

# SHELTERBELTS



## and the History of Sustainable Prairie Agriculture

Presented by the  
West Souris River Conservation District

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## 1. An Introduction

In Trails Along the Pipestone, one of the many excellent local histories surveyed in researching this work, and unidentified farmer muses on changes he's seen:

"Bet farmers never thought 40 years ago about me heading to the field in my air conditioned four-wheel- drive. And look at this field, no more pesky potholes. Mind you, that wind this spring sure had me pretty worried, I had that summer fallow worked right up to snuff and look at it now, blown right to the hardpan. Maybe taking out the trees hasn't been such a good idea after all, sure speeds up the work though, and it surely seems like we need to speed things up, ...."

The prairie climate seems to work in cycles. Whenever a dry cycle comes along we try to figure out how to keep the land productive.

The drought years of the thirties brought on the first concerted efforts to used trees to combat the effects of drought, but the succeeding wet years, combined with more advances in both tillage practices and chemical fertilizers, allowed the successful experiment with shelterbelts to somewhat lapse.

Today, with climate change an issue, and a with the recognition that some of our farming practices may not be sustainable; we are seeing a renewed interest in shelterbelts.

This project attempts to set the stage for that renewed interest.

Essentially we have gathered a collection of materials from a variety of sources such as local histories, scientific studies and interested organizations that apply to the subject of shelterbelts and arranged the information in what we see as an accessible way.

The project is in binder form, soon to be adapted as web content, and is meant as a starting point. Ideally it will be the core of an ongoing collection and presentation of resources for those interested in shelterbelts and sustainable farming initiatives.

## 2. Historical Overview

Since the days of the first agricultural settlements on the prairies began trees have been an issue. To a generation whose parents toiled at removing trees from Ontario farms to make way for productive crops, the first glance at the treeless expanse of southwestern Manitoba was a revelation. They saw immediately the ease with which they could

transform the grassy plain into orderly fields of cereal crops. No back-breaking hours felling the trees, and fighting with the seemingly endless stumps and tree roots that were left behind. Just plow and plant!

Of course they needed trees for fuel and building supplies, but as long as the homestead was within a reasonable distance from the wooden valleys of the rivers or the heavily forested Turtle Mountains, most preferred a flat quarter section with an unbroken horizon.

And that worked, for a while.

There were quite a few things about this land that the first settlers didn't know.



**The Boundary Commission travels through a dry and treeless southwestern Manitoba in 1873**

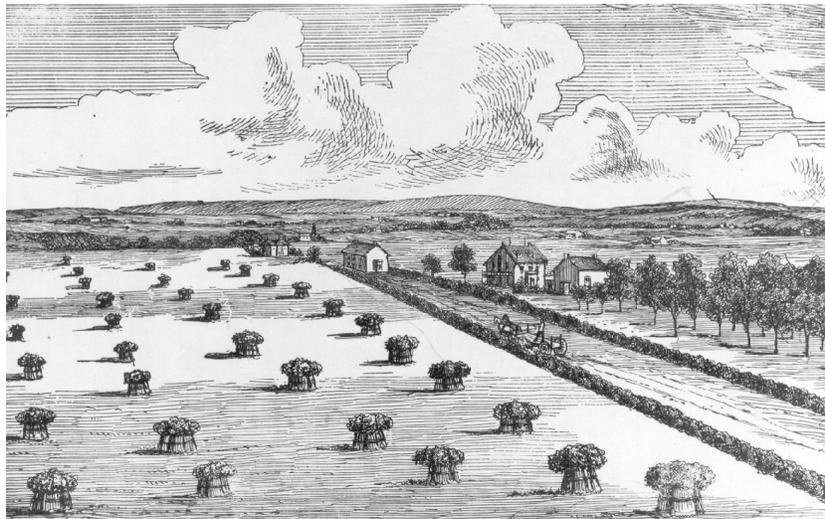
They didn't know that this productive land, which at first glance looked so fertile, existed in a fragile balance. The often-repeated story was of the profusion of wild strawberries, so thick that the feet of the oxen were stained red. What wasn't told was that the succession of wet years in the early 1880's was not necessarily a permanent state of affairs.

They didn't know that the treeless prairie was treeless, not because it wouldn't naturally support such growth, but because the ever-present prairie fires struck saplings down before they had a chance to get started. Where trees were established, along

streambeds and in hills, the retention of moisture that they fostered was the defense against the fires. They would figure this out before long.

They didn't know, or, in some cases willfully ignored, information from exploratory missions a few decades earlier that led several "experts" to declare the more southerly parts of the Canadian prairies a dry wasteland that wouldn't support agriculture. It all looked good in 1881.

They did instinctively know that planting trees was a good thing, especially around farm yards. At first it might have been about shelter from the winds and a striving for the post-card ready appearance of a "prosperous prairie farm" such as would have been featured in promotional brochures. Later they must have recognized that these early farmyard shelterbelts trapped moisture and allowed the vegetable gardens to thrive.



**Settlers were told that this is what their new farm should look like in three years.  
It took a bit longer.**

In fact, organized horticultural efforts often focused on tree culture in both Manitoba and the North-West Territories. Settlers planted trees for a variety of reasons, including aesthetic enhancement, protection of their farmsteads from wind, and for psychological security.



**Tree planting initiatives were evident in all early prairie villages. Lauder Mb.**

A farmyard shelterbelt supported microclimates within which gardens could flourish. The Mennonites from Ukraine who settled in southern Manitoba after 1874 established agricultural street villages, which they lined with cottonwoods transplanted from nearby river banks. In, so doing they demonstrated the viability of tree culture in areas of open prairie.

As of 1883 Manitoba's 9,077 farmers were cultivating 120,000 hectares of land, of which 1,400 hectares were devoted to gardens and orchards. The importance of tree culture was officially recognized with the proclamation of Arbor Day in the North-West Territories in 1884, followed by Manitoba in 1886.

The Dominion government recognized trees as essential to sustained settlement and established experimental farms at Brandon, Manitoba and Indian Head, Saskatchewan, in the late 1880s. In 1915 the Dominion government established the first prairie research station devoted primarily to horticulture, at Morden, Manitoba. Its staff carried out extensive trials in small fruits, trees, vegetables, and ornamentals, and disseminated the results to the farm community.

An early role of the experimental farms was the promotion of tree shelterbelt plantations on farmsteads to create microclimates for garden and fruit culture. and in 1903 established a separate Dominion Tree Nursery at Indian Head as the basis for a large-scale distribution program.

The Canadian Pacific Railway (CPR) played a supporting role in promoting western tree and flower culture in the settlement era. As the principal corporate agency of land disposal on the prairies, the CPR had a strong interest in promoting settlement through horticulture. By 1907 the company had established two early nurseries—one at Springfield, Manitoba devoted to ornamental production, and another at Wolseley, Saskatchewan for the propagation of tree, shrub, and perennial stock. In 1908 the company organized a forestry department to administer its parks and gardens and to advise officials in the planting of railway gardens and windbreaks along its rail lines.

