

SETTLEMENT AND ARBOREAL VEGETATION CHANGE IN
THE CARMAN-MORDEN AREA OF SOUTHERN MANITOBA

BY

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ABSTRACT

The natural pattern of grassland and trees along the Manitoba Escarpment in the Carman-Morden area of southern Manitoba has been greatly altered since the time of the fur trade. The arboreal pattern is now a dominantly cultural one, achieved by man replacing the earlier natural associations. This change was accomplished in two overlapping phases. The first was an exploitive one, in which the forests were removed as they provided the building material and fuel for the fur traders and early settlers. The concern for availability of woodland even led to conflict between the Ontario and Mennonite settlers, and the Canadian and United States settlers. This phase ended with the coming of the railway and the increased pressure for farmland as settlement expanded.

The second phase was one in which the present arboreal environment was put in place by farmers, with assistance from the government, schools, and forestry associations. The shelter for farmstead and field crops was a direct response to desires to improve one's surroundings and to overcome the hazards of wind and drought. The present pattern of many scattered groves is the result of these developments. The trend in altering the arboreal pattern continues today as the inhabitants seek to create a more aesthetically pleasing surrounding in a prosperous agricultural area.

ACKNOWLEDGEMENTS

I hereby extend my thanks to the numerous staffs of archives, lands titles, and record offices, the Surveys and Mapping Branch of Manitoba, and the libraries that have so willingly offered assistance in the pursuit of information for this study. Of special mention are: Mr. V. Hildahl, the Carman Agricultural Representatives' office, the staff of the Manitoba Provincial Library, and the Rare Book Room staff at the Dafoe Library, University of Manitoba.

My thanks go to Dr. D.W. Moodie for his assistance and patient supervision in the preparation of this thesis. And appreciation is hereby expressed for the assistance of the two examiners Dr. L. Stone and Dr. T. Shay. The preparation of the many maps and charts was the appreciated work of Mrs. C. Trottier, and the typing was done by Mrs. C. Penner.

To Dr. J.L. Tyman, formerly of Brandon University, now of Australia, is owed a special thanks. It was while his student and research assistant that the interest in historical geography began, and many of the leads established that enabled me to do this study.

The final thanks and dedication of this study is to my wife, Linda, without whose assistance, advice and encouragement this work would not have been completed.

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CHAPTER I

INTRODUCTION

It has been said that the most foolish statement in the world is that man has harnessed nature. Equally indefensible is the statement that nature controls man. It is their interaction that we observe while appraising the power of man to alter the degree and kind of interaction as he advances in knowledge and experience.¹

It is the intent of this thesis to examine the interaction of man and the arboreal vegetation in the Carman-Morden area of southern Manitoba from 1734 to the present. The area under study has changed from a natural pattern of grassland and trees in the eighteenth century to the present rigid geometric pattern of cropland and trees largely set out by man. This transformation is due to a complex of factors including an alteration in the attitude toward, and the perceptions of, their surroundings by the inhabitants of the prairies. This is quite evident with the settlers of the Carman-Morden region. Where they once saw trees as merely a resource to be exploited, they now value trees and see them as a resource that can be managed.

The study area lies between the Red River Valley and the "Pembina Mountain", and is more specifically defined as the area of Townships 1 to 6 in Ranges IV to VII West of the

1. Isaiah Bowman, *Geography in Relation to the Social Sciences* (New York, 1934), p. xiii.

Prime Meridian (Fig.1-1). This area was chosen because of the range of vegetation and the wealth of information about it. The vegetation in the past has ranged from pure grassland on the level Red River Plain to closed forest on the Pembina Mountain or Manitoba Escarpment. Detailed information on the vegetation of the area is available from the journals of the earliest fur traders. There are excellent descriptions and maps by the surveyors who set out the section, township and range system for the disposal of Dominion Lands, this survey work having been done during 1870-76. There are also miscellaneous descriptions of vegetation by the settlers, their elected officials (see inset map for municipal boundaries), and other government officials who visited the area. The aerial photographs of 1959, and the Department of Agriculture photomosaics² in 1970 create a solid data base for specific interpretation of the more recent changes.

The period involved in the study is 1734 to 1980, with the greatest detail being accorded to the settlement and later agricultural era of 1870 to 1970. The study concludes with some comments on minor changes during the decade of 1970 to 1980, the time in which this study was conducted. In recreating the different arboreal geographies of the area the study is recounted chronologically, for by this method one

2. These photomosaics of 1970 were taken as a monitoring device of cropland taken out of production during the Lower Inventory for Tomorrow program (LIFT). While used to assess crop areas, they serve well to show the tree pattern of the study area.

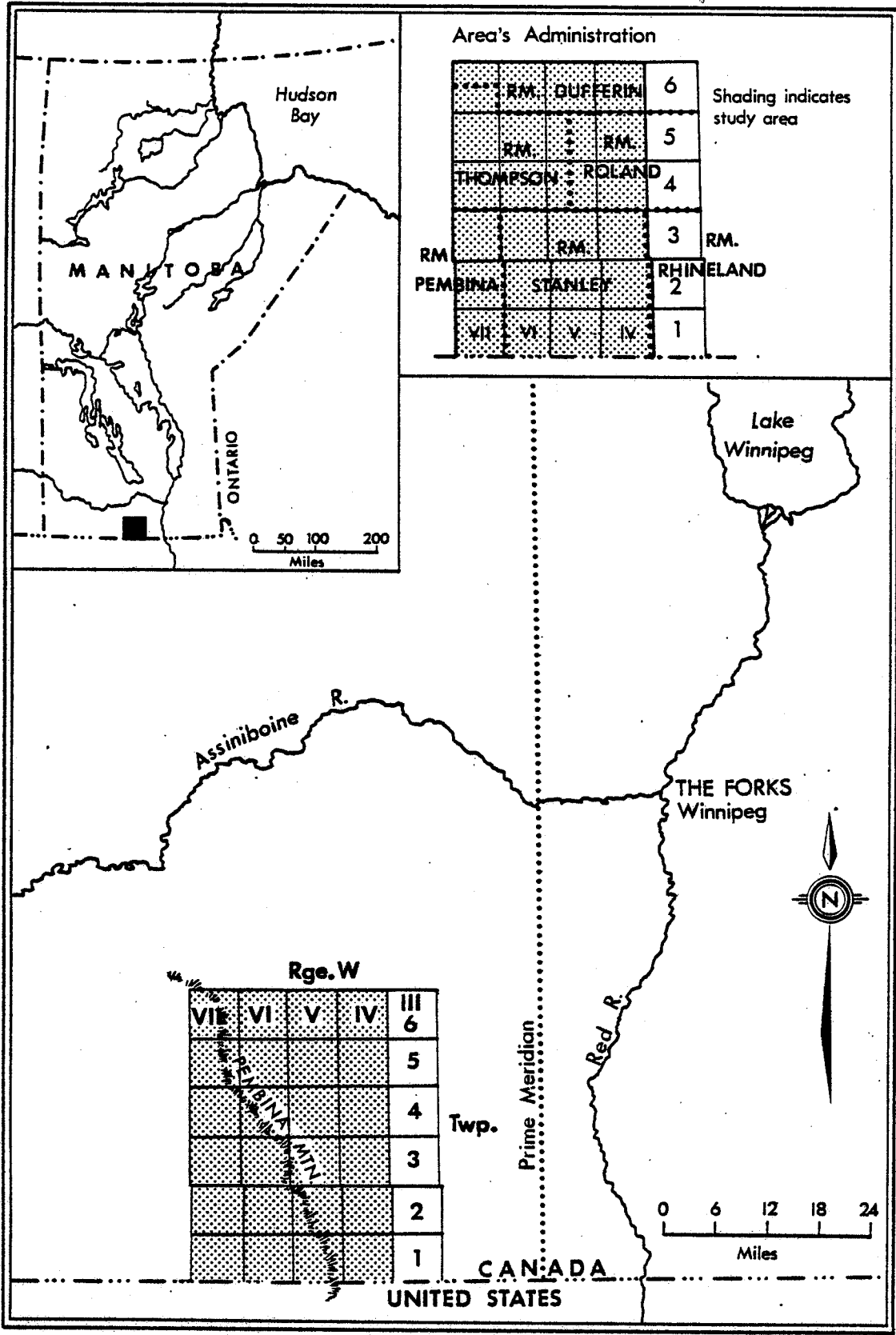


Fig.1-1 The Study Area in Southern Manitoba.

can see the changes in the physical and cultural factors associated with the vegetation geography.

The following chapters are organized in terms of succeeding phases in the European settlement of Southern Manitoba. In the first phase the European had a limited impact on a large and hostile environment, taking, with the help of the Amerindians, the meat and furs of the parkland and grassland region of the western interior of North America. Once the settlement era arrived and the surveyors had laid out the grid that enabled an orderly transfer of common land to individual entrepreneurs,³ there followed a concentrated exploitation of land, water and wood as the settler made good his aspirations for profit and security in a new land. Towards the end of this era, there was a change as the settler sought to give an aura of permanence to his presence by planting trees around his dwellings, both to create shelter and to alter his landscape to a more amenable and pleasant one. It is only after his cropland was tested by the drought of the Thirties that he adopted the philosophy of those in Saskatchewan, and planted shelterbelts, with the Manitoba Department of Agriculture giving assistance. The last phase in southern Manitoba is occurring at this moment, with adjustments to the vegetation pattern being done to accommodate

3. See I. Spry, "The Great Transformation: The Disappearance of the Commons in Western Canada", in R. Allen (ed.) Man and Nature on the Prairies (Regina, 1976), pp. 21-45.

large machines and specialty crops. It is a phase in which some areas are losing their tree belts, in which some natural woodlands are being trimmed, and in which new arboreal shelter areas are being established.

CHAPTER II

THE PHYSICAL SETTING

The interior plains of Canada, with their slightly dipping beds of sedimentary rock and, relatively thin covering of glacial overburden, form three giant steps westward to the Rocky Mountains. The two risers between are comprised of fairly pronounced scarps, called the Manitoba Escarpment and the Missouri Coteau respectively. The first step is the almost level bed of the former glacial Lake Agassiz. Above the Manitoba Encarpment the land of the second step is rolling to the Missouri Coteau. The third step or High Plains stretch to the Rockies but are not a concern of this study.

The elevation of just under 274 metres on the glacial Lake Agassiz plain becomes, after ascending the Manitoba Escarpment, an elevation of over 488 metres, in a rolling glacial till area. This till plain is characterized by water-filled hollows or sloughs, and deep ravines that drain either to the steep-sided, flat-bottomed Pembina River spillway in the southwest corner of the study area, or in the majority of cases, drain northeast down the escarpment. The scarp is composed of the edges of the dipping beds of shale, and the scarp face is layered by glacial beach deposits. The most noticeable of these deposits is the Campbell strandline which parallels the scarp and trends northwest from section 3, Township 1, Range V, and leaves the study area on the west edge of

Township 6 Range VII, all West of the first meridian.* To the east of the escarpment and extending to the Red River stretches the lacustrine deposits that form the almost flat surface of the Lake Agassiz plain.¹

The main streams are the Pembina River in the southwest, and the east flowing streams are Dead Horse Creek, Shannon Creek, Tobacco Creek, and the Boyne River. These are subject to spring flooding, as the great volume of meltwater spreads out across the near level lake plain. This tendency for flooding has required many dikes and drainage works. The drains built in the area are indicated by the straight lines in the creek pattern (Fig. 2-1.).

The soil parent material reflects the glacial action on the escarpment and its two adjacent plains. The soils are mixed till in the southwest above the escarpment (Snowflake, Darlingford soils), with some stream outwash (Pembina), and some fine loams (Glenboro). Below the scarp are delta and stream outwash (Almasippi, Altona, Sperling) and heavy clays on the lower areas (Gretna, Myrtle, Morris, Morden). The gravel or beach ridges from south of Morden to northwest of Miami show up quite distinctly on the soil map (Fig. 2-2).²

Zonally the area is classified as heavy black

*Hereinafter Township and Range co-ordinates will be stated as T.1, R.V, etc., and are understood as being West of the first meridian.

1. Peter B. Clibbon & Louis Edmond Hamelin, "Landforms", in J.Warkentin (ed.), Canada, A Geographical Interpretation, (Toronto, 1968) p. 73; and J.H. Ellis and Wm.H. Shafer, Report of Reconnaissance Soil Survey of South-Central Manitoba, (Winnipeg, 1943) p. 27.

2. Ellis, Ibid., from map in back pocket.

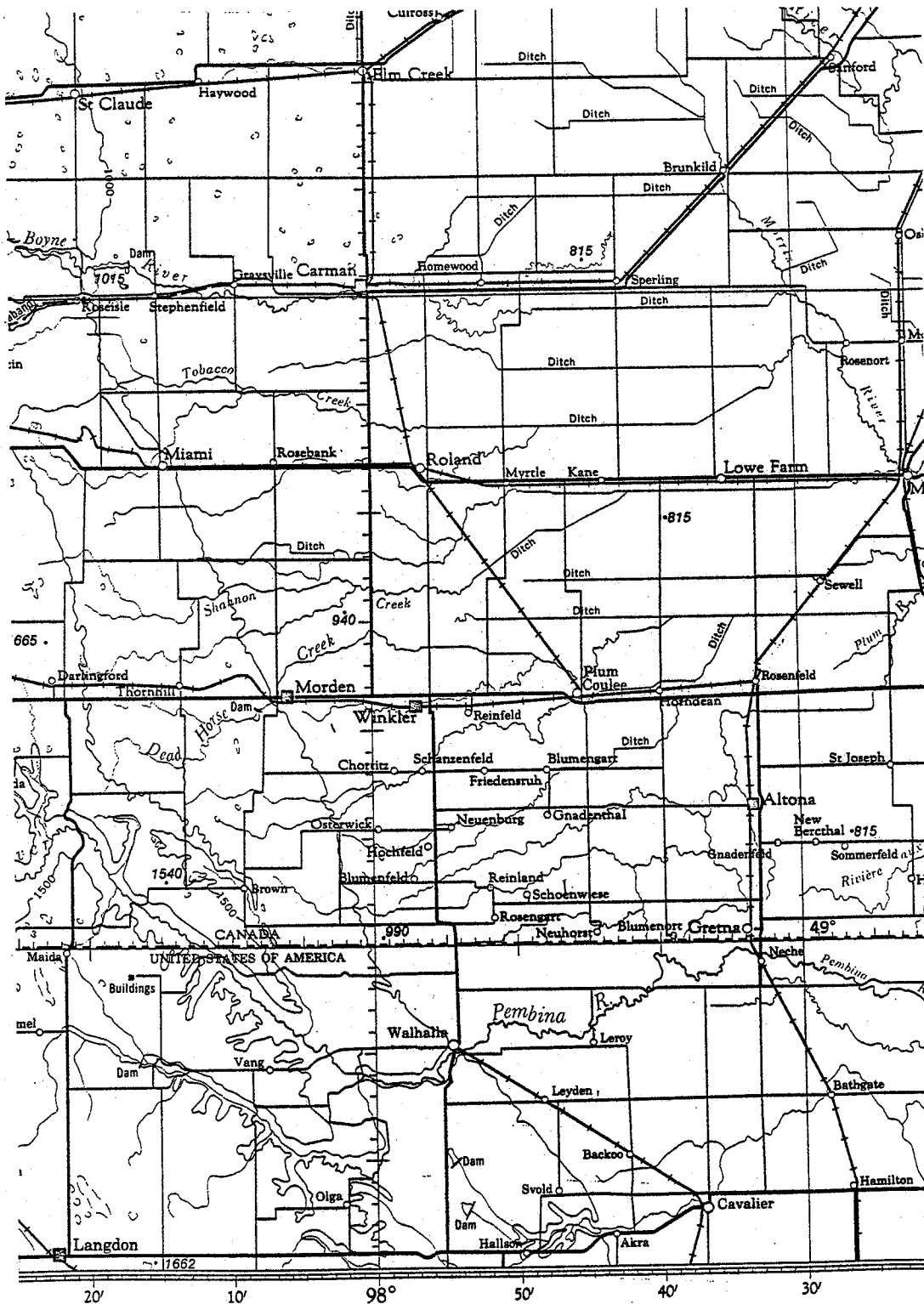
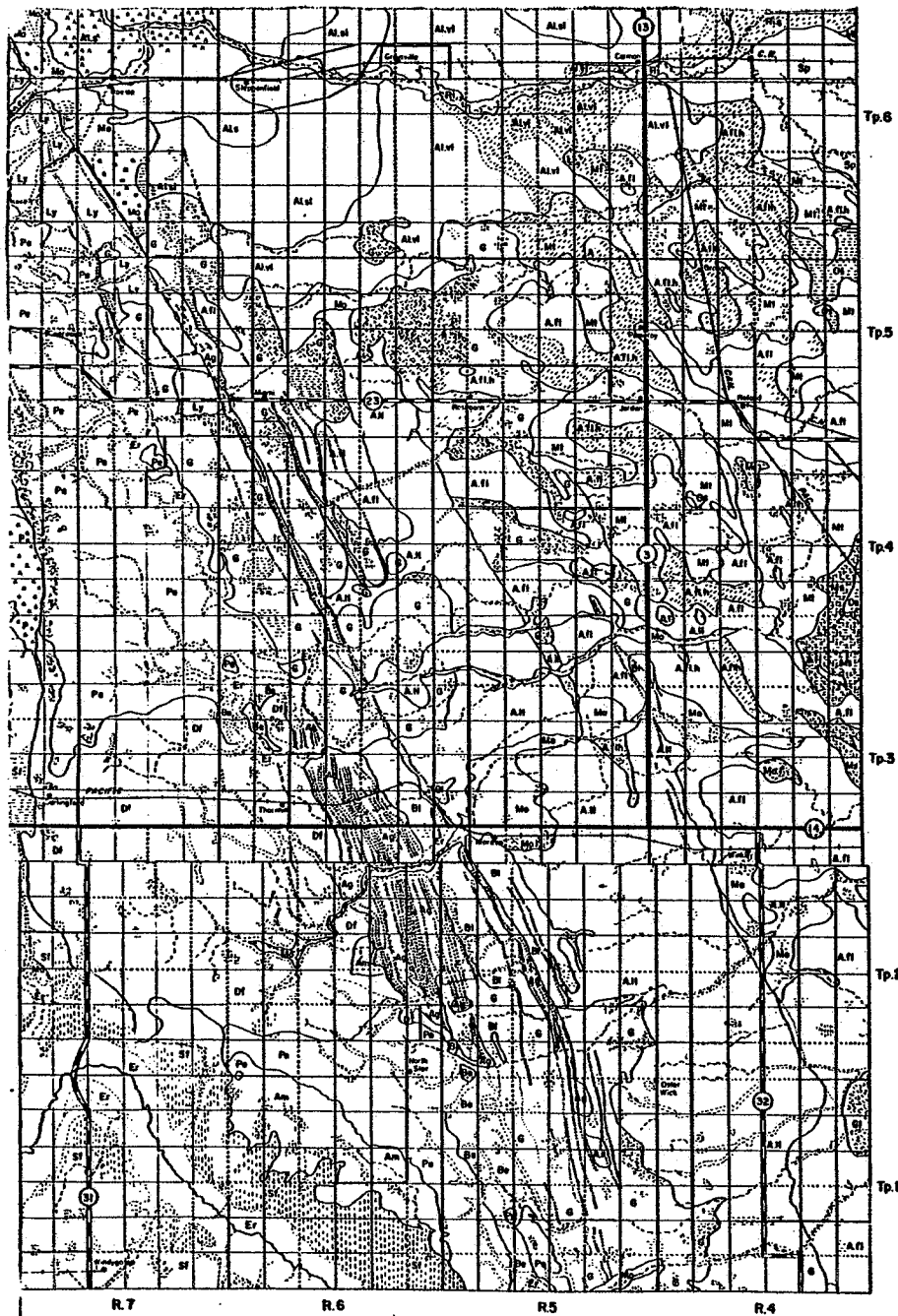


Figure 2-1. The Thesis Area Topography and Drainage.
From National Topographic Sheet 62 NE (S $\frac{1}{2}$)
and 62 SE (N $\frac{1}{2}$) Scale 1:500,000



KEY

Glacial Till

Df Darlington Clay loam

Till and Water Deposits

Sf Snowflake Clay loam

Lake Agassiz Terraces

B1 Blumenstein Loam Clay

Lacustrine and Delta Deposits

Ag Agassiz Textural Complex

Al. s Almassippi light fine sandy loam

Al. sl Almassippi loamy fine sandy loam

Al. vl Almassippi very fine sandy loam

A. ll Altona light sandy loam

A. fl Altona fine loam

G. Gratra clay

Mt. Myrtle Heavy fine loam clay

Ms. Morris shallow phase clay

Mo. Morden fine loam clay

Mo. 1 Morden light fine loam clay

Sp. Sperling Mixed loams

Degraded black earth-grey wooded transition

Fe Pembina clay loam

Ly Leary textural Complex

Am Altamont clay loam- clay

Miscellaneous soils

Er. Eroded slopes

Se. Benton clay

Reduced from

J.R. Ellis and Wm. Shafer Report of Reconnaissance Soil

Survey of South-Central Manitoba

Winnipeg: Dept. of Agriculture, 1943

Figure 2-2 Soils of the Carman-Morden Area

chernozem (or grassland) soils. However, the soil climate is classified as cool boreal (or woodland), with a short warm period of over 15°C and a significant water deficit during the warm soil period. These thermal and moisture conditions combine to place the region in the transition zone between grassland and mixed woodland soils. Thus, which will dominate locally will depend upon variations in slope, drainage, aspect and climatic fluctuation.

Climatically, southern Manitoba lies in the mid-latitude Humid Continental Cool Summer Zone.³ Lacking protection of mountain barriers, it is open to the vagaries of the arctic, polar, and tropical air masses, and since it is far from the moderating influences of an ocean, the region is very continental in its temperature and precipitation patterns. It lies in the zone of westerly and north-westerly winds but this pattern varies from month to month (Fig.2-3). These winds from April to September must be considered in setting out soil and crop protection. The continentality is also noticeable in the frost and drought conditions that occur, conditions that can be adverse for vegetation.

The climatic data for the area has been gathered in the most detail for the city of Winnipeg, but records of temperature and precipitation have been kept at Morden since

3. G.T. Trewartha as quoted in J.W. Watson, North America (London,1963), p.63.

the Experimental Farm was established in 1915. The data used in this study are from Morden, based on the 1931-1960 period.⁴

The mean monthly temperature range from -14.8°C to 13.9°C as minima, and from -11.6°C to 27.6°C as mean maxima, demonstrating a great deal of seasonal change. Mean monthly temperatures hide significant differences, hence mean weekly temperatures are plotted to give a truer picture of the conditions for vegetation growth (Fig.2-4). There is a frost-free period of close to 120 days, but the growing season for tree vegetation can be up to three weeks longer due to its greater tolerance for frost. The more useful agricultural index of degree days over 5.5°C yields a figure of over 3000 mean annual degree days, indicating thermal conditions for all vegetation similar to the Okanagan Valley of B.C. or Simcoe and Grey Counties of southern Ontario.

With these temperatures, average sunshine and under average wind conditions, the mean potential evapotranspiration ranges between 45.7 cm and 50.8 cm annually. The average annual total precipitation at Morden is 51.56 cm, giving just enough moisture in most years for agriculture. This moisture distribution is that of a summer maximum which trends to a drier autumn, and most of the soils of the area provide sufficient storage

4. Canada, Dept. of Agriculture, "Risk analysis of Weekly Climate Data for Agriculture and Irrigation Planning, Morden, Manitoba," Technical Bulletin 35, 1968.

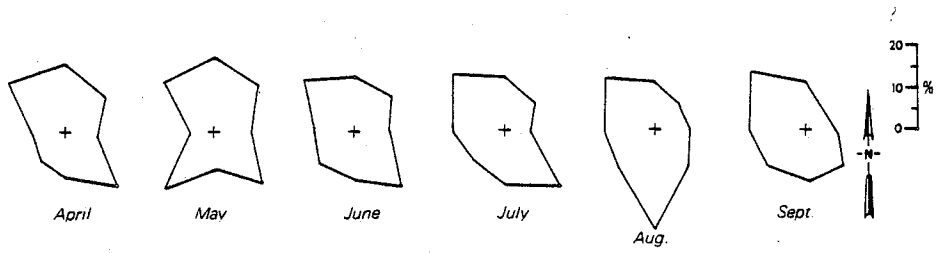


Figure 2-3 Wind Roses , Winnipeg Data

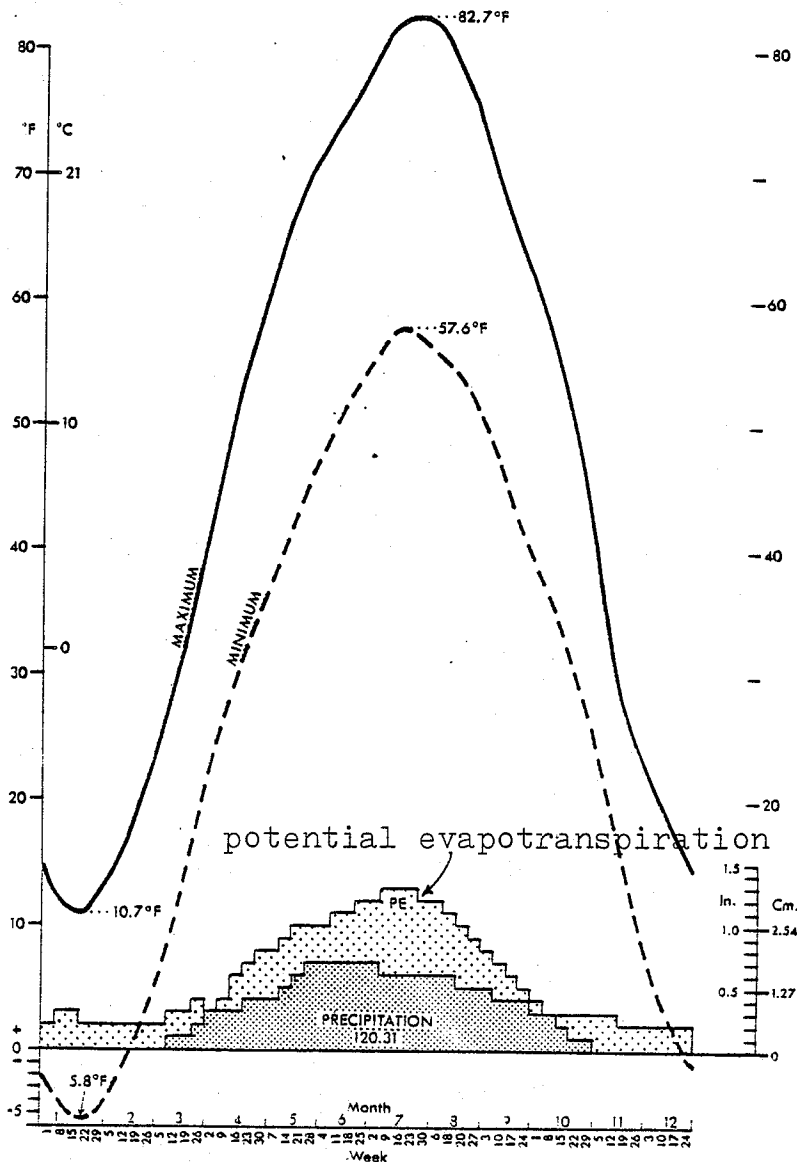


Figure 2-4 Morden Climograph

Source: Canada Agric. Tech. Bull. 35, Table 2

of winter precipitation to support successful agriculture. In other words, in most years the storage barely compensates for the moisture deficiency. But, there is an element of risk from drought, especially during August when the crops are maturing.⁵ Over the 1970 decade there have been extremes of moisture, and lack of moisture in August, and May-June. It is this early drought that can be crucial to the survival of trees.

The other risk to plant growth is the wind conditions, for the northwest and southeast winds of April and May can cause soil drifting. By late July and early August the intrusions of hot Colorado or moist Gulf of Mexico air masses can bring drying winds or crop destroying hail storms, also a hazard to arboreal vegetation.

Recent studies by botanists such as Doris Löve,⁶ Sigrid Federovich,⁷ and J.C. Ritchie,⁸ have pieced together

5. F.D. Watts, "Climate, Vegetation and Soil," in J. Warkentine (ed.), Canada, A Geographical Interpretation (Toronto, 1967), 78-86.

6. Doris Löve, "The Postglacial Development of the Flora of Manitoba, a Discussion," Canadian Journal of Botany (37, 1959) pp. 547-585.

7. Sigrid Federovich. "On the Relation Between the Contemporary Pollen Spectra and Vegetation of the Forest-Grassland Transition in Manitoba," Unpublished M.Sc. thesis, University of Manitoba, 1964.

8. James C. Ritchie, "Holocene Vegetation of the Northwest Precincts of the Glacial Lake Agassiz Basin," W.J. Mayer-Oakes (ed.), Life, Land and Water (Winnipeg, 1967), pp. 217-229.

a fairly substantial picture of the vegetation of Manitoba since the Wisconsin Ice Age obliterated all Manitoba vegetation. With the retreat of the ice a grassland and marsh-grassland developed, and by 9000 to 6000 Before Present (hereinafter B.P.) a deciduous elm and poplar forest developed on the shores of Lake Agassiz II, with pine-oak arriving on the drier upland, the oak migration from the south-east, and the pine from the west. The prairie then seems to have followed, then the forest spread southward during the 6500 to 2500 B.B. period. From 2500 B.P. to the present there has been a small southwards expansion of the spruce forest, with an aspen zone moving just ahead of it, but the major zones have not been greatly altered.⁹

The problem with vegetation reconstruction on a large scale is the variability within physiographic regions due to local variations of site and aspect. For readers interested in following the arguments for patterns in late-Quaternary vegetational history the work of J.C. Ritchie should give some interesting leads.¹⁰

See also J.C. Ritchie & S. Litchte-Federovich "Holocene Pollen Assemblages from the Tiger Hills, Manitoba," Canadian Journal of Earth Sciences (1968), pp. 871-80, and J.C. Ritchie, "The Late-Quaternary Vegetational History of the Western Interior of Canada," Canadian Journal of Botany, 54, 1976, pp. 1793-1818.

9. J.C. Ritchie, Ibid., 1976, p. 1811-12.

10. Idem.

For the purpose of this work the aspen-prairie boundary is admitted by Ritchie to have a sparse history.¹¹ Until new evidence on poplar comes to light, the movement of the parkland seems to be one in which:

The area of true prairie is now gradually diminishing, and the aspen zone is growing out over it, perhaps even better expressed as "under it", as the invasion seems to be rather by root sprouting than by seeding. ...Were it not for the raging prairie fires (in early days often set by man) the encroachment of forest upon the prairie would have been more visible today.¹²

Although the Indian no doubt had a major impact upon the vegetation, the historical record of this change does not begin until the arrival of European fur traders in the region during the early decades of the eighteenth century. The main patterns as seen by the first Europeans have since altered greatly, and especially in the last century. To get a clearer picture of these changes and their causes, it is necessary to examine the changing nature of human exploitation of the vegetation of southern Manitoba, and of that in the Carman-Morden area in particular.

11. Ibid. p. 1816.

12. D. Löve, Ibid., p. 580.

CHAPTER III

THE FUR TRADE ERA

The first fur traders in what was to become the southern part of the province of Manitoba found open plains, tree-lined rivers, and a few areas of heavy timber in the locations more favourable to tree survival. In travelling west from the Red River in the present Emerson-Morris area the fur trader would have encountered a plain, whose heavy soils and abundant moisture produced a lush growth of tall prairie grasses and associated herbs. The species ranged from big and little blue stem to meadow grasses in the wetter areas.¹ The height of the grasses set this area apart from the grasslands further west. Along the main rivers of the plain the traveller would have found the grassland broken by sinuous stands of willow, ash, elm, and birch.* On ascending the escarpment to the west he would have found heavy stands of scrub oak, balsam poplar and aspen. The rolling ground beyond was more varied in its vegetation characteristics, being comprised of bluffs of aspen and oak, punctuated by small areas of medium height grassland.

The first good record of the region of the Red and

*Throughout this study the common names for trees have been used. For the corresponding scientific names, please see Appendix I.

1. F.B. Watts, "The Natural Vegetation of the Southern Great Plains of Canada," Geographical Bulletin 14 (Ottawa, 1960), pp. 25-43.

Assiniboine rivers was left by Pierre la Verendrye. After 1733 he established several forts in the area - Fort Maurepas, first on the Red River and then on the Winnipeg River, Fort La Reine in the vicinity of Portage la Prairie, and others.

I have established a Fort at Lake Winnipeg five leagues up the Red River, on a fine point commanding a distant view.... I could not establish myself nearer the Lake, because it is all prairie there.²

On his map of 1737 the Forks are labelled "prairie" and the first rise of land to the west he has labelled "Grand Bois", (Fig. 3-1). The term "prairie" is taken to be poorly drained grasslands, what the English explorers would call meadow land. Later, this tall grass area would have been known as the true prairie. The vegetation gradations from grass to woodland, that of marshy areas, then drier grassland, then woods are consistent with what a traveller new to the area would notice most.³

La Verendrye would have had an opportunity to view the "Grand Bois" in detail as he travelled from Fort la Reine on

2. Pierre la Verendrye in L. Burpee (ed) Journal and Letters of Pierre Gaultier de Verrenes de la Verendrye and his Sons, Champlain Society, (Toronto, 1927) pp. 197-8.

3. "Prairie" later was applied to the parkland region by Archbishop Tache in Sketch of the North-West of America (Montreal, 1870). For a good discussion of the nuances of a) prairie and barren see D.W. Moodie "A Historical Geography of Agricultural Patterns and Resource Appraisals in Rupert's Land, 1670-1774", Unpublished Ph.D. dissertation, U. of Alberta, (Edmonton, 1972) pp. 183-189; and b) prairie in D.R. McManus, The Initial Evaluation and Utilization of the Illinois Prairie 1815-1840, (Chicago, 1964), p. 10.

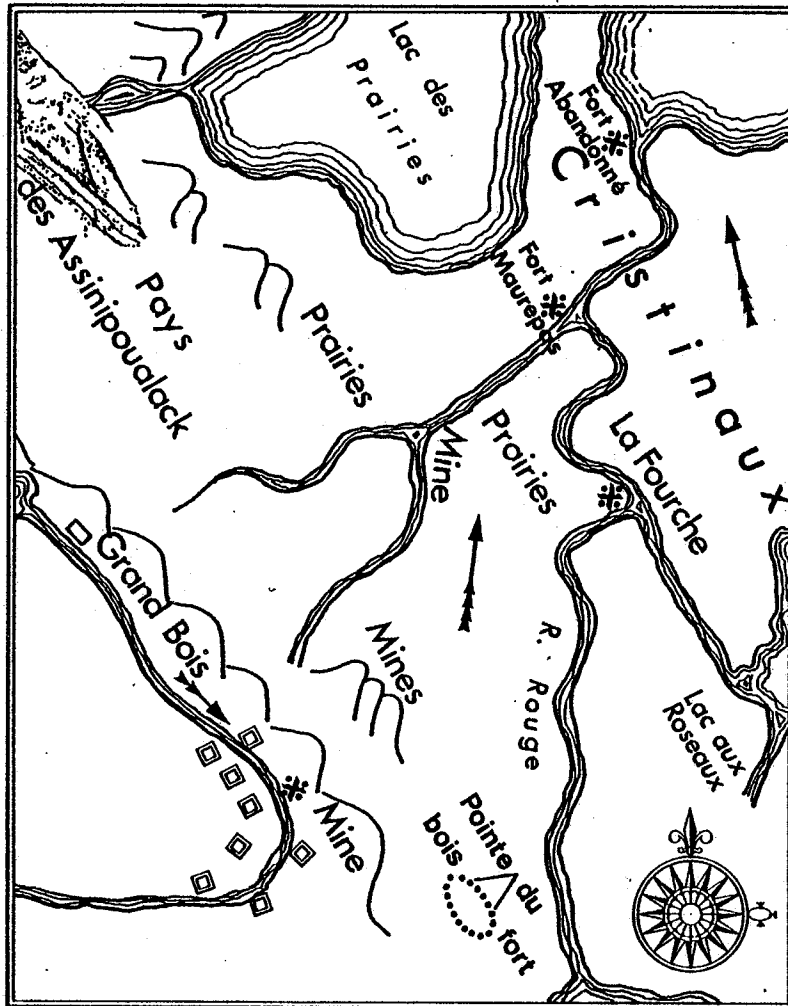


Fig.3-1. The area as reported by La Verendrye (redrawn from L.Burpee (ed) Journal and Letters of ... La Verendrye p.120.)

