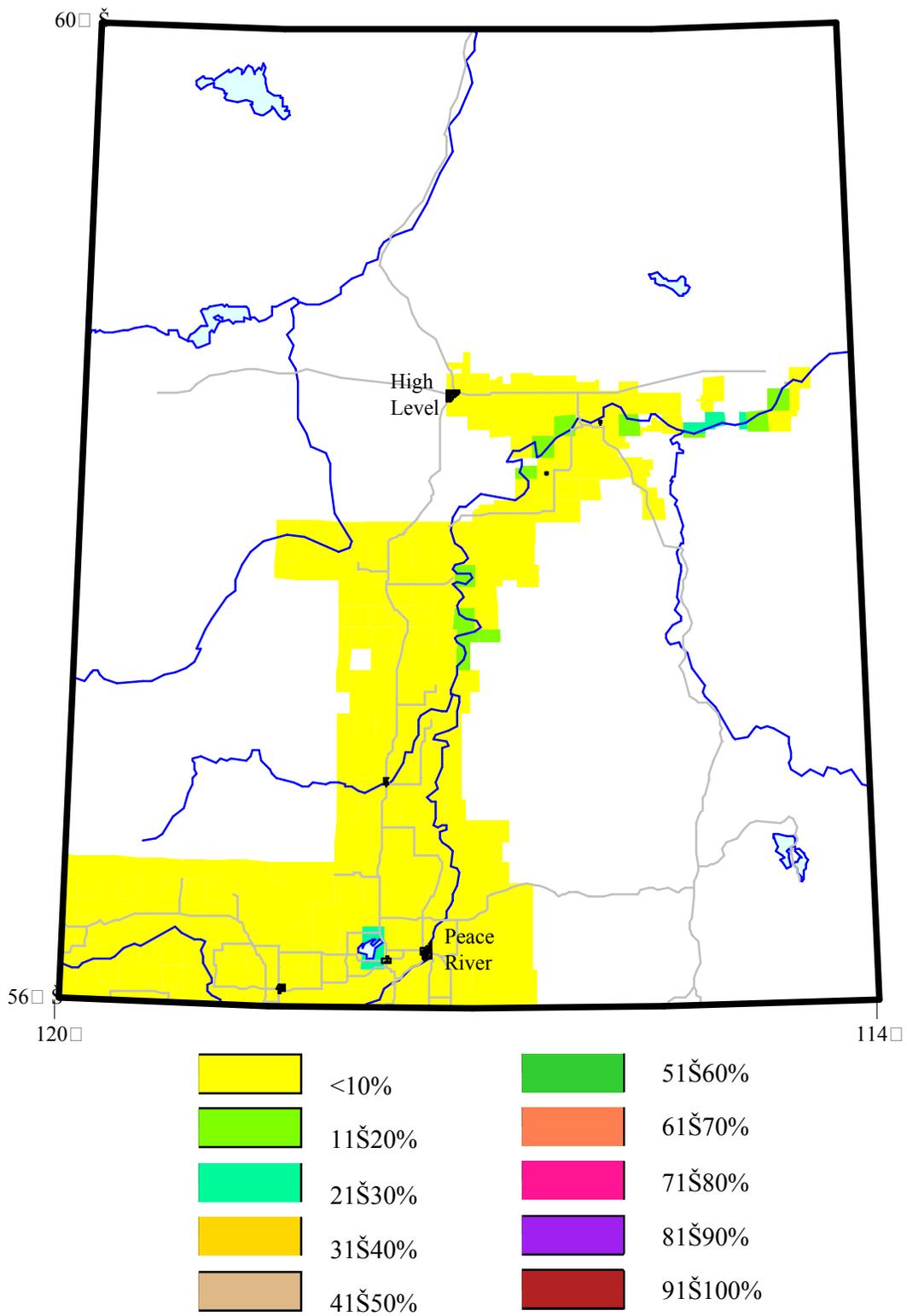


Figure 16. Distribution of water (as % of landbase) in northwest Alberta. Data Source: PFRA

Livestock Industry

Of those municipalities considered to be within the Peace River administrative region, ~45% of the designated white zone “farm” land was in some form of agricultural production such as crops, fallow, hay, or cattle grazing in 1991 (Figure 17); the remaining land is presumably either unbroken “bush”, or not suitable for agricultural purposes (sloughs, lakes, etc.). Using the portion of the white zone that falls within the northwest Alberta study area, agricultural activities (forage crops, croplands) amounts to 38% of the white zone area (Figure 17).

Approximately 40% of all farms are primarily beef cattle operations, and the area of these operations used for forage crop, tame hay, and range grazing covers ~370,000 ha (Table 1). Overall, about 30% of the land used for agriculture is dedicated to livestock as pasture and hay land, ranging from about 19% in MD #23 to 46% in ID #17 (Table 2, Figure 18).

In comparison to northeast Alberta, the cattle industry in northwest Alberta is proportionally small. Whereas municipalities in northwest Alberta have 5,000–15,000 head, municipalities in northeast Alberta have 15,000–60,000 head (Figure 20). The percent of area of municipalities dedicated to livestock production is similarly low in northwest Alberta in comparison to the northeast region (Figure 21). There exists a north-south gradient in area required to raise a cow unit: 6-12 ha in the southern municipalities, 12–30 ha in the mid-latitude regions, and 30+ ha in the most northerly municipalities (Figure 22). Forage production in each municipality declines in a northerly gradient in northwest Alberta (Figure 23).

Table 1. Summary statistics of agricultural land-use practices in the Peace River Region. Extracted from *The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?* 1997. Data Source: PFRA-Peace River, 1997. This area is not equal to the region defined as northwest Alberta in this report, but is defined by the administrative boundaries of MD #135, MD #136, MD #23, MD #21, MD #20, MD #22, and ID #17.

Category	Alberta Peace Region (1991)
Number of Beef Farms	3,737
Total Number of Farms	9,142
Total Farm Area (ha)	3,756,444
Total Annual Cropland Area (including summerfallow; ha)	1,296,910
Total Forage Seed Crop Area (ha)	~45,454
Total Tame Hay Area (ha)	171,879
Total Beef Farm Area (ha)	156,507