In 1935 the Government of Canada launched the Prairie Farm Rehabilitation Act (PFRA). The following year two Lyleton locals, Baird and Will Murray, petitioned the PFRA to establish the Lyleton Shelterbelt Association. The PFRA provided \$5 per mile of planted trees, with an additional \$20 per mile, per year for the following three years of maintenance.

The efforts taken in the 1930's were followed up with varying degrees of commitment across southwestern Manitoba in the decades that followed. Improved farming practices and new chemicals convinced many farmers that shelterbelts were unnecessary. In fact during the 50's and 60's many farmers sought to increase acreage for cereal crops by clearing natural belts of aspen and willow and by draining marshland. Marginal acreage that had been devoted to pastureland was brought into cultivation.

Today with the uncertain effects of climate change and a renewed interest in things such as organic farming and local and natural food production, the time would seem ripe for a renewed effort to revisit efforts to use trees to enhance agricultural productivity.

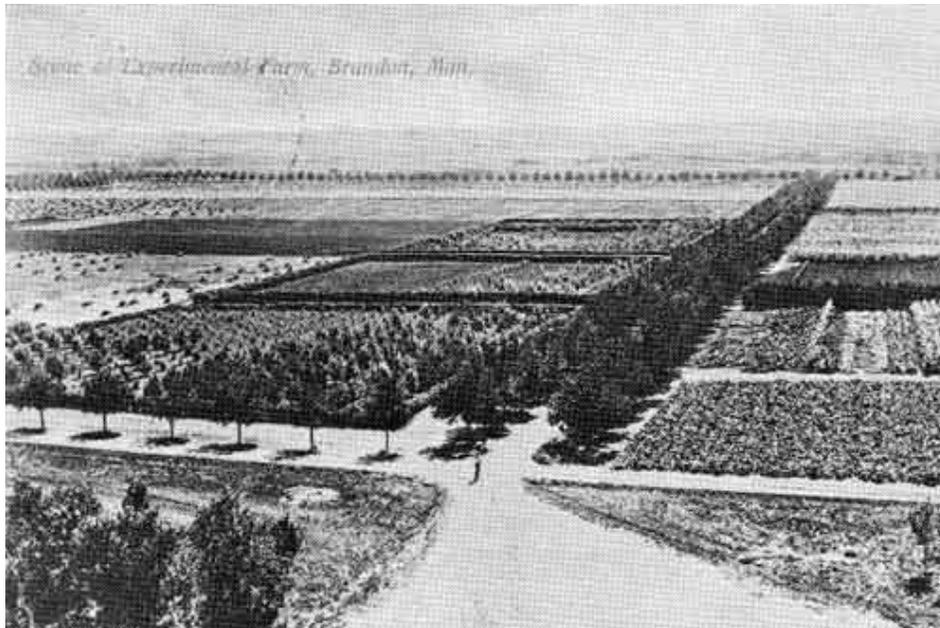
### 3. A Scientific Approach to Prairie Agriculture

#### Dominion Experimental Farms

Farmers and agronomists, agricultural institutes and societies, provincial agricultural colleges, and the federal government each contributed in the development of effective dryland farming techniques and the establishment of the Dominion Experimental Farms at Ottawa, Indian Head and Brandon were and important Federal contribution.

Pressure to establish a federal agricultural education service had existed since the mid-nineteenth century. Not only were most recent immigrants from Europe ill-equipped to deal with the problems of Canadian agriculture, but

Early in the settlement era it became obvious that agricultural methods that travelled with settlers from common in Ontario, Britain, Central and Eastern Europe were inadequate to the challenge of farming the semi-arid regions of the prairies.



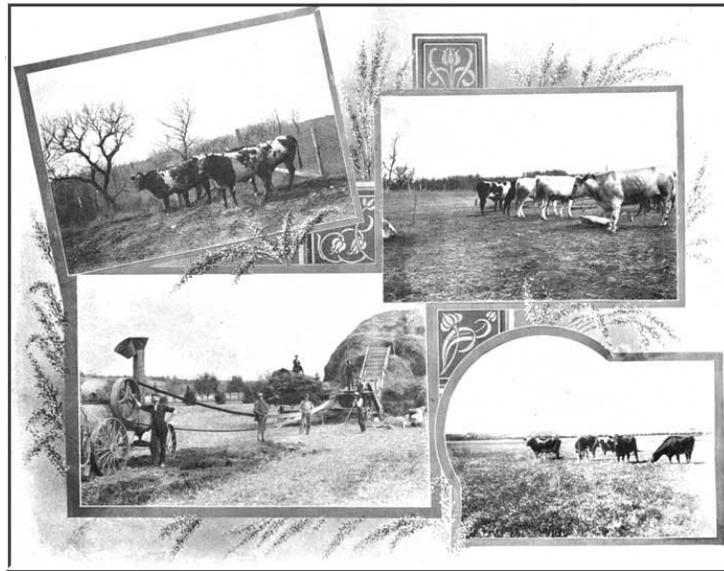
**Brandon Experimental Farm**

In 1885, the government committed itself to the establishment of Dominion Experimental Farms in five provinces, and in 1887, one such farm was established in Brandon. Agronomists at these farms conducted a great many experiments related to dry farming.

Research findings related to comparisons of seed varieties, methods for summer following, bluestoning and seed drilling made available to local farmers and inquiries from farmers were diligently answered by the research scientists.

The Brandon Farm was just one of a network of experimental farms and field stations, which included a second Dominion Experimental Farm at Morden and experimental and demonstration farms operated by the Manitoba government Agricultural Extension Services and the Manitoba Agricultural College.

### Scenes from the Brandon Experimental Farm



*Illustrated Souvenir of Brandon, Manitoba : Published by W. Warner, Brandon : Page 40*

## Demonstration and Reclamation Farms

### Killarney Demonstration Farm

The Demonstration Farm at Killarney represents one of the Manitoba government's efforts in agricultural research and education. The established when George Lawrence, a Killarney pioneer, was Manitoba's minister of agriculture. The purpose was to identify and promote farming practices and crop varieties suited to this particular region of the province.

The demonstration farm was closed in 1946.

### Melita Demonstration Farm 1913 (From "Our First Century")

November 6: Mr. S. A. Bedford, Deputy Minister of Agriculture in the Manitoba Government was in town last week and located a government demonstration farm in this district. It will be on the Fred Merret farm west of town and will face the main road. Forty acres just west of the house was secured. Mr. Bedford expressed himself as highly pleased with the location believing that he had secured a fair average of the soil in the district.