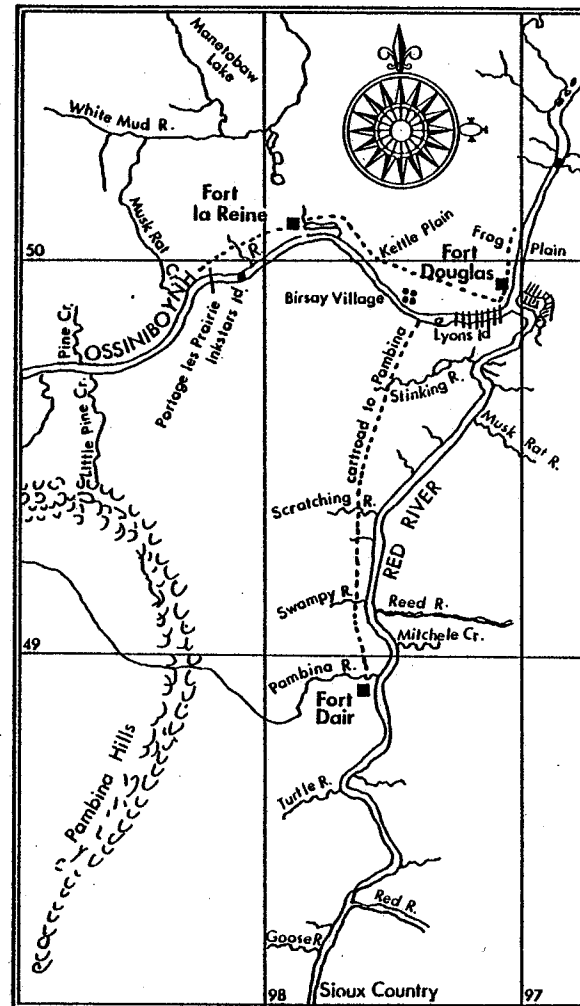


Fig.3-2. Red River District by Peter Fidler. Redrafted from map courtesy of Hudson's Bay Archives B22/e/1 f.1d.

the Assiniboine to the Mandans. Following a bearing of south one degree west for twenty-six leagues they went "up the mountain" or the Manitoba Escarpment, and passed Calf Mountain, a burial mound west of present day Morden.

We were far, however, from being able to follow a straight road for every two leagues we made a straight line we travelled three or four.⁴

Some of the wandering may have been caused by their guide, the rest by the treed terrain and attempts to take the easiest grade. Very possibly this was the same trail found there by the surveyors c.1870.

In later years many fur traders traversed the Red River region starting both from Hudson Bay or Montreal. Those who have left records generally agreed with Sir Alexander Mackenzie's description of the region:

...the Assiniboine, or Red River, which is at the distance of forty miles coastwise, disembougues on the south-west side of Lake Winnipic. It alternately receives those two denominations from its dividing at a distance of about thirty miles from the lake, into two large branches.... The eastern branch, called the Red River, runs in a southern direction to near the head waters of the Mississippi. On this there are two trading establishments [Figure 3-2]. The country on either side is but partially supplied with wood, and consists of plains covered with herds of buffalo and elk, especially on the western side. On the eastern side there are lakes and rivers, and the whole country is well wooded, level, abounding in beaver, bears, moose-deer, fallow deer & ... There is not, perhaps a finer

4. Ibid., p. 312.

country in the world for the residence of uncivilized man...it abounds in everything necessary to the wants and comforts of such a people.⁵

A more detailed account of the area nearer the Manitoba Escarpment is found in the journal and accounts of Charles Chaboillez, and David Thompson. Chaboillez was a North-West Company trader at Pembina during 1797-98. His journal of the Lake Winnipeg area describes the tributaries of the Red River [Figure 3-3] and tells of his building a fort and stockade at the timbered junction of the Pembina and Red Rivers. Several times he mentions the open land to the west, as shown here in an entry about his opposition fort:

In the evening they [the Indians] all went to the English & prevailed on Mr. Miller to give them liquor, which he did, I suppose to avoid Quarrels, he having but few Men with him and all out in the Prairie trading either west or north of the fort.⁶

Hickerson places this prairie between the Pembina mountain and the Red River. Chaboillez had a chilling experience with this open area in January when he followed the English traders toward the source of the River Isle de Bois (Boyne-Morris):

5. Sir A. Mackenzie Voyages from Montreal (London, 1901), pp. 88-9.

6. C.J. Chaboillez in H. Hickerson, "Journal of Charles Jean Chaboillez, 1797-98," Ethnohistory (6,1959), (6,1959), p.291 [emphasis mine].

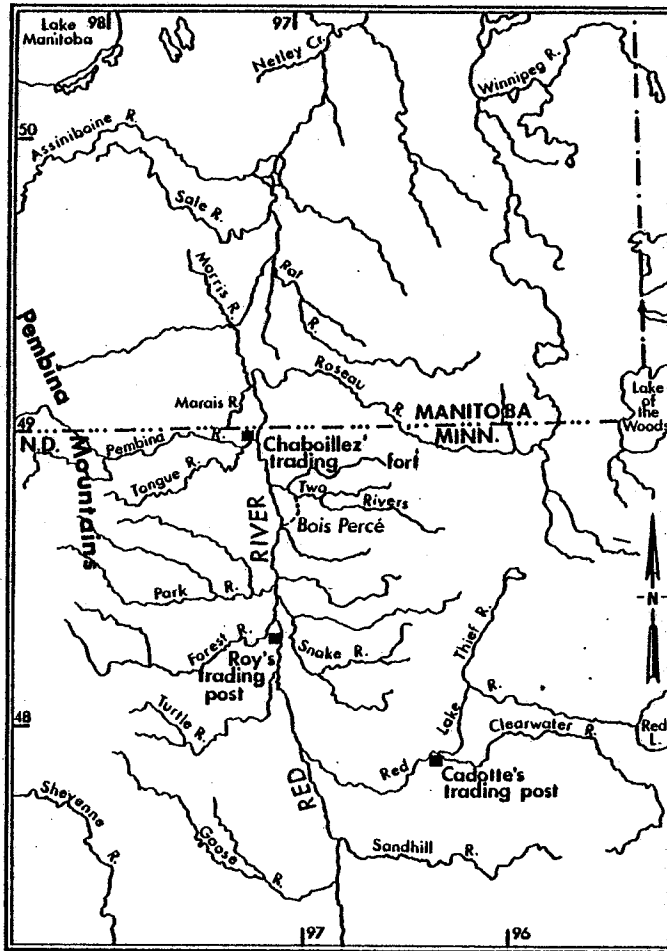


Fig.3-3. Chaboillez' area (redrawn from H.Hickerson, "Journal of C.J. Chaboillez, 1797-98 ", p.40.)

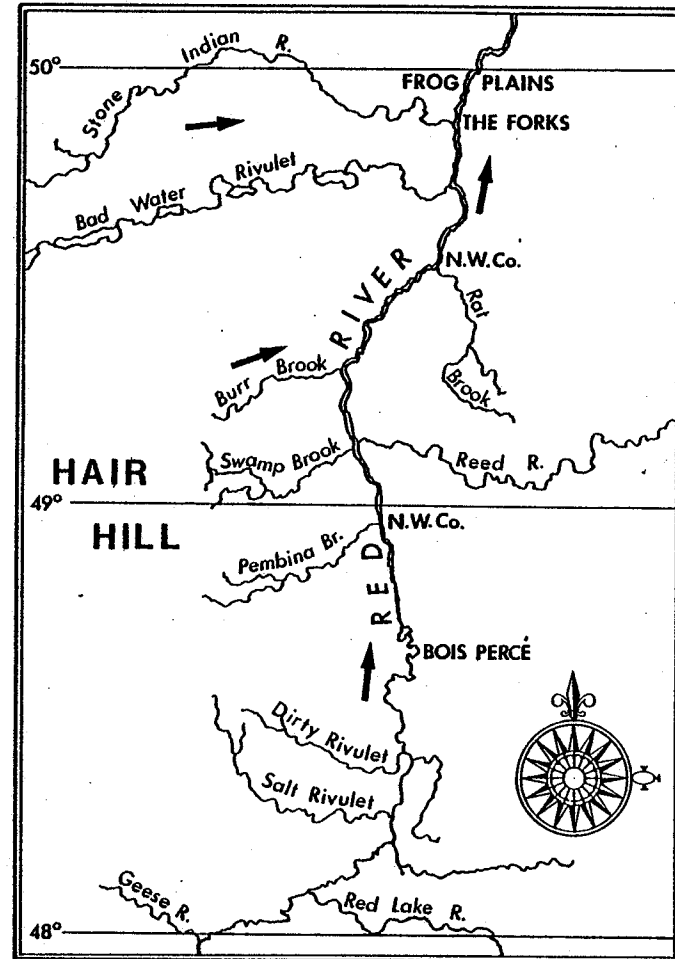


Fig.3-4. David Thompson's area as redrawn from PAC V1/700 David Thompson 1813-14 (1843 Section 9).

Crossing the Big Prairie which is about Ten Leagues about noon I perceived the English, but about Sun Down the bad Weather Took and I overtook them - the Wood on each side being out of Sight & very cold Head Wind we were obliged to Sleep in the Prairie under the Snow. Wedn 16 Still very cold, Blowed & Snowed all Day impossible to go on - so we remained at the Same Place.⁷

David Thompson got provisions at Chaboillez' fort that March after coming from La Sourie via the Forks, taking eight days from the Forks, for the snow was not packed but supported by long grass, which made for laborious walking and the river had too much water on its surface for safe travel

We journeyed on the west side of the River; the whole distance was meadow land, and no other woods than sappings of Oak, Ash and Alder. From the many charred stumps of Pines it was evident this side of the river was once a Pine Forest. In the more northern parts where Pine Woods have been destroyed by fire, Aspens, Poplars and Alders have sprung up and taken the place of the Pines; and along this, the Red River, from the mildness of the climate and the goodness of the soil, Oak, Ash Alder and Nut Woods have succeeded the Pines.⁸

It is apparent from this, and many other descriptions that fire during the presettlement era played a major role in determining the relative distribution of grasses and trees. It was the reproductive power of the grasses that kept the area fit for man and beast in the wake of destructive prairie fires.

7. Ibid., p. 293.

8. David Thompson in R. Glover (ed) David Thompson's Narrative 1784-1812 (Toronto:1962), p. 185.

Thompson found great oaks at Pembina House and with his woodsman's point of view assessed the area:

This part of the River is called Pembina from a small stream that comes in. As this River has a deep rich soil and everywhere fit for cultivation, it must become a pastoral and agricultural country, but for want of woods, for buildings and for other purposes, must be limited to near the River. The open Plains have no Woods and afford no shelter.⁹

Only to the west of the Manitoba escarpment or the gentle rise of ground that he called the Hair Hill were there groves of woods, (Figure 3-4).

The most detailed descriptions of the fur trade landscape of the study area have survived in the journals of the North-West Company trader, Alexander Henry the Younger. He was resident in the study area for several years and is the unrivalled chronicler of the use of the vegetation.

In 1800 Alexander Henry moved his trading operations from the White Mud River northwest of Portage la Prairie to the Park River (see Fig. 3-4). He, too, noted the trees along the river south of the Forks of the Red and Assiniboine. He described the thick willows at the river edge, and of the second low bank he wrote:

This is covered with a very large wood, such as liard [poplar], bois blanc [basswood], elm, ash, and oak; some of the trees are of enormous size. In the rear of this are oak alone; then poplars and willows, as mentioned above.¹⁰

9. Ibid., p. 187.

10. Alexander Henry in Elliot Coues (ed) New Light on the Early History of the Greater Northwest, Vol. 1 (N.Y.:189), pp. 48-9; and p. 57.

Further south he walked on the plains, but found it difficult going because of the long grass, stunted poplars, willows, and rose bushes. Henry found the ground packed and the willow trampled by the buffalo at Riviere au Gratiias,¹¹ and once at the Park River he tells of the destruction of undergrowth and low branches of trees by the trampling and rubbing of the buffalo. This mechanical cause, as well as the prairie fires that he saw spring and fall and even in winter, tended to keep many parts of the wooded sections fairly open and park-like, rather than the "bois fort" of undisturbed tree areas. The bears also made havoc of willow, plum trees, and the acorn-laden oaks. The fur traders altered their immediate surroundings, as they cut oak for the fort, used basswood for the flooring and cleared out some of the trees to give a clear view of the plain in front of the fort.¹² Much wood also would have gone into the fires of the forts and the fires of the visiting Indians.

Henry had left men to set up forts. Langlois was at the mouth of the Roseau, and Legasse had a small hut at the

11. Ibid., p. 64. This river is Thompson's Burr Brook taken from the French for stickseeds or Echionspermum and later names were Scratching River, and presently the Morris River. Its upper branches such as the Riviere aux Ilets du Bois, (the Boyne), and Tobacco Creek have their sources in the Hair Hills or Pembina Mountain, and pass through extensive marshes before entering the Riviere aux Gratais. (as further explained p. 66).

12. Ibid., pp. 102, 123-4.

foot of the Hair Hills. On visiting the Hair Hills Henry provided one of the best description of the vegetation along the face of the Manitoba Escarpment and the country beyond:

The country from Red River to this mountain is one level plain, without a hill or a stone. The grass would be rather long were it not for the buffalo. On ascending the mountain the face of the country suddenly changes, the soil is sandy, and the stones are frequent. The ground is rough; deep wooded valleys and high barren hills are the principal objects...N. and S. the prospect is soon terminated by rising grounds, partially wooded, but westward the winding course of the Pembina is seen in a deep valley for many miles, W. of which appears a blue wooded ridge.¹³

On his way out to Grand Portage during the spring of 1801, Henry stopped and planted a few garden seeds at the spot of Mr. Grant's fort at the Pembina and left plans for the erection of a post across the river on the north-west corner of the confluence. When he returned that August he found his post nearly completed, and he then gave instructions for a post at Grand Fourches (present day Grand Forks) and at the Hair Hills. Over the next five years Henry visited the Hair Hills several times, and rebuilt the fort at least once, with probably a small change in location. On his return from the fort at the mouth of the Souris, after

13. *Ibid.*, p. 118. Coues describes the Hair Hills as the eastern acclivity of the prairie plateau that forms the boundary of the Red River Valley. Henry traversed this area enough that his descriptions can be applied to most of the elevated country that extends from North Dakota northwards through Lisgar County. Henry seldom if ever uses the term Pembina for the hills but consistently applies it to the River.

his Mandan trip to 1806, Henry camped on the Escarpment and provided this account of the vegetation details of the plain and the site factors responsible for them:

We had a delightful prospect; the weather was clear, as far as the eye could reach, nothing offered to obstruct the view; it was smooth, level plain, without the least hillock or rising ground. Upon our right lay the well-wooded Panbian river about six leagues distant, whose banks are well lined with wood coming through the mountain from the Lacs de Placottes, and retaining the woods until it joins the Red river ...At our feet issued out of the mountain two rivulets, whose banks retain their wood for about three leagues on the plains, where the water then spreads into a number of small streams, which run apart through the meadow until they re-unite to form Plumb river, whose tufts of wood we could scarcely discern. Upon our left hand lay first the Pinancewaywining, beyond which we could see the blue wood of Riviere aux Islets de Bois; they both issue out of the mountain and retain their wood for a considerable distance in the plains, when their waters spread, and are most in several large marshes and small streams, which course through the meadows, and then effect a junction by two forks, thus forming Riviere aux Gratiias, which, after running a few leagues, empties into Red river.¹⁴

In Henry's description the trees and bushes were either along the rivers and streams, or along the hills, both areas of moisture and fairly good drainage. Elsewhere the vegetation was wetland meadow or tall grass prairie, where waterlogging precluded tree survival. Drought and fire were also major factors in maintaining the tall grass prairie on the better drained sites.

14. Ibid., p. 420.

Nearly every spring and fall Henry mentions "The plains on fire in every direction, and smoke darkens the air."¹⁵ The frequency of fires in the district reported by Henry, who was absent from the area during the summer period, is truly remarkable. In 1800 fire is mentioned on March 24, October 23 and on December 1, even while snow was falling. In 1801 he reports fires on May 14 and October 17-22, and fires raged on April 30 and May 1, 1802. The next year was a particularly bad year for prairie fires, occurring in April 8 and 26, and October 1, 4, 24, 31 and again during the snow of November 15. There was still something to burn next March 24, but the grass reappeared April 2, 1804. That fall, fires were recorded in September, October and November, and again in the fall of 1805 and 1807.

These fires temporarily destroyed the grazing resources and made it difficult to find fodder for the horses, or to find buffalo near the fort. Henry described one fire as follows:

Oct. 4th Fire is raging at every point of the compass, thick clouds of smoke nearly deprive us of the sight of the sun and at night the view from the top of my house is awful indeed. In every direction are flames, some leaping to a prodigious height as the fire rushes through willows and long grass, or low places covered with reeds and rushes. We apprehended no danger as the fire had already passed near the fort.¹⁶

15. Ibid., p. 180.

16. Ibid., p. 228.

Sometimes the fires were accidental, from campfires, or from teepees which caught on fire. Fires were often set on purpose by returning Cree or Saulteaux war parties in order to deprive any Sioux who might be following the fodder for their horses. Travel was difficult over the hot, or dry prickly stubble, as Henry found on a trip to Portage la Prairie along the foot of the Hair Hills, in October 1806.¹⁷ Even the buffalo fell victim to such fires.¹⁸

The woods on breaks of slope and on low areas tended to survive these fires. It was therefore in the river valleys and in the lee of hills that woodland occurred and were exceptional resource areas in a region otherwise covered with grassland. These woodland areas were sought out by both the Indian and the fur trader for the shelter, fuel and game available there, and the various plant supplements to their diet that occurred in these habitats. The latter included berries, nuts, and sugar from the bastard or ash-leaved maple or box-elder, Negundo aceroides¹⁹, now known commonly as Manitoba Maple, and scientifically as Acer negundo. Here too were the materials for buildings, including the three foot diameter trees that were sliced to make crude wheels for Henry's first carts at Pembina.

17. Ibid., pp. 255-6.

18. Ibid., pp. 253-4.

19. Ibid., p. 172.

Although the frequency of fires probably increased with the advent of the fur trade, the impact of this phase of resource use by the Indian and fur trader was generally one in which a long term equilibrium prevailed. Where the vegetation was removed by use of fire, for the most part the regenerative powers of both trees and grassland meant that earlier patterns would re-establish themselves. It was not until the next phase, when people came in sufficient numbers and brought with them a different technology, that the vegetation was greatly altered. During this phase the buffalo were removed, the sod was broken, and the treed areas greatly altered in the conversion of much of southern Manitoba to grain and cattle agriculture. Most of the vegetation pattern just described was altered and, along with it, the traditional ways of life of the Indians and the fur traders also came to an end.

CHAPTER IV

PREPARATION FOR SETTLEMENT

A. The Scientific Expeditions

Toward the end of the fur trade two scientific expeditions were launched to ascertain the agricultural potential of the Western Interior. The two parties, one from the United Kingdom, under Captain John Palliser, and the other from Canada, under George Gladman and Professor Henry Youle Hind, crossed and recrossed the western plains gathering data for their reports. Members of both expeditions traversed the study area, and their observations, as well as their ideas about the role of fire in shaping the vegetation, largely confirmed those of the fur traders before them.

On July 21, 1857, Palliser left Fort Garry and travelled to Fort Pembina. After leaving the light timber of the area north of the river Sale, they took a well-defined road over open prairie along the west side of the Red River.¹ Here, and there along the river Palliser found evidence of flooding. To the west was an open prairie and swamp. From the International Boundary area he proceeded west over prairie and through oak groves to the area of St. Joseph on the Pembina river,

1. United Kingdom, Papers Relative to the Exploration of British North America (London, 1957) Report #4, pp. 11-12.

finding there aspen and balsam poplar trees.² From there he seems to have moved along the face of the escarpment in a northwesterly direction, for he described the steep slope as "scantily clothed with small wood, the summit forming an even sky line" and when the slope became less they turned west up it to pass near Beef Lodge (the Tete de Boeuf of Henry or present Calf Mountain) "a curious hill...which rises to the altitude of fifty feet above the adjacent plains."³

In a letter to the under Secretary of State for the Colonies in 1859 Palliser told, during his account of the climate and soil of the Red River Settlement, of the advantages for cattle rearing, where "large quantities of very nutritious grasses abound everywhere."⁴ The area of thick mould or topsoil was called "arable prairie" and was essentially the area of tall grass. This was distinguished from the "dry prairie" or shorter grass that occurred further west. Lieutenant T. Blakeston, of Palliser's party, described parts of the arable prairie as willow prairie and stated that much of it was:

probably original wooded land which being by the continual prairie fires cleared of trees, there now remains a fine vegetable soil, on which vetches and plants of that kind flourish, besides the grass,

2. Idem., Journals, Detailed Reports and Observations of Captain Palliser's Exploration in British North America (London, 1857) Report #2, pp. 40-41.

3. Ibid., pp. 41-2.

4. Idem., Further Papers Relative to the Exploration of British North America (London, 1859), Report #1, pp. 2-5.

while some willows are generally found, often very small, but after the absence of fire for some years, they grow to considerable size. Along the edge of the line of woods is usually a belt of this willow land of greater or less width, but often separating the true prairies from the woods by some miles.⁵

He also mentioned that the Red River area had considerable swamp, that firewood for Fort Garry had to be hauled some considerable distance or rafted down the river, but that the climate, soil, and possibilities of getting timber did recommend the valley as a place for settlement.⁶

Hind's party, which had come from Fort William under a Mr. Gladman, explored the Red River valley before it moved on to the Saskatchewan River region. His narrative tells of both routes south from Fort Garry, one along the Red River and a second south from White Horse Plain to Pembina Mountain.⁷ Using the second route they crossed the wet marshy prairie to "La Riviere de Isles des Bois," where he found a drier section and a well-wooded river, then southwest of this a sandy soil region covered with aspen and willow clumps, and all but the "Riviere Tabac" dry. Where he ascended Pembina Mountain, there were few trees, only boulder strewn terraces,

5. Ibid., p. 35.

6. Ibid., pp. 54-5.

7. H.Y. Hind, Narrative of the Canadian Red River Exploring Expedition (London, 1860), p. 155.

but:

on both sides it is well covered, particularly on the south, where the trees seem large and good. Here the forest is said to begin which reaches to the Assiniboine, but with the exception of some oak on the mountain there is no good timber, nothing but young aspen from twenty to thirty feet high, growing very close together, and forming a dense thicket.⁸

This last section would apply to the area between the escarpment and Calf Mountain.

Hind, like Palliser, saw the West with the eyes of one accustomed to trees and fertile soil, and therefore was not overly optimistic about its potential. He repeated the fire theme of prairie formation, and postulated that tree growth would bring about climate amelioration, a theme which we shall meet again in the settlement era. These ideas were stated as follows:

Putting out [setting] fire in the prairies is a telegraphic mode of communication resorted to by the Indians. Its consequences are seen in the destruction of the forests which once covered an immense area south of the Qu'appelle and Assiniboine. The aridity of those vast prairies is partly due to this cause. The soil, though light, derives much of its apparent sterility from the annual fires. In low places and in shallow depressions where marshes are formed in the spring, the soil is rich, much mixed with vegetable matter, and supports a very luxuriant growth of grass. If willows and aspens were permitted to grow over the prairies, they soon would be converted into humid tracts in which the vegetable matter would accumulate and a soil adapted to forest trees be formed. If a

8. Ibid., p. 156.

portion of prairie escapes fire for two or three years, the result is seen in the growth of willows and aspens, first in patches, then in large areas, which in a short time become united and cover the country, then retarding evaporation and permitting the accumulation of vegetable matter in the soil. A fire comes, destroys the young forest growth and establishes a prairie once more.⁹

Mr. S.J. Dawson, the engineer with the Red River Expedition, also noted the effects of fire. He claimed that the prairie did have advantages in being free of stumps, abounding with grass for fodder, and noted that even the "little wolves" (coyotes) would likely disappear with settlement so that sheep could be kept there.¹⁰ He also wrote that there was timber available in the area that could be used, and that even the looked-down upon poplar would make good building lumber. The clear areas of prairie were to be coveted because they would not incur the cost of clearing before they could come under cultivation.

At the time Palliser and Hind were moving about the West, a committee of the British Parliament was examining individuals on the state of affairs in the Hudson's Bay Company territories.¹¹ The witnesses called gave great detail from

9. Ibid., pp. 336-7.

10. S.J. Dawson Report on the Exploration of the Country Between Lake Superior and the Red River Settlement... (Toronto: 1859), p. 20.

11. United Kingdom Report from the Select Committee on the Hudson's Bay Company (London:1857).

first and second-hand knowledge, reflecting the degree of involvement they had in the territory. Some, like Governor G. Simpson, were, by their assessment of the potential of the West, decidedly against settlement, while others were very pro-Canadian settlement, especially if the area were linked to eastern Canada by a railway. On the matter of vegetation their descriptions repeat the details mentioned to this point.

The Hudson's Bay Company's territory was finally transferred to Canada in 1869 and surveyors were sent in to subdivide the land into parcels for possession by settlers. Their reports furnish a very detailed picture of the vegetation cover of the land during the years 1871-73. Here, then is a larger scale view of the prairie-forest fringe along the Manitoba escarpment.

B. Enter the Surveyors

With the confederation of the eastern Canada provinces there came a renewed interest in the Northwest. The impending transfer of the Hudson's Bay Company territory to Canada in 1869 left many of the inhabitants at the Red River uneasy about their land rights. While the residents argued about the benefits of joining Canada or the United States, Lieutenant Colonel J.S. Dennis, chief of the survey party from Canada, moved south from Fort Garry (Winnipeg) to Pembina and began surveying the principal meridian for the western Canada

land survey system, placing it just west of Pembina.¹² With this line run to the Assiniboine River, he then sent two parties to survey a base line from the "Winnipeg meridian" west to Portage la Prairie, and another one east between Townships 6 and 7 toward Oak Point (present Ste. Anne de Chênes). When the east bound party under Mr. A.C. Webb was stopped by a party of Métis under Louis Riel at a point about two miles from the present Pembina Highway gate of the University of Manitoba campus, the surveyors retired to camp to await further orders. The subsequent "Red River Rebellion" prohibited further survey work south of the Assiniboine until 1871, when the area had been transferred to Canada as the Province of Manitoba.

The surveyors returned in 1871 and proceeded with a modified system of subdivision.¹³ Once in the field their

12. It is the considered opinion of the present Manitoba surveyors that the principal meridian, which is not an even meridian of longitude, was placed as it was to avoid the serpentine course of the river, the trees along it, and the existing river lots, especially due to the known hostility of the Roman Catholic Métis of St. Vital and St. Norbert. A.C. Roberts, "The Surveys of the Red River Settlement in 1869," The Manitoba Surveyor, 1969, p. 73. Also presented in D.W. Thomson, Men and Meridians Vol. II, 1867-1917 (Ottawa:1967), p. 35.

13. Canada, Dept. of Interior, Dominion Lands Branch Correspondence, Public Archives of Canada, Record Group 15, Series B-1 a, file no. 1 - A.G. Archibalt "Confidential Dispatch Suggesting Mode of Disposal of Crown Lands of the Province, December 20, 1870" (The collection of documents is cited hereafter as PAC - RG15, followed by file number, and author and title of document). The earlier system was using Townships of 64 squares of 800 acres each plus 40 acres each section for public highways. Colonel Dennis had adapted this from the U.S. system that he had seen in Minnesota. This system was later changed in 1871 at the suggestion of Lieutenant Governor A.G.

progress was greatly retarded by the unusually numerous and extensive prairie fires during the summer of 1871. They also lost time when some of the parties volunteered to help repel the Fenian raiders. Notwithstanding these delays, considerable mileage was surveyed and, in the study area, W. Beatty and his crew completed the block survey between the first and second correction line in 1871 (Fig. 4-1).

The following year most of the region was subdivided, and by 1873 all but the Township 1 tier had been done. This tier could not be laid out until the international boundary was surveyed. That survey was completed by the International Boundary Commission in 1874, and tier one was subdivided in 1875-76.

It is to the township survey reports that we can turn for the microscale examination of the land cover in the study area before agricultural settlement. As each subdivision line was surveyed or "run", the surveyors were required to indicate the topographic features, to record the vegetation and to assess

Archibald who said that "the land not given to early settlers, Indians, the Roman Catholic Church, the Hudson Bay Co. and Halfbreeds be best laid out in 640 acre sections in 36 section townships rather than the larger 210 acre quarter sections of Col. Dennis. The Township system is good and known to Emigrant classes because of United States use, but can get more settlers on the smaller quarter sections, being so very necessary when Manitoba has so much land lost."

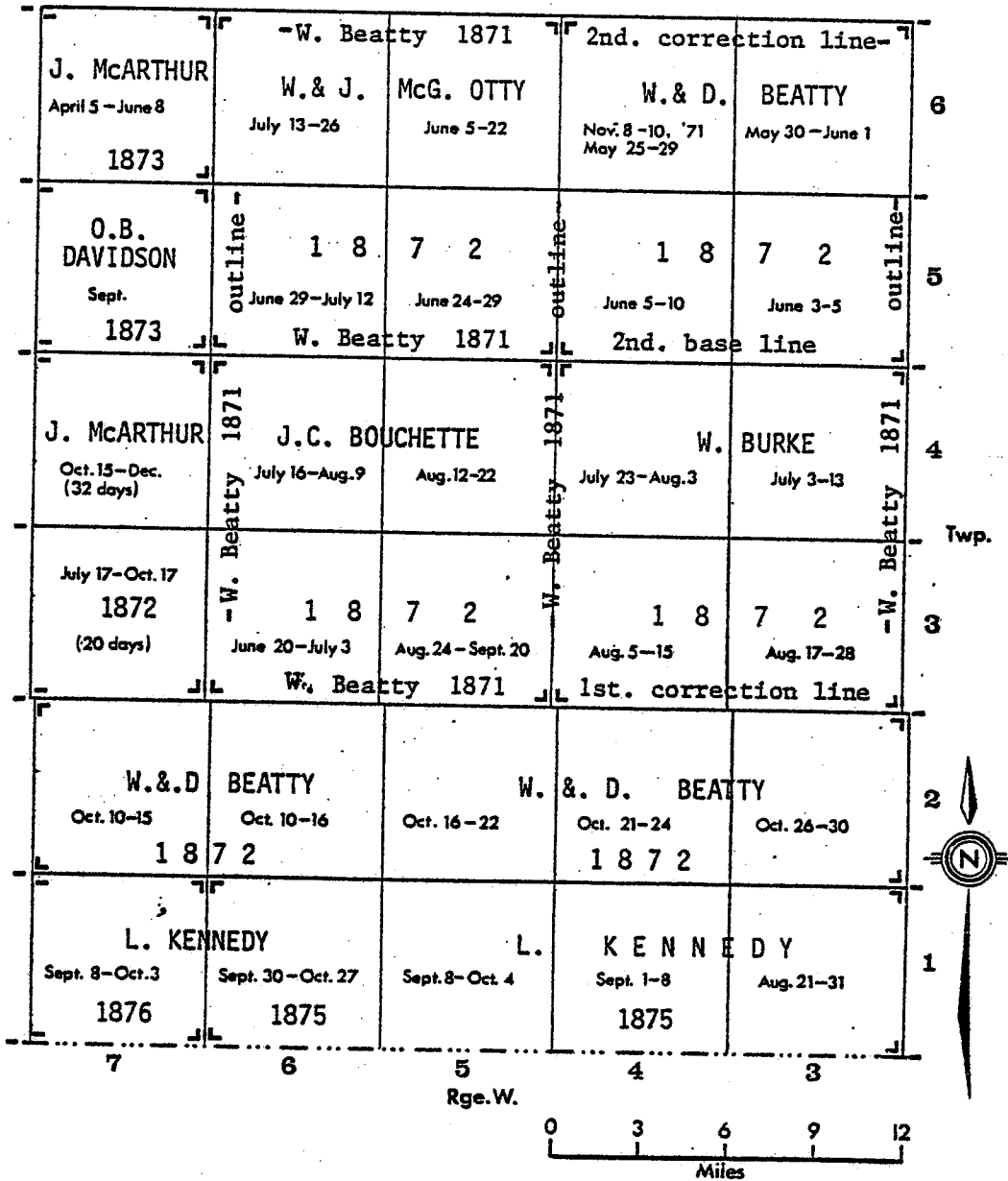


Figure 4-1 Subdivision of the Area The Surveyors and the time it took to subdivide each township. (Compiled from PAM RG 17 Ch 1 Lands Branch Records- the Surveyor's notebooks)

the agricultural potential of the soil. The daily work was written up in a notebook, one for each township, with a township summary at the end of the series of pages showing each section line run (Fig. 4-2). These notebooks, now in the Provincial Archives of Manitoba, are excellent sources to verify the details of landform and vegetation that were later drawn up in the form of township plat maps at scales of 40 chains to the inch by the draftsmen at the Dominion Lands Office. The original summaries can also be compared to those published by the Department of the Interior in 1893.¹⁴

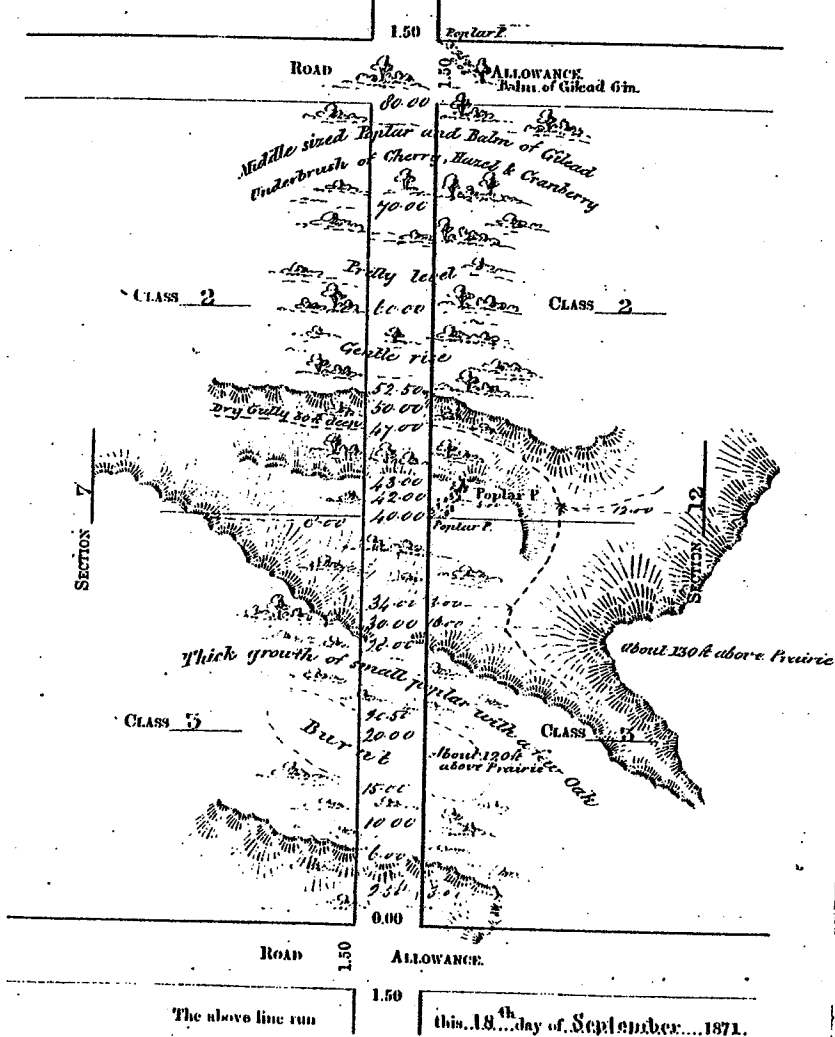
It is from these notebooks, maps and descriptions that the vegetation pattern of the study area has been reconstructed. Closer examination of figure 4-2 shows that as each section line was chained and staked, the vegetation along the right of way was recorded. While the vegetation between the section lines was not recorded it may be extrapolated from the section traverses. This procedure was used to produce a vegetation map of the area (Fig. 4-3). A similar method was employed by F.W. Watts,¹⁵ who used the vegetation along each township edge to create a vegetation map of the prairie provinces. The limitations encountered by Watts in

14. Canada, Dept. of the Interior, Description of the Province of Manitoba, (Ottawa:1893).

15. F.W. Watts, "The Natural Vegetation of the Southern Plains of Canada" Geographical Bulletin No.4 (Ottawa, 1960), pp. 25-43.