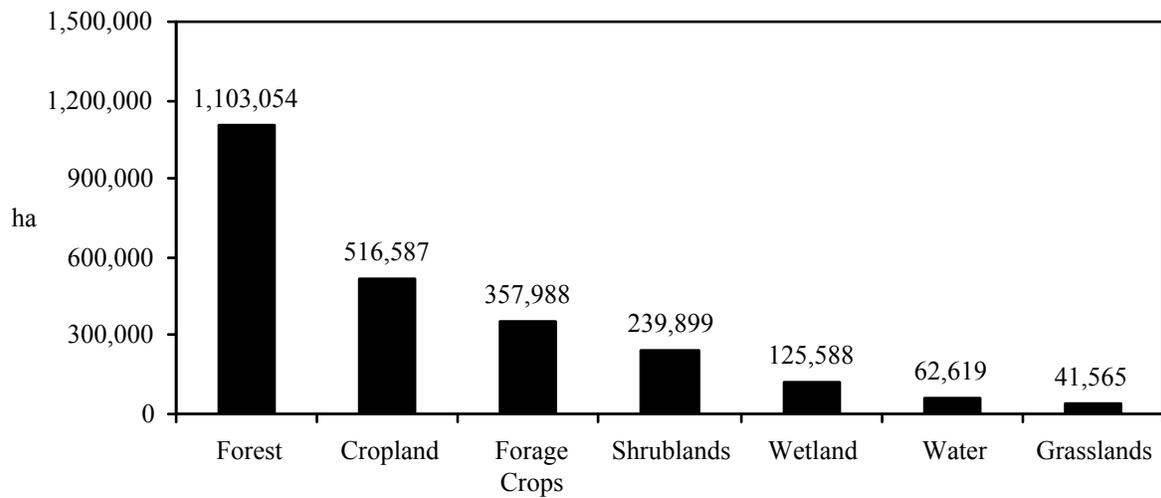


Figure 17. Area in different cover types in the white zone townships of northwest Alberta. Data Source: PFRA 1997.

Table 2. Summary statistics on agricultural production in northwest Alberta (municipalities found wholly or predominantly within 56–60°N and 114–120°W) based on 1991 census data. Land dedicated to livestock includes both pasture and hay land. Total land for agricultural purposes includes pasture, fodder crops, annual crops, and summer fallow. Data Source: PFRA-Peace River, 1997.

District	Land Dedicated to Livestock (ha)	Land used for Agriculture (ha)	Number of Beef Cows	Total Number of Cattle	Land (ha) Dedicated / Cow Unit	Land (ha) Utilized / Cow Unit
MD #135	17,358	68,874	4,360	8,600	4.0	15.8
MD #136	24,586	102,743	6,143	12,960	4.0	16.7
MD #23	30,806	158,802	4,114	8,163	7.5	38.6
MD #21	59,694	167,653	13,050	24,215	4.6	12.8
MD #20	45,307	174,832	10,671	21,011	4.2	16.4
MD #22	48,623	195,009	9,006	17,354	5.4	21.7
ID #17	112,479	245,374	28,714	56,297	3.9	8.5
Totals	338,853	1,113,287	76,058	148,600	4.8	18.7

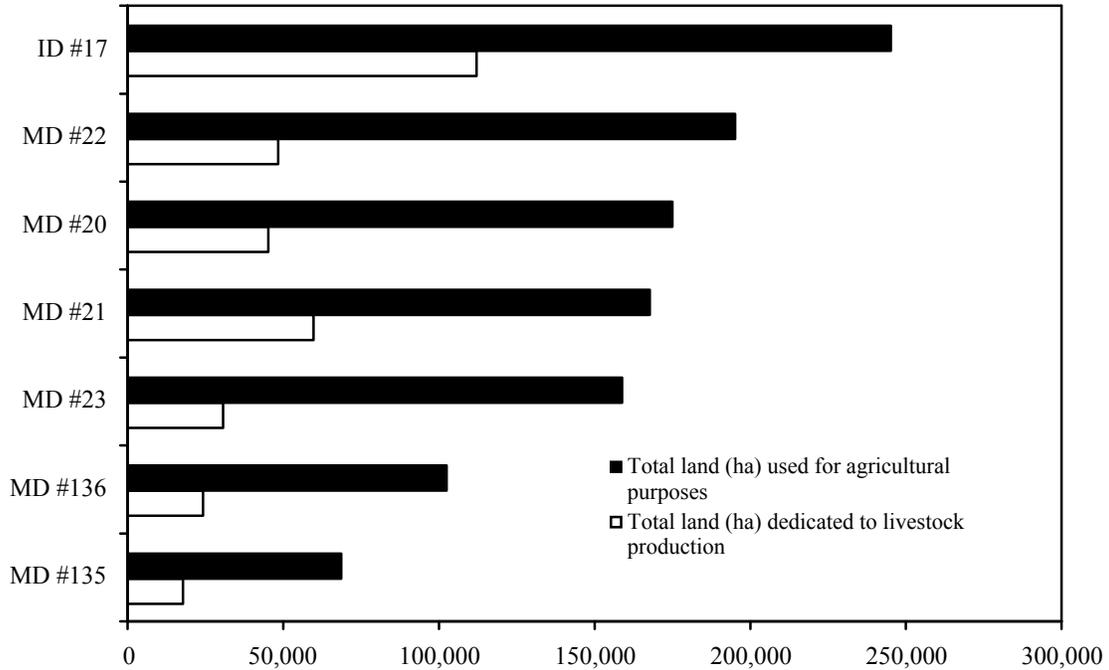


Figure 18. Comparison of area (ha) in agricultural and livestock production in Municipal and Improvement Districts of northwest Alberta. Land dedicated to livestock includes both pasture and hay land. Total land for agricultural purposes includes pasture, fodder, annual crops, and summer fallow. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997.

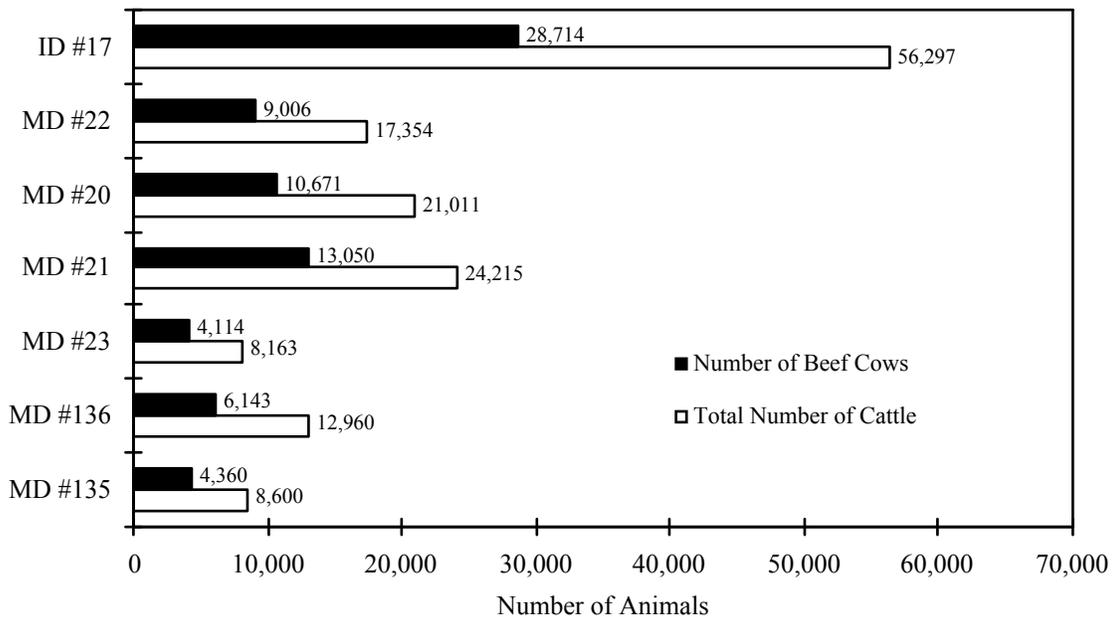


Figure 19. Comparison of beef cow units and total cattle populations in Municipal and Improvement Districts of northwest Alberta. Based on 1991 census data extracted from The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion? 1997; Data Source: PFRA-Peace River, 1997.