Mr. Bedford said the plan of the government was to carry out at small cost, demonstration plots at various places in the province. The land will be divided into five acre plots and under a system of rotation of crops will be cropped every year. Experiments are to be carried on with fodder and root crops. Work on the plots will be done by the resident farmer under instructions from Mr. Bedford. Mr. Bedford, who for 18 years was superintendent of the Brandon Experimental Farm, and who also is a close student of agricultural life is undoubtedly the right man in the right place as Deputy Minister of Agriculture in this western province. For 30 years Mr. Bedford has studied conditions in the west. He is a firm believer in mixed farming as he points out one of the things which the demonstration farm will demonstrate will be the manner in which stock feed can be grown without diminishing the wheat product. To Mr. Lyle is due much of the credit for the establishment of this farm in this constituency.



**Mature shelterbelts, north of Melita**

**Melita Reclamation Farm** (From "Our First Century")

The Dominion Department of Agriculture (1935-1960), leased N 19-4-26, S 30-4-26 and 29-4-26 just north of Melita to experiment in reclamation of lands abandoned, and to determine the best cultural practices and cropping methods to prevent further serious drifting.

Mr. H. A. Craig B.S.A., a graduate of the University of Manitoba drafted plans and Mr. J. Parker resided at the station to be in charge.

## History of the Reclamation Station Melita (From "Our First Century")

Ken Dawley from Melita Tails & Trails

The Reclamation Station, Melita, Manitoba, was established in 1935 under provisions of the Prairie Farm Rehabilitation Act investigating problems associated with drought and wind erosion in the Souris River basin. Large tracts of land in south-western Manitoba had been devastated by wind and wide areas were denuded of their vegetation. Over wide areas, the top soil which contains the natural fertility for crop production, was removed to varying degrees leaving exposed an infertile subsoil which during periods of below average rainfall is capable of supporting meagre crops. The site chosen for the Station is representative of the extensive area which has been severely eroded by wind. The Reclamation Station is operated as a substation and is supervised from the Experimental Farm, Brandon.

Early observational investigations disclosed that, while the sandy nature of the top soil had a low water retention capacity as compared with the clay soils of the Carroll Clay Association or the Red River Valley soil types, ground water levels were relatively close to the surface. This indicated that forage crops such as brome grass, crested wheat grass, alfalfa and sweet clover would supply hay and pasture for live- stock because these crops were capable of sending down root systems which would feed from the natural water table. At that time, it was postulated that trees would flourish in the region, provided they could be kept free from insects and disease. With these two important factors in mind, a basic plan was formed for the stabilization of soils in southern Manitoba.

The initial work undertaken included land leveling, the stabilization of drift soil by seeding grasses and legumes, fall rye and other crops and tree planting. During the

ensuing years, the experimental work has been extended to include a wide field of crop production. The Station now includes 1440 acres of rented land. The need for including livestock in the reclamation program became evident and in 1941 a portion of the purebred Shorthorn herd from the Experimental Farm, Brandon, was transferred to Melita. The feeding of steers, heifers and bulls on an individual basis as part of the sire testing program had been underway for four years.

Meteorological data have been recorded at the Reclamation Station since 1937. This data includes temperature, precipitation, wind velocity and in recent years evaporation from a free water surface. This information had been useful in relating crop production to climatological phenomena.

The term reclamation implies that waste land is being brought under cultivation. The problems associated with such a program are many and the final solution to a successful conclusion of the program is often hampered by factors not anticipated.

Soils are composed of great hosts of living things and in the application of certain tillage practices or certain fertility treatments, the balance in population of soil fauna may be changed thus giving rise to poor crops of low quality. The problem of restoring fertility to soils which have been severely damaged by wind erosion is of major concern. The use of soil building crops such as grasses and legumes has been an important measure in land reclamation. The application of rotted manure, the growing of green manure crops such as sweet clover and the application of various chemical fertilizers are being investigated. The process of rebuilding a soil which has suffered from erosion is slow as measured by periods of time and thus long term fertility experiments provide valuable sources of information.

The importance of tillage machines cannot be overlooked in a program of soil reclamation and soil protection. The vulnerability of light textured soils to erosion by wind has brought about the improvement in tillage techniques. Trash land farming or the maintenance of the trash or previous crop residue at or near the soil surface should largely replace black summer fallows. While this trash farming procedure is the desired method for soil protection, factors such as weed growth often limit the extent to which trash farming can be carried out successfully. The tendency has been to kill weed growth as soon as sufficient populations have developed over a field and with successive tillage operations, more of trash is buried each time until by the completion of the fallow season, all trash has disappeared. The limiting factor in trash farming seems to be the low organic matter content of the soil. The rate at which this material disappears when incorporated below the soil surface is extremely rapid under Melita conditions. The reason for this taking place seems to be that the soil population of micro-organisms are so hungry for food that when amounts of organic matter in the form of crop residues are added, they are rapidly consumed, thus leaving a soil low in organic substances.

The testing of cereal and forage crop varieties constitutes an important phase of the experimental work at Melita. The performance of these crops is often quite different from other points of testing in the province and the information obtained serves as a basis for recommendations to farmers of the area. From time to time, new varieties of grain are increased at the Melita station for distribution to local farmers on a registered or certified basis.

The annual Field Days which are held serve as an important method of circulating information which has been compiled at the Station. Local press releases and bulletins covering recommended cereal varieties and cultural practices appear from time to time. Letters, phone calls and personal visits of farmers and others to the Station serve as a yardstick to measure the interest which is being taken in the affairs of the Reclamation Station, Melita.

## Reclamation Station Beneficial to District

by Murray Parker (son of J. Parker) March 28, 1946

Ten years ago, the land that is now the Dominion Reclamation Station, was chiefly sand banks, Russian thistle and ragweeds. What is now the green lawn was then tree-like weeds extending to eight feet in height. Sand was piled high over the fences, making ridges which are still visible. In the field, holes were gouged and sand piles formed only to be shifted again by the wind. When one looked at the fields, it seemed a futile task to make this arid land productive of crops again.

In 1936, a quarter section was enclosed by three rows of trees and three intersectional hedges. When trees were planted, windbreaks had to be built of weeds and old sweet clover to keep the sand from cutting off the delicate young trees. Today these trees have attained a height of 25 feet, forming an excellent windbreak, and beautifying the farm to a large extent. During the growing season, these trees are of particular value, in protecting the sprouting plants and helping to prevent soil drifting, as they are now of sufficient height to reduce the wind velocity. In winter the trees collect a large amount of snow, and this extra moisture is bound to be beneficial to adjacent crops.

As each quarter section of the farm varies from the others, there is considerable difference in soil, thus different experiments are carried out on each. The only land that was safe from wind erosion, was land which had couch grass. One quarter section in particular, was solid couch grass, but in the past few years this land has been brought into production, producing real good crops during favourable seasons.