MANITOBA.
 Township 4 Range 7 West
 East Boundary of Section 12
 Course South

161



MANITOBA.
 Township 5 Range 7 West
 East Boundary of Section 1
 Course North

163

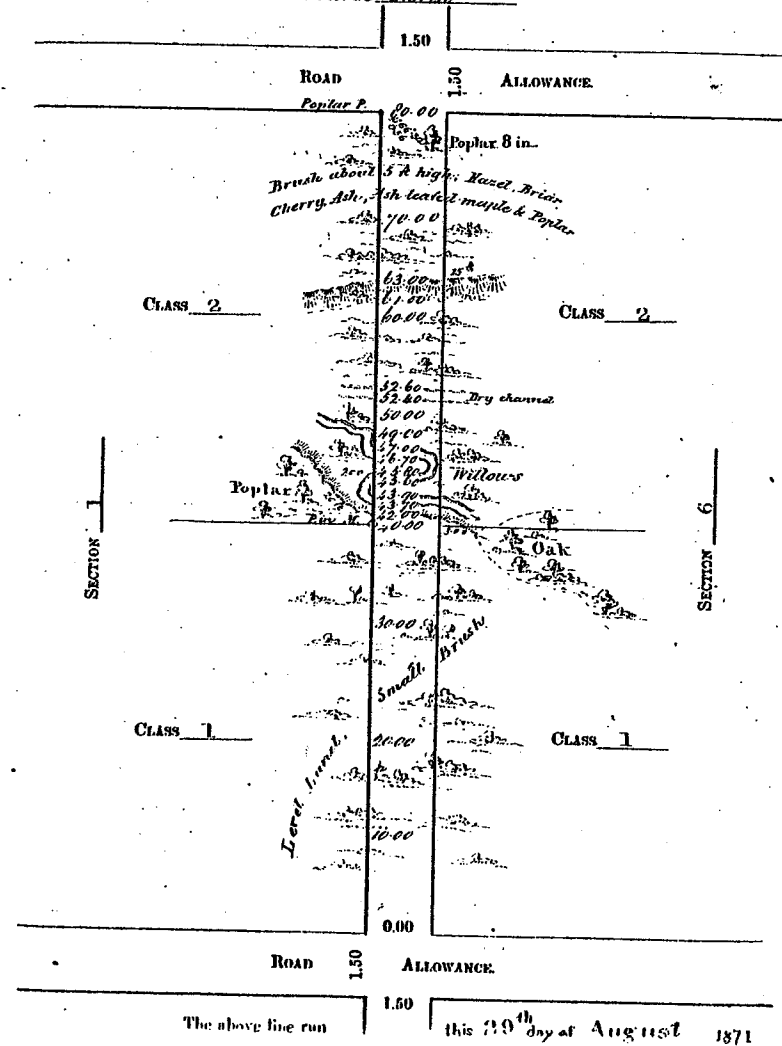


Figure 4-2. Two Samples of the Surveyor's Notebooks. PAM RG 17 Ch1.

07

constructing his map were variations in the quality of the surveyors' descriptions, lack of uniformity in the terminology applied to the vegetation, and the failure of the surveyors to identify forbs and grasses. The lack of identification of grass and forbs did not affect this study since the emphasis is on the trees of the area. The variation is less in the study area for its size relative to the prairie as a whole precluded great variations in the surveyors' descriptions since the study area was described by only five different surveyors and all recorded their impressions in summer and fall. Moreover, the descriptive detail available at the level of the section traverse, as opposed to the township unit employed by Watts, was such that variations in terminology and other characteristics of the surveyors' descriptions did not present major difficulties in distinguishing the variations in the arboreal vegetation of the study area. On the basis of this information the following six vegetative associations were distinguished and mapped (Fig. 4-3):

1. Mixed woodland-oak dominant. This gallery association had the large trees of oak, elm, basswood, and some poplar, and a thick undergrowth of hazel and cherry bushes, with a lower undergrowth of wild hops, "grape vines" and rose bushes. The trees of this gallery forest were prized for lumber by the first saw-mill owners in the area.
2. Oak-poplar parkland. This parkland association, dominated by oak was found along the escarpment slopes and the rolling

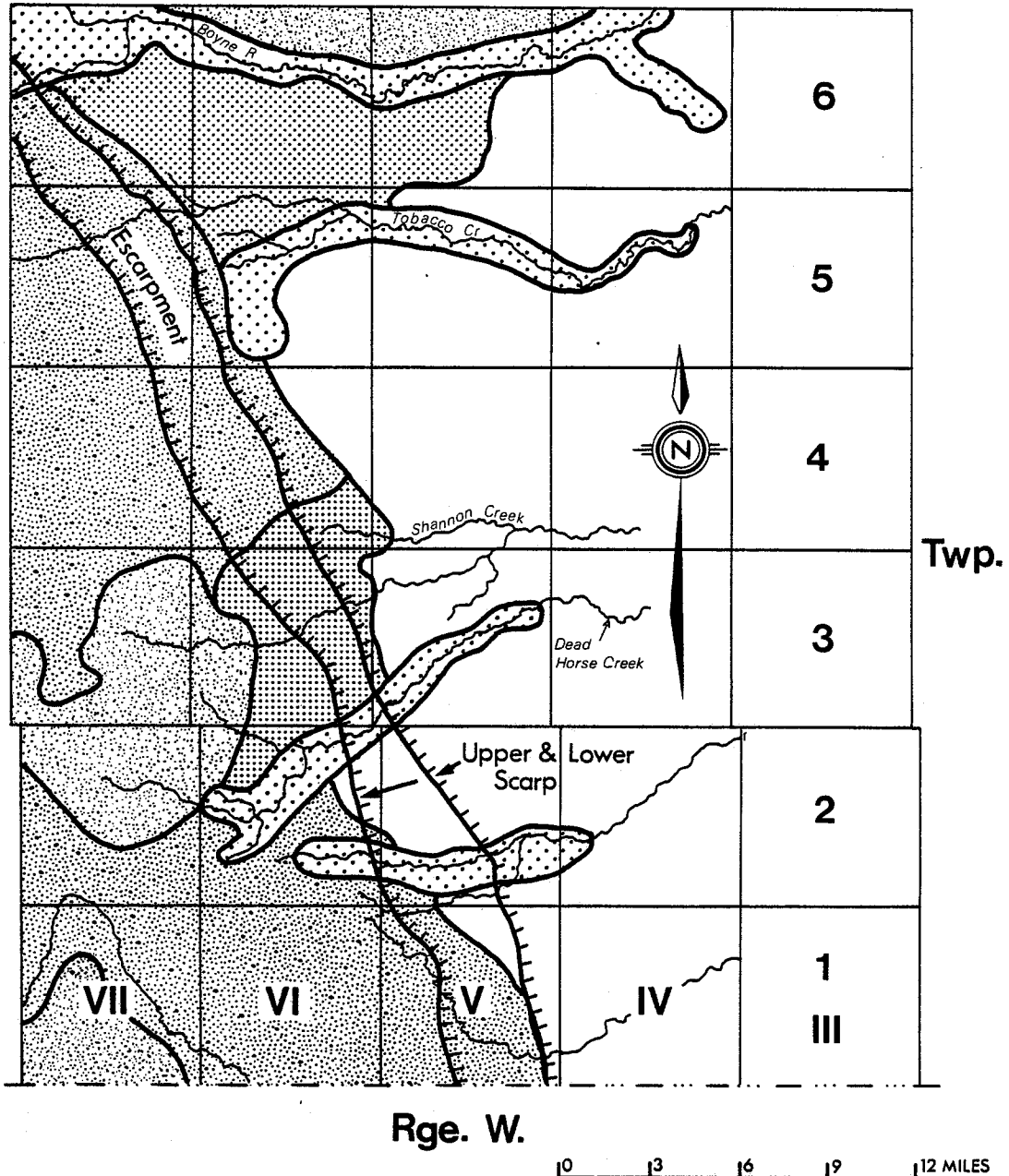


Figure 4-3 The Vegetation as Recorded by the Surveyors
 Compiled from maps and notebooks PAM RG 17 Ch1



land above.

3. Oak-willow parkland. This parkland association had oak bluffs and willow as the intervening vegetation, and was found mainly on the escarpment slopes between Dead Horse Creek and Shannon Creek.

4. Willow-poplar parkland. This association of willow, with bluffs of poplar was found on the flat land at the foot of the escarpment between Tobacco Creek and the Boyne River and was a poorly drained area.

5. Willow-prairie. This was a grassland association with willow clumps in the hollows. It was found in the marshy area north of the Boyne River and on the land southwest of the Pembina River.

6. Prairie. This was found mainly in the east tier of Ranges IV and part of V. It was the true or tall grass prairie, interspersed with marsh grass in the poorly drained hollows.

These associations as generalized from the surveyors' maps comprise the so-called "natural" vegetation first encountered by the settlers in the study area. As such they provide a base for comparison with later vegetation distribution and it is against this distribution of trees that the picture of arboreal vegetation in 1970 is compared in a later chapter.

One of the jobs assigned to the surveyors was to lay out woodlots in any grove of trees of more than twenty-five acres in size, so that these could be granted to the settlers on the prairie land, or as later occurred, sold at a nominal sum in order to provide the settler with building materials, fuel and fencing:

...as much of the woodland of the Province is scattered in comparatively small blocks over the prairies, and is of the first importance to the future settlers therein, some special mode of allotting the same from time to time in small areas amongst the actual settlers should be adopted....¹⁶

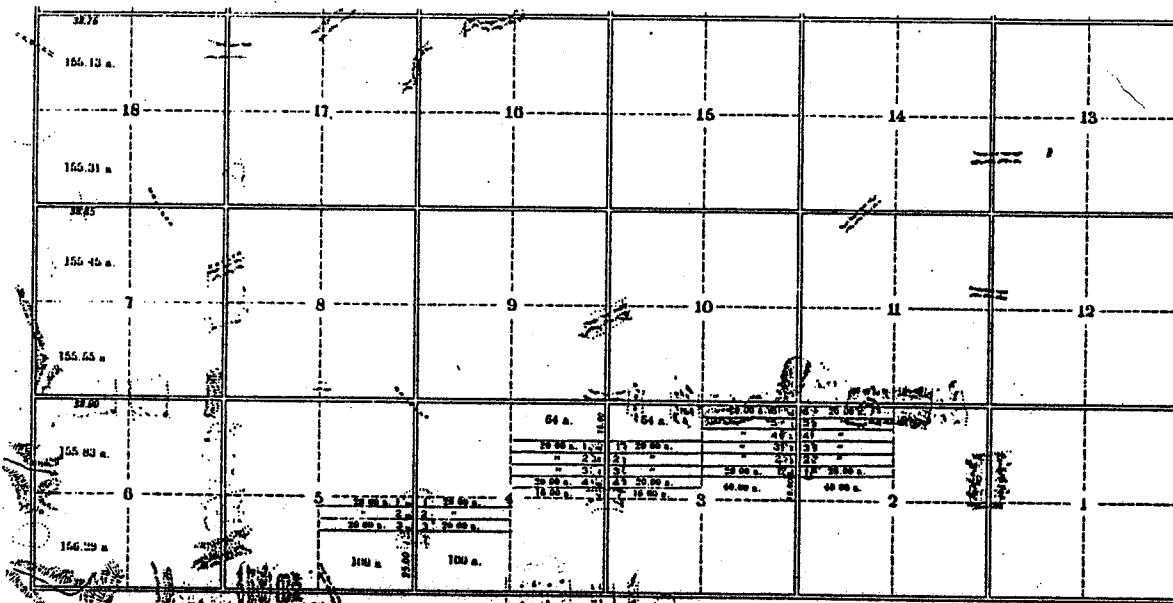
This memo and order of the Privy Council exempted from homestead and pre-emption claims all woodlands set apart as such for supplying settlers with fuel and fencing.

The rationale behind such a subdivision was explained in almost a full folio page of instructions from the Surveyor-General, Lieut. Col. J.S. Dennis.¹⁷ The policy was that the subdivided woodland would be set out in such a manner as to serve the greatest possible number of settlers. This limited resource would be available to the prairie settler, thus, assisting the settlement of prairie as well as the parkland. A good example in the study area is the lots in the galeria

16. Canada, Order-in-Council, Report and Memo, Hon. A. Campbell to Privy Council, 1st March, 1871 #2, pp. 59-64. Revised by Order and Memo, #874 25th April, 1871, pp. 69-75.

17. P.A.C. RG15 Vol. 4 File 533 p. 4, J.S. Dennis, Surveyor-General, Printed "Memorandum of Proposed Timber Policy, December 4, 1871."

woodland in sections 2, 3, and 4, Tp. 2-Rg. VW1, near present Glencross, as shown in Fig. 4-4.



Surveyed by the undersigned
 Walter Beatty & David Beatty, Dep. Sur.
 22nd October, 1872

DOMINION LANDS OFFICE
 Ottawa, 1st January 1873

Approved and Confirmed
A. Denny
 Surveyor General.

Contents:

Land in Sections.....	22977.63 Acres
Roads.....	870.99 "
Water.....	"
Total Area.....	23848.62 "

Fig. 4-4 Woodlots on Tp. 2-V W1

Later other wood lots of twenty acres each were set out for the use of the next flood of settlers (see Fig. 5-8). The importance of this resource will be discussed in Chapter V.

The assessments of the surveyors as they subdivided each township were recorded in the notebooks, and reveal the opinions of the surveyors as to the importance of the treed areas. Two examples of this are:

- 1) The Boyne settlers were coming in at the time of survey, (see Fig. 5-2 for details), enough to occasion the surveyor to remark (and of course it wasn't printed in later descriptive

works) that the township is fit for settlement" if the woodland, which has been gobbled up by the few, was divided among the many."¹⁸

2) In contrast to the above, the surveyors were more cautious in describing the area above the escarpment. The Township 4, Range VII W1, which had taken so long to survey:

is heavily timbered with oak and poplar. There are also some elm, ash, maple, and white birch. There is not one section of prairie land in the township, but there are some clearings made by recent fires.

Pembina Mountain intersects the township diagonally, and the surface is so much broken by ravines as to render one-third of the area unfit for settlement. The residue of the township is well-suited for farming, but as it is difficult of access it is not likely to be settled for a long time.¹⁹

It is of interest to note that the last phrase "but as it is ..." was not published in the Department of the Interior description of 1893. Obviously the civil servants wished to offset any adverse publicity that would cause immigrants to choose land in the American west in place of the sections of Manitoba still open to settlement.

It is not known as to how far the original descriptions were dispersed,²⁰ but much of the information was incorporated

18. P.A.M. RG 17 C1 Dominion Lands Branch, Surveyor's Notebook 157.

19. Ibid., Surveyor's Notebook 305.

20. See T.A. McElhanney, "Paper on Land Classification" Annual Report of the Association of Dominion Land Surveyors, 1919 p. 57 as quoted in J.L. Tyman, "The Disposition of Farm Lands in Western Manitoba, 1870-1930: Studies in Prairie Settlement" (Unpublished Ph.D. dissertation, Oxford, 1970) Vol. 1, p. 18.

into the promotional literature of the C.P.R., the settlers with land to sell, and the settlement companies. This information was often selectively quoted in the promotional literature to leave an impression of boundless optimism, so that the hardships of Manitoba had to be found out only by experience.²¹ Once land had been surveyed, assessed and advertised, there remained only the need for policy, or the machinery for transferring the land and its resources to the individuals who wished fortune and the better life in the Northwest.

C. The Dominion Lands Act

The lands, forests and minerals of Manitoba and the Northwest remained vested in the Canadian government when the Province of Manitoba was formed.²² The distribution of these lands to the old settlers of the Red River and to the newcomers, to the Hudson's Bay Company,²³ and later the Canadian Pacific Railway, and the allocation for townsites was carried out by agents of the Secretary of State, and later the

21. For a sample of the promotional literature, see Bibliography for Tache, Shantz, Trow, Tasse, Spence.

22. Canada, Statutes 33 Vic. Chap. 3 Sec. 30 (187).

23. By terms of the transfer the H.B.Co., was to receive the land around the forts and also 1/20 of the region. By Proclamation, June 23, 1870 and Order-in-Council, 1872 this land was given them, wherever not already alienated by previous settlement. The transfer from the Crown included sections 8 and S $\frac{1}{2}$ & NW of section 26 in every township, plus the NE 26 in every township that was numbered 5 or a multiple thereof.

Department of the Interior, which came into being in 1873.²⁴ In April of the previous year prior Orders-in-Council were amalgamated with detailed instructions for the licensing of surveyors to form the Dominion Lands Act.²⁵ The details followed very closely the memo from the Hon. A. Campbell of 1871.²⁶ It confirmed the system of township survey already begun, and made the land available to intending settlers by sale of homestead in parcels of 40, 80 or 160 acres, with the limit being the quarter section of 160 acres. If you were a head of a family or at least 21 years old, and had ten dollars you could enter for a homestead, make improvements and cultivate your land for three years and gain the deed or patent to your homestead. If your land did not have timber for your much-needed building, fencing and fuel, you could also apply for a free grant of a wood lot which the surveyor had laid out in your district, and its timber could only be used for your homestead's needs. Selling of the timber would bring prosecution with fine or imprisonment and forfeiture of your wood lot claim.²⁷ Thus the intent of J.S. Dennis' Memo of 1871 was

24. Canada, Statutes 36 Vic. Chap. 4 (1873).

25. _____, 35 Vic. Chap. 23 (14 April, 1872).

26. Canada, Orders-in-Council (O/C), April 25th, 1871 (Footnote 18 above).

27. Statutes op. cit., section 46. See also footnote 18 above. Timber Agents were appointed to carry out this policy as one of their many duties.

carried out for the benefit of the greatest number of settlers.

Over the next decade the wording of the Act was refined as the Department of the Interior gained experience in transferring the Dominion Lands to the settlers and speculators who flocked into the Northwest. Much of the legislation was passed to facilitate the half-breed claims, but there were small changes in the legislation regarding the settler's use of land and resources. In 1874 the age for entry was lowered from 21 to 18. An adjoining quarter could be pre-empted or entered for during the three year proving of homestead period, and then be bought at one dollar an acre, as could the wood lot (if bought after 1874).²⁸ In 1881, when the odd-numbered sections were set aside to endow the Canadian Pacific Railway, land prices were raised, depending on which settlement belt (distance from the main railway line) they were in, and the price of wood lots also rose to five dollars an acre. This Order-in-Council also closed another venture of the Department of the Interior, that of Forest Tree Culture.²⁸

In the United States during the 1860's there had grown the awareness that their timber supply was diminishing, and as settlement approached the treeless plains, there occurred a desire to change the situation by artificial cultivation of trees.³⁰ It was found that, with cultivation and protection from fires, trees could grow on the prairie. Also as Commissioner Wilson of the United States Department of the Interior urged:

28. _____, 37 Vic c19, 1874 and 39 Vic c19, 1876.

29. _____, O/C December 23, 1881, section 14.

30. Benjamin H. Hubbard The History of the Public Lands Policies (New York, 1924), p. 411.

If one-third of the great plains were covered with forest there is every reason to believe the climate would be greatly improved, the value of the whole area as a grazing country wonderfully enhanced and the greater portion of the soil would be susceptible of a high state of cultivation.³¹

The United States put the idea of forest tree culture into law March 13, 1873.³² By this legislation any person could gain title to a quarter section by planting and cultivating for 10 years 40 acres of trees where the trees were not more than twelve feet apart. But 40 acres proved too large a task for a homesteader or "tree claimer" as they were called,³³ so that the Act was amended in 1874³⁴ to allow a step-by-step land preparation and planting schedule over the first 4 years, with patent only to a head of a family or 21 year old U.S. citizen after 8 years from time of entry. The grasshopper devastations of 1876 caused further modification, for often all trees were lost to this plague, and seeds or nuts or cuttings could be substituted for trees in the planting.³⁵ Further amendments reduced the number of acres from 40 to 10³⁶ and stated the number of trees to be alive at time of issue of patent. But for all the changes,

31. As quoted in Ibid., p. 412.

32. United States Statutes at Large 42nd Congress Sess. III, Chap. 177, 1873.

33. Albert Wold, "My Father was a Tree-claimer", North Dakota History (1959) pp. 121-180.

34. United States Statutes 43rd Congress Sess. I, Chap. 55, 1874.

35. Ibid., 48th Congress Sess. I Chap. 102, 1876 and Hubbard, Op. cit., p. 415.

36. United States Statutes 45th Congress 2nd Sess. Chap. 190 (1878).

the idea of encouraging the growth of timber on the western prairies was soon opposed and abandoned, especially since the system had come in for many abuses as speculators attempted to grab the public lands.

Canada, too, had been concerned about improving its prairies through tree planting as well as by dividing up the existing wood islands for the benefit of the settlers. As early as the Hind expedition it was believed that trees might bring an amelioration of the climate. Early settlers had commented on the speed with which trees would grow in the region³⁷ and many had noted the growth of trees around the homes of the Mennonites in the Western Reserve.³⁸ Therefore in 1876 the Dominion Government amended the Dominion Lands Act with several sections entitled "Forest Tree Culture".³⁹ These amendments were modelled on the United States Act.⁴⁰

By the terms of this amended act, patent could be obtained by planting 32 acres of land to trees over a period of four years and cultivating them for six years from time of

37. Great Britain, Parliament, Report of Select Committee...1857; and Canada Report of Select Standing Committee on Immigration and Colonization, Canada Sessional Papers 1877, Appendix 6, p. 89. Thomas Spence's evidence.

38. J. Warkentin "The Mennonite Settlements of Southern Manitoba". Unpublished Ph.D. thesis, U. of Toronto, 1960.

39. Canada: Statutes 39 Vic. Chap. 19 Sections 20-26.

40. Canada: Debates of the House of Commons, 1876, p. 1002.

entry. This was amended and later abandoned with the Lands Act changes of 1881, but several sections were claimed under this act so they will be discussed further in the following chapter along with other aspects of the settlement of the Pembina region.

It was during this era of preparation for settlement that we see the first arrangements for more effective exploitation of resources. What had been viewed as an area that could provide some of the amenities for the life of a wandering fur trader now was seen as an area that could provide the settler with rich land and the wood necessary for fencing, home building and fuel. This woodland could also be expanded by the enterprising settler, for the government had put in place the enabling mechanisms - the homestead act, with accompanying provisions for forest tree culture. This act and its amendments provided for the government bureaucracy or institutions that facilitated controlled transfer of the land.

It thus provided the framework for agricultural settlement which in turn brought about the most profound changes that have been made to the arboreal vegetation of the region by the hand of man.

CHAPTER V

SETTLEMENT

A. Enter the First Settlers

The administration of the new province of Manitoba moved with all possible speed to extinguish the Indian title and satisfy the claims of the first settlers in the Red River area. The surveyors imposed the township system of land division across the small province. The militia of 1870 returned to Ontario carrying tales of the new western territory, and the Ontario immigration to Manitoba began. In 1874 they were joined by Icelanders and Mennonites from Russia.

Those who took up land in the study area were of Ontario-British Isles and Russian Mennonite origin. They settled the different parts of the study area and, initially at least, appeared to have had two different perceptions of what land was suitable for settlement. The Ontarians avoided the open grasslands and saw treed land as having various levels of fertility. The Mennonites, in contrast, saw the prairie grassland as land on which they could prosper. This was the legacy of their experience in the southern Ukraine.

Although the Mennonites could use straw and manure in their efficient ovens, they still needed lumber for building. So when they chose land, like the Ontarians, it was also with

some consideration for the nearby woods.¹

These slight but significant differences in perception were a product of their backgrounds. The Ontario settler had had to fell the large trees of Southern Ontario to get land for his crops. The trees had provided building materials, and potash, and the cleared land produced good crops. This attitude was taken west as the expansion into Manitoba took place, so that the Ontarian, unlike the Mennonite, sought out a more direct and intimate association with treed land.

The first influx of settlers, of Ontario stock, headed for the existing settlements along the Red and Assiniboine rivers, and then extended them west and north towards Stony Mountain and as far as Palestine on the White Mud River. They also settled the country east to Bird's Hill and Clear Springs near the Dawson Road.² Others set out along the trails such as the western Saskatchewan and the southern one to St. Joseph's. The south-bound settlers displaced the Métis from their staked claims on the Rivière aux Islets de Bois and formed the Boyne settlement,³ (Fig. 5-1). It was only by the intervention of Lieutenant-Governor Archibald that this did not become another

1. See J.H. Warkentin, "The Mennonite Settlements of Southern Manitoba," Unpublished Ph.D. dissertation (Toronto, 1960), for a full discussion of the changes in Mennonite settlement and their causes.

2. W.L. Morton, Manitoba, a History (Toronto, 1957), p. 157.

3. Ibid., pp. 153-4.

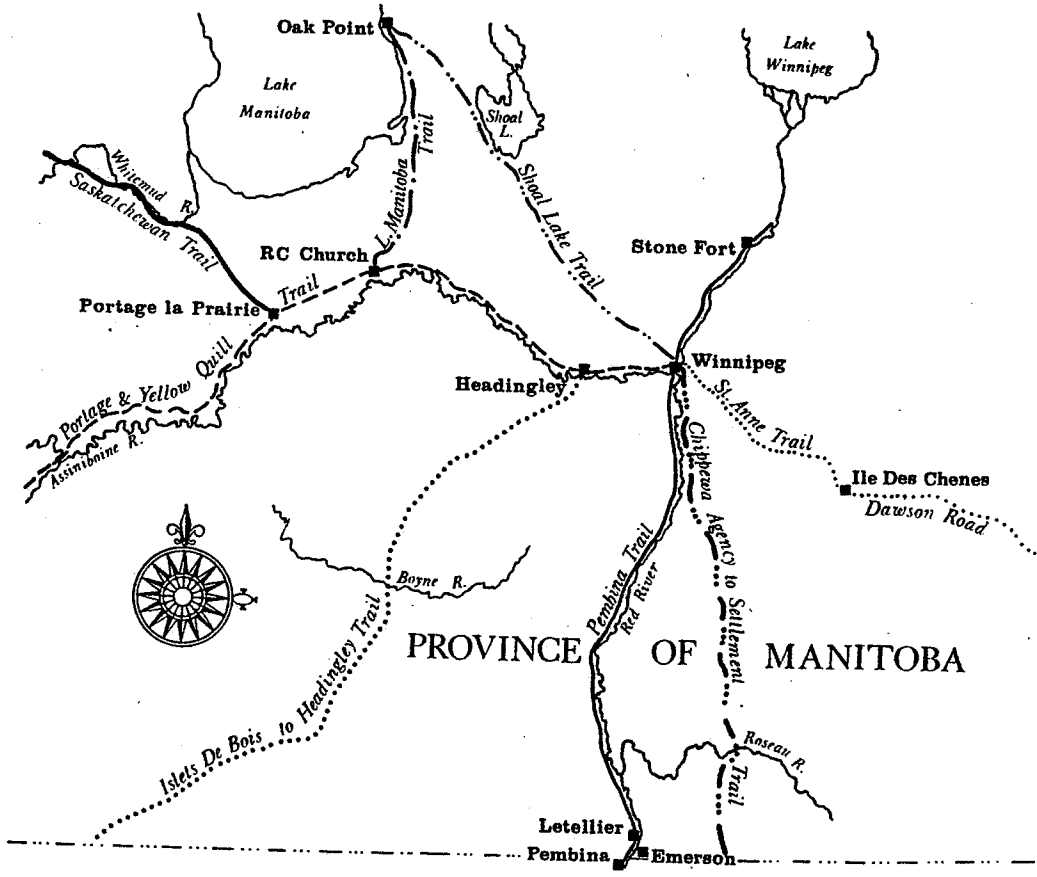


Figure 5-1. The Trails of Manitoba c.1870.
(after the original in PAC)

battle of the Boyne, and the Ontario settlers, attracted by the fertile land and the trees, stayed to found the present community of Carman. Thus, in 1876, the first agricultural settlement in the study area illustrated the statement that the settlers "despised the plain which had not wood and water, crossed over them..."⁴ and took up farms where there was access to wood and running water. (Fig. 5-2 - Surveyor's maps).

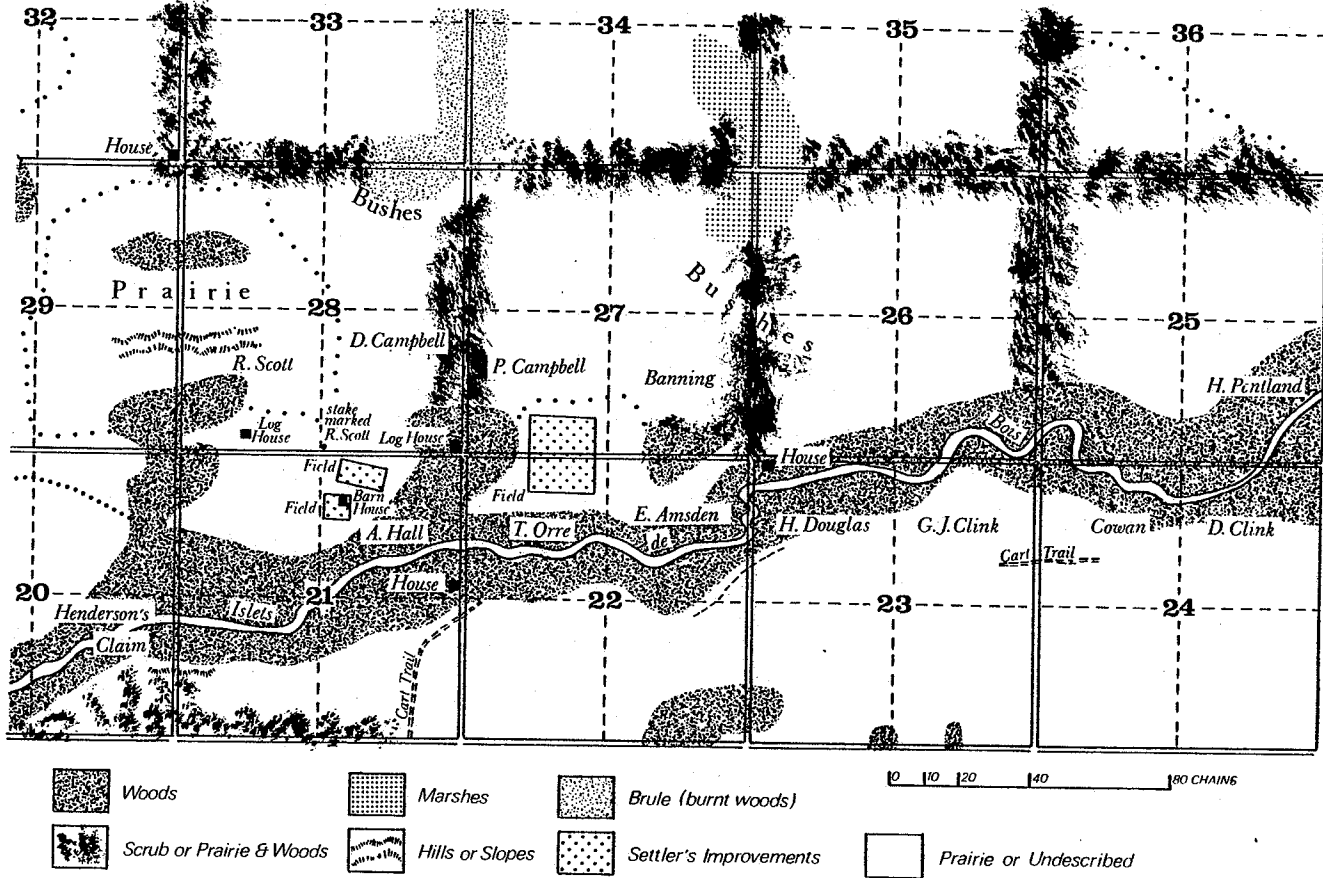
The availability of a good trail was a further help to settlers, since the proposed Pacific Railway was delayed by the political scandal of 1873. The trail west of Emerson used by the International Boundary Commission and the North West Mounted Police became a favoured route for settlers coming in via the Red River steamships, and soon there appeared small communities along the wooded streams that flowed off the escarpment.⁵ At first, they were known collectively as Pembina Mountain, but then gained separate identities as Mountain City, Alexandria, and Nelsonville.

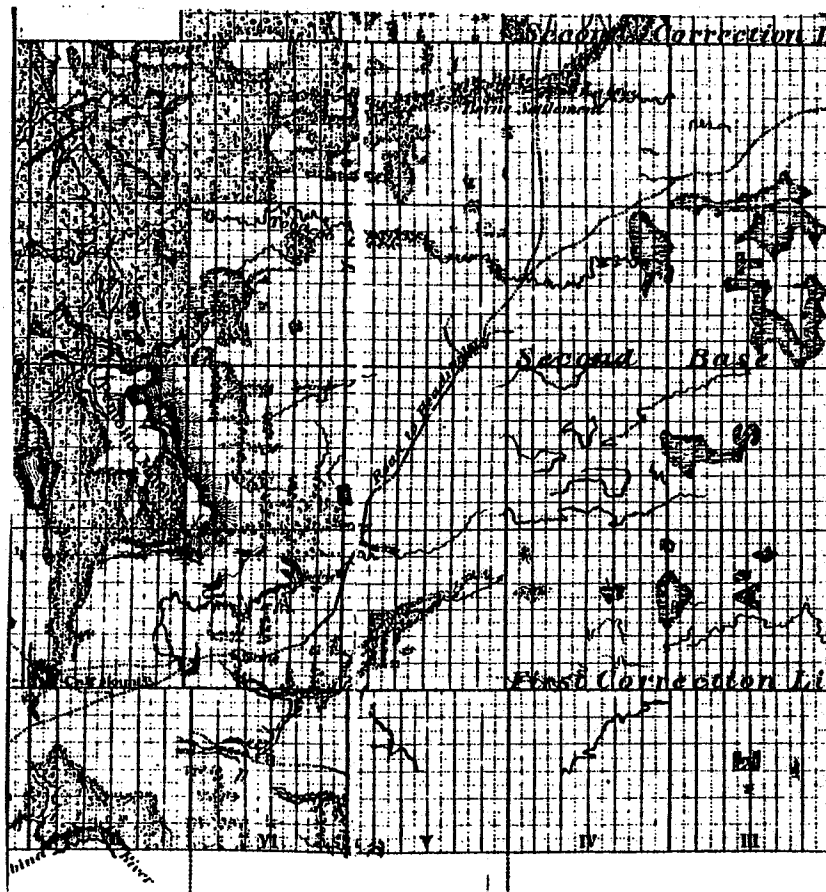
The Department of the Interior maps showing settlement or lands taken up during the years 1874-1880 (Fig. 5-3 a,b,c,d) illustrate very well the way in which the Canadian settlers avoided the prairie area and chose the wooded areas along the escarpment. In 1875-6, the prairie area near the border became

4. G. Bryce, A History of Manitoba (Toronto, 1906), p. 185.

5. J.H. Warkentin, Op. Cit., p. 60. There were 17 former and 20 new settlers all north of Dead Horse Creek in 1874.

Figure 5-2. The Garman Area Settlers Township 6 Rg. V W1
 Redrawn from Dept. of Interior Township Plat.