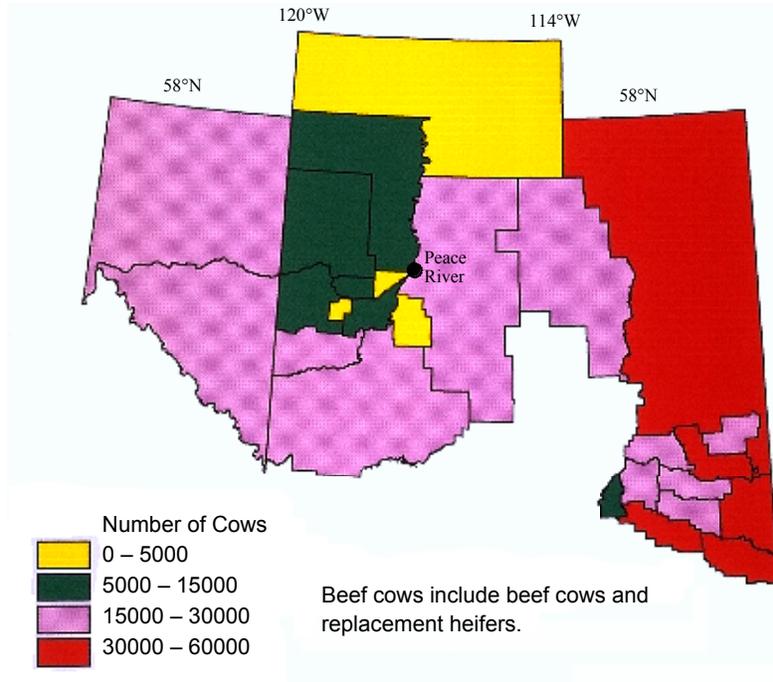


Figure 20. Beef cow populations in each municipality of northern Alberta and northeast British Columbia. Data based on 1991 census data extracted from *The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?* 1997; Data Source: PFRA-Peace River, 1997.

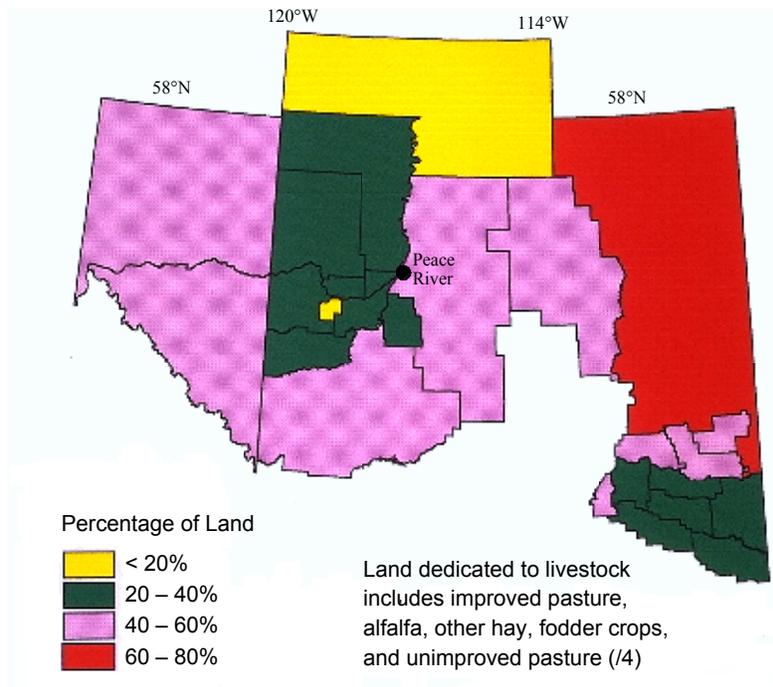


Figure 21. Percent of land designated for agricultural production in each municipality of northern Alberta and northeast British Columbia used in the production of livestock. Based on 1991 census data extracted from *The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?* 1997; Data Source: PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.

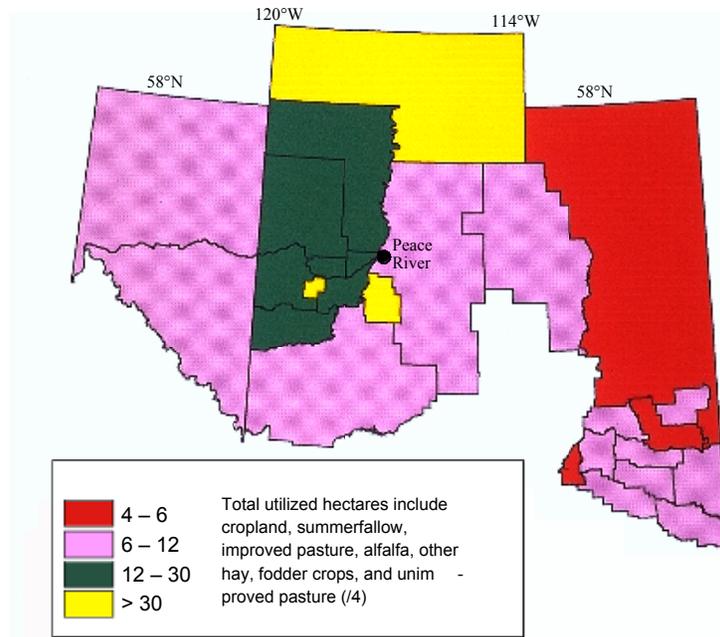


Figure 22. Area (ha) required per cow unit raised in each municipality of northern Alberta and northeast British Columbia. Unimproved pasture is given a production value of 25% that of improved pasture. Based on 1991 census data extracted from *The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?* 1997; Data Source: PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.