The method of couch grass eradication has been a combination of the stiff tooth cultivator, with narrow points and the one-way disc. After about three cultivations it was found necessary to go over the field with the one-way disc to chop the clumps of sod and grass roots. It was found necessary to watch the new growth of couch grass very closely. In this sandy loam soil, all that seems necessary to kill the couch grass, is to open the soil, with cultivation letting the air in to dry out the land and the roots. In a wet season the cost of couch eradication is almost doubled compared to that of a dry season. Another important factor in the eradication is to work only the acreage that can be properly handled by the equipment available during the season.

In the growing of grain crops in this light sandy loam soil it has been the practice on the Reclamation Station to strip farm, this way that soil drifting is more easily controlled. Observations for the past eight years have revealed that, on days when soil drifting was prevalent, the wind blew from the north-west. The next highest wind came from the southwest. It would appear then, the strips should be north and south.

Besides strip farming, trash covers have been found very effective in controlling wind erosion. Sufficient trash must be left on the surface so as not to be buried by successive

tillage operations. Results for the past nine years show little difference in yield or cost of production from the ploughed areas in comparison with the surface-worked fallows. The main advantage of surface tillage is the protection it gives to the soil.

On soil such as we have in this district and that farmed for as long as it has been, the time has come to begin seeding a portion of the land down with grasses and legumes. It would appear that this could be worked in with crop rotation system. There is no doubt the soil is in need of fibre and organic matter, to get results the fields or portion thereof should be left in grass at least three years. At present on the station there are 240 acres of the 1120 acres seeded down to grasses and legumes.

Since the time of its opening, the Reclamation Station has set a fine example of what can be done to otherwise useless land. It has also rendered valuable service in the form of expert advice and suggestions on various farm problems. It is to be hoped that in future years this station will continue to show good results, thereby setting an example of Canadian progressiveness in the agriculture field.

## Herb Edgar Family History (Edward History Book)

Edgars operated a mixed farming operation on the farm north of Lyleton, 28-1-28

The Edgar farm was selected by the Brandon Experimental Farm as a sub-station in 1935 to record cost of production, rotations, and test plots of new varieties of grain, with yearly field days held on the farm to view the year's work. This project was under the direction of M. J. Tinline and D. A. Brown. Herb also recorded the rainfall and snowfall from 1935-1970. In 1960 the Experimental Farm changed the sub-station to a Research Station with more emphasis on plot work, varieties and yields. The contract was terminated in 1970.

## Lyleton Sub-Station by G. H. Edgar (Edward History)

Soil Drifting was a big problem in the early thirties due to the drought and the grasshoppers, leaving very little stubble or trash in the soil. About the only thing that would grow was the Russian thistle which was cut and put up for feed.

In 1934, the federal government under the PFRA (Prairie Farm Rehabilitation Act) decided to set up a series of sub-stations in Western Canada to control soil drifting by strip farming and other cultural methods.

Under the Brandon Experimental Farm with Superintendent Mr. M. J. Tinline and Mr. D. A. Brown, section 28-1-28 was selected as the site for the Lyleton sub-station. The south half of the section was owned by Herb Edgar and the north half was owned by Jack Parsons. A supervisor was selected by the Experimental Farm to work with the operators of the sub-station. Mr. A. W. Wilton was the first permanent supervisor.

The owners received a rental for the land as well as grass seed and some seed grain from the government.

The fields were laid out in strips from 200 feet to 400 feet wide depending on the texture of the soil, favoring a north-south direction, as the strong prevailing winds were west-northwest and south-east.

The owners were encouraged to be mixed farmers with cattle, hogs and an approved number of hens, as well as to have a large garden, flowers, and shrubs. Fruit trees were supplied from the Morden Experimental farm.

Under their supervision, a large shelterbelt of trees including evergreens were planted around the buildings with a tree-lined roadway to town.

A test plot of all varieties of grain and flax was planted each year. These plots were harvested and recorded by the Brandon Experimental Farm for yield and performance

under the local conditions and results published in book form of all sub-stations in Manitoba.

In 1936, the Lyleton Tree Field Shelterbelt Association was formed, but the operators of the substation were not allowed to plant trees in the fields as the government wanted to demonstrate that soil drifting could be controlled by strip farming and cultural methods. However, in 1950, under pressure from the operators the government relented and allowed us to plant field tree shelterbelts.

In 1940 and later, after the yard was landscaped and the farm shelterbelt was established, the supervisor with the owners set up a large tent and a Field Day, with speakers from the Experimental Farm to show and review the different projects, rotations and plots with the new varieties.

Records of cost were recorded on all fields, including time, gallons of fuel, and the implement used.

Precipitation records were recorded by the operators and sent to Brandon each month.

In 1960, the federal government changed the sub-stations to research stations with emphasis on weather and plot work of all varieties of wheat, barley, oats, flax and soybeans. This contract was terminated in 1970.

## C.P.R. Demonstration Farm (From the R.M. of Edward History)

When the village of Pierson was settled on the north side of the correction line, and the railroad came through, the townsite was all used for dwellings and business establishments such as: the lumberyard, hardware, two general stores, schools, churches, implement dealers, elevator and rink. As more room for expansion was required, it was therefore decided to purchase more land from the C.P.R. Company, in order to expand on the south side of the correction line.

In 1912, the C.P.R. Company decided to develop a Demonstration farm and so built up a full line of modern buildings, including a two-storey cottage roof house, size 28 by 28 feet. The lower storey was covered with white siding, the second story with green shingles as was the cottage roof. The house contained four bedrooms, three clothes closets, and an upstairs hall. The downstairs consisted of a living- room, bedroom, hallway, kitchen and pantry. There was a small excavation under the main floor that served as a storage cellar.

The out buildings consisted of an outside toilet, granary, pig house, hen house and a dairy building for the cream separator and churn, with a wash up space. There was a modern-type barn with a loft and storage space in the centre of the barn. It had a high roof and on the west and east side were lean-tos with the mangers along the outside of the middle hay shed. Facing towards it was a shed for horses and one for cattle, especially the milk cows and cow and calf crop.

In 1912 the C.P.R. Company went all out to fix the portion remaining of the N 35-2-29 for their demonstration farm; crews were hired to fence and cross fence with pagewire. Mr. Irwin Evers of Gainsborough was hired with his big steam-powered engine and ploughs to break the sod. Buildings were erected and painted. Plots for experimental work were planned and things were put into shape to carry on.

The fall of 1913 Mr. J. Mates and his wife, from Butterfield, moved from their farm and took up residence in their new place as manager of the C.P.R. Demonstration farm. This involved a lot of work keeping records and farm data, so Mr. George Followell was engaged to help Mr. Mates.

When Mr. Mates came to the farm, he sold some of his equipment to the C.P .R. One team I remember was a pair of brown mares, almost identical mates, called Gypsy and Nellie. The Mates family brought their black and white dog Fritz with them.