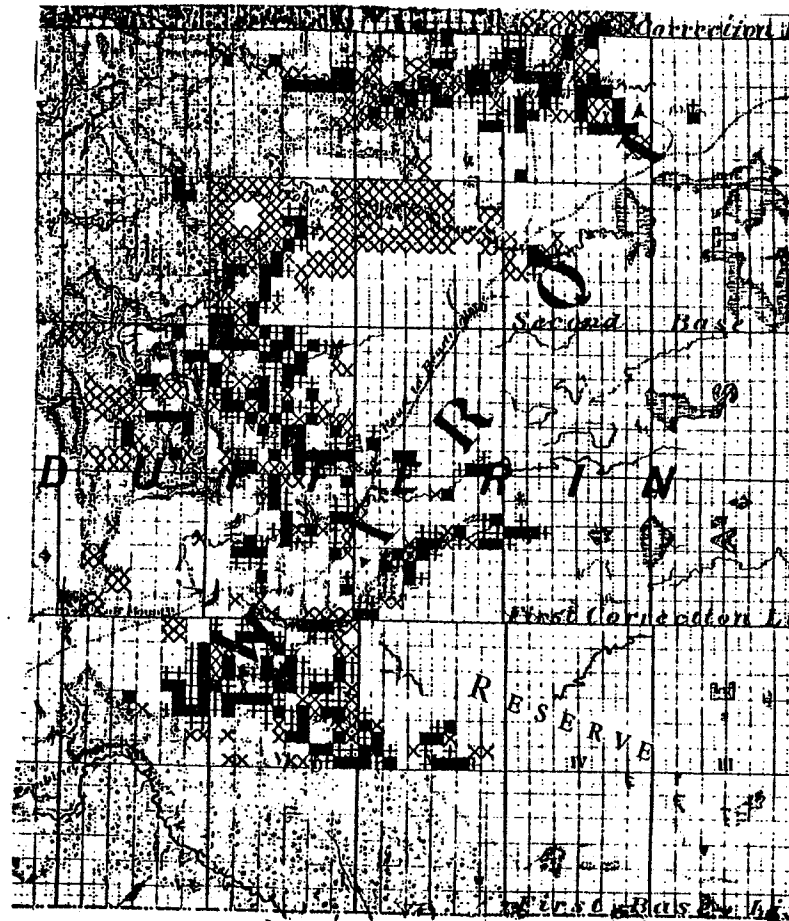




 Trees

 Swamp

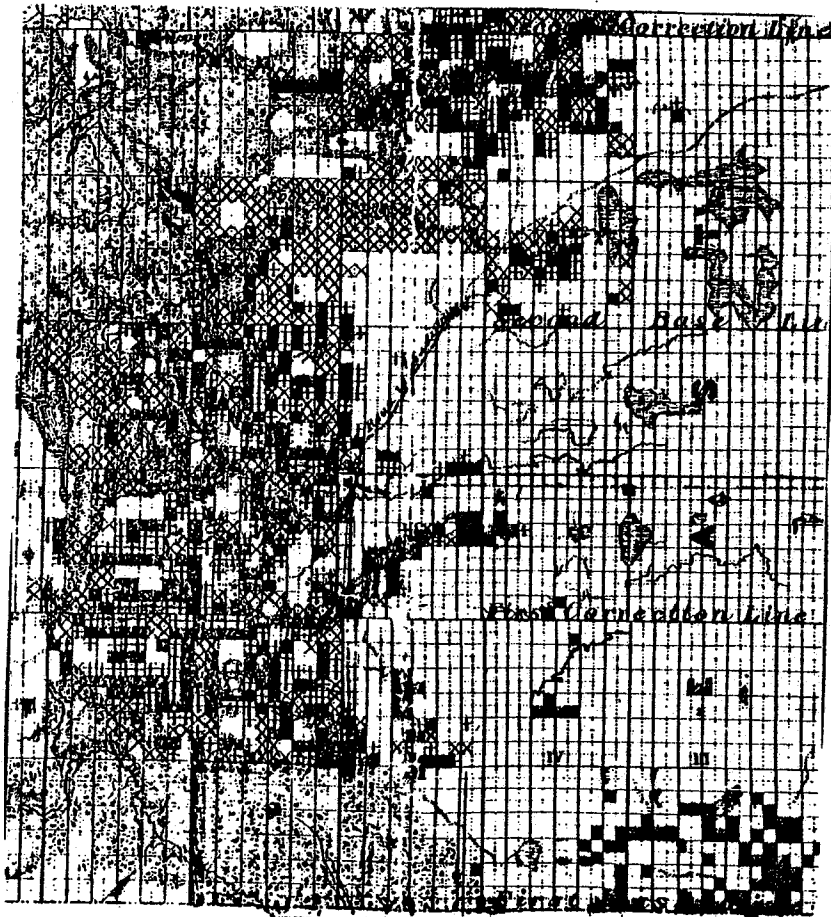
Figure 5-3-a. The Area Surveyed-1874
(PAC V1/501-1874).



Land taken up:

- Homestead
- + Pre-emption
- × Sale or military grant

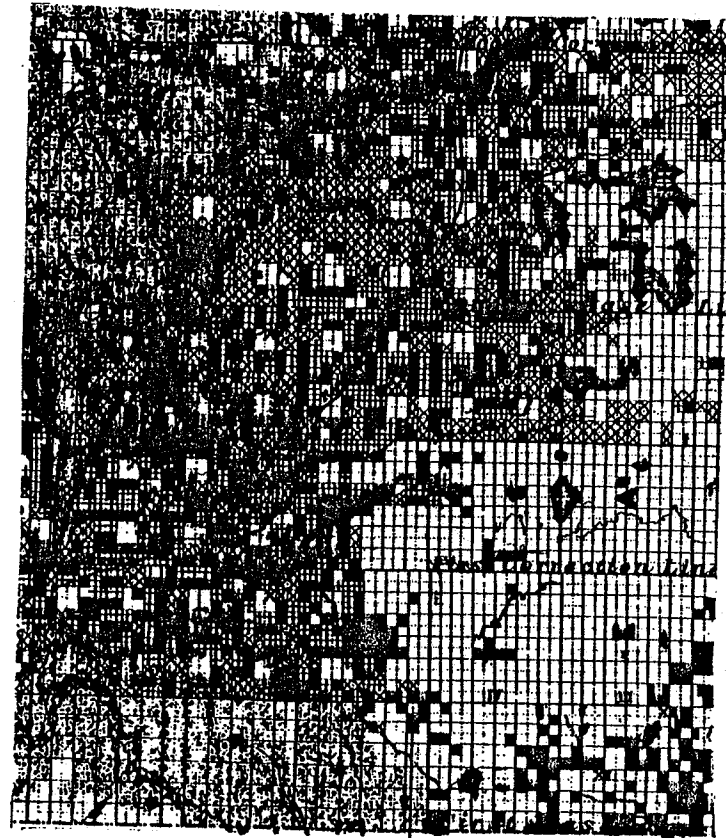
Figure 5-3-b. Sections alienated -1877.
(PAC V1/501-1877).



 Trees

 Swamp

Figure 5-3-c. Sections alienated -1878.
(PAC V1/501 -1878)



Land taken by:

- Homestead
- + Pre-emption
- x Sale or military grant

Figure 5-3-d. Sections alienated 1880.
(PAC V1/501-1880).

a reserve for the Russian Mennonites, and with their success and demand for wood, the two groups came into conflict, in what the Winnipeg papers called the "Menno Canuck Difficulty."⁶

As Bryce stated, the settlers at Pembina Mountain had chosen the woodland and were "only to be envious ever afterwards of the 'foreigner' in his possessions. One of the penalties of the pioneer is that he has to make the mistakes which his successors are then able to avoid."⁷

B. The Menno-Canuck Difficulty

The Mennonites had first settled on an eight-township reserve east of the Red River, an area of abundant wood and water (and almost swamp). By 1875 much of this area was taken up, and the government was asked for more land. The Dominion Land agent in Winnipeg asked his superior in Ottawa for approval of his recommendation:

The three hundred mennonites families now here willing to settle on treeless plain between Red River and Pembina Mountain if townships are reserved for them so as to prevent other settlers speculating in desirable hay lands to their injury wood lots to be supplied from Pembina Mountains and Roseau River. Recommend that townships one two and three in ranges one east and ranges one two three four and five west be reserved for them

6. Manitoba Free Press, Dec. 1, 1877.

7. Bryce, Ibid., p. 156.

no objection will be raised by Canadian settlers as tract unfit for settlement by them being destitute of timber...⁸

Have agreed with Mennonites to recommend they get townships one two three ranges one to five west inclusive township one range six west and one range one east but no wood lots outside the reserve...⁹

The crux of the problem that developed between the Mennonites and the Canadians is indicated above. The agent of the government, D. Codd, was the typical Britisher, with the views that grassland was unfit for settlement since it had no wood. Yet the Mennonites were willing to utilize the prairie, even though deprived of wood lots outside their area. It was to be their search for wood that precipitated the difficulty. The Mennonites began settlement that year,¹⁰ even before the government approved the reserve by Order-in-Council, April 25, 1876. They chose the lighter soil in the western part of the reserve, close to the wooded district.¹¹ But at the same time now Canadian squatters had moved into the reserve near the wooded areas of townships 2 and 3 range v. west. Since these townships contained the only good timber in the reserve, a serious quarrel developed over the use of the wooded land in range V.

8. PAC Dept. of the Interior, R.G.15 B-1a Vol. 9 "Telegram D. Codd to J.S. Dennis, July 23, 1875" [emphasis mine]. He repeated this assessment of the area in his 1875 report to the Surveyor General, Canada Sessional Paper #9, Appendix 2, p. 20.

9. Ibid., July 29, 1875 [emphasis mine].

10. Survey Report of D.L.S. Kennedy for Tp 1-3W, 1875.

11. Warkentin, op. cit., p. 62.

During the summer of 1877 the Mennonites complained to the Dominion Land Agent and wished to have the squatters evicted. The land agent was in sympathy for he stated:

This course of action is rendered more advisable in the case of the Mennonites in consequence of the difficulties they have to contend against in settling the reserve allotted to them in consequence of the scarcity of wood, another impossibility of their succeeding should these squatters be allowed to keep possession of the only lots having any timber upon them in the reserve... 12

He requested that he be able to use the provisions of eviction in Section 70 of the Dominion Lands Act, and the Surveyor General - J.S. Dennis, authorized these steps.¹³ But it was November before action was taken. At that time Codd sent Wm. Pearce into the area to report, after the Mennonites had again complained of being kept from their wood by firearms, "the difficulty being between the Mennonites and those who have settled since the Reserve was made."¹⁴ Pearce's report was forwarded to Ottawa on November 29 and received there December 10.

12. PAC, RG 15b1-s, file 3129, "A.M. Belch to J.S. Dennis, July 14, 1877.

13. The reliance on men in the field was one of the main features of the administration of the Dept. of the Interior, as long as Ottawa was kept informed so that it could make the major decisions. W.M. Bauer, "The Department of the Interior, 1873-1891. "A Study in Administration," unpub. Ph.D. dissertation (Queen's, 1953), p. 26.

14. PAC, RG 15 B-1a, File 3129, "Codd to Dennis, Nov. 2, 1877," repeated with emphasis on the word since in covering letter Nov. 29/77.

Meanwhile the news had hit the Winnipeg papers.

The Free Press correspondent at Emerson called for quick action by the government to settle the matter by giving woodland to the Mennonites from some other area, leaving the township which they had not yet settled to the Canadians. After another small item on December 22, "Menno-Canuck" wrote deploring such advice and countered the Emerson correspondent with:

...Why Should the Mennonites be compelled to go in the United States for their supply of wood, while they hold timbered land within their reserve (on Tp 2, R.5 West) as set apart for them....It is a notorious fact that a few of the original Canadians have induced other Canadians to squat on land...in direct opposition to repeated warnings of the land agents... Mob law may sometime obtain sway in a wild mineral region, but in a quiet agricultural country like this law and order should prevail, and those Canadians...should be taught to abide by the civil law....15

Meanwhile, the local Justice of the Peace of Pembina Mountain had fined the Mennonites for taking wood from the homestead of one Johnston Rinn (SE 30-3-V, within the Reserve). When the fine was not paid by January 5, a posse was sent to bring in the Mennonites charged with taking the wood. It returned with five of the ten Mennonites so accused, their friends having rescued the other five. The Chief Justice put

15. Manitoba Daily Free Press, Dec. 1, Dec. 22, Dec. 24, 1877, and January 10, 1878. The paper also reported on a great increase of settlement activity at Pembina Mountain with the surveying of a townsite at Alexandria (20-2-6W) and the beginning of centers of Mountain City and Belmont (Nelsonville), all just west of the disputed townships.

the case over the March Assizes,

William Pearce's report gives a detailed account of the situation in the contested townships. He lists eleven bonafide settlers, plus two who had obtained land before but had not settled on the land until after the reserve had been set up. There were also nine who had moved in on cancelled claims during 1877, and sixteen squatters. John Johnston and the Rev. H.J. Borthwick, the Presbyterian minister, were named as the instigators of the difficulty. Yet Pearce pointed out that the first settlers did have some consideration due them since the creation of the reserve did isolate them in an area that would prevent a large enough community to support schools and churches. They had enough timber. On the other hand, Mennonites did need the remaining timber, as it had been part of the reserve grant. Having the Mennonites settled there would eventually enhance the area, since their prosperity would encourage trading and their villages formed a good midway point between the Mountain and Emerson, the major town on the Red River at the U.S. - Canada border. "The Mennonites have demonstrated to them and all others little timber available..."¹⁶ therefore the grievances should be settled in the courts and the squatters should be evicted. Pearce stated there should be little trouble establishing this precedent, since the squatters

16. PAC RG15 B-1a, file 3129 "W. Pearce to D. Codd, Nov. 22, 1877," p. 8.

had slight hopes of keeping their area as demonstrated by the few improvements they had made. J.S. Dennis concurred with this and recommended that land be exchanged with the Mennonites for the land given to the first squatters.

On January 5, 1878 the Mennonite Immigration Agent, W. Hespeler, and the Dominion Land Surveyor, W. Pearce, left Winnipeg to negotiate the settlement difficulty.¹⁷ On their arrival they learned of the arrest of the Mennonites (as reported in the Manitoba Free Press of January 12),¹⁸ and Hespeler and Pearce had to explain to both groups the intended boundary changes. The Mennonites objected to losing the good area of T. 2 and 3, R. V W and foresaw difficulty in getting timber from the rough terrain of Tps. 1 in Ranges VII and VIII or the much more distant Tps. 5 and 6 in Range VIII. The two agents drew a line between the early settlers and their improved lands and the area of the squatters with few improvements (see Fig. 5-4). Those non-Mennonites east of the dotted line had their claims cancelled for non-fulfillment of homestead conditions. Only George Williams was left there since he preferred the Mennonites as his neighbours. Johnston Rinn, on whose property the major incident had occurred, was to get wooded land west of the compromise line, and his land was to go as wood lots for the

17. Manitoba Weekly Free Press, January 5, 1878, p. 5.

18. Ibid., p. 6.

Mennonites, as an exchange for wood they could have on sections 4 and 5 in T-2 R.V. W1 (Fig. 5-5). It is important to note the close correlation of settlers to woodland as seen in this map, and how the Mennonites had chosen open prairie.

In February and then again in April, G.F. Newcombe, the agent at Emerson, went into the area to carry out the suggested accommodations. The claim of Marcus Vanalstine west of the line was cancelled because he cut timber on other wood lots while holding close to one hundred wooded acres. This land was divided up into wood lots to be given to the resettled squatters. Care was taken to give neighbours shared wood lots - a poplar woodlot to one and an oak woodlot to another as:

a more satisfactory distribution of the oak timber which is so highly valued in a new settlement where so many articles of wood have to be manufactured by the settler for immediate use. 19

There is no record available as to the outcome of the case against the Mennonites for the March Assizes. It may have been dropped. The Mennonites chose Tps 1 in Range 7 and 8 for their wood needs, and all seemed settled. Yet, within a month squatters were again in the area, and were ejected. By 1880 the local legislative representative took up the Mennonites' grievances, and Premier Norquay championed the

19. PAC RG 15B-1a, file 11621 and 13600 "Newcombe to Codd, April 30, 1878".

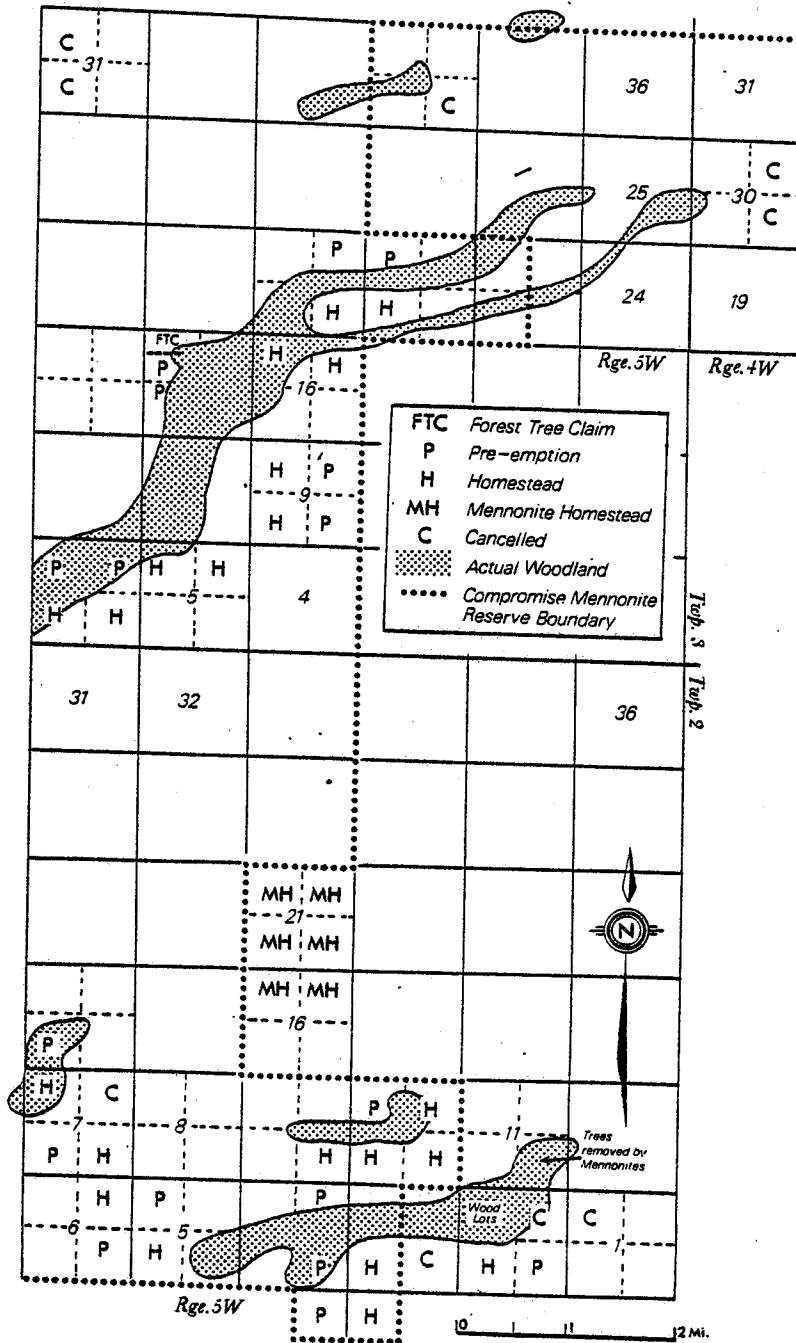


Figure 5-5 The Compromise, as redrafted from PAC RG 15 B-la file 3129.

cause of the squatters. The situation even came up in the House of Commons when members questioned Sir John A. Macdonald, Minister of the Interior, as to when the Reserve would be open to settlement since part of it remained unsettled.²⁰ The remaining unsettled portion was eventually sold by auction.

This series of incidents left a degree of distrust between the two groups. Warkentin claims that this was due to the closeness of the Mennonite community and the basic antipathy of the Canadians towards this isolated settlement.²¹ Much of the ill will that existed for many years afterwards, however, can also be traced to the major struggle to get the needed commodities for successful settlement - timber and fuel.

C. Canadian-American Difficulties

During the 1880's the problem of access and rights to timber took on the characteristics of an international incident. The rapid increase in the number of settlers in the study area put a great drain on the timber reserves of the area. This drain was increased by Americans cutting wood in Tps. 1, Ranges 7, 8, and 9 W1. These depredations caused the settlers to petition the Minister of the Interior for some means of prevention, and in November, 1886, Andrew Johnston of Mowbray

20. Hansard March 11, 1881, p. 356; and March 8, 1882, p. 269.

21. Warkentin, Op. cit., p. 67.

was appointed local timber agent. Immediately the U.S. Consul in Winnipeg, James W. Taylor, and H. Allert of Hannah, Dakota, wrote to complain of the treatment the Americans were receiving. Allert felt that they were due the same privileges as Dominion settlers. The Winnipeg Crown Timber agent termed this unreasonable:

If it were a densely wooded country which it was necessary to clear for farming purposes, the request of the Dakota settlers might be considered, but owing to the almost uninterrupted access they have had to the Timber on Dom. Lands in the Tps. before mentioned, for the last 3 or 4 years, the same has now become so reduced in quantity as to be scarcely sufficient to meet the needs of our own settlers for more than a few years, and I think should be vigorously protected for their benefit.²²

He knew of no similar trespass by Canadians on U.S. timber, and felt it best "from an International standpoint" that trespass by either side should be prevented. To this end several other officials made trips into the area the following year. Commissioner Herchmer of the North West Mounted Police noted a great deal of cutting and waste, so he recommended that a fourteen-man detachment be posted in the area to ride patrol on the border.²³

A letter in January 1889 puts the whole matter in historical perspective. In the timberless part of the Mennonite settlement wood had been bought from private individuals

22. PAC RG15 B2-a, Vol. 7, file 138245, p. 2
"E. Stephenson to Commissioner of Dominion Lands, January 24, 1887."

23. Ibid., file 190047 "Asst. Commissioner W. Herchmer to the Commissioner, N.W.M. Police, October 17, 1888."

in the United States, and it could be brought back through customs to Manitoba. The U.S. settlers could always have bought wooded land from the Dominion but they preferred to "have their supply of wood without paying compensation therefor."²⁴ The situation was further aggravated because most of the wood taken in trespass over the two years previous was not taken for settlers' use, but as wood supply for Langton, the main town in Cavalier County, North Dakota, (Fig. 5-6). Forest Ranger Toole reported this information.²⁵ He stated that often Manitobans bought their needed hay from the prairie regions of North Dakota by exchanging wood, load for load. This was particularly true in Cavalier County, for it had only a small wooded area in the northwest corner near the Pembina River, but abundant hay.

The zeal of the N.W.M. Police patrol from Snowflake to Morden aroused the ire of the Cavalier County settlers and there was a very inflammatory article in the Langdon Cavalier County Courier, March 14, 1889. It called for retaliation by Americans caught avoiding customs, retaliation that could work since the Canadians needed the reciprocal trade of hay cut in

24. PAC RG 13 2-a vol. 7, file 195420, p. 2
"Stephenson to H.H. Smith, Commissioner of Dominion Lands, Winnipeg, January 5, 1889." The problems met by the Mennonites in bringing wood from the lands they had bought in the U.S., with customs to be paid, are recounted in "The Biography of John Atchinson" Collections of the State Historical Society of North Dakota, II (1908) pp. 236-7.

25. Ibid., "Stephenson to Smith," appended report.

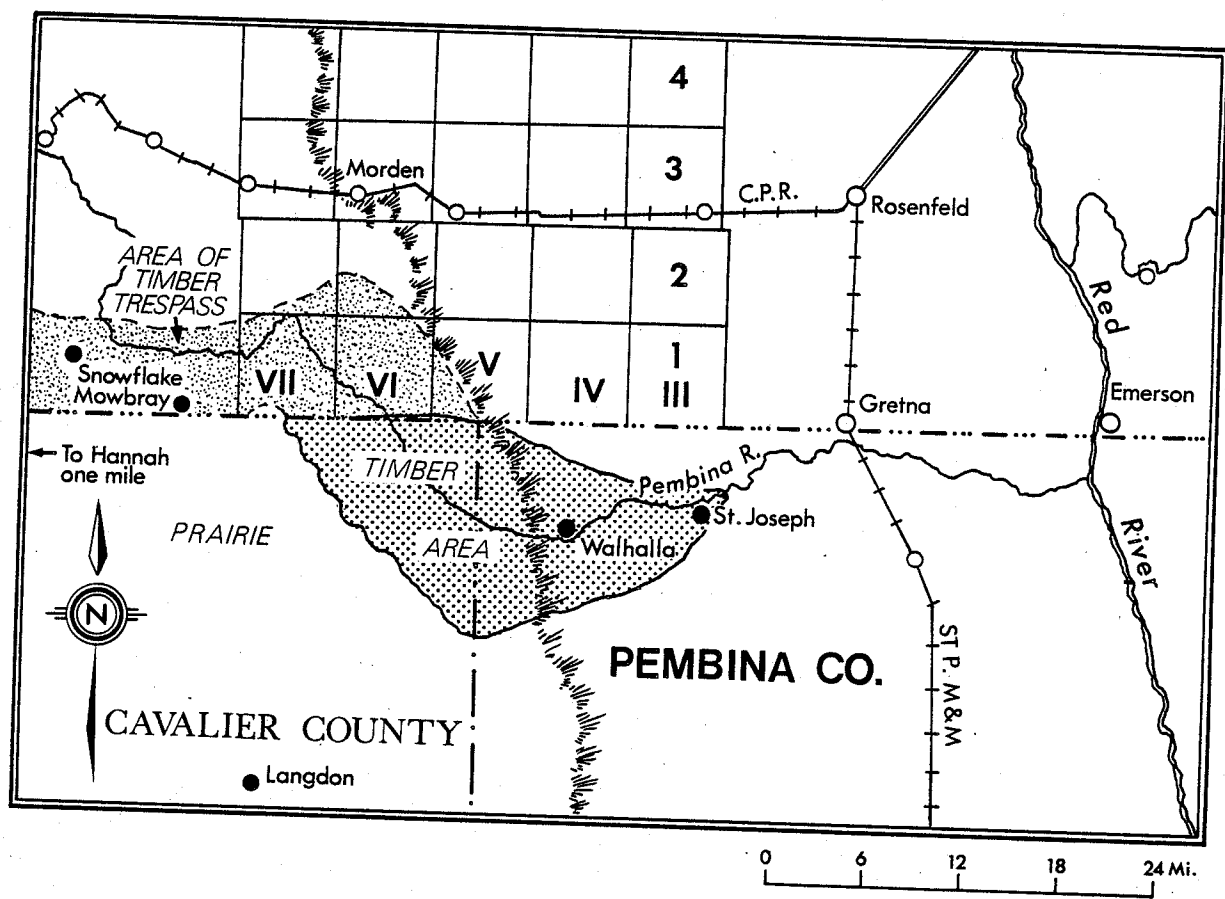


Figure 5-6. The Canadian-American Conflict Over Woodland Fuel Supplies 1886 - 1896.
U.S. Timber area according to A.T. Andreas
Andreas' Historical Atlas of Dakota,
(Chicago: 1884).

the U.S. Despite the complaints, the wood thefts did slow up with the N.W.M.P. in the area, but they did not stop entirely. In 1894, for example, Agent Johnston asked if he could shoot the horses to prevent timber thieves from escaping across the border. The Deputy Minister of Justice in Ottawa felt this was an extreme way to effect a seizure, and advised the Secretary of the Interior that judgment as to when to use this type of force was best not left to the discretion of the local agent.²⁶

The prevention of timber loss became only one of the many duties of the Timber Agents and in the following decade the concern for growing more timber increased. The idea of timber culture, that had been part of the Dominion Lands Act in 1876, again became an official concern.

The Timber Culture Act had been part of the United States Land Office's encouragement to homesteaders on prairie lands. This act and its amendments were enacted since "Congress timber believed that if the region could be supplied with timber a desirable class of citizens would settle it."²⁷ But the scheme was, except in isolated cases, a failure, and productive of much perjury and fraud.²⁸ It was unsuccessful

26. Ibid., "E. Newcombe to Secretary, Dept. of Interior, June 11, 1895."

27. G.W. Kingsbury, History of Dakota Territory (Chicago, 1915) pp. 77-8, quoted in R.M. Wobbins, Our Land Heritage, The Public Domain 1876-1936 (Lincoln, Ne., 1962) pp. 218-9; and above in chapter IV.

28. PAC. Macdonald Papers Vol. 112 "A.M. Burgess to Sir John A. Macdonald, 1883" pp. 45688-90, and B.J. Hibbard, History of Public Lands Policy (N.Y. 1924) Chapter 19.

also "largely because of insufficient knowledge on how to plant and care for trees on the prairie."²⁹ Thus, the plan of the 1870's was repealed in 1891, and the Department of Agriculture took over the encouragement of tree planting as part of their service to farmers.

D. Forest Tree Culture

In Canada the Forest Tree Culture section of the Dominion Lands Act was passed in 1876, and was patterned after the American Timber Culture Act. The same optimism that had accompanied the launching of the U.S. scheme was evident in J.S. Dennis' report on the plan to the Minister of the Interior in 1875.³⁰ Its main purpose was to encourage tree planting that would serve as replacement material as the natural woodland was used up in supplying the increasing settlement. Dennis even included an appendix on practical suggestions for forest tree planting, written by the Hon. L.B. Hodges, who was the Superintendent of tree planting on the St. Paul and Pacific Railway line in Minnesota.

The Dominion Lands Acts were amended so that anyone over eighteen years of age could pay ten dollars and enter for

29. B.L. Wills, North Dakota, the Northern Prairie State (Ann Arbor, 1963), p. 86.

30. Canada: Sessional Papers #9, 1876, Dept. of Interior, "Surveyor-General's Report," pp. 9-11.

a quarter section as a claim for forest tree planting. After six years, during which one fifth of the acreage, or 32 acres, had been cultivated and planted to trees no more than twelve feet apart each way, title could be issued.³¹ While it took only one year more than ordinary homestead claims there was not an immediate rush to take advantage of these provisions in the Dominion Lands Act. The Dominion Lands Agent in Winnipeg reported only three entries in 1876, thirteen in 1877, thirty-five in 1878, and one hundred and ninety-two entries in 1879. This last figure may very well reflect a flurry of activity just before the provision was dropped in 1881. There are no further claims reported after the report for 1879, printed in 1880.³² The Ottawa politicians had wondered how the scheme had fared, and J.S. Dennis reported to Sir John A. Macdonald in May, 1879:

...Should the matter be referred to again, you may say that up to the date of the latest returns there had been in all 69 forest tree entries, covering 11,040 acres of land. No forest tree patents have as yet been issued, for the reason that the period within which the conditions with regard to planting require to be carried out, has not yet expired in any one case. [6-8 yrs].

P.S. My information is that these are in the vicinity of Pembina Mountain where there are forests. I am sure that this portion of our land policy can accomplish no useful purpose.³³

31. Canada: Sessional Papers Chp. 19, 1876 Dominion Lands Acts amended, sections 20-26, pp. 78-79.

32. Ibid., #11, 1877 Part III, Appendix 6; #10, 1878, Part III, Appendix 4, p. 38; #7, 1879 Part II, p. 3, #4 1880 Part I.

33. PAC Macdonald Papers Vol. 112, "J.S. Dennis to Sir John A. Macdonald, May 8, 1879," pp. 88719-21.

The forest tree claim provisions did not fail due to the lack of knowledge about the opportunity to gain land this way, for pamphlets such as a Alexander Begg's Practical Handbook and Guide to Manitoba and the North-west with the provisions on pp. 49-50 had had wide distribution.

But cancelled it was. When one reads the letters from the entrants and their anguished cries about "why was my claim cancelled?", and the trouble the Dominion Land agents had on getting accurate reports on these claims, it is easy to see why this portion of the land policy was dropped.

Of the thirty forest tree patents to land that were issued, five occurred in the thesis area.³⁴ In all cases they took a long time to be straightened out in the Lands Branch records. The north half of NW 17-3-V was entered for by Marcus Vanalstine (of Menno-Canuck fame) in 1877 and it was not patented until 1894. The claims by the two Duncan brothers - Walter (NE 28-3-V) and John (SE 28-3-V) were entries of 1878 and they did not obtain patent until 1889 and 1890 respectively. Thomas Godkin, who had worked with the Duncans and had helped freight the mill machinery from Emerson to Belmont (Nelsonville), entered for his Forest Tree Claim on SE-3-VI in 1879 and patent was not effected until 1901.

34. For location see the woodlot map, Fig. 5-8.

Judging by the case of Marcus Vanalstine, the proof of claim was long and complicated. In 1892 when a dispute arose over a C.P.R. land sale for NW 17 T.3 R.V, the land then being vacant, Vanalstine expressed surprise that he was being deprived of his land, since he had planted about "4000 trees which of course had been a source of great labour and expense."³⁵ It took several more letters and the sorting out as to whether he was John Clark or Marcus W. Vanalstine, before patent was finally issued.

The fifth entry, that of Elizabeth Harvie for SE 13-3-VI was, it seems, the most straightforward, yet it, too, entailed much correspondence to gain the patent once the settlement conditions had been fulfilled. From the entry in September, 1876, with planting and cultivation in 1878 and 1879, 2,700 trees on each acre became 675 living and thrifty trees on each acre in 1885.³⁶ The Homestead Inspector made a trip in March to see it but found the snow too drifted in, so that he had to make another trip in October of 1885 to complete his report. He stated:

....I have not yet seen a tree claim which meets my idea of what a tree claim should be. There is a lack of cultivation. Those having tree claims say the trees die out when cultivated and allow them to grow up with grass. This one had a very heavy growth of grass between the rows and among the

35. Manitoba Lands Branch records, File NW 17-3-V W1. -various letters during 1892.

36. Ibid., SE 13-3-11W E. Harvie affidavit, Nelson, Jan. 5, 1885.

trees but the trees stand thicker and have a better growth than any other I have seen in Manitoba....they will average about 850 to the acre....,there are no fire breaks and a prairie fire in this long grass would destroy every tree...³⁷

His report emphasizes the need for proper care of the trees since not all farmers were as fortunate as Mrs. Harvie with grass growing around the trees, and the previously feared prairie fires still posed a threat in the partly settled countryside.

Mrs. Harvie's case was finalized only after a flurry of letters in each direction during July and August, 1886, and her case is also a good demonstration that a woman still had to follow the mores of the time, for some of the delay was occasioned by the Government ascertaining if she was married and what was her husband's name, part of the chauvinism of the times.

People still advocated that the planting of trees should be part of obtaining land on the Prairies, even though the uncertainty of getting the trees to grow and the trouble of obtaining patent to the land was known. The Land regulations still stated "The Governor-in-Council may from time to time as may be deemed expedient make regulations for the encouragement of tree planting where it would be beneficial."³⁸

37. Ibid., Report of D. Aikenan, Inspector, Oct. 24, 1885.

38. PAC Macdonald Papers Vol. 112, "T.A. Sash to Senator D.L. Mcpherson-Memo re Draft Copy Amendment Dominion Lands Act, 1882." pp. 45469-73.

J.W. Dawson's report on the land along the C.P.R. route states:

Tree should be planted by all settlers for shelter and wood. Seed of the Negunda (Manitoba maple) and other trees is abundant by the banks of the streams, and if sown in drills, could be cultivated in the same way as green crops, and would soon form belts of trees and afford young trees for planting out. These would not only give shelter and fuel, but would increase the rainfall and moisture.³⁹

The theme of climate modification returned again, but this time the emphasis changed from just growing trees to that of maintaining tree nurseries and fruit trees. The government was still wary of any promotion of planting becoming again forest tree culture, for "it was tried in Manitoba and was an utter failure there."⁴⁰ In 1882 Manitoba encouraged tree planting via the Public Works Act, such trees to be placed by the owners and municipalities along the highways and roads in the province - an idea that was followed up on a larger scale in the 1940's and 1950's. The federal Department of Agriculture continued to encourage tree planting, using planting stock from the Experimental Farms they had set up at Brandon and at Indian Head.⁴¹ The Brandon Experimental Station had been established in 1886 and Indian Head was set up in 1887. Their purpose was

39. Ibid., J.W. Dawson, "Report on the Quality and Resources of the Lands Lying Along the Line of the Canadian Pacific Railway Between Winnipeg and the Rocky Mountains, September 3, 1883," pp. 4591-2.

40. Ibid., Dept. of Interior memo to Sir. John A. Macdonald as answers to Mr. Charlton," pp. 45660-61.

41. Manitoba Statutes 45 Victoria c.VI sec.1-9, 1882; and Consolidated Statutes, the Municipal Act, Part IX, Title III, being part of 53 Vic. c.51, sec. 429-433, 1890.

to try out all species of trees and grow and cultivate the quickest growing timber trees for gratuitous distribution, with the idea of encouraging extensive tree planting on the Great Plains.⁴² This meant that farmers could manage the tree resources of their area as they did their crops.

The records of this distribution are not available, yet the trees were utilized in many areas of the Prairies. This phase of resource management will be followed up in a later chapter.