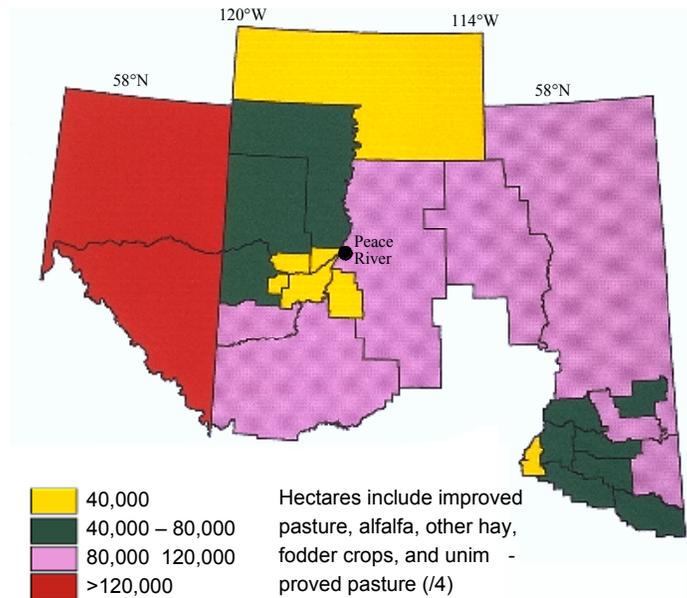


Figure 23. Area (ha) in forage production used in the production of livestock in each municipality of northern Alberta and northeast British Columbia. Unimproved pasture is given a production value of 25% that of improved pasture. Based on 1991 census data extracted from *The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?* 1997; Data Source: PFRA-Peace River, 1997. Only 25% of unimproved pasture was considered to be in agricultural production.

Provincial Grazing Reserves

There exists five provincial grazing reserves in northwest Alberta. Each of these reserves is described below using information extracted from Provincial Grazing Reserve's Program web site at:

www.agric.gov.ab.ca/ruraldev/publands

Three Creeks Provincial Grazing Reserve

In the fall, deer and moose hunting top the list of recreational activities at the multi-purpose Three Creeks Provincial Grazing Reserve. Cross-country skiers and snowmobilers use the 16,009 ha site in the winter. Winter also brings seismic crews as part of the oil and gas exploration and development activity. Two wells are located on the reserve, located 56.3 km northeast of Peace River. The reserve was originally requested by the agriculture development committee from ID 17. The site was chosen on a large tract of aspen-covered Crown land. Multiple uses were proposed for the reserve. Therefore, a number of provincial government departments and divisions participated in its planning. After the plan was approved in 1979, development of the site began under the supervision of the grazing reserve staff in the Public Lands Division of Alberta Forestry, Lands and Wildlife.

Initial clearing of 912 ha on the east end of the reserve was completed in 1979, but the reserve was not opened until 1982. In 1994, the reserve served 41 patrons with 4,487 head of cattle, an equivalent of 12,599 AUMs.

The reserve headquarters is on NE 2-86-19-W5.

Bear Canyon Provincial Grazing Reserve

The Bear Canyon Provincial Grazing Reserve is located just east of the British Columbia border, about 16 km north of the Peace River in the northwestern quarter of Alberta. Half of the reserve's 8217 ha is cleared of brush and developed. The land is gently rolling with many sloughs and muskeg areas. Wolf Creek bisects the pasture east to west and a secondary road cuts through the area, running north to south. The normal grazing season runs from mid-May to mid-October. Cattle may graze longer in the fall if there is sufficient grass and sometimes horses can be grazed during the winter months. In 1994, the reserve accommodated 27 patrons who grazed 3,338 head of cattle, equivalent to 9,246 AUMs. Oil and gas exploration has taken place on the reserve and two major gravel pits, one used for highways and the other for private work, are located on the property.

The reserve is not heavily used for recreational activities as it is located away from large population centres. However, deer and moose are hunted in the fall months and there is also a limited amount of trail riding, picnicking and snowmobiling. Bear Canyon provides year-round access to recreational users, but gates may be locked in fields where livestock is grazing or where construction is taking place.

The reserve headquarters is on SE 33-84-12-W6.

Fort Vermilion Provincial Grazing Reserve

Intensified grazing was one of the objectives when developing the Fort Vermilion Provincial Grazing Reserve, located about 60 km northeast of High Level. The 7,786 ha site has dugouts scattered across it to supply water for the cattle.

Grazing first took place on the flat pastureland in 1981. At that time, patrons had to look after their own cattle due to lack of accommodations on the property. In 1982, the Public Lands Division of Energy and Natural Resources began operating the reserve.

In 1994, 27 patrons grazed 2,497 head of cattle, an equivalent of 6,828 AUMs. Three Alberta Government departments and several divisions from within those departments participated in planning the multiple use development of this reserve. Alberta Agriculture, Alberta Environment, and Alberta Forestry, Lands and Wildlife were the departments involved. The Public Lands, Fish and Wildlife, and Alberta Forest Services Divisions all made contributions on behalf of Alberta Forestry, Lands and Wildlife.

The site was chosen because the land was suitable and available. While aspen forest had to be cleared to develop the pasture, a good deal of bush was left between the fields to ensure a habitat for wildlife.

Seismic crews operate in the area during winter months and one gas well is located on the reserve.

The reserve headquarters is on SE 24-110-14-W5.

Manning Provincial Grazing Reserve

An agricultural development committee and a group of local farmers first proposed establishing the Manning Provincial Reserve at a location 11.2 km northwest of Manning. In 1977, a planning committee was established to develop a multiple use plan. The committee included membership from Alberta Environment, Alberta Agriculture and Alberta Forestry, Lands and Wildlife. Three divisions, Public Lands, the Alberta Forest Service, and Fish and Wildlife, represented Alberta Forestry, Lands and Wildlife. The plan was approved later that year and initial clearing of 660 ha was completed by early 1978.

In keeping with the development goal of intensified grazing at the reserve, pastures range in size from 60 to 160 ha. The reserve's topography is fairly level throughout and a few small creeks wind across the property.

The grazing season normally runs five months, from mid-May to mid-October. During the 1994 grazing season 25 cattle patrons grazed a total of 2,647 head of cattle, equivalent to 6,730 AUMs. Water for the cattle comes from dugouts scattered across the 4,018 ha site.

A limited amount of deer and moose hunting takes place during the fall months. Cross-country skiers and snowmobilers take advantage of the flat terrain in the winter. For several years there has been oil and gas exploration on the reserve and winter seismic operations are ongoing. The reserve's headquarters is located on SE 14-92-24-W5.

Whitemud Provincial Grazing Reserve

Although deer and moose hunting are probably the most popular recreational activities on the Whitemud Provincial Grazing Reserve, it's also used for hiking, skiing, snowmobiling and berry-picking. The reserve is located 22.5 km northwest of Dixonville. Resource activity in recent years has focused on natural gas. Four wells are now located on the property, along with two gas compressors.

Whitemud takes in a total of 9,624 ha of undulating land, with the Whitemud River and several small creeks forming its main topographical features. Water for the cattle comes from dugouts located throughout the reserve.

In 1963, a group of Clear Hills district farmers met to discuss the possibility of setting up a grazing association. A year later, an inspection by the Department of Lands and Forests found the land to be suitable only for grazing, allowing the implementation of the project.

While fence construction was underway local people operated the reserve on a year-to-year basis. The first meeting of farmers wishing to graze cattle on the reserve was held on May 2, 1967. At that time an advisory board of five people was chosen.

Clearing work started in December of 1967. It was carried out in a checkerboard pattern to accommodate wildlife habitat. Since then, many of the areas originally left untouched have been cleared or reduced in size. This was done to permit cattle movement and help with reserve management. A considerable amount of trees and bush still remain outside the fields.