This went along well until 1916 when Jack enlisted in the 222 Battalion and his wife and little son went to Scotland to her parents, where a second son was born and Mrs. Mates passed away.

When Jack enlisted, Mr. Hogg, wife and family came to operate the farm.

In 1918 the farm was sold to Mel Mayes, but he gave it up. Others who rented, or hired here with the Company were: Mr. and Mrs. Matt Tole, and Mr. and Mrs. Fred Drier. It was later purchased in 1942 by the Steve Lee family, and is now successfully farmed by Mr. and Mrs. Ken Lee and son Brian.

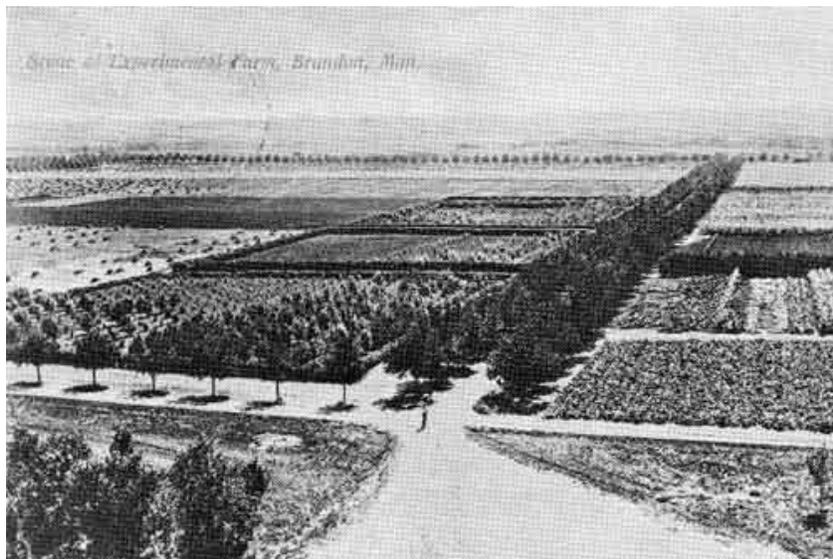
## 4. The Greening of the West: Horticulture on the Canadian Prairies, 1870-1930

by Lyle Dick Parks Canada, Victoria, BC

Manitoba History, Number 31, Spring 1996

Early horticultural efforts after Confederation often focused on tree culture in both Manitoba and the North-West Territories (after 1905, Saskatchewan and Alberta). In this vast, often sparsely treed region, settlers planted trees for a variety of reasons, including aesthetic enhancement, protection of their farmsteads from wind, and for psychological security.

Tree culture also enabled the creation of farmstead microclimates within which gardens could flourish. Among the earliest groups to plant trees were Mennonites from Ukraine who settled in southern Manitoba after 1874. These newcomers established agricultural street villages, which they lined with cottonwoods transplanted from nearby river banks. In so doing they demonstrated the viability of tree culture in areas of open prairie. By 1883 Manitoba's 9,077 farmers were cultivating 120,000 hectares of land, of which 1,400 hectares were devoted to gardens and orchards. The importance of tree culture was officially recognized with the proclamation of Arbor Day in the North-West Territories in 1884, followed by Manitoba in 1886.



Shelter belts and tree-lined approach, Dominion Experimental Farm, Brandon, circa 1905. Source: Archives of Manitoba

The systematic horticultural development of rural areas was an ancillary goal of Dominion experimental farms in the settlement period. The Dominion government, whose National Policy initiated a coordinated program of immigration, railroad construction, and settlement on the prairies, viewed forestry and horticulture, as well as field crops, as essential to sustained settlement. Accordingly, federal authorities established experimental farms at Brandon, Manitoba and Indian Head, Saskatchewan, in the late 1880s. In addition to cereal grain and livestock trials, the farms tested a wide variety of tree and plant material originating in central Canada, the northern United States, and Eurasia. In Alberta the first federal agricultural research station was established at Lethbridge in 1906. Its experimental work included comparative tests on both irrigated and non-irrigated land to determine the potential for cultivating a broad range of plant material within the dry belt. In 1915 the Dominion government established the first prairie research station devoted primarily to horticulture, at Morden, Manitoba. Its staff carried out extensive trials in small fruits, trees, vegetables, and ornamentals, and disseminated the results to the farm community.

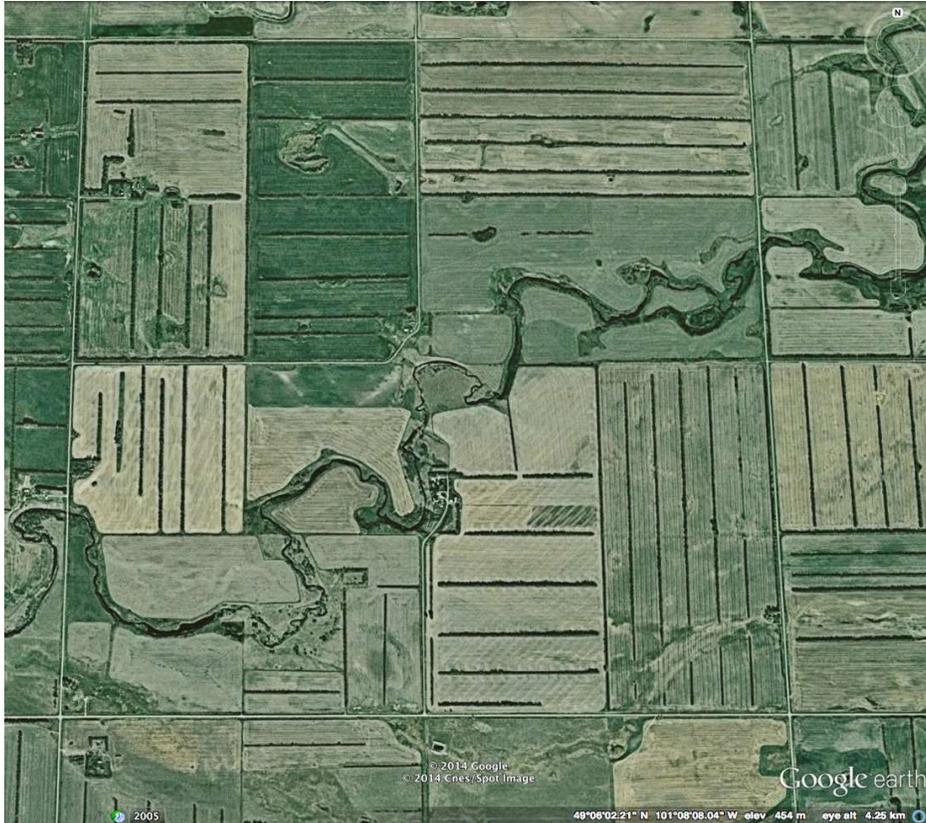
An early role of the experimental farms was the promotion of tree shelterbelt plantations on farmsteads to create microclimates for garden and fruit culture. Between 1886 and 1890 the Central Experimental Farm in Ottawa shipped about 500,000 young trees to the prairies for distribution to farmers. While many of these trees did not survive, they provided an empirical basis for determining suitable varieties for prairie tree culture. To expand its promotion of farmstead shelterbelts, the federal government in 1903 established a separate Dominion Tree Nursery at Indian Head as the basis for a large-scale distribution program. In 1914 a second tree nursery was established at Sutherland, Saskatchewan, specifically to encourage farmers to expand their plantations to comprise field shelterbelts as well as farmstead windbreaks. Under the general direction of Norman M. Ross and his successors, the two federal nurseries distributed and supervised the planting of 145 million trees by more than 100,000 farmers between 1901 and 1935.