E. Wood Lots

One other facet of resource use was that of the wood lots for prairie settlers. The wood lots had been part of the surveyors' guidelines when the townships were laid out and assessed. The wood lot was a part of the Dominion Land regulations, and an integral part of each immigrant's expectations of his new home in Manitoba. During the settlement boom of 1882-3, there was a shortage of wood for the settlers, partly due to increased demand, but also due to the fact that much of the woodland was held by the C.P.R. on its alternate section land grant. This caused the Farmers' Delegates to Ottawa

42. G.M. Dawson "Memo on Experimental Agricultural Stations, Feb. 27, 1884" in Wm. Saunders, Agricultural Colleges and Experimental Farm Stations, reprinted from the Appendix to the Report to Minister of Agriculture, 1885.

in 1884 to press strongly for the opening up by sale of this reserved woodland in wood lot size holdings, as opposed to quarter sections. There were even those who had bought land from the C.P.R.:

who had purchased and improved their land in the hope of having the opportunity of purchasing wood lots near their homes from the company, from whom they had every right to expect some consideration. To a resident of Ontario or Quebec where fuel is abundant this may not seem a matter of such vital importance, but to a settler in the North West where fuel is so scarce the question is firewood, then good land, water etc.⁴³

The wood lot was the source of fuel for cooking and warding off the cold of the Manitoba winters. It also could provide the logs for the first house and barn and provide the thin wood for fence rails. This fencing was of the Ontario style, with thin rails held by dowels to upright posts. A correspondent from Belmont had advocated ditch fencing, which took only a one rail fence along a mound, and it could act as a fire guard and drain,⁴⁴ and in scarce wood regions would be considerably cheaper. There is no evidence that it was widely adopted, and between 1877 and 1880 barb wire came into general use.⁴⁵

43. Macdonald Papers, Vol. 113 "Newspaper clipping reporting on the meeting of the Manitoba and North-west Farmer's Union Deputation with the Privy Council, 1884." Note the priority is reversed from the usual - land, water, then wood.

44. Manitoba Free Press, March 9, 1878, p. 7.

45. Begg and Nursey, Ten Years in Manitoba as quoted in W.L. Morton, Manitoba, and Warkentin "The Mennonites..." dates its use as 1885 in the Reserve (pp. 90-91) and 1877-80 west of the Reserve (p. 131).

If there was not enough timber on or near the homestead it was possible after November of 1873 to cut from Crown Lands timber and fuel free of charge. For extra timber needs a permit could be obtained at a very low rate.⁴⁶ A subsequent amendment also included in the permit fence poles at the rate of one dollar per thousand. These regulations did aid the settlers, but it was far easier for each farmer if he had his own lot nearby. Not all the timber was obtained in such a formal manner. The accounts of the time often mention the hauling of fuel from that mythical timber limit that supplied Southern Manitoba - "section 37" i.e. wherever timber could be found.⁴⁷

The first settlers had come to the Pembina Mountain because it had wood, water and open land. The first wood was used in log form, squared and notched by hand to form building timber. Cut lumber could be bought at Emerson or Winnipeg, having been sawed in the mills of Minnesota. This was an expensive way to acquire building materials and it was too tiresome to have to freight the wood by wagon or sleigh, so immediately there were community meetings for the purpose of raising bonuses of money, grain, and woodland to encourage the

46. Canada: Order-in-Council No. 22 on Timber and Mining file #40, January 13, 1873, amended by O. in C., Feb. 20, 1873.

47. Warkentin, "The Mennonites" p. 76; Rev. G. Hambley, Trails of the Pioneers (Altona; 1956) to cite two of many.

erecting of saw and grist mills in the region.⁴⁸ Mr. Adam Nelson took advantage of \$1,000 in grain and 23 acres of woodland. He erected a frame for his saw and grist mill at Belmont on Tp. 3 Rg. VI W in 1877. The machinery came by sleigh from Emerson. The saw was used to cut the lumber to cover the mill building. Both grist and saw mill were serving the farmers by April, 1878.

In the fall of 1879 James Anderson, the Crown Timber Agent in Winnipeg, made a journey through the area to report on the sawmills in use. He found and reported on four, giving good details on their capacity and operations (Fig. 5-7).⁴⁹ Mr. Nelson had moved his mill machinery to Mountain City that summer, and the citizens of Belmont (Nelsonville) had formed the Belmont Milling Company and taken land along the creek next to the road along the east side of SE 3 T.4 R.VI.⁵⁰ Anderson must not have gone into the Mennonite Reserve, for he makes no mention of the saw mill in operation in Blumenort in 1878,⁵¹ nor does he mention the portable saw mill that operated at the foot of the escarpment on Sec. 7 T.4 R.VI.⁵² These saw mills were

48. Manitoba Daily Free Press, October 24, 1877.

49. PAC RG15 B-2a Vol. 1, Feb. 69, p. 5 "James Anderson to the Surveyor General, Report on Mills and Timber in the District of Pembina Mountain and Rock Lake, October 22, 1879."; and Sessional Papers #4, 1880 Appendix 2; #3, 1881; #18, 1882.

50. Morden Land Titles Office, Instrument #158, Deed from Walter Duncan to Belmont Milling Company, July 15, 1879.

51. Warkentin, "The Mennonites," p. 109.

52. Thompson, R.M. Hist. Com. The Hills of Home, 1967, p. 184.

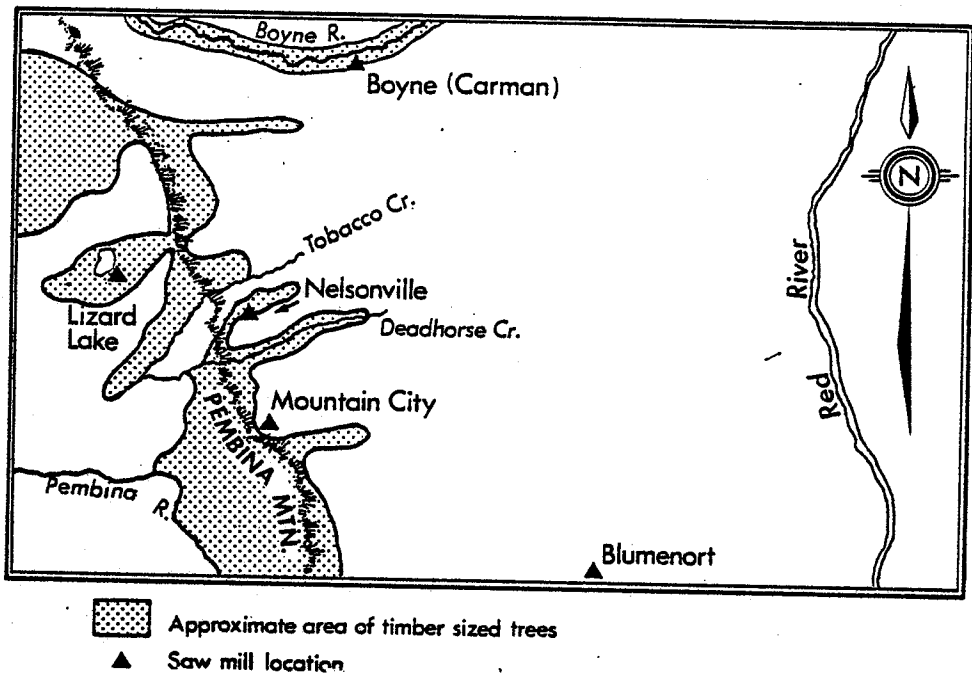


Figure 5-7 Saw Mills Operating in Manitoba 1879-1881
(Pembina Mountain District)

Drawn from data in PAC RG 15 B-2a Vol.1
file 69, and Canada, Sessional Papers 1880-82.

Name and Location	Power	24 Hr. Capacity	Building Size	Date Commenced
Belmont Mills Nelsonville	steam 35 HP	6,000	24x48'	1879 ('78 actual)
Nelson and Sons Mountain City	steam 20 HP	4,000	20x16' 30x28'	1879
D.Kilgour Lizard Lake	steam 16 HP	2,000	20x24'	---
D.S.Clink Boyne River	steam 22 HP	3,000 board feet	10x20'	1879

Timber source- oak and poplar from their immediate areas.
All manufactured lumber and all but Lizard Lake ground
grist for the settlers.

the means whereby the settlers obtained the lumber for their frame homes that replaced the first log buildings. But this era of timber utilization was brief, for the mills are not in the reports after 1882, coinciding with the coming of the railway that year. Lumber could then be brought easily from other parts of Manitoba, the northern United States, and Ontario, and, after 1885, from British Columbia. The railway also made coal available as a fuel, judging by the drop in price reported in the Winnipeg paper.

The Winnipeg papers of 1879-80 report (via their correspondent at Belmont) great activity in preparing timber along the Mountain to be taken out to the prairie farms. This would have further depleted the saw-log size timber, and the wood lots would then have been only a source of rough timber, fencing and fuel. In this capacity it is interesting to study the location of the wood lots, the trip to and from the homestead that would have been necessary to utilize this resource, and the time of activities associated with these small ten and twenty acre holdings.

The Lands Branch of Manitoba provided the names of the first entrants for each wood lot and also the date of entry. Perusal of the records for the surrounding areas found the same names as homesteader or purchaser, and this permitted mapping the journey from wood lot to home (Fig. 5-8). Research in the Morden Land Titles office yielded the dates of later transfers of the land and the names of subsequent owners of the

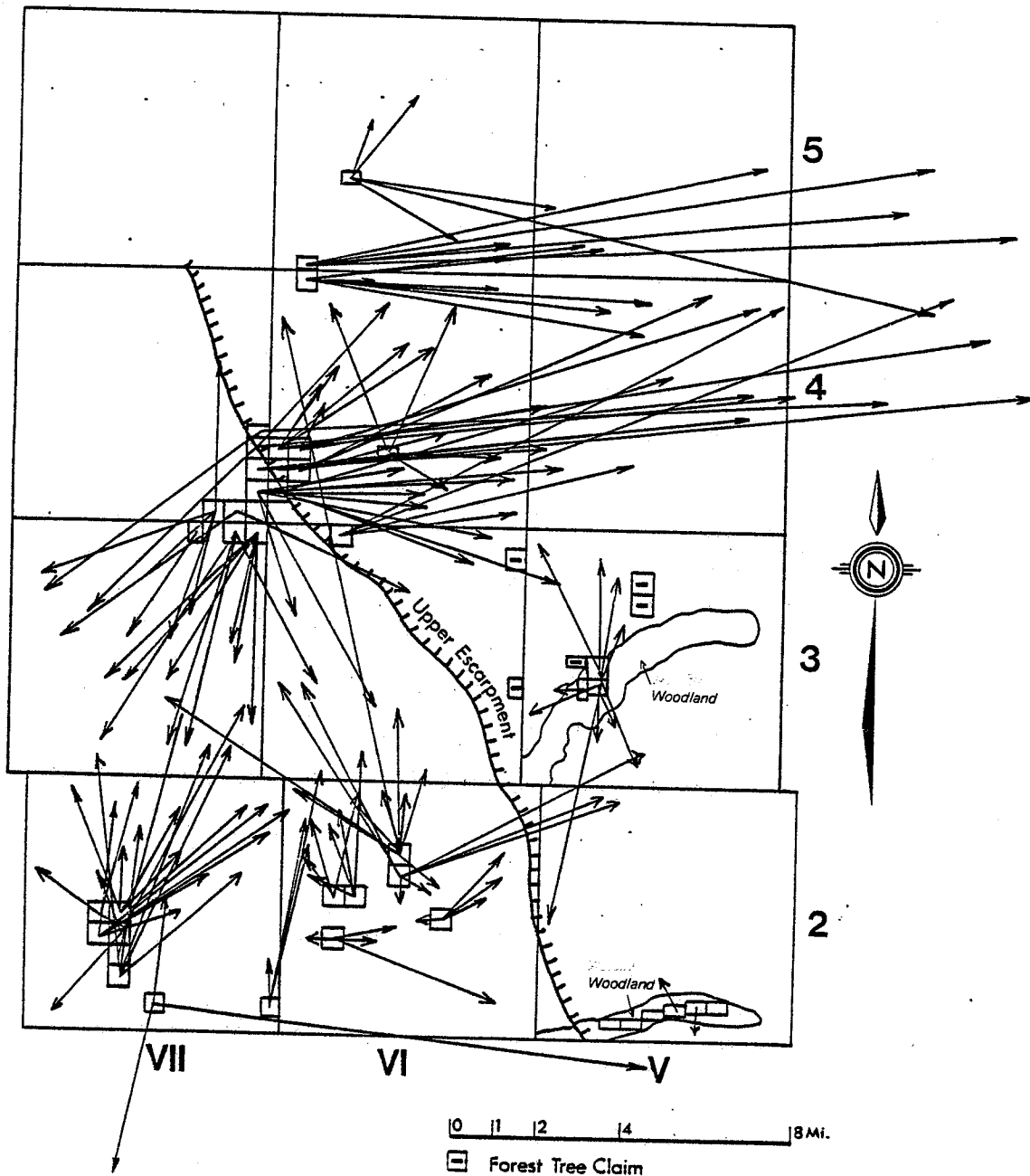


Fig.5-8 The Journey from Wood Lot to Homestead
Compiled from Lands Branch Records and Morden
Lands Titles Records

woodlots during the speculation in land era and later the consolidation era.

The wood lots set out by the surveyors during subdivision and in the years following the survey were relatively accessible to settlers in the area. Five groups were in the treed area below the escarpment, one major group and a smaller one were on the escarpment, and the other groups were on the rolling land southwest towards the Pembina River. The earliest entries were in T.4 R.VI at the foot of the mountain, the site of the portable sawmill and near Nelsonville, and secondly, in the two areas of the Menno-Canuck dispute in T. 2 and 3 R.V. The 4-VI lots served the wide area from near Roland on the east to almost Darlingford on the south. The settlers holding the southwest part of these lots, essentially in T. 3 and 4 R. VII W1 came for their wood from above the escarpment. The escarpment seems to have been a barrier for those using the lots on 9 and 31 of T.4 R.VI, for the lines fan out to the east and northeast, and a similar use by first prairie level farmers appears for the lots in T. 2 and 3 R. V W1.

For the lots in T.2 R.VI the farmers travelled south and west to get their wood, mostly from farms above the escarpment although there are several exceptions of some from T. 2 and 3 R.V and as far away as T.4 R.VI, and most of the entries were before the railway came through Morden to Thornhill in 1882. The latest wood lot acquisitions were in T. 2 R.VII, where most of the wood users lived south of Darlingford and Thornhill

and went south towards the Pembina River for their supplies of fuel.

This pattern is borne out by tales in the local histories recently compiled in the area. The settlers on the plains mention going to the Mountain for wood, as in the case of William Bell, on 19 T.4 R.III at the edge of the Boyne Marsh. He had built a house of sods against rough boards, with some of the lumber having been carted from Winnipeg.

The winter was taken up with getting fuel, and even more difficult task of burning the green elm after it had been cut and hauled home from the Pembina Hills some twenty miles west.⁵³

Friends often filed for land and wood lot in close proximity and an examination of subsequent sales of the land shows two phases of activity.⁵⁴ The first flurry of sales occurred during the land speculation that followed the announcement of construction of the Canadian Pacific Railway branch line west from Morris. In this land boom parcels of land changed hands often, at very inflated values ranging from \$1000 to \$3300 a twenty acre wood lot. After the boom prices returned to normal, being from \$15 to \$75 per wood lot. The speculative period did not result in many consolidations of the holdings, so it may be assumed that they were still being used as wood lots.

53. As told by nephew N. Bell for E. Mullen, Living Gold (Altona, 1978), p. 78.

54. Land Titles Records, Morden Land Titles Office.

It was not until the late 1890's and early 1900's that there was a major trading of these small parcels of land. At that time there is a definite pattern of consolidation, largely as additions to neighbouring farms or by grouping to form quarter and half sections for the most recent settler. The south half of 20 T.2 R.VI was used by residents, then consolidated for a new settler. The woodlots on the east half of § T.2 R.VII, being Hudson's Bay land,⁵⁵ seem never to have been sold as woodlots and provided land for the sons of the settlers, or as the neighbouring lots show, land for the 1890 wave of immigrants.

The consolidated land holdings still provided wood for the area at the turn of the century, and the wooded land in the old Mennonite woodlot region of T.1 R.VI still provided wood at \$2.00 a load during the 1930's depression. Farmers on T.3 R.VIII also traded wood for flour and groceries in Manitou. While the wooded lands provided some revenue, the majority of the area was devoted to crops. The era of trees as part of a resource to be managed began. This could be seen in the planting of farmstead windbreaks and field shelterbelts. It is to this era that the next chapter is devoted.

55. Hudson's Bay Archives, Winnipeg, file on section 8-2-VII.

CHAPTER VI

THE GOVERNMENT PROMOTES TREES AND MORE TREES

The previous chapters have traced the pioneer phases of exploitation of the arboreal vegetation in the study area. This chapter describes the change in emphasis that came in the post-settlement era. Now feeling at home, the settler began to put down roots, both literally and figuratively. His farmstead, especially if he had invested in a substantial "new style" brick or stone house, needed shelter from the elements. There was also the statement to be made to his community that with the planting of trees the settler now was at home in the community. The efforts of the farmers in this respect were assisted, in typical Canadian fashion, by the Government. What had once been the vision of a few persevering tree planters became the overall view of the country's government and administration. The infrastructure necessary to supply trees, to supervise their planting, and to educate the public to see trees as part of the environment was developed by the government and the results of these efforts are apparent in the landscape today. It is to this change, that of private exploitation becoming publicly assisted resource management, that this chapter is addressed.

A. The Federal Government Promotion

The partially fire-maintained grassland observed by the fur traders and surveyors had been rapidly giving way to cultivated land devoted to cereal grains, especially wheat. This change was accelerated by the influx of settlers at the turn of the century. The earlier settlers had clung to the woodland and the nearby prairie and did little tree planting. The Forest Tree Claim scheme had not been successful. The first tree planting efforts of the settlers failed either because the stock for planting was too tender or because the preparation and cultivation had not been properly attended to. It was the Mennonites, that group that had shown others that the prairie could be farmed successfully, who had had the most success in planting trees.¹ Their village groves of cottonwood, poplar, Manitoba maple and peach leaf willow taken from along the banks of the Pembina River stand today as grand testimony to their skills. The success of these groves persuaded others that tree planting might be worthwhile.

Part of the change was also due to the success of the experimental farms. The Canada Department of Agriculture had established Experimental Farms at Brandon and Indian Head,

1. G.B. Elliott "The Advantages of Tree Planting, the Most Useful Trees and the Best Method of Planting" MS in RG 39 Dept. of Interior - Forestry file 120817, June 5, 1896. He quotes C.S. Waldron of Minnesota on the best trees for the Prairies. The above statement about the Pembina source is corroborated in "E. Winkler to T. Greenway, fall, 1889". The Greenway Papers, P.A.M. MG13, E2 No. 2289, 2395.

1886-7, and had planted beds of trees. They were able to distribute seedlings and seeds to farmers who requested them, and by 1892 they could show an example of tree culture in their well-planted farmyard and driveways (Fig. 6-1). Yet, the success of trees planted on the settler's farm depended on his own perseverance and skill.

There had been a slight change in attitude by the general public. It was generally admitted that while trees could not cause rain, they could trap and hold moisture, especially in the form of snow. This had a bearing on agriculture and the value of the water power sites throughout the region. The influx of immigrants raised a general concern that there was not sufficient timber and fuel for these settlers. At the same time the concern was for protection of the existing timber from forest fires.

In response to these problems and concerns, the Canadian Department of the Interior, responsible for the natural resources in the prairie region, tried to find some solutions. While much of their effort went into timber management in the timbered areas, there was also a major effort at "Tree Planting on the Plains" by the Timber and Forestry Branch. The program was paid for by appropriations to the Department of the Interior. And in Parliament the Minister, the Hon. Clifford Sifton (from Brandon) suffered great derision²

2. Debates, House of Commons 1 Edward VII, Vol. LIV, April 9, 1901. Much of the debate was over the cost of supervision. This later was proven to be the reason for the success of the project. The denuding of the Pembina Mountains and the need to bring in coal from Estevan was cited as the reason to protect the local wood supplies by tree planting and fire control.

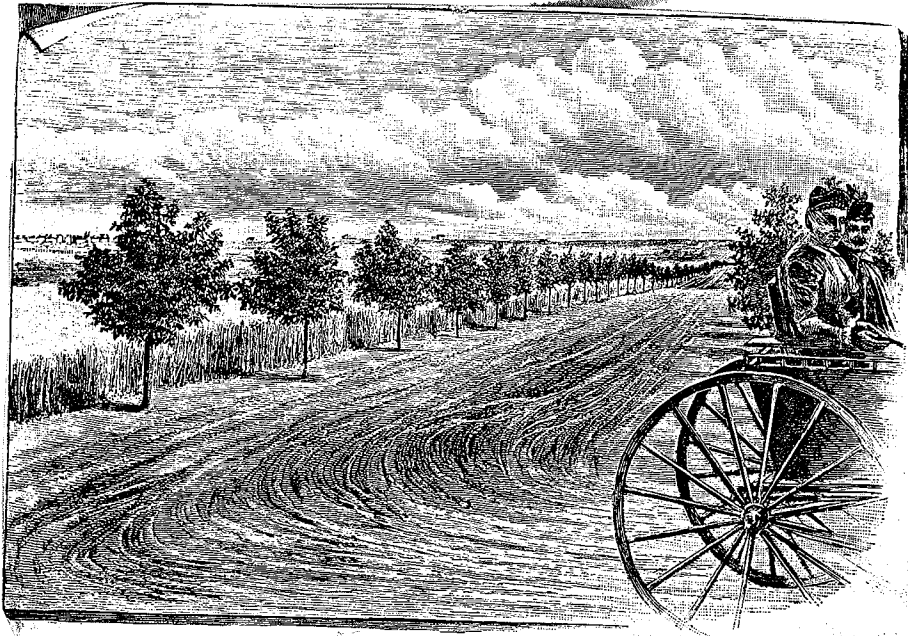


FIG. 4.—PART OF AVENUE OF MANITOBA MAPLE, EXPERIMENTAL FARM, BRANDON, MAN.



FIG. 5.—HEDGE OF MANITOBA MAPLE, EXPERIMENTAL FARM, BRANDON, MAN.

Figure 6-1 Two illustrations from Canada, Department of Agriculture, Brandon Experimental Farm Report—Forest Tree Planting, 1894, p 262 and 266.

from the Ontario M.P.s (where lack of trees had never been a problem). They saw the project as a waste of money, teaching the farmers something they already knew. But the Minister got his \$15,000 appropriation, and using seedlings from Brandon and Indian Head, he set up a tree nursery at Indian Head. Later a second nursery was established at Sutherland, Sask. In 1901, 58,000 seedlings were distributed to 44 farmers. By 1931 over 100 million trees had been distributed to over 100 thousand farms.³

The work of the Department of the Interior Forestry Branch, in cooperation with the Indian Head Dept. of Agriculture, began the work of tree planting slowly. As they became more adept at growing seedlings so that they had more 2 year-old stock for transplanting, the public interest increased. The successful plantations across the prairie were object lessons that encouraged other farmers to protect their new homes with trees, and thereby tell all who came by that the migrant had found a home. The government allocated the number of trees on the basis of what a farmer could plant and keep cultivated, so that the number varied according to the Tree Planting Inspector's judgment.⁴

One of the inspectors was A.P. Stevenson of Nelson (formerly Nelsonville and later Dunston P.O.), in the thesis area, a very knowledgeable horticulturalist who had assisted

3. J.W. Dafoe Clifford Sifton and His Times (Toronto: 1931), p. 247.

4. Restrictions as set out in Circular 2, Department of Forestry, April, 1901.

many settlers, and later was to help establish the Morden Experimental Station in 1913. His reports show that he spent a busy year, both in inspecting the applicants preparations and follow-up cultivation and in giving lectures. This took him into Saskatchewan and Alberta as settlement expanded westwards. The theme of his lectures was that farmers should plant trees to a) create attractive dwelling places for settlers, b) to create shelter for buildings, and c) to provide shelter for gardens and fruit trees.

The Department of the Interior produced Forestry Bulletin #1 in 1910 as a detailed treatise on how to do proper planting, and the distribution of this bulletin would have helped the busy inspectors, whose work loads were constantly increasing. The railway lines were expanding, and while this meant more settlers to be visited, the inspector was able to get about his district with ease. The railways also transported the trees to the various communities, and the progress of tree distribution can be judged from the map that accompanied the 1910 Forestry Branch Report (Fig. 6-2)⁵ Morden, Miami and Roland stand out as major recipient stations. This reflects the fact that these prairie people were altering the landscape by creating farmstead shelterbelts, many of which still may be seen in the area today.

Norman Ross, Chief of the Branch was able to report at a 1912 Canadian Forestry Convention that over 85% of the

5. Canada, Sessional Paper 25, Department of Interior, "Forestry Branch Report, 1910."

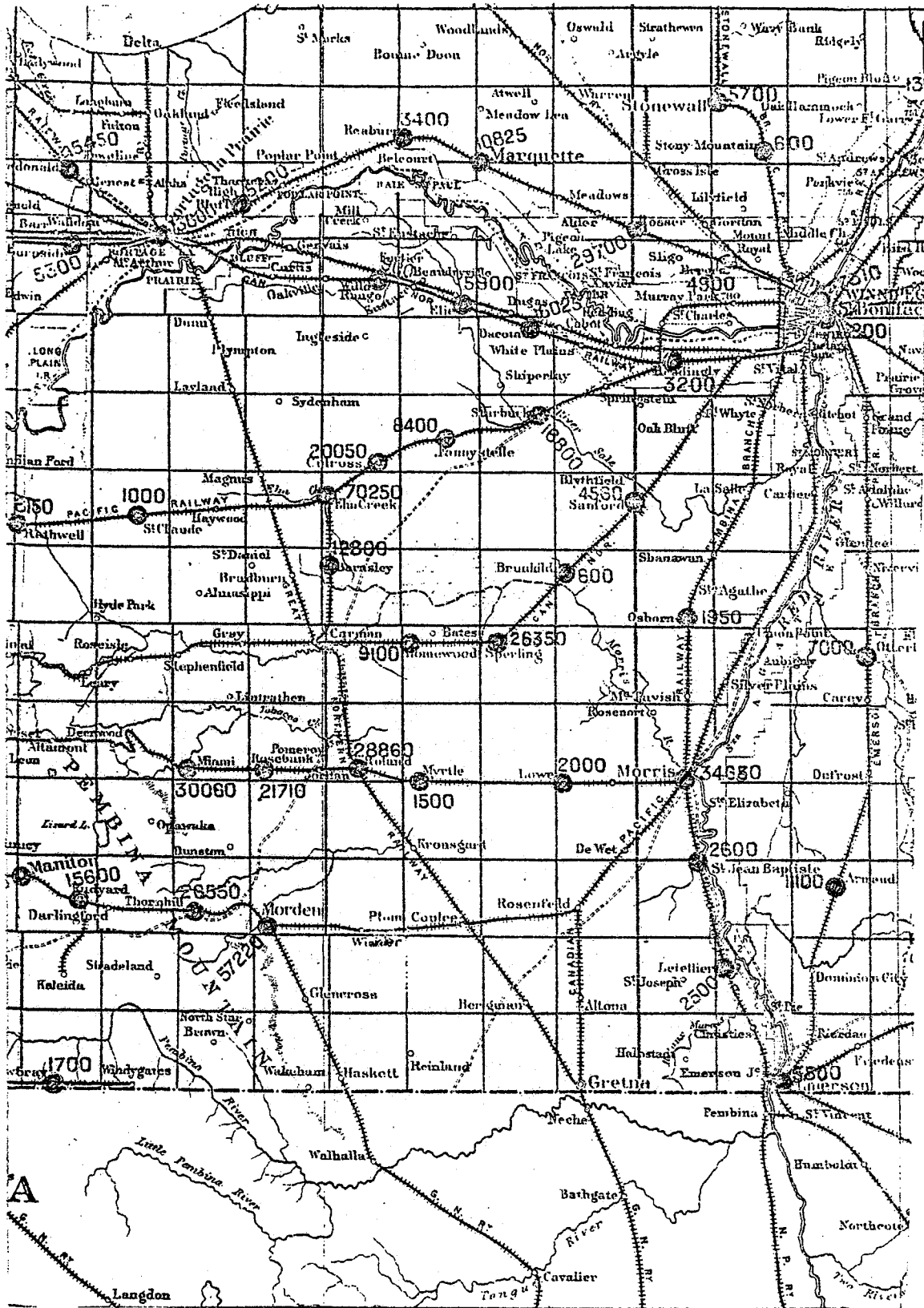


Figure 6-2 Portion of 1910 map of trees distributed 1901 - 1909 (Canada, Sessional Paper 25, 1910)

trees planted had survived and that it was suggested that the plantings to follow should be set out as future fuel sources. His aim was to save the farmers the expense of travel to wood sources and the cost of buying fuel from elsewhere. The 1913 Convention also advocated gaining the interest of children by promoting tree planting through the schools, some aspects of which will be described in a later part of this chapter.

The Forestry Branch program gives us statistics of applicants and trees distributed for the Prairies (Fig. 6-3). While this distribution began in the eastern side of the prairies and spread westwards, the trends may be studied as a way of judging the scope of the project, the fluctuations in interest, and the possible level of interest in the Carman-Morden area. It is assumed that since the people of Carman-Morden area were leaders in the tree planting of the 1950's that they would also have been vitally concerned during the 1901-1940 era. And again, the existing farmstead shelterbelts are mature stands, many that would date back to the early decades of the 20th century, a period known as one of agricultural progress in farmyard and field. Thus, the Carman-Morden region would likely have mirrored on a smaller scale the trends of the work of the farmers across the prairies.

Figure 6-3 shows that the greatest number of trees were distributed during the affluent farm period at the beginning of World War I and following the opening of the Sutherland Nursery Station in 1915, and that a downtrend followed

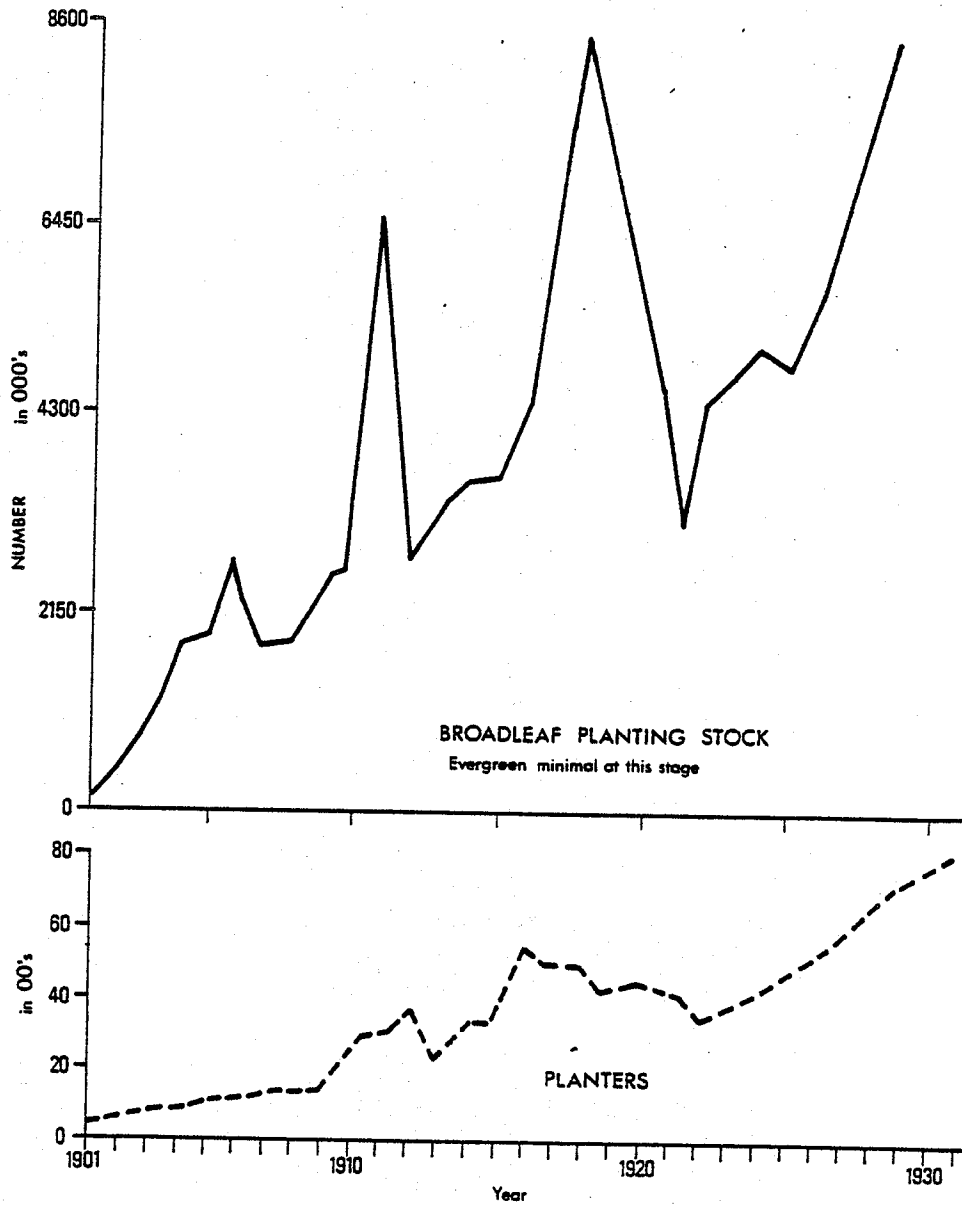


Figure 6-3 Tree Distribution and Recipients, 1901-1931
 Reports of the Dept. of Interior, Forestry Branch,
 for the Prairie Provinces

the war, during a time of high inflation, labour shortage and low farm prices. With a return of a better economic climate in the mid 1920's interest revived, with many applicants extending existing shelterbelts set out a decade earlier and planting new areas. Distribution rose to a record number of 8,673,650 broadleaf trees to 6486 farmers, with also 138,700 evergreens to 966 farmers in 1928.⁶

The drought in the 1930's affected both the tree belts and the availability of nursery stock. There was a great increase in the distribution of caragana seed as farmers sought to grow hardy shelter for their farms. In response, both Indian Head and the Sutherland Station until it was closed in 1966 were taken over by the federal Department of Agriculture, and we shall see more of their work later.

There is an interesting side to the "Tree Planting on the Plains" era. In 1915 the United States administration had looked at the Canadian system of tree seedlings distribution and supervision and had adopted it to assist their farmers in the prairie states. Following the dust storms of 1934 the Prairie State Forestry Project (Better known as the Shelter-belt Project) was launched by President F.D. Roosevelt

6. C. Leavitt, Forest Protection in Canada 1913-14 (Toronto: 1915) reports that the species proportions in the tree planting stock gradually changed from elm and Dakota cottonwood and maple to maple, ash, various willow and caragana. The figures graphed may seem too large for the amount of area that was planted, but the change to caragana meant a 1 foot spacing as opposed to the 4 foot interval for other species, so less total acreage would result. After 1911 various species of conifers were also distributed.

and his administration. Its goal was to modify man's surroundings by controlling soil drifting and, using relief funds, provide employment for residents of the stricken region.⁷

The Department of Agriculture Forest Service set out to plant almost two million acres to north-south windbreaks occurring every mile east-west in a 100 mile belt from the U.S. borders (south of the thesis area in North Dakota) to Texas. (Fig. 6-4)⁸

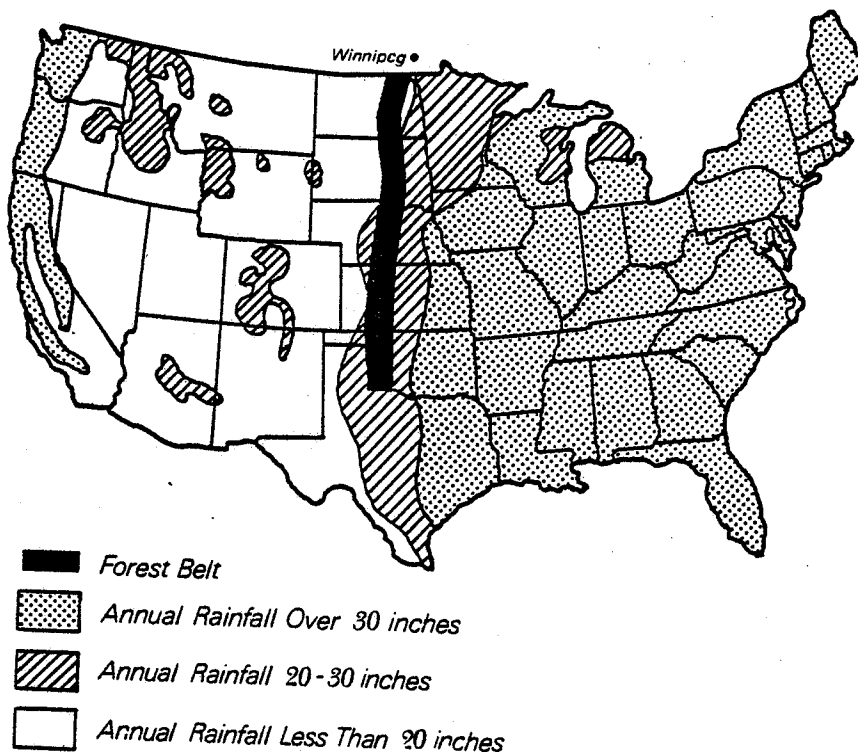


Fig. 6-4 The Great Shelterbelt Project

(redrawn from A.T.A. The Forest News Digest Service, Sept., 1934)

7. T. Saloutos "The New Deal and Farm Policy" Agricultural History 43(3) 1969, pp. 351-3.

8. American Tree Association The Forest News Digest Service (Washington, Sept., 1934), p. 1.

While the American project was launched in the midst of great controversy, it was based on scientific work that had been done in Russia and on the Canadian plains. The supporters summarized all of the points made by tree planters since the early 1890's - that tree belts provided shelter, they reduced losses from exposure, they provided fuel, and a suitable habitat for gardens and wildlife, especially for birds which could reduce the damage to crops by insects. With a New York Times photographer's two-page layout, August 30, 1936 contributing to the favourable climate of opinion, and good work by the foresters based on their borrowed information, fortunately the project did go ahead and it brought those benefits to the area.⁹

In Canada the Prairie Farm Rehabilitation Administration (P.F.R.A.) also saw the urgent need to plant trees to control soil drifting and to give the crops shelter. It was suggested that belts two rods wide every quarter mile would be better than the U.S. plan, since the shelter effect extends out 10-15 feet for every foot of tree height. Rather than lease the land as it was done in the U.S., it was felt that the farmers would be glad to give the land and to provide needed cultivation.¹⁰ Some of the areas were organized into agricultural

9. See the enthusiastic discussion of this project in C.G. Bates "The Plains Shelterbelt Project" Journal of Forestry, Vol. 32, No. 9 (Dec. 1934), pp. 978-991.