The grazing season runs from May 15 to October 15. In 1994, the pasture was used by 45 patrons with 4,487 head of livestock for a total of 11,634 AUMs.

The reserve headquarters is on NE 24-87-26-W5.

Agricultural Leases

A total of 1,055 grazing leases existed on public lands in the White and Green Zones of the Peace River District in 1996, amounting to 326,658 hectares and an average lease size of 310 hectares. Average “animal unit months” (AUM) stocking rate for northwest Alberta is 2.0 AUM/ha (Alberta Agriculture 1998), yielding a total of 163,329 AUMs. Given an average grazing season of 5 months (June–September), this would amount to 32,666 animal units. Lease size class frequency (Figure 24) indicates that modal lease size interval is 100–150 hectares, whereas modal lease size contributing the greatest area is that of 250–300 hectares (Figure 25). The smallest and largest grazing leases in the study area were 34 and 9,339 ha, respectively.

Table 3. 1997 Grazing statistics on public land in Alberta north of the North Saskatchewan River. Data Source: Alberta Agriculture web site at www.agric.gov.ab.ca/ruraldev/publands/publan20.html.

	Number of Dispositions	Grazing AUM	Area (ha)	Ave AUM	Average Size (ha)
Grazing Leases	2,817	431,429	859,303	153	305
Grazing Permits	286	14,725	29,123	51	102
Forest Grazing Licenses	144	15,731	46,373	109	322
Grazing Reserve Head Tax Permits	432	217,322	194,446	503	Na
Head Tax Grazing Permits	9	708	1,688	79	Na
Subtotal	3,688	679,915	1,130,932	Na	Na

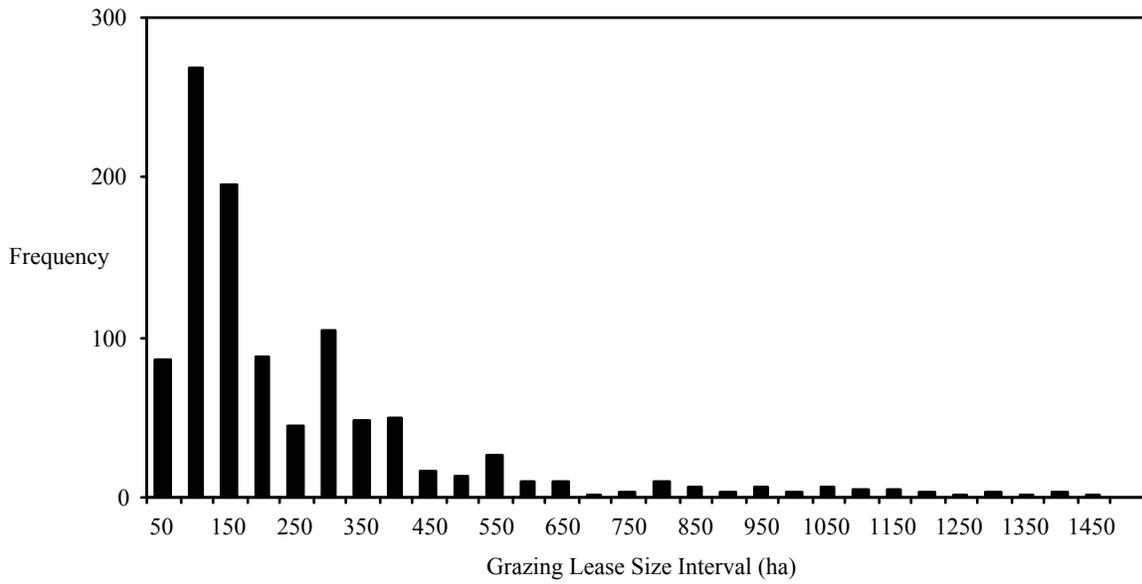


Figure 24. Frequency of grazing leases of different size classes in the Peace River District. Data Source: Alberta Agriculture.

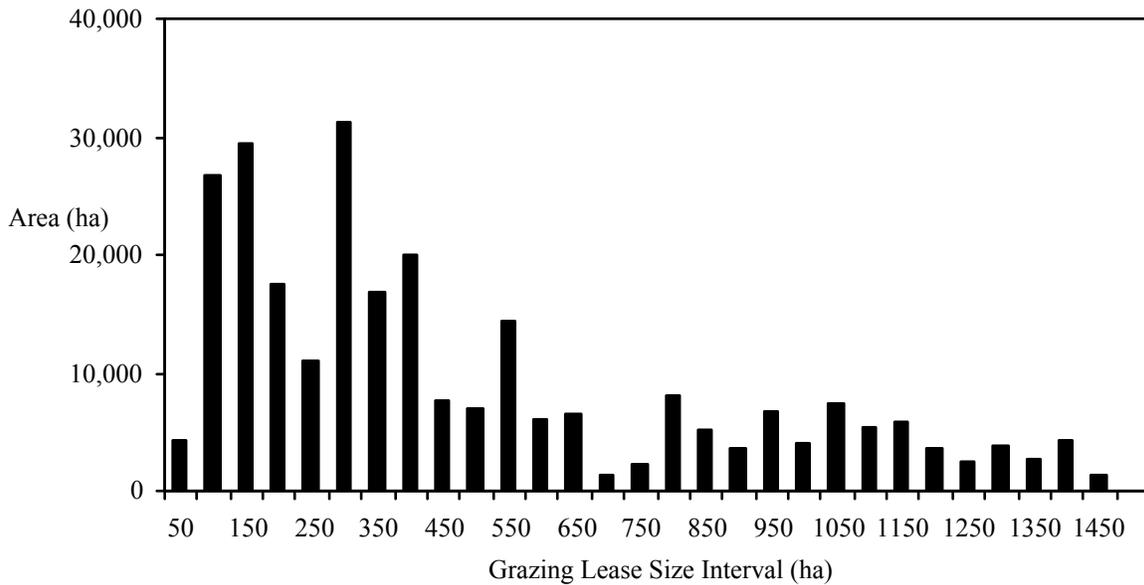


Figure 25. Total area of grazing leases of different size classes in the Peace River District. Data Source: Alberta Agriculture.

Deforestation in the Wake of Agricultural Expansion

The development of the agricultural sector in northwest Alberta has occurred at the expense of boreal mixedwood forests (Figure 26). Although detailed surveys of boreal forest that has undergone deforestation are not available, it is likely in the order of 1,500,000 – 2,000,000 ha (Table 2). Although pockets of native prairie existed and were often preferred, they were small in comparison to the amount of agricultural lands needed. A series of Landsat images progressing downstream along the Peace River (Worsley Region Figure 27; Peace River townsite and Fort Vermilion, Figure 28) illustrate the transformation of the boreal mixedwood landscape into one whose character is largely defined by agriculture.



Figure 26. Example of agricultural deforestation occurring in northwest Alberta.