The Canadian Pacific Railway (CPR) played a supporting role in promoting western tree and flower culture in the settlement era. As the principal corporate agency of land disposal on the prairies, the CPR had a strong interest in promoting settlement through horticulture. By 1907 the company had established two early nurseries—one at Springfield, Manitoba devoted to ornamental production, and another at Wolseley, Saskatchewan for the propagation of tree, shrub, and perennial stock. In 1908 the company organized a forestry department to administer its parks and gardens and to advise officials in the planting of railway gardens and windbreaks along its rail lines.

## 5. Lyleton Field Shelterbelts by Jim Murray

Originally published in the R.M. of Edward History

The early homesteaders found a sea of waving grasses, bluejoint, and other native hays. They plowed them under. The result: hot, dry, prairie winds often blew their freeholds into the next township.



**Near Lyleton Mb.**

The early farmers soon realized what had to be done. They knew that at home in Ontario, the British Isles or the Ukraine, native stands of trees and shrubs protected cultivated cropland from erosion. Not only would trees catch and hold the moisture in the soil, they would provide windbreaks for home and herd. But natural tree growth on the prairies was restricted to spring fed coulees and lowland river valleys. The only answer was to grow seedlings in nursery plots and transplant them on the prairies.

In 1935 Parliament passed the "Prairie Farm Rehabilitation Act", (PFRA). Subsequently, thousands of dugouts were to catch and hold spring runoff water and new tree planting projects flourished.

In 1936 Baird and Will Murray of Lyleton Petitioned P.D.F.R.A. to establish, The Lyleton Shelterbelt Association. With Baird as president and Will as secretary, the P.D.F.R.A. backed them to the extent of \$5 per mile for planting, plus \$20 per mile per year for three years for maintenance.

The department sent in Des Crossley as supervisor and under his direction the first plantings were completed in 1936. They consisted of one-half mile planting of 2300 trees on the farm of C. E. Fennell. In 1937, 27 farmers planted 35 miles of shelter belts, which meant planting 375,000 trees. In 1938, 39 miles of trees were established. The varieties planted were caragana, ash, elm, maple and willow.

Originally the project was set up to run for five years, but the success of the program and the interest shown by the farmers caused it to be extended several times. It was finally terminated in 1959.



**Near Lyleton, 1960**

During the periods 1936-1959 some 97 farmers planted 364 miles of field shelterbelts over a 60 square mile area, involving 2,386,000 trees. The total cost of the assistance supplied by the Federal Government approached \$28,000. All the tree material was supplied free of charge from the Forest Nursery Station at Indian Head. The farmers planted most of the trees by hand, hoed them by hand for three years, as well as cultivating on both sides.

### Additional Information: From Local Histories

It would be folly to try and name all those who gave their enthusiastic support to this project. It is sufficient to say that the majority of the residents in Township 1-28, and

also the townspeople, believed that this enterprise would be the salvation of this area. As a result the Lyleton district would once again be a viable and prosperous farming community.

The New Era reports that in October, 1937 Shelterbelt Association executive consisted of: President, Cecil Murray; Vice-President, Cliff Fennell and Secretary, Fred Hill.

Today these rows of trees are stately and arrow straight, attracting scores of visitors to Lyleton, just a few minutes' drive from the point where the boundary of Manitoba, Saskatchewan and North Dakota meet.

Over the years the field shelterbelts have proven beneficial in keeping the snow in the fields, conserving the precious moisture and slowing down the prairie winds. Some of those early plantings now tower 60 feet in the air. They are a living tribute to the far sightedness of the farmers of that era.

The following letter was received, following inquiries by the History Book Committee, from D. 1. Crossley, who was involved in the planning of the Lyleton Shelterbelts.

*Dear Jim:*

*I note the history writing project in which the community is involving itself. This is a worthwhile endeavor and I will try to satisfy your request. It is hard to realize that forty-seven years have gone by since we started the Lyleton Field Shelterbelt project. You have provided the pertinent information on the "raison d'etre" for the establishment of this study. Four projects were initiated across the prairie provinces and your community had the initiative and drive to attract one of them*

*A prairie boy myself (Lloydminster, Alberta) I graduated in Forestry from the University of Toronto in the spring of 1935. At this time jobs were very difficult to obtain but I was fortunate to be offered a position under the P.F.R.A. in the completely new field of prairie silviculture, with headquarters at the Dominion Forestry Nursery Station at Indian Head, Saskatchewan, and was immediately assigned to the Lyleton project.*

*Southwestern Manitoba was completely new country to me. The light soils and the scarcity of precipitation over the preceding years made it a likely and challenging area for the establishment and subsequent study of shelterbelts to retain the drifting winter snows and to minimize soil movement and moisture evaporation.*

*Baird and Will Murray were my initial contacts with the newly formed Shelterbelt*

*Association and I was soon made to feel at home in the community, fully sympathetic with*

*the problem it faced of retaining the viability of a farming community over the adversities it was experiencing. In an honest effort to record my perception of the task to which I had been assigned, it soon became evident that the initial membership was dedicated to the goals of the study project and that the farm lands to be removed from the agricultural land pool in order to support the shelterbelts to be established would be justified. On the other side of the fence were farmers who were not so convinced and held back. This was unfortunate because the success of the project might depend on the mass effect of a compact series of shelterbelts on adjoining farms. However, farm incomes during the 30's were at a minimum, and many of these unconvinced farmers were subsequently attracted to sign up, simply because of the federal financial assistance.*

*It cannot be recorded that the initial results were encouraging. Caragana was the initial tree species that was considered to have the best possibility of establishing under drought conditions. Spring survival following planting was comforting, but an un- expected danger awaited the advance of the season from blister beetle that were attracted to this new source of food with rapid defoliation the result. Emergency control measures were initiated by dusting with an appropriate insecticide, with moderate success. Those trees that succumbed had to be re- placed the following spring, only to require further dusting. These unexpected expenses were born fully by the Department. At this time more thought was given to the incorporation of other species that were immune to this insect's attacks. As a result, and because of the improving climate, the belts became established and form the stately avenues that dominate the rural scene today.*