10. Dept. Interior "R.D. Craig to H. Finlayson, Director of Forestry, August 11, 1934" PAC R.G. 39 Vol. 58, file 49099.

improvement associations and field shelterbelts districts, the latter being at Lyleton, Manitoba, Conquest and Aneroid, Saskatchewan, and Porter Lake, Alberta. Between 1935 and 1960 more than 1500 miles of shelterbelts were planted in these areas.¹¹ Figure 6-5 gives the trends in this distribution, with a maximum during the late 1930's and a gradual increase in the use of evergreens (some for field shelterbelts and some for farmstead shelter improvement).

While few of these tree distributions seem to have been in the Carman-Morden area, interest would have been kept up by the Country Guide, a weekly newspaper with a wide readership across the prairies. A sampling of it shows that both the main news items and Mr. Chipman (a noted horticulturalist from Charleswood in S.W. Winnipeg) writing a Fruit and Garden column emphasized the hardiness of caragana during a dry period, and stressed the benefits of shelterbelts. The pictures printed in the Guide always showed successful farms with flourishing trees around the farmstead and flower beds and orchards. The news of the Regina World Grain Show in July, 1933 mentions the Hon. James F. Bryant (Minister of Public Works for Saskatchewan) giving a paper on "Prairie Shelterbelts". His point was that the farmstead shelterbelts and their garden crops provided enough food to keep many farmers off welfare. He praised the free distribution of trees that

11. D.E. Ketchesen and A.G. Teskey "The Economics of Shelterbelts:..." MS, 1970, quoting earlier summaries by V. Hildahl.

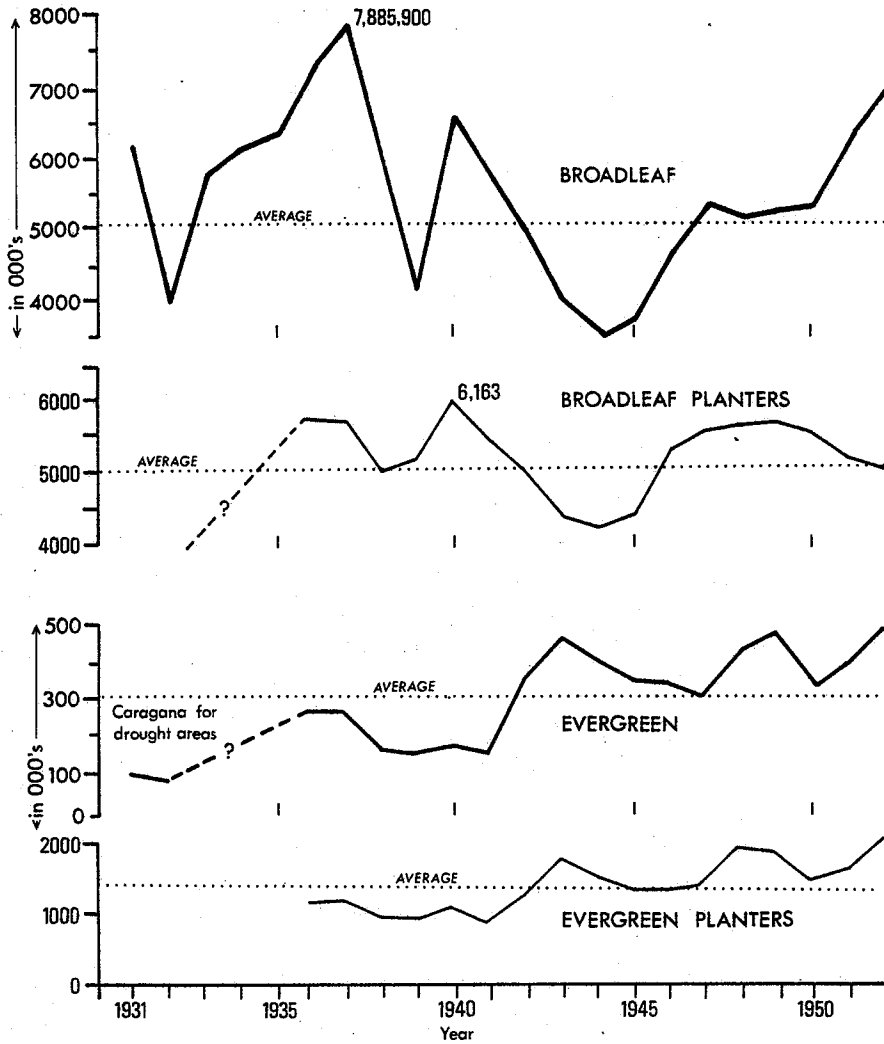


Figure 6-5 Tree Distribution to the Prairie Provinces
1932-1952

Source: Table 2 Dept. of Agric. Report of Dominion
Forest Nursery Station, Indian Head.
1948 - p.7 , 1952 - p.7.

had taken place 1901-1931 across the prairie provinces.

The harsh climate of the 1930s caused the farmers to reassess their approach to their land. What had been an attitude of exploiting the soil had to change to one in which the soil and the vegetation were seen as a partnership that could, with care and proper management, yield crops not only for one lifetime, but for all times. Following World War II, the prairie provinces moved to increase the stock of trees available for conservation plantings. Manitoba established nurseries at Hadashville, Morehand and Cash Lake; Saskatchewan started work at Prince Albert and Big River; and two were established in Alberta at Oliver and Brooks.¹² The major impact of these distribution sources was in Alberta, but these nurseries did help supplement the tree supply from Indian Head and Sutherland. For the thesis area the major impact was the work done by the province of Manitoba in the promotion and supervision of field shelterbelts 1954-70.

12. Hildahl and W.H. Gram "Tree Growing in the Prairie Agricultural Zone of Alberta, Manitoba and Saskatchewan" Typescript 1967, courtesy of V. Hildahl.

B. The Province of Manitoba Assists in the Promotion

In 1945, as part of the post-war reconstruction the provincial committee had J.H. Ellis, C.B. Gill and F.W. Brodrick¹³ produce a report entitled Farm Forestry and Tree Culture Projects for the Non-Forested Region of Manitoba.¹⁴ By 1948 the Soils and Crop Branch of the Province of Manitoba had looked at the experience of the federal P.F.R.A. at areas such as Lyleton, Manitoba and was able to plan a "Field Shelterbelt Program" to promote control of wind erosion. By 1954 their work was such that municipalities were encouraged to use tree seedlings from Indian Head, the provincial Forestry service tree planting machine, and a subsidy of one-half the cost to municipalities purchasing such a machine.¹⁵ There was also money to pay a man to run the machine, at \$2.00 a mile and to control the weeds at \$1.00 a mile. Between 1954 and 1969 3,763.51 miles of field shelterbelts were planted (Fig. 6-6).¹⁶ The major areas of tree distribution were in

13. Manitobans with experience in soils, forestry and Agriculture.

14. Manitoba Advisory Committee on Wood lots and Shelterbelts report to the Post-War Reconstruction Committee, Oct., 1945.

15. The tree planting machines were especially designed plows that allowed the rider to set in the planting stock as the furrow opened and closed beneath him. Most were manufactured in Lechner's Machine Shop in Morden and sold to the various municipalities. They are still in use in many parts of Manitoba. Production at Lechner's was as follows: 1 in 1954 for the R.M. Dufferin; 6-1955- (\$550) -1 to R.M. Thompson, and 1 to R.M. Stanley; 4 -1956 - 1 to R.M. Roland; 1957 -2 at \$600 each; 6 -1958 (\$600) - 1 to R.M. Pembina and 1 to R.M. Rineland.

16. J.H. Ellis The Ministry of Agriculture in Manitoba (Winnipeg: Dept. Agric.) 1971, pp. 393-398.

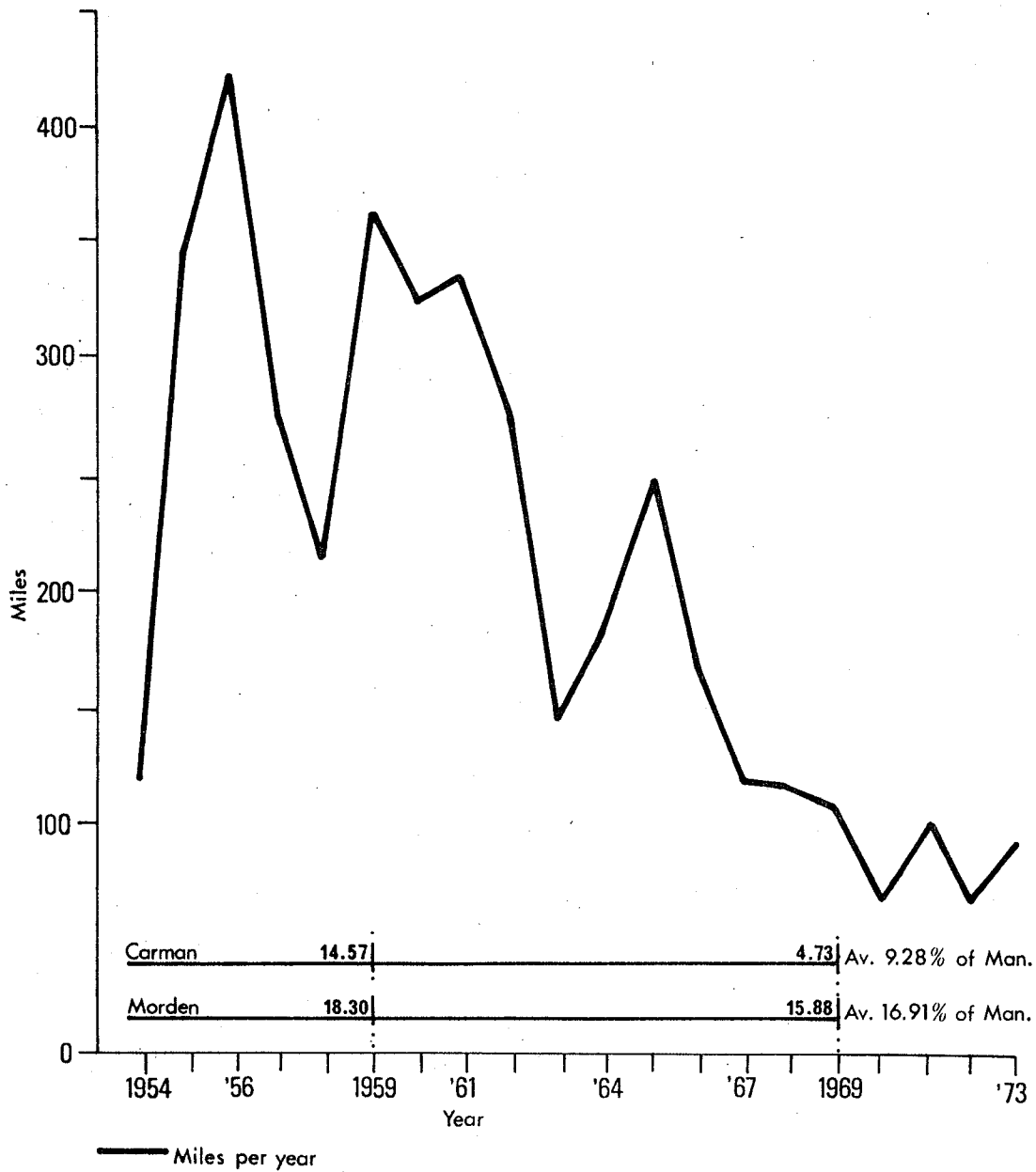


Figure 6-6 Manitoba Field Shelterbelt Plantings
1954-1973

Compiled from Manitoba Department of Agriculture
and Immigration Annual Reports.

order of importance - Carman district (635.35 miles or 16.91%), Morden district (349.46 miles or 9.28%), Melita district in S.W. Manitoba, and Morden's neighbour to the East-Altona district.

A comparison of the yearly totals with the records of requests for planting stock in the various Agricultural Representative's offices shows that a large percentage of the planting was done by adjacent farmers. This reflects a community awareness of the need for and the benefits of shelterbelt plantings.¹⁷ And the local agricultural representative worked hard to foster this awareness.

The representative inspected the area to be planted, drew up plans and took orders for planting stock, and supervised the planting work and the cultivation in the following years. Tillage field days were held at Darlingford in 1955 at which C.B.C.-TV made a film for the Country Calendar farm broadcast. The tree planting machine was exhibited at the Portage and Carman Agricultural Fairs in 1956 and 1957. The agricultural representative also held meetings to explain the shelterbelt program and organize shelterbelt associations.¹⁸ The inspection work in the Morden area in 1957-58 showed that 235 miles had been

17. A further plotting of mileage totals per quarter section over a number of years shows that many extended their initial plantings and replaced the trees that had died, so that today one finds a high survival rate, and that they form a significant part of the land use as seen in aerial photographs.

18. Morden Ag. Rep. district meetings: (Agric. Dept. Reports)
1955 - April - 70 attended at Thornhill, 60 in June at Darlingford, with 13 meetings in all. 1956, Nov. had 45 at Hochfeld, Feb. 27 had 180 in Winkler - the Canning Crop Growers. In July 1958 and March 1959 40 and 35 attended meetings in Altona.

planted and of the 210 miles on the 156 farms closely inspected, 25 miles had been abandoned. The main concern was that proper weed control was necessary for tree survival. Similar inspections were done in the variety of species used for the field shelterbelt plantings - chokecherries, rosybloom crabapples, triflora plums and pincherries, noted for their good growth and survival rate were used for spot planting in the field belts (There is a good example surviving in the field belts of W - 21-2-VII W).

The awareness of the benefits of tree planting was heightened by the local newspapers, The Dufferin Leader and The Morden Times. Each spring the Farm News section had articles on the value of shelterbelts. The actual planting operation made news. The first planting was reported on May 12, 1955 with about six miles being put in.

On April 5, 1956 farm news column stated that:

...field shelterbelts definitely reduce wind velocity and soil drifting,...for a distance of 20 times belt height....Another advantage, especially in the drier year is the trapping of snow on fields and the consequent yield increase due to the added moisture therefrom... There is, too, less snow and dirt in ditches and less surface evaporation.¹⁹

19. Dufferin Leader April 5, 1956, p. 4.

Plans for 1956 included planting of 422 miles of field shelterbelts, planned for 622 farms. It was mentioned that one-half of the mileage would be in the Carman-Morden district. An examination of the actual totals over the length of the project shows that only one-quarter of the mileage did get planted in that area, due to the increased popularity of the drive to get field shelter in other parts of Manitoba.

A mild winter in 1957 and the concern for soil moisture kept the topic of field shelterbelts before the reader. This was also a time of great activity in water control on the study area, manifest in the building of dams on the Dead Horse Creek and later on the upper Boyne River. There were also articles about woodlot. "Tree Farming" and reports of tree planting in the Spruce Woods and Sandilands forest reserves. June saw over 377½ miles planted in the province, and the news encouraged all to keep the trees growing by practicing proper weed control. Carman was still high on the list of areas receiving planting stock. That November the Farm News section reminded people that tree planting had been going on for over fifty years and

that the value of trees had been demonstrated time and time again, especially where there are large blocks of farms with planned plantings, and they can be had for the asking.²⁰

And ask the people did. Figure 6-6 indicates how many received trees during the two phases of 1954-59 and 1960-69,

20. Ibid., Nov. 7, 1957.

both on a provincial basis and for Carman-Morden area during the period of 1954-58. It can be seen that the greatest number of trees were planted in 1956 (422 miles) while the drier season of 1960-61 had the maximum number of planters involved (637). As the reports to the provincial government were made each year, the progress in tree growth was noted, the first plantings of 1954 attaining a height of over 28 feet by 1963, and the 1967 report remarks on how well the Pembina Triangle sub-region is protected from the wind by shelter-belts. From 1965 on much of the planting was as replacement for trees that had died, and by 1973 the province reduced its staff to just one technician, leaving the work to be carried out by the Agricultural Representatives as just one of their many services.

The changing of the landscape was almost completed on the broad scale, with only minor additions and deletions to come in the years following 1970. While the federal and provincial administrations had done the majority of the promotion and supervision, two other groups had done their part in the education of the public to the benefits of tree planting. While their impact is hard to measure, the Canadian Forestry Association and the Provincial Department of Education had worked hard for many years to educate the public about the benefits of putting trees around home, field and school yard.

C. The Canadian Forestry Service Assistance

An added impetus for promotion was the Canadian Forestry Service Tree Planting Car, a classroom on wheels. The Tree Planting Car, a project of the Canadian Forestry Association, was a railway car outfitted as a 100-person classroom on rails. The CPR donated the car, and both CPR and CNR moved it from station to station free of charge. From 1919 on it was on the road from spring to December stopping at the various towns, where the man in-charge would visit the schools and hold evening meetings in the car, preaching the value of trees and working with the slogan "Shelterbelts for Every Prairie Farm." From the 40's on the program used 16 mm. films and in many towns it was the first chance for many to see talking movies. The work of the Tree Planting Car was one way to keep the interest up and the available records show some effect on the Carman-Morden area (Table 6-7). By 1957, the Canadian Forestry Association was preaching to the converted, due to the shelterbelt associations in the area. By the 1960's the novelty had worn off. Most of the men were too busy with farm work or recreation, and improved roads meant greater mobility for the rural population. The main message went to the school children.

Figure 6-7 The Canadian Forestry Association
Journeys of the Tree Planting Car

Communities, attendance, contacts made 1946-71:
 (Compiled from the yearly reports of the Association)

Roseisle	Stephenfield	Graysville	Carman	Homewood
1946 -260	1946-95	1946-180	1946-509	1946-260
1950 -good	1950-24	1950-fair	1950-392	1950-360
1957 -75	1957-30	1957-60	1957-10	1957-15
Leary's	'46 appeal	sandy, the	'50	(heat)
1946 -65	of first	people are	Tribune took	'50
	movie	tree	pictures	women
		conscious		more
Roseisle CN	'57-J. Bergen		'57-interest	interested
section foreman,	Isaac D.		there-4	& doing the
H. Wiens also.	Peters		tree	tree planting
	P.A. Thiessen		planting	around the
			machines	home
Darlingford	Thornhill	Morden	Winkler	
1946-230	1946-145	1946-480	1939;1946-300	
1949-220	1949-30	1949-550	1949-505	
1953-small	1953-88	1953-30	1953 large	
1956-168	1956-132	1956-265	1956-225	
1963-70		1963-569	1963-590	
1971-102		1971-822	1970 -	
		'63-high	Stanley	
		winds gave	Conservation	
		a good	Association	
		object lesson		
		on the need		
		for shelter		
		belts		

Note * the high attendance included lesson at the schools
 (with consolidation reflected in the 71 figures)

D. Arbor Day

In searching for the basis of attitudes it is useful to examine the school system - that institution responsible for taking the wishes of the parents and the community and passing them on to the next generation. While the total area occupied in each community by school buildings and their grounds was small (about 4-6 acres per township) the example of the site and the teachings that went on in those buildings helped set many of the attitudes for a lifetime. People interviewed in the area, especially those whose schooling was in the one and two-room rural schools, all mention the school yard and the celebration of Arbor Day. While Arbor Day may have been observed only once or twice in nine years of education, it left an impression that is still part of an individual's perception of trees.

Ever since the late 1890's it had been to the future generation - the school children - that much of the efforts had gone to promote the benefits of tree planting. The Province of Manitoba's Department of Education had made tree planting part of the curriculum in science and agriculture studies, and had encouraged the observance of Arbor Day in bulletins and magazines for teachers. The field representative of the Department - the School Inspector - also pushed for proper observance as part of the classroom activities, and encouraged teachers and trustees to beautify the school grounds.

The observation of Arbor Day had been part of the culture of Manitobans of British or Ontario origins, and in 1884 it became part of Manitoba's laws. An amendment to the Agriculture and Immigration Act was passed that:

The Lieutenant Governor in Council may in each year by proclamation appoint as a public holiday to be observed throughout the Province, a day to be known as Arbor Day for the planting of forest and other trees.²¹

The activities of Arbor Day, itself a public relations activity, were complementary to the work being done by the Department of Agriculture. The purpose of this day suffered misunderstandings and apathy from the general public. The Department of Education took up the promotion of tree planting. Although the Department's first publications are in 1899, it seems that since 1892 most schools had been encouraged to use Arbor Day to good advantage. "But for want of definite direction however the results to date have not been important."²² It appears that many took the day in May as a holiday rather than preparing special morning lessons to emphasize the planting, and then taking an afternoon holiday as a reward and a time to apply the lessons at home.

To overcome this attitude, a full program for the tree

21. Manitoba Statutes 47 Vic. C/O s46, 1884-first proclaimed May 14, 1886.

22. Educational Journal of Western Schools, Vol. III, 1901, p. 50 - "Arbor Day".

planting day was printed,²³ and each year the Journal devoted part of its April or May issue to possible activities, songs, poems, etc. that could be used on the tree planting day.

The advice given was consistent with the discoveries of the Experimental Farms, recommending that plantings be of trees from nearby bluffs, streams, and from the Experimental Farms. Species best suited to the region were Manitoba Maple, basswood, elm, oak, cottonwood, hawthorn and poplar.²⁴ However, an article in 1913 again describes the misuse of Arbor Day as a holiday rather than a clean-up-and-plant day. It stated that the day's success and proper observation "rest largely with the teachers"²⁵ and that an organized program was needed. The Department of Education put some teeth into their legislation by declaring in 1914 that Arbor Day was a legal teaching day, not a holiday and:

If the teacher and scholars spend the forenoon in cleaning up the yard, planting trees etc. and so observe the spirit of the day they may take the afternoon for vacation and count the whole day. Where nothing is done along Arbor Day lines,

23. The historian, George Bryce, edited the text for the first series in Manitoba Agriculture course - Our Canadian Prairies (Toronto: Blakett Robinson, 1895). He followed this work with an "instructive novel", William Silverings Surrender (Winnipeg: Winnipeg Forestry Association, 1901) in which all the reasons for tree planting, and the methods to be used are propounded during the conversion of Mr. Silvering to the cause of tree planting. It was written in the 'everything-must-have-a-moral' style that was popular in reading materials for schools prior to World War I.

24. The major pamphlets were written by F.W. Brodrick, Professor of Horticulture, Manitoba Agricultural College, and he was a contemporary of Bryce.

25. Quoted from Departmental Bulletin in Educational Journal of Western Schools, Vol. XV, 1913.

however, the classes must continue throughout the whole day, as usual.²⁶

The Western School Journal continued to promote Arbor Day in its April and May issues during the 1920's and 1930's, much of it as gentle reminders to the children, on their page, telling of the benefits of trees. The Journal also quotes the Department of Education Bulletin in 1937, stating

Monday, May 10th has been set as Arbor Day. This is not observed as a school holiday. Teachers should take full advantage of this opportunity to do something towards the beautification of the school grounds. Sites now bare and exposed can be transformed into beautifully sheltered spots if the trustees and people will take action. If a comprehensive plan is to be attempted, the ground to be planted should be cultivated for one, still better for two years. With proper tillage of the soil successful planting and rapid growth is assured. When the Inspector reports that there has been proper preparation, the Department will send trees for the district at no expense except carriage charges from Indian Head.²⁷

The Inspector's Reports are available from 1899 to 1960. While the large inspectorate areas in early years meant that the remarks would be generalized, by the 1920s the smaller areas for each inspector allowed for more specific comments, usually collated and printed on a topic basis. The "Condition of grounds and the planting of trees" were part of the form to be filled in by each inspector (1883 to 1964).

26. Ibid., Vol. XVI, 1914.

27. The Western School Journal, Vol. XXXII(5) 1937, p. 138.

Often the visit by the inspector afforded a golden opportunity to encourage the teacher to do practical and effective Arbor Day lessons, and the inspector could chide the trustees into providing the proper learning atmosphere.

Inspector E. Best, who looked after the Morden to Killarney area in 1894 states:

It is to be regretted that an unfavorable report is due on the state of school yards and school environments. Fencing, tree planting and flower cultivation do not receive attention in proportion to their educational influence. The unsatisfactory condition of this feature of the work is the result of culpable indifference and negligence on the part of trustees and teachers. It is to be hoped that the introduction of Agriculture may work a reformation in this field, otherwise the legislative grant should be promptly withdrawn from all schools refusing or neglecting to take action in the matter.²⁸

By 1900 Inspector A. McIntyre in another district was able to say:

The picture of a school house surrounded by bare coramous is gradually vanishing. I can report with pleasure the reclaiming by several districts of the grounds immediately surrounding the school house. A tidy fence is but the prelude of grounds properly sodded and adorned by shade trees and flower beds, all of which go far toward the cultivation of the aesthetic and the orderly. The trustees of the county districts are, as a rule, busy men, but I am free to say that they will do their share in beautifying the school grounds if fortunate enough to have a teacher who has the courage and the tact to lead the way.²⁹

28. Manitoba: Report of the Department of Education 1894, p. 34.

29. Ibid., 1900, p. 41.

The fact is that the teachers changed schools often, and interest in tree tending (which needed to be done each year) often changed as well. Succeeding reports kept pushing for active observance of Arbor Day, and systematic work in fencing and tree planting. The work could be part of practical lessons in forestry and horticulture, and a janitor might be assigned to plant and cultivate trees, to extend the efforts of the first year or two of grounds beautification. In 1907 J.M. Friesen, Inspector of Mennonite Schools noted that trees were not planted where the teacher took Arbor Day as a holiday. He wrote "If there are no means to induce the teachers to comply with the purpose of Arbor Day there would be no harm in having it struck off the list of holidays altogether."³⁰

Fortunately Arbor Day was not cancelled. The Department of Education had a pamphlet called Tree Planting on School Grounds sent in 1934 and 1948 to schools and secretary-treasurers of school boards. The authors included photographs of the barren prairie school showing it as a unsuitable environment for education (Fig. 6-8-a). Photographs of schools and parks that would serve as models for the school district planning improvements to their yards are shown in Fig. 6-9-b and c. The problem with the plan by C.B. Gill³¹ (Fig. 6-9-a) is that while it is correct, with snow trap up-wind and allowing ample sheltered space for playing fields, it was for an area four

30. Ibid., 1907, p. 75.

31. The forester who worked with Ellis and Brodrick for the 1945-54 provincial shelterbelt program.

times larger than the average rural school ground. It was only in a consolidated school, like Darlingford, across from the model park (Fig. 6-9-c) that there was a large enough area to carry out such an ambitious plan.

The accompanying four photographs show what could be done to change a large school on a bare area (Fig. 6-10-a) in the northwest part of Darlingford into an island of shelter (Fig. 6-10-b). This aesthetically pleasing area (Fig. 6-10-c and d) could not help but be a lasting influence on those educated in those surroundings.

The Forest Tree Nursery Reports from 1937-52 give the number of trees distributed to schools in Manitoba (Fig. 6-11). The trends are similar to those that we have seen in the farmstead shelter planting distributions. After the high interest of the late 1930's and the decline during the war years, there was a small resurgence during 1950-51. But the decline in rural school numbers meant that by 1957 very few Arbor days were held by schools. The cycles of activity did occur, often because the idea was in general vogue, or because a particular teacher or inspector promoted school ground beautification. The significance of the activity may be seen in the creation of green islands for prairie children.

The half yearly report that came with the official register had as item 11, Building and Equipment, subitem 5, "Number of trees planted during the year..."³² so the idea

32. Rosythe Registers 1924-35, Kronsfield Register, 1906.

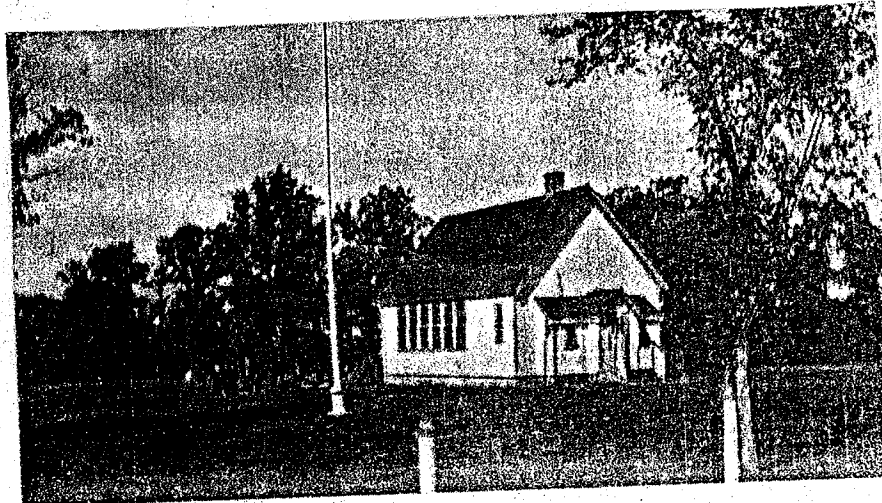


Fig. 6-9-b A SCHOOL WITH TREES, PROTECTED, AND BEAUTIFUL

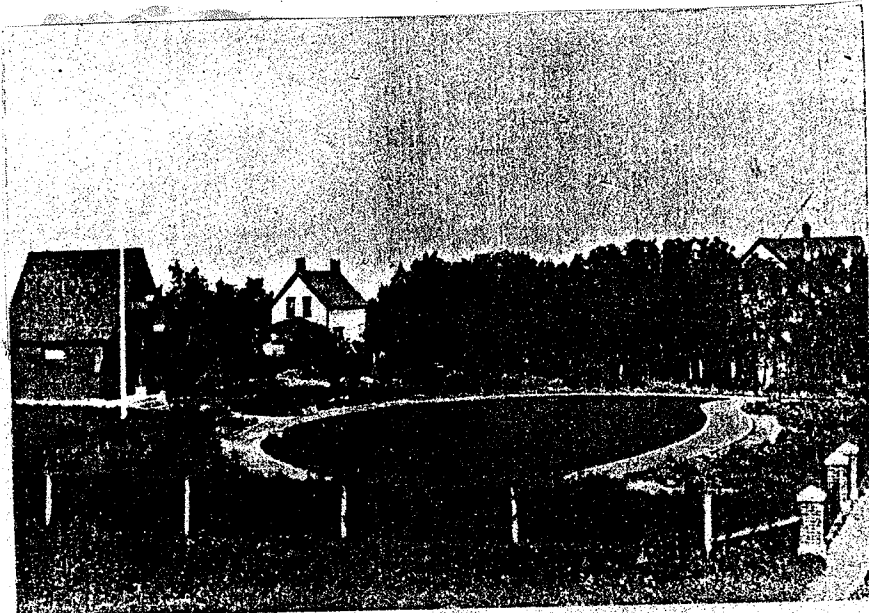


Fig. 6-9-c DARLINGFORD MEMORIAL PARK—A FINE EXAMPLE OF WHAT TREE PLANTING
COULD DO FOR YOUR SCHOOL GROUNDS



Figure 6-10-a Darlingford School #91 c.1915 (PAM)
Note the lack of trees.

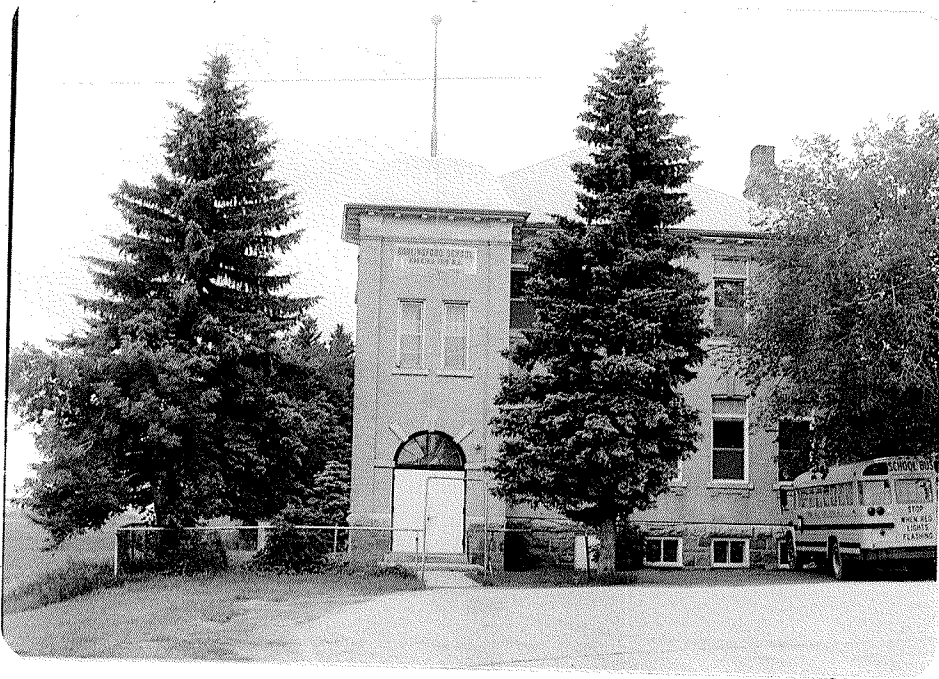


Figure 6-10-b Darlingford School, 1979.
Note the mature shelterbelt.



Fig. 6-10-c Darlingford's inner play yard, 1979.



Figure 6-10-d The larger ball field with mature deciduous and evergreen shelterbelt, Darlingford.