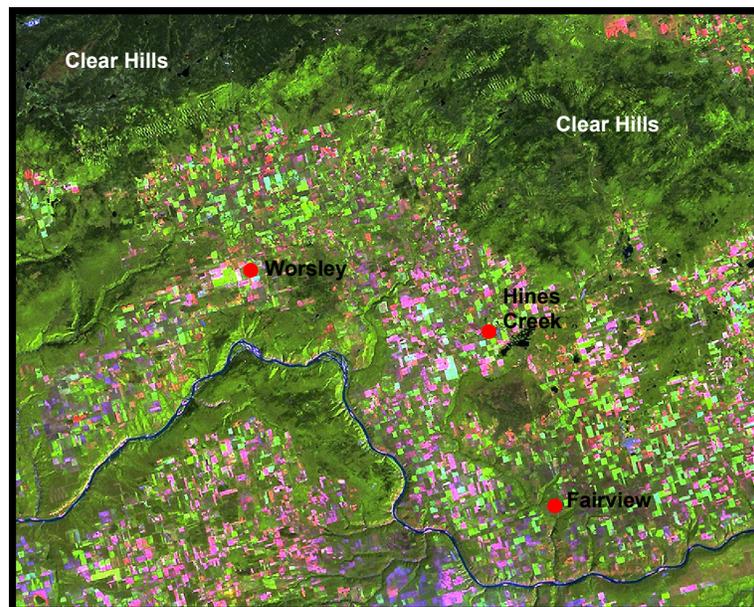


Figure 27. 1986 Landsat image showing level of deforestation in the white zone north and south of the Peace River near the border with British Columbia. The medium and dark green colors indicate boreal forest. The pink and white colors indicate cultivated crops, and the light green colors indicate pasture and hayland. Regional landscape patterns caused by clearcutting can be seen along southern portions of the Clear Hills. The continuous green patterns in various shades seen in the Clear Hills and along the Peace River indicate boreal forest. Data Source: Alberta Provincial Government.



Figure 28. 1986 Landsat image showing level of deforestation in the white zone near the community of Peace River. The medium and dark green colors indicate boreal forest. The pink and white colors indicate cultivated crops and the light green geometric patterns indicate pasture and hayland. The continuous green patterns in various shades along the east and north of the image, and along the major river systems, indicate boreal forest. Data Source: Alberta Provincial Government.

Cited References

- Toma, D. and J. Bouma. 1997. The pursuit of quality. A sustainable growth strategy for the Alberta Agri-Food sector. Report submitted to Alberta Agriculture. Toma and Bouma Management Consultants.
- Leonard and Lemieux 1992
- Prairie Farm Rehabilitation Administration (PFRA) Peace River. 1997. The Cow-Calf Industry in the Peace River Country; An Opportunity for Expansion?
- Turner, A.M. 1991. The state of Canada's Environment. Government of Canada, Ottawa, ON.
- Acton, B.K. & Spence, C.C., A Study of Pioneer Farming in the Fringe Areas of the Peace River, Alberta (Ottawa: Department of Agriculture. Publication #792, Technical Bulletin #60, 1947).
- Bezanson, A.M., The Peace River Trail (Edmonton: Edmonton Journal Publishing Co., 1907).
- Bezanson, A.M., Sodbusters Invade the Peace (New York: Burgey & Curl, 1954).
- Butler, William Francis, The Wild North Land (London: Burns & Oats, 1915).
- Canada. House of Commons. Sessional Papers #123 (1880).
- Canada. House of Commons. Select Standing Committee on Agriculture & Colonization, 1906-06. 3rd Session. 10th Parliament.
- Chambers, Earnest, Canada's Fertile Northland (Ottawa: Government Printing Bureau, 1907).
- Chambers, Earnest, The Great MacKenzie Basin (Ottawa: King's Printer, 1908).
- Dawson, Carl & Murchie, Robert, The Settlement of the Peace River Country (Toronto: MacMillan Company, 1934).
- Horetzky, Charles, North West Canada (Ottawa: A.S. Woodburn, 1873).
- Imrie, John, Peace River: An Empire in the Making (Edmonton: Edmonton Journal, 1930).
- Kitto, F.H., The Peace River Country, Canada (Ottawa: Department of the Interior, 1930).
- Leonard, David, Delayed Frontier (Calgary: Detselig Enterprises, 1995).
- Leonard, David, "The Great Peace River Land Scandal" in Alberta History, vol.39, #2, (Spring, 1991), pp.9-16.
- Leonard, David & Lemieux, Victoria, Lure of the Peace River Country (Calgary: Detselig Enterprises, 1992).
- Macoun, James, Report on the Peace River Country (Ottawa, 1904).
- Macoun, John, "Botanical Report" in Sanford Fleming, Report on the Progress on the Explorations and Surveys [of the CPR] up to January, 1874 (Ottawa: Maclean, Roger & Company, 1874).
- Macoun, John, Manitoba & the Great North-West (Guelph, Ontario: Great World Publishing Company, 1887).
- Macoun, John, cited in Canada. Senate (Hansard), Select Standing Committee on Agriculture & Colonization, 1906-06, 3rd Session, 10th Parliament.
- Mair, Charles, Through the MacKenzie Basin (Toronto: William Briggs, 1908).
- Ogilvie, William, "Report" in Canada. Department of the Interior. Annual Report, 1884, Part II.
- Ogilvie, William, "Report" in Canada. Department of the Interior. Annual Report, 1892, Section 7.
- Pike, Wharburton, Barren Grounds of Northern Canada (New York: MacMillan & Co., 1892).
- Schneider, Ena, Ribbons of Steel (Calgary: Detselig Enterprises, 1989).
- Selwyn, Alfred, "Report" in Canada. Annual Report of the Geological Survey of Canada (Ottawa: Maclean, Roger & Company, 1876).
- Somerset, H. Somers, Land of the Muskeg (London: W. Heinneman, 1895).
- Waiser, William, "A Bear Garden: James Melville Macoun and the 1904 Peace River Controversy" in Canadian Historical Review, vol. lxxvii #1 (1986).

** The archival sources cited were from the Glenbow Alberta Archives (GAA), Provincial Archives of Alberta (PAA), the National Archives of Canada (PAA) and the University of Alberta Archives (UAA). Most statistical information was obtained from the Canadian Census, Alberta census divisions 15 and 16, which cover practically all of the Peace River Country, this being identified for this chapter as land south from Fort Vermilion from which the water flows into the Peace River. Among the countless works which address the subject of the historical development of agriculture in this region, the following stand out as major analytical studies:

Irwin, Robert, "The Regional Identity of the Peace River Country", Ph.D. Thesis, Department of History, University of Alberta, Spring, 1997.

Tracie, Carl, "Agricultural Settlement in the Peace River Country", M.A. Thesis, Department of Geography, University of Alberta, 1967.

Wetherell, Don, "The Economic Development of Northern Alberta", Unpublished manuscript, Alberta Historic Sites Service, Department of Community Development, 1999.

Zaslow, Morris, *The Opening of the Canadian North, 1970-14* (Toronto: MacMillan & Stewart, 1971).