*At this point I would like to record my own memories of my involvement with the Lyleton com- munity during the initial five years. I was 24 years of age in 1935, single, just out of University and anxious to become a part of the type of community in which I was nurtured. I found it in Lyleton, when I became part of the Ma White household which included Joe Mustard, local entrepreneur, Willard (Stoop) Allan, Seward Smith, both of whom were federal entomologists battling with the study of grasshoppers, and other civil servants passing through from time to time. Ma White was not at all hesitant*

*in showing disapproval of our exuberance and lack of piety, but I do think she regarded us as her family and I will be forever grateful that I had the opportunity to be part of it. She was an excellent cook, forever pressing further consumption upon us. In 1937 I took my bride with me and she was taken into the community as readily as I had been.*

*In the light of present day sophistication I am nostalgic over the simpler forms of entertainment that characterized the community at that time: the corn roasts we enjoyed at the old swimming hole, the Saturday night trips to Antler to enjoy a bottle of beer to the strains of Clyde McCoy and his " Sugar Blues" played over and over again on the Juke box, and the baseball games in which I was invited to participate whenever I happened to be in the community at the right time.*

*I could go on and on. 1940 was the last year of my participation in this project. Wartime*

*obligation had to be satisfied, and upon discharge in 1945 I severed my employment with the Federal Dept. of Agriculture and took up employment elsewhere, but we will always remember the good years my wife and I spent among you.*

*Sincerely, D. Crossley.*

## Lyleton Shelterbelts

Originally Published in Vantage Points

<http://vantagepoints.ca/pages/publications>

Shelterbelts in the area around Lyleton ensured the viability of agriculture during years of drought 1936-1959.

### The Need for a Wind Break

Stately rows of trees line the gravel roads near Lyleton, Manitoba. From the sky one could imagine the fields of the region resembling a striped tablecloth that has been draped over the landscape, changing colours with the seasons. Regardless of the poetry one could write while considering such a metaphor, the planting of the shelterbelts in and around Lyleton served a much more practical purpose.



**The shelterbelts near the town of Lyleton are captured in this picture: looking northeast in August, 1979.**

Settlers first arrived in the area of Lyleton in the 1880s. They found in front of them an almost endless expanse of native prairie grasses, bending to the will of the wind. The intended purpose of the settlers who populated the region was to farm. Therefore, these native grasses were tilled under without a thought to what their absence would mean: prairie winds gusting unhindered across the landscape.

### The PFRA

In 1935 the Government of Canada launched the Prairie Farm Rehabilitation Act (PFRA). The following year two Lyleton locals, Baird and Will Murray, petitioned the PFRA to establish the Lyleton Shelterbelt Association. The PFRA provided \$5 per mile

of planted trees, with an additional \$20 per mile, per year for the following three years of maintenance.

### **Stately Rows of Trees**

The first of many shelterbelts to be planted in the region was completed in 1936. It consisted of 2,300 trees which were planted in a row measuring half a mile on C. E. Fennell's farm.

At first, caragana trees were thought to be the most appropriate tree to combat soil drifting due to severe drought. However, the caraganas ended up suffering from local blister beetles, which regarded the trees as an exciting new source of food. Additional varieties of trees planted afterwards were ash, elm, maple and willow.

In line with the hopes of local residents, the trees were found to be very effective at keeping soil erosion to a minimum. They also kept winter snows from blowing away, conserving more moisture on the fields. The shelterbelts were instrumental in retaining the viability of agriculture in the region during the Dirty Thirties and afterwards.

The trees also changed the aesthetics of the region. Where previously a vast area of open cropland had existed, there appeared 30- or 40-acre strips of land, bordered on each side by arrow-straight rows of trees. Wildlife, too, found the trees to be an attractive addition to the region. Moose, elk, deer and sometimes cougars have found accommodating habitats within the shelterbelts. New species of birds have found homes in the tree branches, adding their song to the area. The region continues to be a popular birding destination today.

### **The Project is Extended**

The project was set up to run for only five years, but due to its success it was extended several times, and ran for a total of 23 years. By the project's end in 1959, 97 farmers had been involved with the planting of 364 miles of shelterbelt, made up of 2,386,000 trees, over an area of 60 square miles. The expense of the project to the federal government was \$28,000. Most of the trees were planted by hand and maintained using hand-held hoes. Many of the shelterbelts planted in the 30s and 40s remain today, though the need for them is not as critical as it was in the years of dire drought. Recently farmers have begun tearing down the trees in order to increase the amount of land available for crops.

Author: Teyana Neufeld

Sources:

Neale Daniels. Personal Interview. 21 June 2010.

RM of Edward History Book Committee. Harvests of Time. Altona: Friesen Printers, 1983. pp 83-85.

Photo: RM of Edward History Book Committee. pp 84.

## 6. The Indian Head Shelterbelt Centre



**Shelterbelt Centre, Indian Head.**  
*Agriculture and Agri-Food Canada 91-08-079*

### **Purpose**

In 1901 the government of Canada established the Forest Nursery Station at Indian Head, in what is now Saskatchewan

Its purpose was to researching, cultivate, and supply hardy trees and shrubs suited to the prairies to prairie farmers. The first decades of prairies agriculture had taught all concerned that species and methods that worked in Ontario were not necessarily transferrable to the western climate and soils. Along with trees they were able to provided advice as to where to plant the trees and how to care for them.

Group plantings, known as shelterbelts, were designed to protect the settlers, their land and their livestock from the strong winds, as well as to provide relief during the cold winters and shade during the hot summers. Seed from trees found in cold countries was collected and grown to assess survival under prairie conditions.

Orders for trees and shrubs grew at a rapid rate and the resulting plantings have done much to reduce soil erosion, trap snow for additional moisture, help increase farm water supply, and provide shelter for wild life. Both centres have also tested a range of fruit trees.

## **Education**

Public information activities were undertaken to publicize both the Centre and sustainable agriculture. In 1920, the CPR donated to the Forestry Associations of Western Canada a railway coach, which traveled to stations with displays promoting the benefits of tree planting, forestry, and shelterbelts.

## **The PFRA**

In the 1930s the PFRA (PRAIRIE FARM REHABILITATION ADMINISTRATION), was established and teamed with the Nursery worked to plant over 2,000 km of shelterbelts across the prairies, including the well-known ones at Lyleton Mb. One purpose was to demonstrate their use for soil conservation. The shelterbelt program became part of the PFRA in 1963. The Indian Head facility continued to grow and develop.