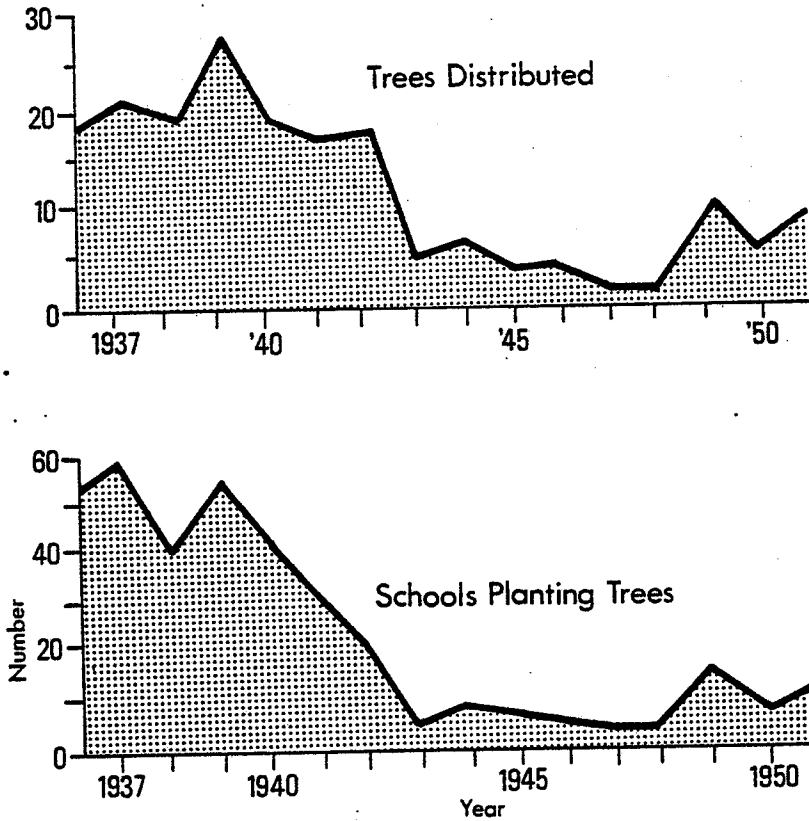


Figure 6-11. Tree Distributed to Manitoba Schools, 1937-1951
 Table 4 Canada, Dept. of Agric.
 Report of the Dominion Forest
 Nursery Station, Indian Head.
 1948-p.11 , 1952-p.9.

of tree planting was in front of every teacher completing a Department of Education report. The trustees could not plead ignorance, for the Inspector's report form in the 1880s had "State of yard, fence, closets or privies, outhouses, well or other water supply, drainage, tree planting, and other incidentals" and in 1950s there was a line under "General Conditions - trees and shrubs."³³

A specific case can be seen from an examination of the registers of Lorne School #56. The teachers reported:

Lorne School District (Founded 1878)

Arbor Day 1888, 1889, - 1898, 1902
and

Trees planted 9, 16 (died) 75, 100's

Holiday taken 1907 1910 1911 1913

Arbor Day 1920, 1925, 1926, 1931, '32, '33, -36, '37, '39,
observed. 1940 - additional land bought and trees planted
to west and south border since shelter
needed.

The school received a certificate for taking part in 1967 Centennial tree and shrub planting program, yet that fall the school was closed following consolidation with Morden. The land was sold and cleared, and in 1980 the area is part of a regular field.

33. Lorne SD #56 report - PAM RG 19.F2 Pembina Valley SD.27.

An examination of registers in the Garden Valley School Division office at Winkler and others in the Mennonite Archives in Winnipeg reveals the two major factors at work. The encouragement of the government official - the school inspector, and the interest and organization skills of particular teachers were responsible for the successes of Arbor Day.

During the 1930's Inspector G.C. Neufeld inspected the schools in the Winkler area. To him gardens, flowering shrubs, and tree planting were part of the necessary activity clubs in each school.³⁴ And it is during Neufeld's time that many teachers remained in their position for more than 3 years, each year following up the previous year work with more tree planting (See again Fig. 6-11).

Credit should also go to those teachers, who used flowers from the Brandon Normal School (itself a showplace of horticulture), shrubs from the Morden experimental station (under Mr. Leslie's care), and trees from Indian Head. Their work in creating an arboreal surroundings out of what was prairie was often capitalized on by later teachers who competed for the yearly Wolkof trophy, awarded for the best school grounds. The trophy was offered by the man who had had beautiful grounds at the schools where he taught, such as Kronsfield, Blomstein, Winkler and Valleyfield. The first year (1946-47) that the trophy was offered the award's

34. Conversation with J.P. Dyck, teacher at Birkenhead 1931-37. It is strange that his reports printed by the Dept. of Education never mention his work on this topic.

Committee felt that Mr. Wolkof's school was the most deserving.³⁵

It was a case of a teacher having the vision and tact to organize students and trustees to see that the ground was prepared, the planting done, and the cultivation of the plantings kept up until they were well established. And today, with school consolidation, many farmers have taken over the old school grounds, and put their homes in a ready-made shelterbelt, thanks to the earlier work of teachers and students.

Some indications of the decline in Arbor Day activity can be seen in the 1949-50 report of Inspector Day. "Tree planting is not popular because trees induce snow to drift and block the roads,"³⁶ and when one considers that the average school ground was one acre adjacent to a road, any shelterbelt would cause a winter hazard on the newly constructed system of roads in the area. With rural depopulation and the school consolidation movement of the 1950's-60's the program died out. Arbor Day became just one of the many other activities to be met in the program of the larger village and town schools.

35. Manitoba: Dept. of Education Report 1946-47, p. 39.

36. Ibid., 1949-50, p. 60.

CHAPTER VII

PRESENT PATTERNS AND PAST LEGACIES

Since the beginning of agricultural settlement, mankind has wrought profound changes in the arboreal vegetation of the study area. The overall effect of these changes is clearly apparent from a comparison of the vegetation as recorded by the surveyors (Fig. 7-1) on the eve of settlement, and the tree pattern of the same area in 1970 (Fig. 7-2). A more detailed view of recent changes in the distribution of the arboreal vegetation can be obtained at the township level and is presented for the period 1959-1970 in Figures 7-3, 7-4, 7-5 and 7-6.

A. The Regional Pattern of Arboreal Vegetation Change 1870-1970

The 1970 distribution of trees in the study area (Fig. 7-2) was compiled from township airphoto mosaics of the Lower Inventory for Tomorrow program of the Department of Agriculture, 1970. These photos were made as a means to monitor the area taken out of crop that year as an attempt to lower the surplus grain on hand. For our purposes it gave good coverage of the tree distribution in the study area. The arboreal patterns shown in this figure are the result of almost a century-long period of modification of the pre-settlement landscape by both clearing and planting of trees. A comparison of this figure with that of

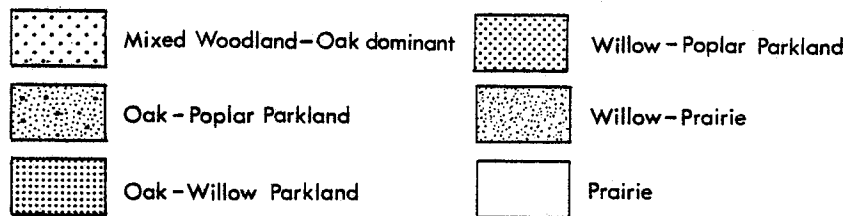
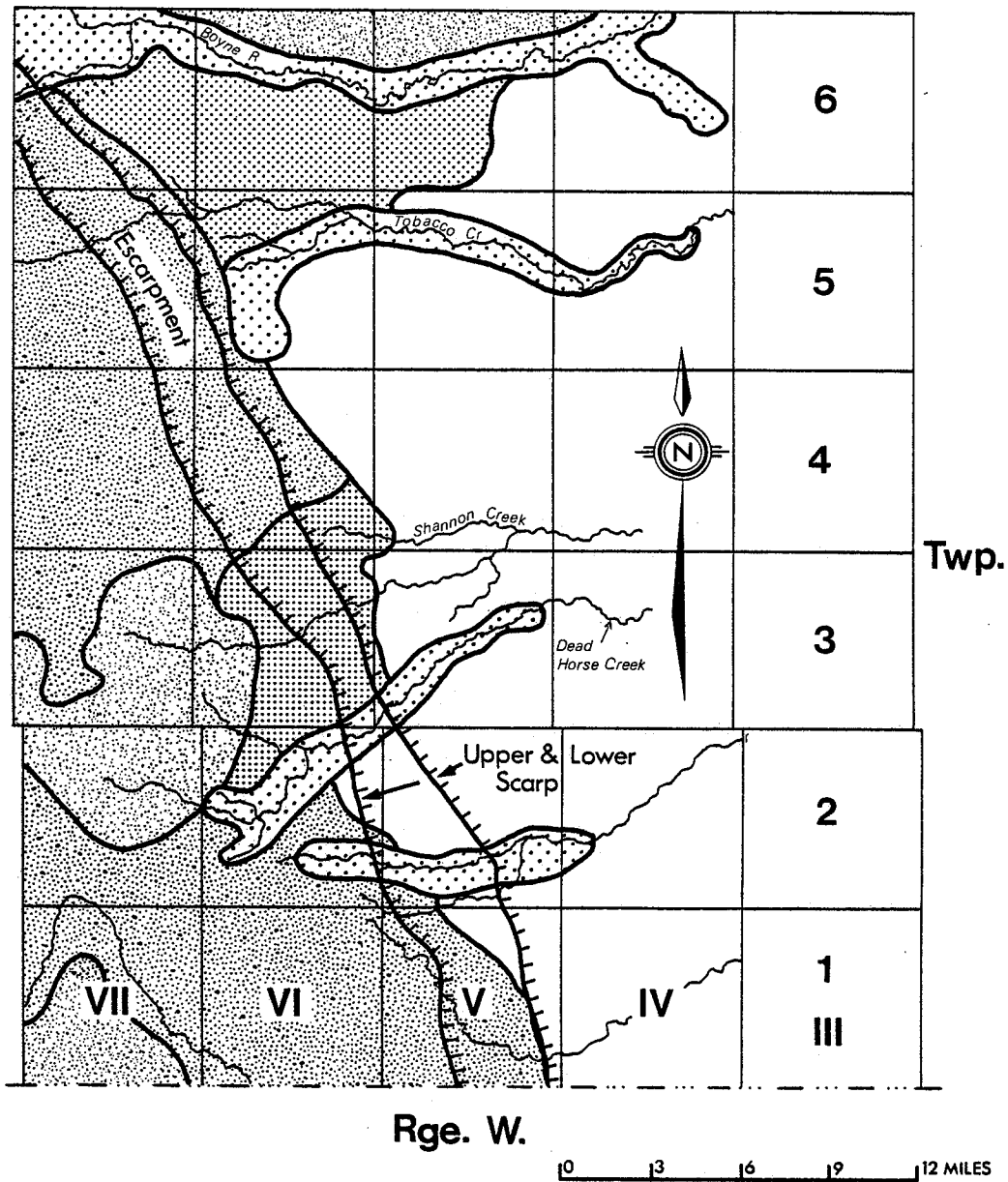
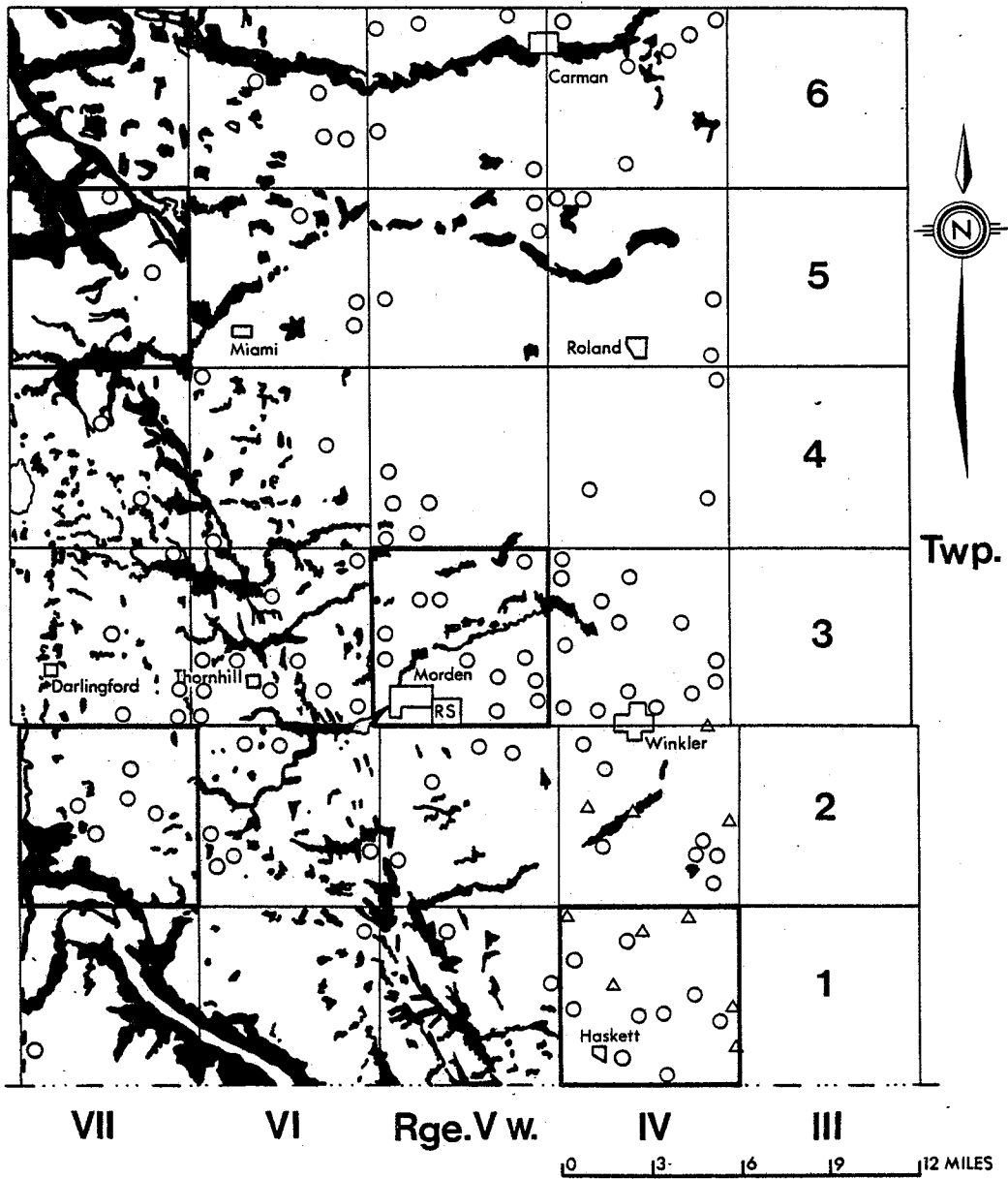


Figure 7-1. The Vegetation of 1871-76. Compiled from the Surveyors' Notebooks. PAM RG 17 Ch1.

Fig. 7-1 shows that most of the level land above the escarpment has been cleared and below the escarpment the riverine trees have been trimmed back. In many places farmsteads have been set into this trimmed environment. The major areas of natural vegetation now remain on the more rugged terrain. This is found on a south tributary of the Boyne called Roseisle Creek, in the northwest corner of the map, on the adjacent escarpment to the southeast, and along the slopes of the Pembina River Valley. Also in the northwest and Township I R.V. there are trees left on the gravel ridges at the foot of the escarpment. The cores of the old galeria forests of 1870 remain as major features along the more entrenched parts of the streams, especially at Glencross (T.2 R.IV), Dead Horse Creek north of Morden, Tobacco Creek (T.5 R.IV), and the Boyne River across Townships 6.

The area of field shelterbelts is densest around Winkler and Morden and west above the escarpment to Thornhill and Darlingford. This corresponds with the area now growing specialty crops such as dill and soybeans.

The originally heaviest treed area southwest of Miami (T.4 R.VII) and in the Roseisle area (T.6 R.VII) and in the Pembina Valley (T.1 R.VII) have had very little planting of field shelterbelts. More surprising is the lack of interest in field shelterbelts in the "prairie" area around and southwest of Roland (T.4 R.V). On the other hand, there has been considerable interest in farmstead shelterbelts, as seen in the request for planting stock and in the surviving farmstead belts.








-  Timber
-  Field Shelter Belts
see detailed maps for farmstead shelter belts
-  Mennonite Village treed area
-  Morden Research Station experimental farm
-  Detailed Maps: Twp. 1 2 3 5
Rge. 4 7 5 7

Figure 7-2. The Vegetation of 1970. Compiled from Dept. of Agriculture LIFT Photos.

B. Local Patterns of Change, 1959 - 1970

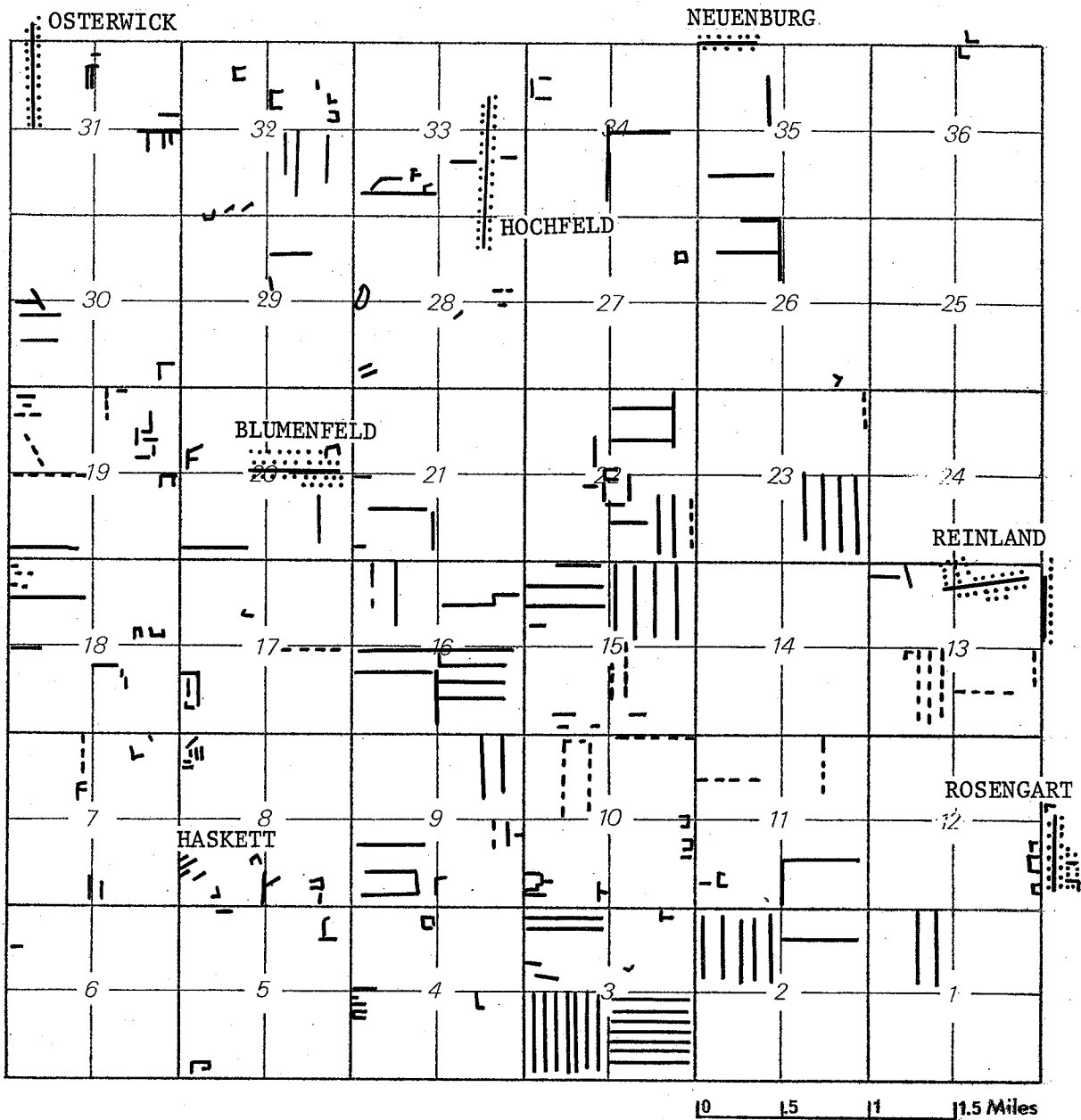
A more detailed investigation of recent patterns was conducted by examining changes in the arboreal vegetation of four selected townships. Figures 7-3 to 7-6 portray the vegetation changes during this period, for a prairie and Mennonite village area, for a once timbered area above the escarpment, for an escarpment and town area, and an escarpment and rural township area. Each map was compiled by comparing the 1959 air photos and the township mosaics of the 1970 LIFT program.

1. Township 1-IV-W1 (Fig. 7-3)

This, prairie township, part of the Mennonite West Reserve, was settled in villages over one hundred years ago. By the turn of the century most villages had good shelterbelts of cottonwood and Manitoba maple (box elder). In 1908 the Great Northern railway townsite of Haskett was established on Section 8, and some trees were planted around the townsite. A few trees at the school site on the northwest side may date from this period, but most are likely those placed there in 1951-52, when the school register reports that Peter Brown and his pupils planted 375 trees.¹

The majority of the field shelterbelts date from the

1. Canadian Mennonite College Archives, Register for Haskett, (1951-52).











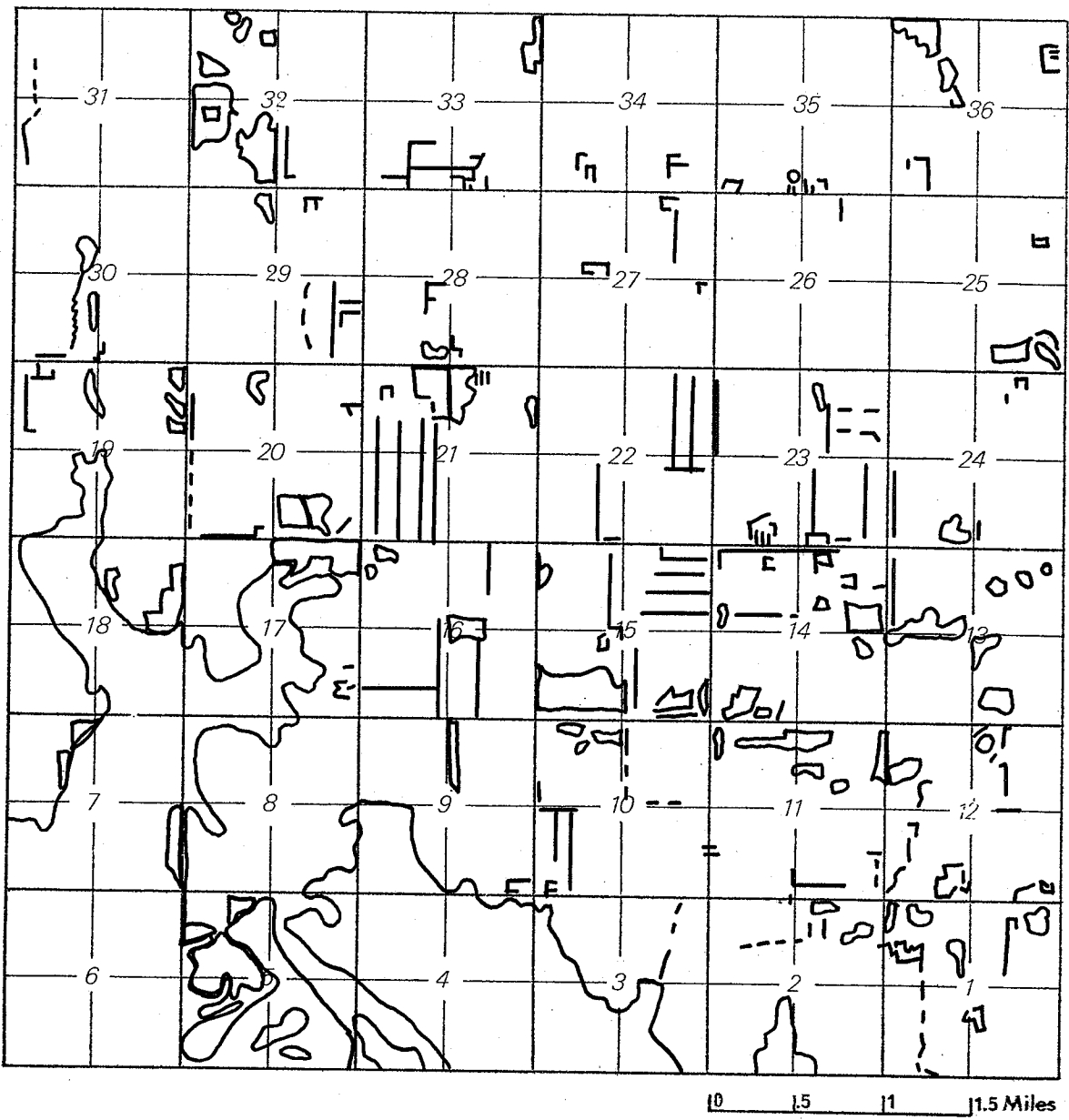
-  Woodland
-  Removed Woodland
-  Field Shelterbelts
-  Scattered Shelterbelts
-  Removed Shelterbelts
-  Added Shelterbelts
-  Farmstead Shelter
-  Mennonite Village Trees

Fig. 7-3 Tp.1-IV W1

1950's planting era. They are very noticeable on sections 2, 3, 15 and 16, with others across the rest of the township. Since 1959 the new belts were planted on sections NW13, SW30, SE32, while at the same time there has been clearing to create complete fields on NE27, SE31 and N $\frac{1}{2}$ 32. The dense pattern of man-placed arboreal vegetation parallels the northwest-southeast trend of the sandy ridges, where the trees are acting as a control factor on soil drifting.

2. Township 2-VII (Fig. 7-4)

This township, with its rolling land to the NE of the Pembina trench, was originally oak-poplar bluff terrain. Since settlement occurred, the wood lots on section 20 have only a remnant left, and there is only a good farmstead shelter left of the woodlots on NE section 1. Much of the area was cleared prior to the 1959 photos, but there has been some clearing since to increase the acreage under crop. Most of the plantings must have followed the 1956 meetings at Darlingford, for the only new strips of trees since then are in sections SW24 and NE13. On NW14 the plantings of Lorne School District have been cleared away for farmland, while Pearce School on SE12, with its natural bluff and yard shelterbelt, has become a residence. This township is a good example of man's modification of the treed domain to suit the demands of modern agriculture.










-  Woodland
-  Removed Woodland
-  Field Shelterbelts
-  Scattered Shelterbelts
-  Removed Shelterbelts
-  Added Shelterbelts
-  Farmstead Shelter

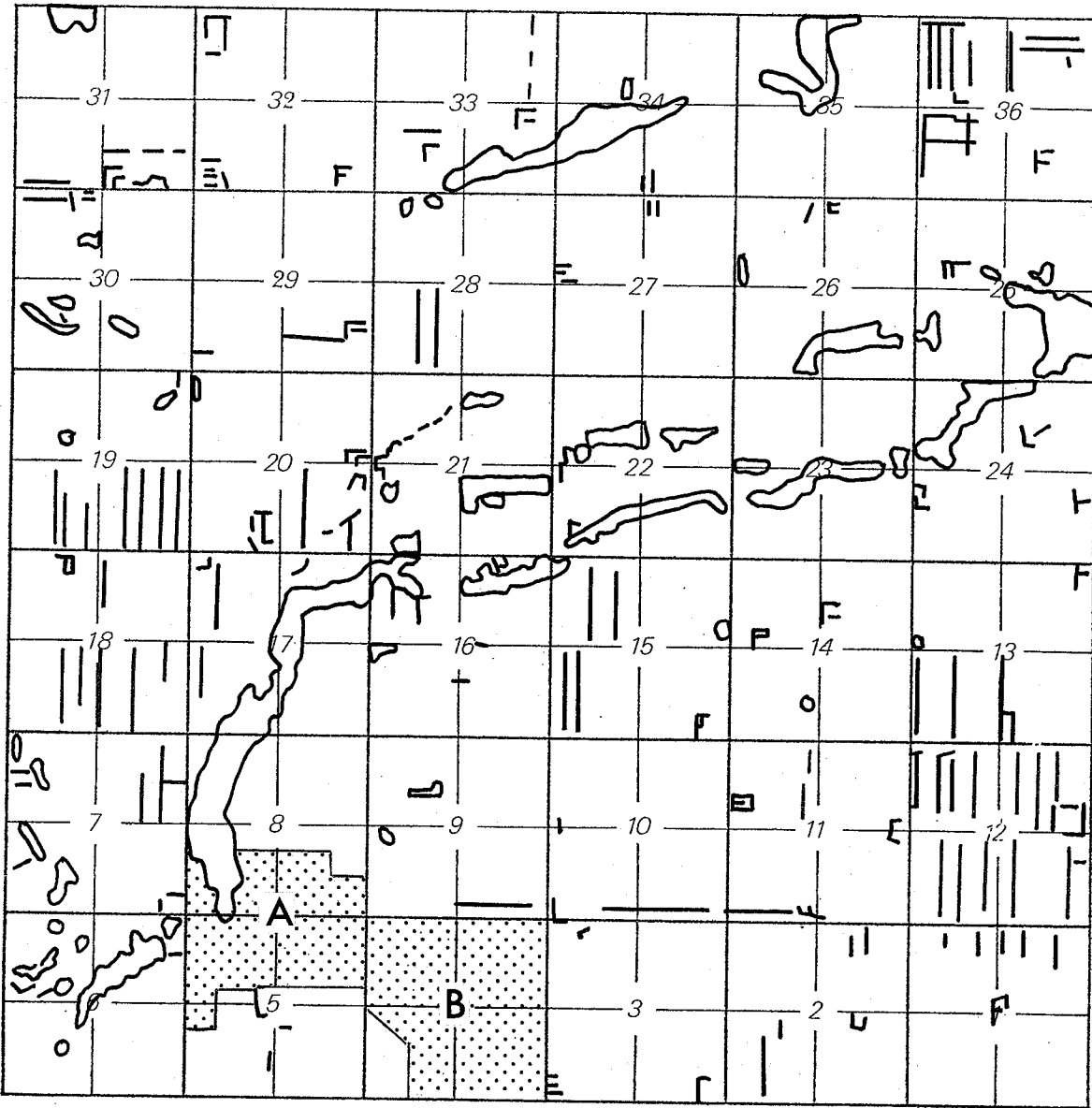
Fig.7-4 Tp 2-VII W1

3. Township 3-V W1 (Fig. 7-5)

This township, on the escarpment and valley of Dead Horse Creek retains its riverine woods, which show up quite distinctly. Most of the clearing has been done on small parcels of land in an effort to crop some of the less rugged stream edges (sections 21 and 22). The two major zones of change of the tree pattern are the townsite of Morden and the adjacent Experimental Station (see the detail in photograph 7-16 c and the discussion of townsites). The township residents participated actively in the shelterbelt planting, scheme, with roughly one-half the belts in place by 1959, and the remaining half having been planted since then. The specialty crop farmers now benefit from these field belts, and many of the small areas with trees around shelter new homes that are part of the "exurban" homesteads spreading out from Morden. The former Forest Tree Claim on E $\frac{1}{2}$ -18 is now a grain field. Either the trees did not grow beyond the initial stage, or they have been cleared by owners of the land since then.

4. Township 5-VII W1 (Fig. 7-6)

This township on the upper edge of the escarpment was also originally a dense area of oak-poplar bluff. It is drained by the Tobacco Creek, and its rugged valley is still heavily covered in trees (Sec. 27 to 30) as is the South Branch of Tobacco Creek in sections 1-6. The slope of the











-  Woodland
-  Removed Woodland
-  Field Shelterbelts
-  Scattered Shelterbelts
-  Removed Shelterbelts
-  Added Shelterbelts
-  Farmstead Shelter
-  A-Morden, B - Experimental Farm

Fig.7-5 Tp.3-V W1

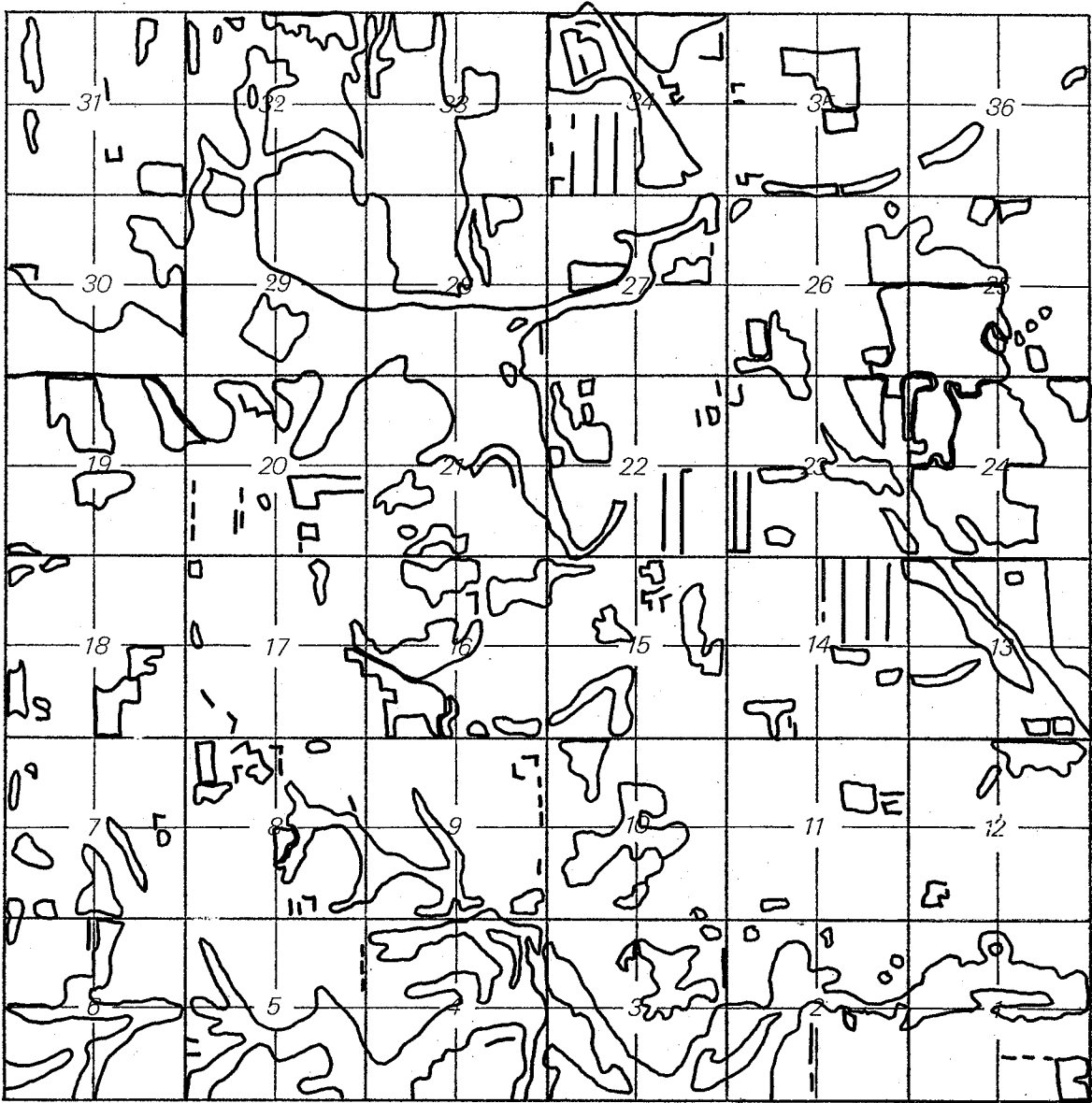
escarpment and the gravel ridges at the foot of the scarp are still characterized by their groves of trees. The clearings are largely on the more level land as the farmers seek to add to the area in crop. This clearing was continuing on the scarp's second crest on the southeast corner of SW21, during 1979. The planting of field shelterbelts seems to be the work of only a few farmers, such as on NE14 and SW34. The site of Arbor Day observance at Deerwood, SW20, is today only a lone tree and few lilacs left on an abandoned site next to the community hall.








These four sample townships present patterns that are at once similar yet varied. The varied nature of the patterns within the townships reflects different site characteristics and human reactions to them. The similarities result from an ongoing process of converting the pre-settlement landscape to a man-made one which, in terms of the arboreal vegetation, has been manifest in a net reduction of natural woodland and an expansion of the man-made treescape.

C. Other Perspectives on the Arboreal Vegetation

1. The "Natural" Woods

Although the natural woodland has been diminishing, the "woods" still form a goodly part of the ordering of the environment in the Carman-Morden area today. However, there is no longer the need for trees as fuel, except where the recent energy-saving trend to wood burning stoves is followed. And



-  Woodland
-  Removed Woodland
-  Field Shelterbelts
-  Scattered Shelterbelts
-  Removed Shelterbelts
-  Added Shelterbelts
-  Farmstead Shelter

0 1.5 1.5 Miles

Fig.7-6 Tp.5-VII W1

there no longer is the means for efficiently marketing the wood, since most coal and wood dealers have gone out of business. This means that the natural woodland along the rivers and the bluffs in fields are trimmed to suit the needs of farmstead and cropland (Fig. 7-7-a). Where the land is too steep for farming, natural trees remain, especially along the escarpment (Fig. 7-7-b). On the plains area trees have been left or have grown back along many of the streams, as at the old site of Nelsonville (Fig. 7-7-c). A more detailed examination of woodland sites shows that many have been modified by the browsing of cattle pastured in the oak-poplar bluffs (Fig. 7-7-d).