Zaslow, Morris, *The Northward Expansion of Canada* (Toronto: MacMillan & Stewart, 1988).

General References

Alberta Department of Agriculture, Rural Development Research Branch. 1968. *Industry and resources: Alberta's census division 15*. Edmonton.

Alberta Environment Conservation Authority. 1976. *Public hearings on erosion of land in northwestern Alberta: January 1976*. Environment Conservation Authority, Edmonton.

Anonymous. 1978. *Agriculture in the Peace River*. Province of British Columbia, Ministry of Agriculture, Victoria. Report No. 78-10.

Anonymous. 1983. *The Development of new agricultural land in Northwestern Alberta: Executive summary*. Northern Alberta Development Council, Peace River. 26 pp.

Anonymous. 1983. *The development of new agricultural land in northwestern Alberta: A position paper presented to hearings of the Environment Council of Alberta*. Northern Alberta Development Council. 21 pp.

Anonymous. 1987. *Keg River sub-regional integrated resource plan*. Alberta Forestry, Lands and Wildlife, Resource Evaluation and Planning, Edmonton. 39 pp.

Anonymous. 1987. *Sturgeon Lake-Puskwaskau East: Sub-regional integrated resource plan*. Alberta Forestry, Lands and Wildlife, Resource Evaluation and Planning, Edmonton. 151 pp.

Anonymous. 1988. *Lower Peace River region climate evaluation*. Alberta Forestry, Lands & Wildlife, Land Information Services Division, Land Information Branch, Edmonton. 32 pp.

Anonymous. 1990. *Trends in northern Alberta: A statistical overview, 1970-90*. Northern Alberta Development Council, Peace River. 151 pp.

Anonymous. 1991. *Grande Prairie County West local integrated resource plan*. Alberta Forestry, Lands and Wildlife, Edmonton. 35 pp.

Anonymous. 1991. *Northern Perspectives: Northern Alberta into the '90s*. Conference summary report. Northern Alberta Development Council, Edmonton. 47 pp.

Anonymous. 1993. *Toward a business plan for Alberta Agriculture, Food and Rural Development: Summary of public response*. The Ministry, Edmonton. 23 pp.

Anonymous. 1996. *Factors affecting future development in key economic sectors in the Peace, Athabasca and Slave River basins*. Northern River Basins Study, Edmonton. 28 pp.

Anonymous. 1996. *State of water quality of Peace River above Alces River, 1984-95*. Ministry of Environment, Lands & Parks, Environmental Protection Dept, Water Quality Branch, Victoria; Environment Canada, Pacific & Yukon Region, Monitoring & Systems Branch, Vancouver. 59 pp.

Anonymous. 1996. *Transportation opportunities in the Peace region*. The Council. 42 pp.

- Appleby, T., and G. Monner. 1993. A Consensus of the comparative costs and returns of a 1920 acre direct seeding and conventional seeding operation in the Falher Region. Alberta Agriculture, Food & Rural Development, Economic Services Division, Production Economics Branch, Edmonton. 32 pp.
- Armstrong, G.W., and W.E. Phillips. 1989. The optimal timing of land use changes from forestry to agriculture. *Canadian Journal of Agricultural Economics* 37(1):125-134.
- Boisclair, D. 1984. Peace River Fish and Wildlife region: Agricultural land base study. Alberta Fish and Wildlife Division, Edmonton.
- British Columbia Ministry of Agriculture. 1979. Horticultural recommendations for the Peace River region of British Columbia. Ministry of Agriculture, Victoria, British Columbia.
- Carcajou Research Limited. 1977. Agriculture in northern Alberta: An introductory study. Carcajou Research, Edmonton.
- Chanasyk, D.S., and C.P. Woytowich. 1984. Water erosion in the Peace River region. Pages 170-175, IN: Twenty-first Annual Alberta Soil Science Workshop Proceedings: Farming for the future.
- Chanasyk D.S., and C.P. Woytowich. 1986. Sediment yield as a result of snowmelt runoff in the Peace River region. *Canadian Agricultural Engineering* 29(1):1-6.
- Coupland, R. and J. Henderson. 1996. Anthrax in northern Alberta. *Canadian Veterinary Journal* 37(12):748.
- Dawson, G.M. 1879?. Report on the climate and agricultural value, general geological features and minerals of economic importance of part of the northern portion of British Columbia, and of the Peace River Country. Unknown source.
- Downing, D., D.J. O'Leary, and R. Schultz. 1987. Integrated resource inventory of the East Peace study area, Vol. I. Alberta Forestry, Lands & Wildlife, Resource Evaluation & Planning Division, Natural Resource Information Services, Edmonton. 81 pp.
- Farstad, L. 1965. Soil survey of the Peace River area in British Columbia. University of British Columbia, British Columbia Department of Agriculture, Research Branch, and Canada Department of Agriculture, Vancouver.
- Gill, K.S., and M.A. Arshad. 1995. Weed flora in the early growth period of spring crops under conventional, reduced, and zero tillage systems on a clay soil in Northern Alberta, Canada. *Soil and Tillage Research* 33(1):65-79.
- Glazier, H.R. 1982. Short-term economics of stubble and summerfallow cropping of wheat, barley, and canola in the Peace River region of Alberta. Alberta Agriculture, Regional Economic & Business Services Branch, Fairview. 21 pp.
- Goerzen, D.W., S. Sims, A.L. Olmstead, D.B. Wooten, and D.T. Fairey (eds.). 1990. Alfalfa seed production in the Peace River region: Update 1990. Alberta Alfalfa Seed Producers' Association and Fairview College. Publication No. 90-02. 49 pp.
- Hamley, W. 1992. The farming frontier in Northern Alberta. *Geographical Journal* 158(3):286-294.
- Hanus, F. 1980. Farm development and public land disposition in the lower Peace River area, Alberta. Alberta Agriculture, Resource Economics Branch, Edmonton.
- Hudson, J. T. R. 1976. Draft assessment of impact on agriculture in Peace River Valley of proposed hydro-electric development. Canadian Bio Resources Consultants Ltd., Cloverdale, British Columbia.
- Izaurrealde, R.C., Y. Feng, J.A. Robertson, W.B. McGill, N.G. Juma, and B.M. Olson. 1995. Long-term influence of cropping systems, tillage methods, and N sources on nitrate leaching. *Canadian Journal of Soil Science* 75(4):497-505.
- Larney, F.J., C.W. Lindwall, C. Izaurrealde, A.P. Moulin, and M.R. Carter. 1994. Tillage systems for soil and water conservation on the Canadian Prairie. Pages 305-328, IN: Conservation Tillage in Temperate Agroecosystems.
- Leskiw, L., M. Anderson, and A. Ribeiro. 1984. Farmland drainage in central and northern Alberta. Pages 161-169, IN: Twenty-first Annual Alberta Soil Science Workshop Proceedings: Farming for the Future, pages 161-169.
- MacDonald, D., and G. Monner. 1984. An economic comparison of wintering and package bees in the Peace River region. Alberta Agriculture Publication No. 821-14. 19 pp.
- MacDonald, K. 1983. Potential for agricultural expansion relative to forestry in northern Alberta. Alberta Agriculture, Resource Economics Branch, Economic Services Division, Edmonton. 161 pp.