Today, there are only a few reminders of the early era of utilization of these natural woods. There are some log buildings, now mainly used as sheds or outbuildings on a few farmsteads. Some of the trails in the escarpment area would be legacies of earlier wood gathering journeys. It was in the transition period, during which an increasing population carved out homesteads and fields from the forest and grassland, that a man-made treescape evolved.

2. The man-made treescape-phase one 1870-1930

The first settlers and their children utilized the local woods for building material (Fig. 7-8-a), for fencing, and fuel. The creation of the man-made treescape began about the turn of the century, especially when the large "cubic" brick or stone houses replaced the initial log or frame house.



Fig.7-7-a Trimmed Woodland for cropland



Fig.7-7-b Escarpment edge trees.



Fig.7-7-c Riverine trees- Old Nelsonville Site.



Fig.7-7-d Cattle browsing has removed the understory.



Figure 7-8-a A Home in and of the Boyne Woods -
1905 (PAC 21568)



Figure 7-8-b Mott's new home $3\frac{1}{2}$ miles north of
Morden, 1905 (PAC 11526).

It was usually at this time that trees were planted in the houseyard for both aesthetic and protective purposes (Figs. 7-8-b and c). And over the years they have matured to provide distinctive shelterbelts, for example, the site of Fig. 7-8-d, southwest of Rosebank. It is during this era that the innovator also left his mark on the landscape, such as the fine shelterbelt and garden area of the former station agent on the southwest side of Roseisle, the flourishing nursery of A.P. Stevenson at Dunstone, and the many fine groves of trees around the first consolidated schools such as Roseisle, Graysville and Darlingford.

The providing of homestead shelter and aesthetically pleasing surroundings was an important motive until the 1930's, at which time the concern became one of protection for soil and crops.

3. The man-made treescape-phase two 1930-1980.

With the wind damage to the dry fields during the 1930's and again in the 1950's the agricultural representatives advocated planting field shelterbelts. Caragana was a hardy planting stock and was used to some extent. The majority of the field shelterbelts were put in place during the 1950's - 60's, when the locally made tree planting machines helped in getting the job done. It is to this era that we attribute the major visual change to the prairie area. The stately trees of the earlier homestead shelterbelts (Fig. 7-9-a) now extend



Fig.7-8-c An improved Miami farmstead,1905 (PAC 11445)



Fig.7-8-d Mr Stibbing's old and new -Pembina Mountains
-1905 (S.W.of Rosebank) (PAC 11448)

out across the cropland, often with more recent plantings added on (Fig. 7-9-b). A closer examination of some of these shelterbelts also indicate an interesting variety, for while the majority are of ash, Manitoba maple and caragana a few are planted with crabapple.

It is during this last phase that the landscape has been altered in many small ways. During the 1950's the Manitoba Department of Highways sought to protect its Highway #3 from drifting snow by planting a caragana hedge along the west side from Carman to Morden. With highways and the greater mobility of the population parks became more in demand, and have been provided, either by taking over a local school ground and making it a community recreation area, or by placing a picnic area in association with a historic marker (Fig. 7-10-a). The major parks have been placed along the edge of the water control bodies at Morden and Stephenfield (Fig. 7-10-b).

The Stephenfield Recreation Park, on the south side of the Stephenfield-Boyne River Reservoir, on SE35-6-VII is, in the manner of many of Manitoba's Provincial Parks, a good place to study the modern management of forest and grassland. A natural poplar grove has been selectively cleared to supply campsites (see Fig. 7-11). There have been recent plantings (about 2500 by fall of '80) in the open spots, to provide improved picnic sites on the naturally ridged gentle slope to Boat Launch and Picnic area. For the long term it is the



Fig.7-9-a A mature farmstead shelter belt with snow trap.



Fig. 7-9-b A field shelterbelt with new additions.

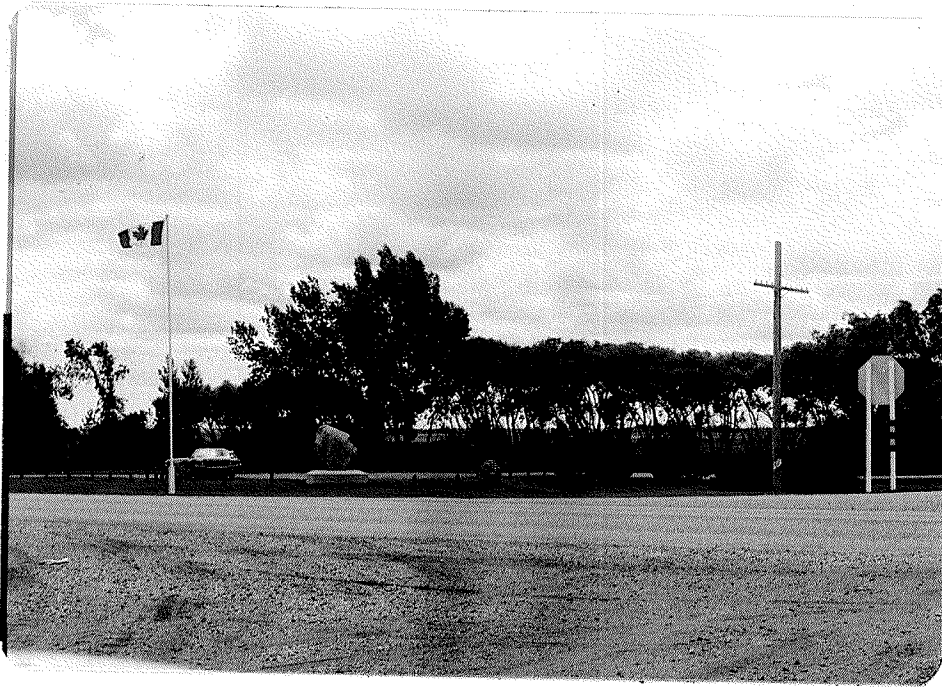
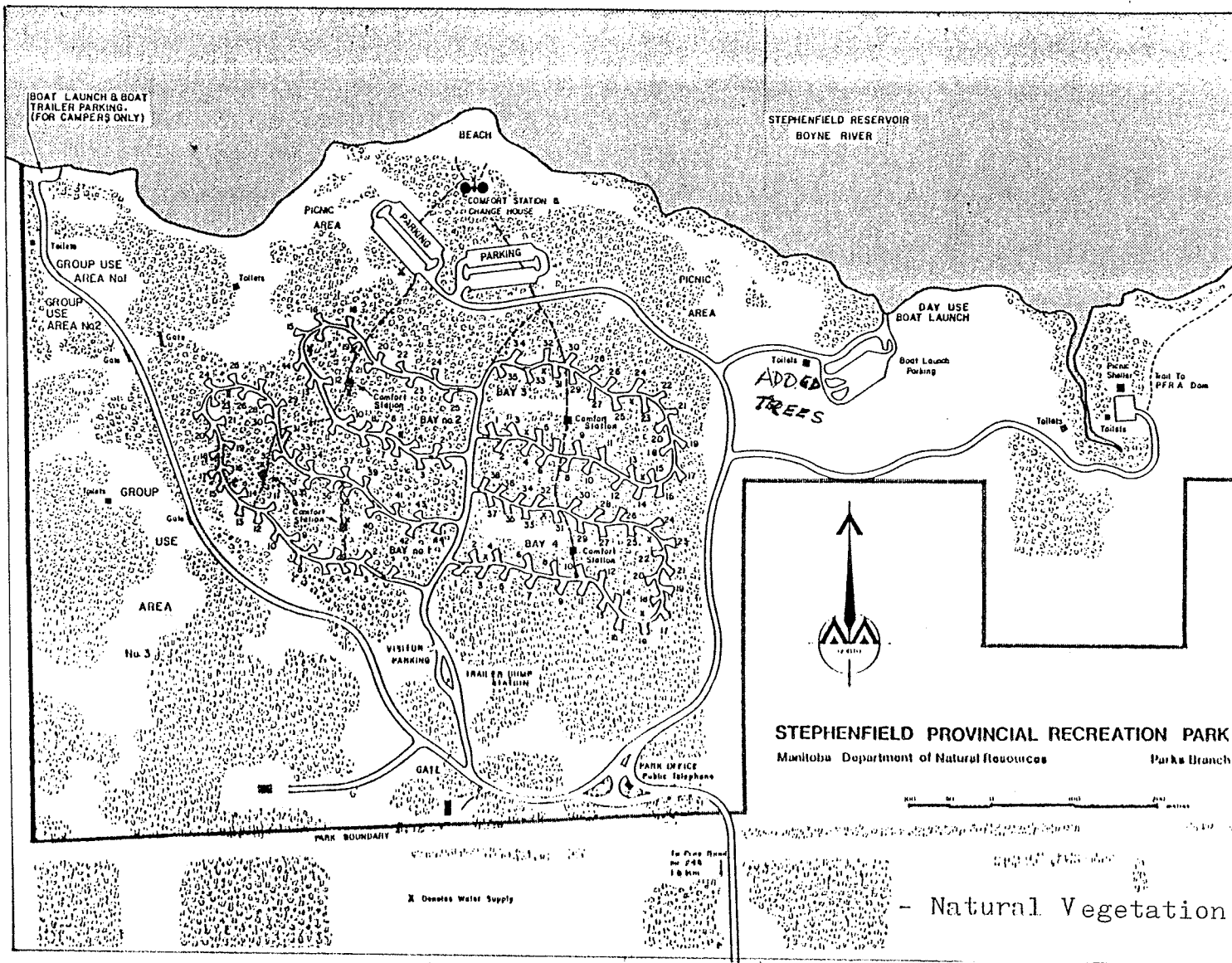


Figure 7-10-a La Verendrye Monument Park on Highway #3
near Darlingford.



Figure 7-10-b Stephenfield Recreation Park new landscape
planting near picnic area, 1979.

Figure 7-11. Stephenfield Provincial Recreation Park.



plans of the Parks Branch² to renovate the poplar bluff by removing the dead trees, allow regeneration by natural sucker growth of the polars, and at the same time promote the growth of hardwoods such as ash, basswood, and maples, with some spruce plantings as well. In this one small area is demonstrated the concept and the action that has been followed by the people of the Carman-Morden area - that the natural treed areas can be modified and their beauty and arrangement may be augmented by man's planning and action.

The park aspect is also seen in the cemetery. The cemetery, a facility as old or older than the community, is usually identifiable on the horizon by its tall evergreens (Fig. 7-12). The most distinctive park is one that received high praise in the 1934 Canadian Forestry Association Journal (see earlier Fig. 6-9-c) - the Memorial Park in Darlingford. It is still an impressive area, with its now mature trees and well kept lawn and flowerbeds (Fig. 7-13).

The shelterbelts and the grounds of the former schools form one other type of park in a rural setting. Fig. 7-14 shows the location of the schools and the current use of these sites. The two trends are for reversion of the area to farmland (Fig. 7-15-a) and for the site still to be in use as a school or other dwelling (Fig. 7-15-b). The latter is more noticeable in the southern part of the Carman-Morden region, where schools still serve the villages or the transportation is

2. Conversation with Park Planner, J. Berg, August, 1980.

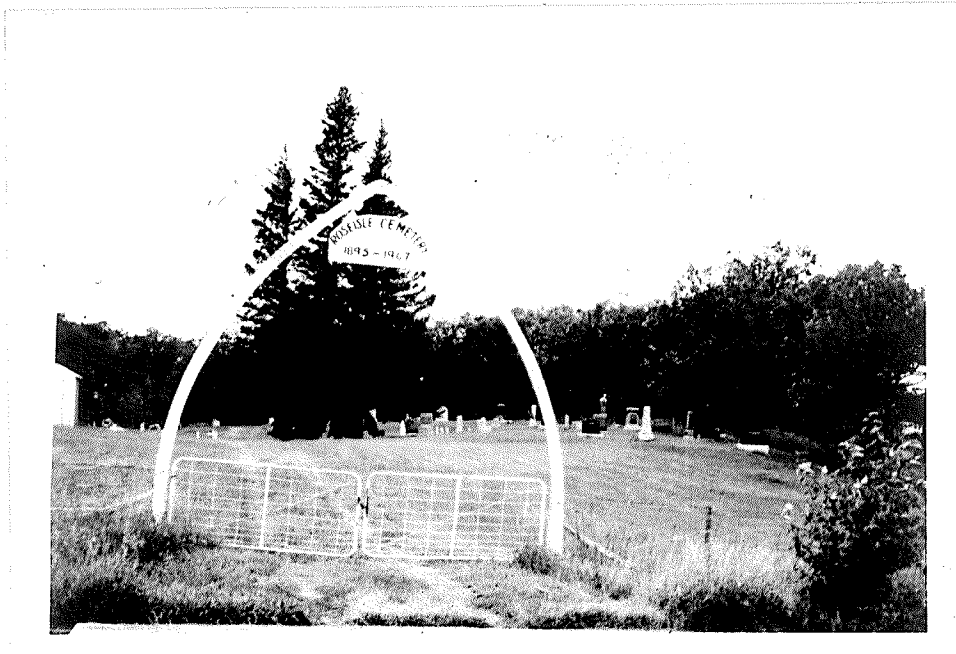


Figure 7-12 Roseisle Cemetery, 1978.

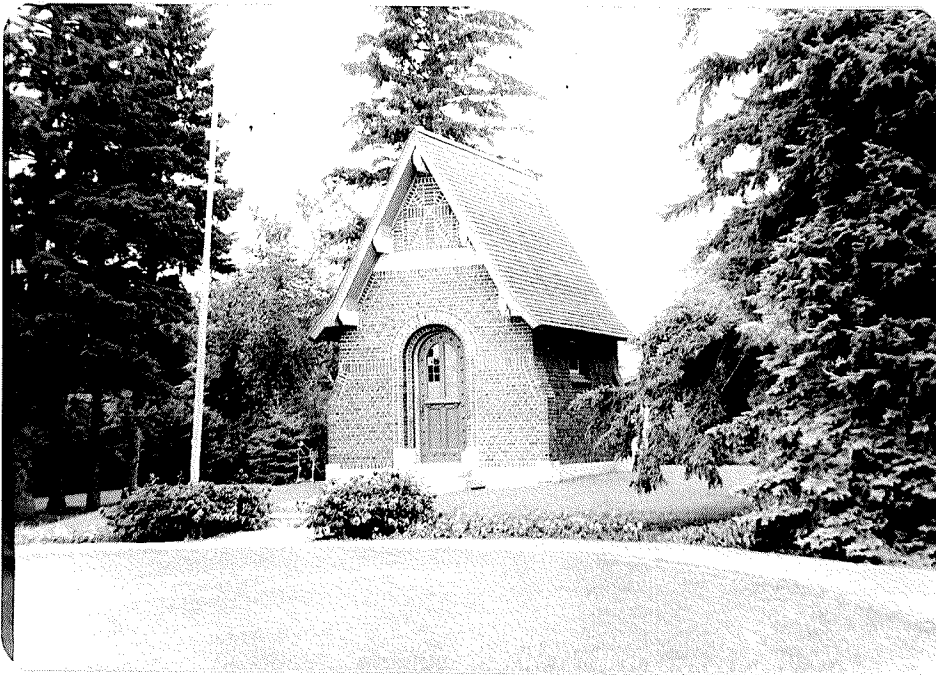
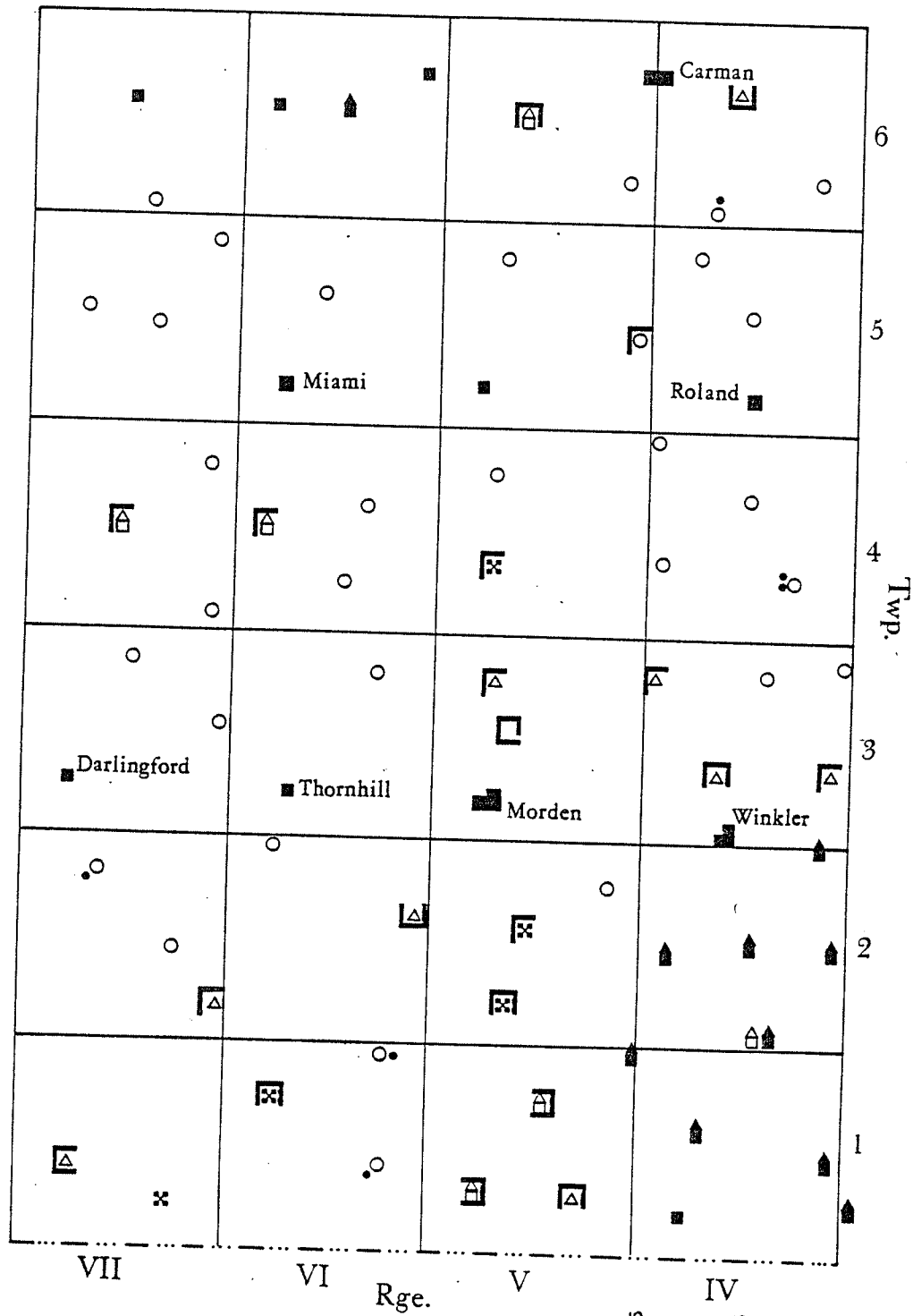


Figure 7-13 Darlingford Memorial Park, July 1980.



- ⌂ School
- ⌂ Village school
- Town school (with trees)
- △ Other uses
- ⊠ Boarded up
- Site empty
- Single tree
- ▭ Shelter belts

Figure 7-14. School Sites in 1978-80



Fig. 7-15-a Elk Creek School grounds SW 14-1-VI W1
-now farmland



Fig. 7-15-b Lindal School grounds and boarded up
building - SW 32-1-VI W1 - grounds are
pastured. Possible home?

more difficult due to the dissection of the area by streams flowing down the escarpment.

4. The Urban Arboreal Pattern

In the accompanying vertical air photos of Darlingford, Winkler and Morden (Fig. 7-16-a, b & c) the extent of the treed area has been outlined.

Each townscape shown here has been the product of the work by the individual lot owner and the street plantings by the local council. The towns were not eligible to receive planting stock from Indian Head Nursery, and it is only recently that seedlings could be obtained from the provincial nurseries. The tree pattern is a product of additions and deletions from the existing trees, and the addition of ornamentals, mostly from the Morden Experimental Farm and the local nurseries. The home yard and boulevard plantings have made a distinct zone of green, appreciated by the traveller through the area and valued by the town dweller.

It is to these last several phases, both on the broad scale and on the individual site that we can attribute the causes for the current vegetation patterns. Everywhere one turns can be found the legacy of earlier settlers, who sought to improve the homes, fields, schools, recreation areas and towns. Their efforts have left a fitting tribute to their foresight and concern for their neighbours, in those groves of trees now found throughout the study area.



Figure 7-16-a Darlingford, October 1979 (Prairie Agriphoto)

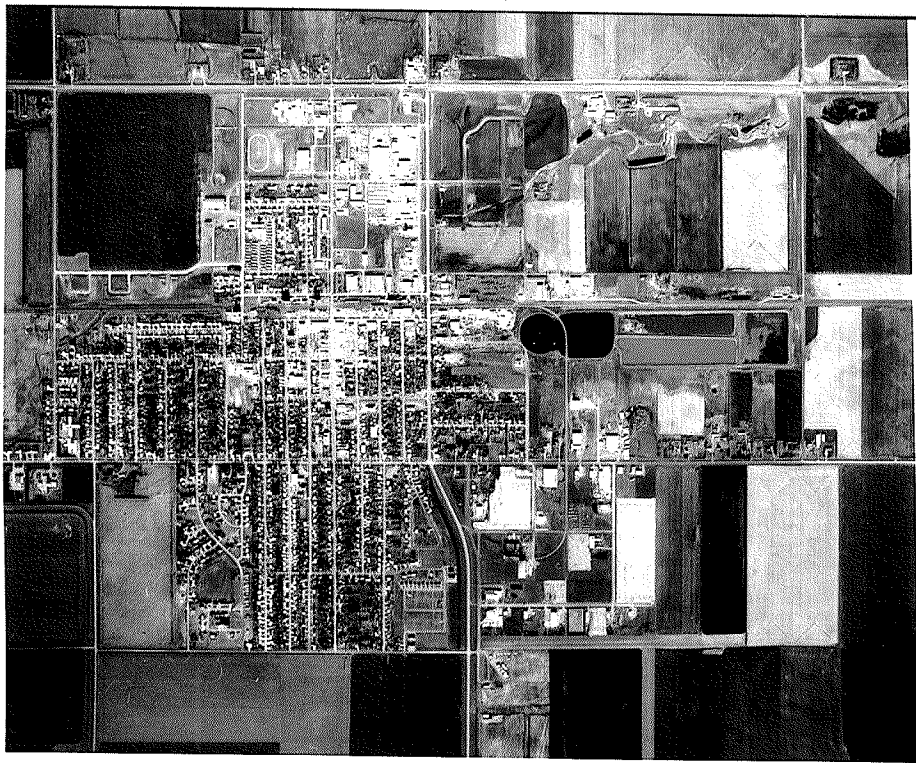


Figure 7-16-b Winkler, October 1979 (Prairie Agriphoto)

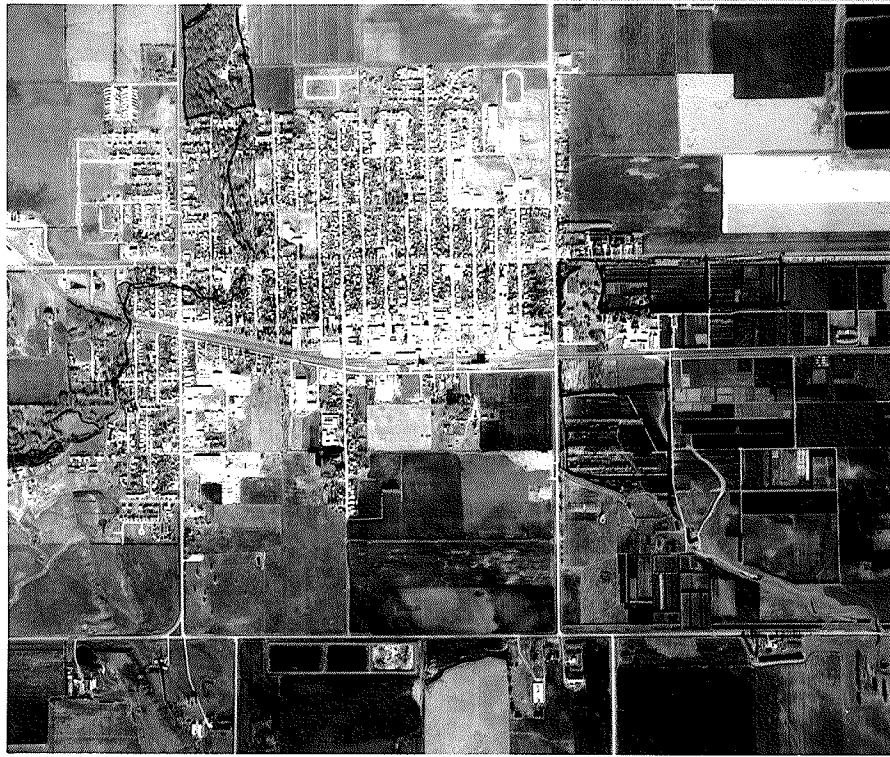


Figure 7-16-c Morden, October 1979
(Prairie Agriphoto)
The natural vegetation at the Dead Horse Creek, upper left, and the Experimental Farm, right of center, are the two main features, along with the tree-lined streets. See map Fig.7-5.

CHAPTER VIII

CONCLUSIONS

This study has traced the changing patterns of arboreal vegetation in the Carman-Morden area of southern Manitoba from the time of the fur trade occupation until the present. During this period, the landscape of the study area has changed from one of more or less stable communities of natural grassland and woodland to a dominantly cultural landscape in which cultivated fields and trees planted by man have almost totally replaced the earlier, natural associations. Where stands of naturally occurring trees remain today, they are remnants of earlier, more widespread woodland associations. In particular, they are vestiges of the galeria woodlands of the plain, of the timbered slopes of the escarpment and the parklands that characterized the rolling land to the west of the escarpment.

Elsewhere, trees are largely those planted by man. The occurrence of these trees reflects the decisions of individuals to develop arboreal environments in the treeless and, to a lesser degree, in the cleared locations of the study area. Initially, most tree plantings were undertaken to provide shelter for the farmsteads. This practice was subsequently extended to include field shelterbelts and it has been for these two reasons that most of the tree plantings have been conducted in the study area.

This clearing, planting and redistribution of trees in the study area reflects two fundamentally different phases in man's relationship to trees since the advent of Europeans to southern Manitoba. The first phase was confined to the fur trade period and the period of initial agricultural colonization. This was essentially the pioneer phase in the European occupation of the region. During this phase, European settlement was dependent upon local supplies of wood for construction and fuel and, under these circumstances, the relationship between man and trees was an exploitive one. The impact of this relationship upon the arboreal vegetation was of little consequence during the fur trade period. The demands for local timber were such that once the exploitation ceased, the regenerative powers of the trees easily replaced those used. Within a generation, the site once used, would take on the earlier balance of grassland and trees. The early settlers continued this phase of exploitation of the local woodland, and the decisions about where to settle were made with one eye on the availability of this resource - how far was it to building material, fencing material and fuel? The early conflicts in the study area arose because the Ontario settlers along the woods wished to exploit the woodland on the west edge of the reserve of the grassland-dwelling Mennonites. The resolution of the conflict merely transferred the exploitation to other wooded areas nearby.

As this pioneer phase drew to a close there were a few attempts at manipulating the woodland resource as opposed to straight exploitation. The Forest Tree Claim provisions of the Dominion Lands Act encouraged the settler to fulfill the settlement improvement work by cultivating trees, trees that would provide the community with their woodland resources near at hand. But this attracted only a small number of settlers, and most of the manipulation was left to the bureaucratic realm - the apportioning out of woodland as woodlots for prairie-dwellers, or the keeping of wood areas for Canadian settlers as opposed to the use of that resource by the United States settlers in the adjacent states.

The exploitation phase drew to a close because of the changes due to railways and the pressure on the ecosystem of commercial agriculture. The railways provided building material and fuel from other areas. They provided the means for the farmers' products to be sold beyond the region. This increased the pressure to clear the land and have it produce grain. The arboreal area then became something to be cleared for fields, diminished, or cut to provide a supplementary income when sold as firewood to those who could not afford the imported coal. At the same time trees were being added to the region.

The local settler spent most of his efforts on the improvement of the homestead, and began the management phase of the arboreal environment that continues to this day. The first additions to the woodland on a major scale were the

cottonwood groves around each Mennonite village. Around many of the farmsteads shelterbelts were planted, especially if the farmer had just invested in a large brick house. These houseyard groves proclaimed to all who passed by that the wanderer had found a permanent home. Then, when nature turned on the settler during the drought of the 1930's, the government, which had been assisting with tree distribution, put the emphasis on field shelterbelts as well. It is from this time and into the 1960's that the many field shelterbelts came into being.

The government promoted woodlot and farmstead management. This attitude of the settlers was also shaped by two other agents, the schools and the Canadian Forestry Association. The arbor day ceremonies were promoted by inspectors and teachers as a way to make the learning environment more pleasant. It was also hoped that the lessons learned each spring would carry over to improvement of the home grounds as well. The Canadian Forestry Association took its classroom on wheels, the tree-planting car, into each community and preached the gospel of trees making life on the prairies much more bearable. These programs, including the first sound films to be seen by some of the rural people, were an excellent way to make a lasting impression.

Today, the trees placed in the study area form a strong impression on the traveller through the area. While the rate of woodland modification has declined, there are still small scale changes - the removal of a shelterbelt to gain some extra

crop land, the trimming of the areas on the escarpment, and the addition to a farmstead shelterbelt. Most of the recent changes have been site-specific. The demand for recreational areas has seen the shelterbelts of now abandoned rural schools converted to local picnic and baseball fields. The area around water retention lakes have been converted to swimming beaches and managed woodland that will provide the traveller with protection from the heat of mid-day. And the last resting place of the local resident - the cemetery, is an island of evergreen calm in a sea of windswept cropland.

The second phase, has been characterized by the attitude that a woodland area is a resource to be managed, and utilized in a way that the benefits will have some long term effect. The major question is what will be the trend in the next decades? Will we, with our affluence, neglect the resources put in place by our fathers and grandfathers? It is ironic that in a country settled by hard-working pioneers, we have become very willing to leave the work to someone else. In this case the Canadian Government has been left to look after our children, our sick, our unemployed, and even to improve our living conditions. Perhaps, in the struggle to wrest a living from the area, we have been too busy to plan, to take the long view, so the leaders and their bureaucrats have taken over this task. Many would argue that only the government has the resources and the expertise to see the long range plans for a country, and to bring about major schemes that benefit the public, such as transcontinental

railways or the alteration of the non-forested regions of the western provinces. This movement from individual enterprise to socialistic planning is a Canadian movement, or is it?

To prove this point a further study should be conducted in the United States. The work of settlers there in a similar zone of grassland and parkland will likely have a similar exploitation phase, but may not have to the same extent the phase of arboreal management. It would be valuable to see if the knowledge of shelterbelts for crops was implemented in areas other than those designated by the United States Great Shelterbelt scheme.

The past has taught us that the government is the "free" source of ideas, education, and assistance in bringing about a major change to one's environment as in farmstead and field shelterbelt plantings. On the other hand, can we, in our affluence, continue the luxury of green groves throughout an agricultural region? Some would advocate increasing our production by removing the trees. The increased size and cost of equipment has made many advocate clear fields for efficient and speedy cultivation. There must be a balance between these extremes and this balance is often achieved by agricultural representative and conservationists, who tell us that the shelterbelt benefits of soil erosion control and increased yields outweigh the inconvenience of having the belts interrupt the fields. And on the whole, a single row shelterbelt is not as great a threat to economic production as a 3 or-more-row

shelterbelt found in many of the U.S. windbreak plantings. The U.S. switch to pivot irrigation has come to Carberry, Manitoba, but the heavier clays and better rainfalls of the Carman-Morden area has not necessitated irrigation to any great extent. And as long as this farming method is not used, the mid-field shelterbelts will remain. Moreover, the green belts of trees have put something into the "nothing" expanse of the flat land.¹ and in this way are of value in themselves.

In examining the reasons behind the current arboreal environment in the study area, it is legitimate to ask if the same attitudes toward tree planting would have been present if it had not been for the Morden experimental farm? As seen in the successful homes and farms of that first generation, the expertise of the planting inspector, A.P. Stevenson, and the more recent work of people such as Dr. W.R. Leslie at the Morden experimental station, all have added immeasurably to the community's success. The well-developed farmsteads and the early adoption of specialty crops indicate innovative leadership in the area and the sophistication of the farmers.

If the Experimental Station is a major reason for successful farming, a study of this type could be conducted in an area further from the influence of such a government agency. A similar grass and tree transition zone could be

1. See Laurence R. Ricou "Circumference of Absence: Landscape and Space in Poetry of the Canadian Plains," in R. Allen, (ed.) Man and Nature on the Prairies (Regina: 1976).

found north of Neepawa or in north-central Saskatchewan. Only then could the researcher determine if the access to government expertise at a nearby agricultural research station is the major influence.

This would also be a good place to pursue further the effect of ethnic background on perceptions and practices of settler modification of each farmstead. The Ontario settler and the Mennonite each had their views, which blended and became the view of farmers in the Carman-Morden area. The new research could trace the similarities and differences of views of the Ukranian settlers and the British settlers between Neepawa and Dauphin, and also see if the views coalesced there as well.

The leadership of this area is also part of the larger picture of successful farming. The area has had a high number of master farmer awards, and the success has carried over into secondary activities, such as the manufacturing and agricultural product processing in the Winkler-Morden-Carman townsites and immediate environs. The success also shows in the pride being taken in the more recent ornamental planting and farmstead shelterbelt additions.

As positive as all these statements may seem, there are also problems for the future of the arboreal vegetation pattern. The rural depopulation continues, with farmstead abandonment and general decadence of existing shelterbelts. There is thus a need for renovation, a task almost as large as the

original planting projects. With the threat of the Dutch Elm disease now a reality in Miami (August, 1980) there is also a real need for some long range planning of the management of the tree resources in the Carman-Morden area. Because the labor for this will be costly, the government should continue its tradition of assisting the individual in a project that has practical and aesthetic benefits for the whole community. In this way the deterioration in landscape amenity values will be halted. The maintained groves will also serve the more recent concerns for wildlife habitats. With cultivation to the former fence rows, there has been little area left for wildlife. If double row shelterbelt are put in, there will be runs for mammals and ample foliage for birds. For the public good, this work might be best conducted as an extension service of the Experimental Farms.

The power of mankind, be it in individuals, or collectively as in a government agency, has altered the degree and kind of interaction with nature. As the pioneers and their children grew in knowledge and experience, they altered the landscape by exploitation and then by careful management. These people were altered in turn, accepting themselves as part of a rich and pleasant area. It is to be hoped that the trend of creating an aesthetically pleasing surrounding by the placement of trees will continue, so that the future inhabitants of this part of southern Manitoba may benefit from the work of those who laboured there before them.

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Appendix 1

Common and Scientific Names of Manitoba Tree Species

<u>Common Name</u>	<u>Scientific Name</u>
<u>Deciduous</u>	
Manitoba Maple (box elder)	<i>Acer negundo</i> L.
Green Ash	<i>Fraxinus pennsylvanica</i> Marsh var. <i>subintergerrima</i> (Vahl) Fern
Bur Oak (Scrub oak)	<i>Quercus macrocarpa</i> Michx.
White elm (American elm)	<i>Ulmus americana</i> L.
White bush (paper bush)	<i>Betula papyrifera</i> Marsh.
Hop hornbeam (Ironwood)	<i>Ostrya virginiana</i> (Mill.)
Wild plum	<i>Prunus americana</i> Marsh.
Basswood (Linden)	<i>Tilia americana</i> L.
Balsam poplar (Black poplar)	<i>Populus balsamifera</i> L.
Trembling aspen (White poplar)	<i>Populus tremuloides</i> Michx.
Eastern Cottonwood	<i>Populus deltoides</i> Marsh.
Peachleaf willow	<i>Salix amygdaloides</i> Andeiss.
<u>Coniferous</u>	
Black spruce	<i>Picea mariana</i>
White spruce	<i>Picea glauca</i>
Pine	<i>Pinus</i>

Source: Oswald, Edward J. and Frank H. Nokes Field Guide to the Native Trees of Manitoba. Winnipeg: Forestry Service, Manitoba Dept. of Mines, Natural Resources and Environment/Environment Canada, 1979.