- MacIver, I. 1966. The land and water resources of the Spring Creek Basin: Some problems of settlement on the agricultural frontier in Alberta, Canada. Unknown Source.
- MacLock, R.B., B. Lyons, E.A. Ellehoj, and W. Gummer. 1997. Environmental overview of the northern river basins. Northern River Basins Study, Edmonton. 124 pp.
- MacLock, R.B., and J.P. Thompson. 1996. Characterization of aquatic uses within the Peace, Athabasca and Slave rivers. Northern River Basins Study, Edmonton. 80 pp.
- Major Resource Planning Ltd. 1973. Bibliography: literature, papers and opinions respecting the Peace Athabasca Delta, near Fort Chipewyan, Alberta. Major Resource Planning Ltd., Calgary.
- Massie, M.R.C., B. Everett, and R.D. Kabzems. 1990. An Economic strategy for managing aspen on private lands in northeast British Columbia. Forest Resource Development Agreement, Victoria. 72 pp.
- McCarthy, L.H., T.G. Williams, G.R. Stephens, J. Peddle, K. Robertson, and D.J. Gregor. 1997. Baseline studies in the Slave River, NWT, 1990-1994: Part I. Evaluation of the chemical quality of water and suspended sediment from the Slave River (NWT). *Science of the Total Environment* 197(1-3): 21-53.
- McKenzie, R.C., and M. Nyborg. 1984. Influence of subsoil acidity on root development and crop growth in soils of Alberta and northeastern British Columbia. *Canadian Journal of Soil Science* 64(4):681-697.
- Nation P.N. 1991. Hepatic disease in Alberta horses: A retrospective study of "alsike clover poisoning" (1973-1988). *Canadian Veterinary Journal* 32(10):602-607.
- Nelson, D.L., W.A. Rice, and F.V. Swanson. 1995. Research highlights, 1994: Northern Agriculture Research Centre, Beaverlodge, Alberta, and Alberta Research Farm, Fort Vermilion, Alberta. Agriculture & Agri-Food Canada, Research Branch, Ottawa. 30 pp.
- Northern Alberta Development Council. 1982. The development of new agricultural land in northern Alberta. Northern Alberta Development Council, Peace River Alberta.
- Northern Alberta Development Council. 1983. Ten years later: Northern Alberta Development Council: A review of activities April 1, 1973 - March 31, 1983. The Council, Peace River, Alberta.
- Nyborg, M. and S.S. Malhi. 1991. Acidification of forest soil by elemental sulphur dust. *Dev. Plant Soil Sci.* 45:555-563.
- O'Leary, D., and D. Downing. 1986. Integrated resource inventory of the Grande Prairie County West study area. Alberta Forestry, Lands and Wildlife, Resource Evaluation and Planning Division, Edmonton.
- Odynsky, W. 1964. Public lands open for settlement in the Peace River district of Alberta. 5th ed. The Department, Edmonton.
- Ojamaa, P.M. 1988. Arable lands inventory of selected areas in the Peace River region. The Company, Edmonton, Alberta.
- Ojamaa, P.M. 1988. Arable lands inventory of Tall Creek block, Peace River region. The Company, Edmonton, Alberta.
- Peace Athabasca Delta Project. n.d. A collection of information on socio-economic conditions in the Peace-Athabasca Delta. Peace-Athabasca Delta Project.
- R. K. Acton and C. C. Spence. 1947. A study of pioneer farming in the fringe areas of the Peace River, Alberta, 1942. Department of Agriculture, Edmonton. 88 pp.
- Regehr, L. 1968. Agriculture in Alberta's Census Division 15. Alberta Department of Agriculture, Rural Development Research Branch. Resource Study No. 801.
- Reicher, P. 1996. Water resources use and management issues for the Peace, Athabasca and Slave River basins: Implementation of stakeholder surveys, February to April, 1995. Northern River Basins Study, Edmonton. 288 pp.
- Ross, C., D. Kaliel, and D. Chase. 1988. Economics of cow-calf production in Alberta. *Canadian Journal of Agricultural Economics* 36(4):821-836
- Scrimgeour, G.J., and P.A. Chambers. 1996. Identification of spatial and temporal patterns in nutrient limitation with herbivory effects, Wapiti, Smoky and Athabasca Rivers, 1994. Northern River Basins Study, Edmonton. 43 pp.

- Soon, Y.K., G.W. Clayton, and P.J. Clarke. 1997. Content and uptake of phosphorus and copper by spring wheat: Effect of environment, genotype, and management. *Journal of Plant Nutrition* 20(7-8): 925-937.
- Soon, Y.K., and S. Abboud. 1990. Trace elements in agricultural soils of northwestern Alberta. *Canadian Journal of Soil Science* 70(3):277-288.
- Soon, Y.K., S. Abboud, and G. Lutwick. 1989. Extractable boron, cobalt, molybdenum and selenium in northwestern Alberta soils. Pages 76-81 IN: *Proceedings of the Annual Alberta Soil Science Workshop*.
- Stacey, E.C. 1974. *Peace country heritage*. Western Producer Book Service, Saskatoon.
- Svenson, K.A. 1968. Population characteristics, Alberta's census division 15. Rural Development Research Branch, Economics Division, Alberta Dept. of Agriculture, Edmonton.
- Tracie, C.J. 1967. Agricultural settlement in the South Peace River Area. Unknown source.
- Tracie, C.J. 1970. An analysis of three variables affecting farm location in the process of agricultural settlement: the south Peace River area. Unknown source.
- Twardy, A. G. 1982. Arable land inventory of ten blocks in the Peace River Region. Pedology Consultants, Edmonton.
- Twardy, A. G. 1984. Arable land inventory of four blocks in the Peace River Region. Pedology Consultants, Edmonton.
- Williams, G.D.V., J.S. McKenzie, and M.I. Sheppard. 1980. Mesoscale agroclimatic resource mapping by computer, an example for the Peace River region of Canada. *Agricultural Meteorology* 21(2):93-109.
- Woods Gordon Management Consultants and Marv Anderson & Associates Limited. 1983. The development of new agricultural land in northwestern Alberta: Assessment of benefits and cost implications. Marv Anderson and Associates, Edmonton.
- Woods Gordon, Mary Anderson & Associates. 1983. The development of new agricultural land in northwestern Alberta: Final report. Prepared for the Northern Alberta Development Council, Peace River, Alberta.
- Young, D.A., C.D.A. Rubec, and R.P. Overend. 1987. Development of water management plans to protect wildlife resources during agricultural drainage. Pages 325-331 IN: *Symposium '87 Wetlands-Peatlands*. Available from: *Wetlands-Peatlands '87 Coordinator*, 495 Athlone Avenue, Ottawa, Ont. K1Z 5M8, Canada.