Between 1901 and 2001, more than 570 million evergreen and deciduous tree and shrub seedlings were distributed by the Indian Head Nursery as a service to prairie farmers as well as to federal, provincial, municipal and other agencies. At its height it produced twenty-nine hardy tree and shrub species distributing approximately five million seedlings free of charge, to prairie farmers and rural landowners.

## Indian Head Shelterbelt Centre

**From the Encyclopedia of Saskatchewan**

**[http://esask.uregina.ca/entry/prairie\\_farm\\_rehabilitation\\_administration\\_pfra\\_shelterbelt\\_centre.html](http://esask.uregina.ca/entry/prairie_farm_rehabilitation_administration_pfra_shelterbelt_centre.html)**

When the early settlers arrived in the North-West Territories, they found a treeless region with an extreme climate that would not support many of the plants that they had brought with them. In 1901, under the Department of the Interior the government of Canada established at Indian Head, in what is now Saskatchewan, the Forest Nursery Station, dedicated to researching, cultivating, and supplying hardy trees and shrubs to prairie farmers. Advice was provided as to where to plant the trees and how to care for them. The group plantings, known as shelterbelts, were planned to protect the settlers, their land and their livestock from the strong winds, as well as to provide relief during the cold winters and shade during the hot summers. Initially, broadleaf species such as American elm, caragana, green ash, Manitoba maple, poplar and willow were grown, as were evergreen varieties of larch, pine and spruce. The Colorado spruce, recognizable in most prairie farm shelterbelts, was not introduced until 1937. Seed from trees found in cold countries was collected and grown to assess survival under prairie conditions.

Orders for trees and shrubs grew at a rapid rate, and a second nursery was established in 1913 at Sutherland, near Saskatoon. Over the years, both stations tested and distributed many tree and shrub species; these plantings have done much to reduce soil erosion, trap snow for additional moisture, help increase farm water supply, and provide shelter for wild life. Both centres have also tested a range of fruit trees. Public information activities, such as fair displays, newspaper advertisements, pamphlets, and presentations to farm groups increased the profile of the nursery. In 1920, the CPR donated to the Forestry Associations of Western Canada a railway coach which traveled to stations with displays promoting the benefits of tree planting, forestry, and shelterbelts.

During the severe droughts of the 1930s the nurseries, in conjunction with the newly formed PFRA (PRAIRIE FARM REHABILITATION ADMINISTRATION), worked to plant over 2,000 km of shelterbelts and demonstrated their use for soil conservation across the prairies. In 1963, the shelterbelt program became part of the PFRA. Two years later, with improvements to the Indian Head facility that included a new water reservoir as well as irrigation and cold storage facilities for trees and shrubs, the Sutherland nursery was shut down.

The Indian Head nursery has grown from its original quarter-section (64 ha) to a full section (256 ha). Between 1901 and 2001, more than 570 million evergreen and deciduous tree and shrub seedlings were distributed by the Indian Head Nursery as a service to

prairie farmers as well as to federal, provincial, municipal and other agencies.

Today the Nursery produces twenty-nine hardy tree and shrub species, and its sophisticated facilities allow stable and healthy seedling production for clients. The Centre has three distinct business units focused on research, technology development, and tree production and distribution. Conservation and ecological issues such as reduction of greenhouse gas emissions, soil and water conservation, and enhanced wildlife habitat combine with economic and social returns for rural residents. Each year, approximately five million seedlings are distributed, free of charge, to prairie farmers and rural landowners. The Indian Head Nursery is now known as the Agriculture and Agri-Food Canada PFRA Shelterbelt Centre.

*Merle Massie, Allan E. Smith*

<http://www.agr.gc.ca/eng/about-us/offices-and-locations/agroforestry-development-centre/?id=1186517615847>

<http://www.producer.com/2012/04/govt-axes-shelterbelt-program%E2%80%A9/>

**From: Saskatchewan's Environmental Champions Website**

[http://econet.ca/sk\\_enviro\\_champions/indian\\_head.html](http://econet.ca/sk_enviro_champions/indian_head.html)

From the beginning of farm settlement in Saskatchewan, there has been a demand for trees to shelter farmsteads and help settlers adjust to life on the open prairie. Later, field shelterbelts were promoted to prevent wind erosion and trap blowing snow away from roads. More recently, trees and shrubs have also been planted for wildlife habitat, biodiversity, and agroforestry initiatives.

The PFRA Shelterbelt Centre was established at Indian Head, Saskatchewan in 1901 to supply prairie hardy tree and shrub seedlings to meet these needs. By 2004, over 590,000,000 seedlings have been distributed to 645,615 applicants throughout the Prairies. If all those seedlings were planted at 1-metre spacings, they would circle the world 15 times!

If all those seedlings (590,000,000 from 1902-2004) were planted at 1-metre spacings, they would circle the world 15 times!

Selection and limited distribution of hardy trees first began in the late 1800s at the Agriculture Experimental Station in Indian Head. To meet growing demand, the Department of Interior established the Forest Nursery Station, which shipped 106,000 trees to 92 settlers in its first year (1902). The program became more popular every year and by 1906, 2 million trees were being shipped. A second nursery was established in 1913 at Sutherland, Saskatoon.

After installation of irrigation facilities at Indian Head in 1965, the Sutherland operation was discontinued and the productive capacity of the Indian Head nursery increased to 7 million trees annually. Today the Shelterbelt Centre is 640 acres (256 ha) in size, produces 29 hardy tree and shrub species, and distributes over 5 million trees and shrubs to as many as 10,000 prairie clients annually. In 2004, 288 miles (464 km) of field shelterbelts and about 1,000 miles (1,611 km) of farmstead shelterbelts were planted in Saskatchewan alone.

During the severe drought of the 1930s, Shelterbelt Centre staff worked with the newly formed PFRA to plant field shelterbelts and demonstrate their use for soil conservation. Major plantings were established at this time near Lyleton, Manitoba; Porter Lake, Alberta; and Aneroid and Conquest, Saskatchewan. Over 2,000 km of shelterbelts were planted, many of them still present today. In 1963, the Shelterbelt Centre at Indian Head Saskatchewan became part of PFRA.

Public promotion was an instrumental part of the nursery activities. In early years, displays in fairs, talks to farm groups and horticultural societies, and publications, bulletins and pamphlets were used. From 1920 -1973 a donated railway car operated by

the prairies provinces Forestry Association traveled free on both CPR and CN lines. The 'tree train,' as school kids knew it, promoted both forestry and shelterbelts. The benefits of shelterbelts are numerous. Shelterbelts reduce wind speed and thereby create a microclimate for yards, gardens, and crops. The wind is deflected up and over the shelterbelt, creating a well-protected zone in the lee of the belt. The zone of protection extends outward many times the height of the trees. Reducing wind speed can have a dramatic energy saving benefit. On average, a mature 5-row shelterbelt, with at least 2 rows of conifers, planted around a farmhouse will reduce its heat requirements by 25%. The trapped snow provides water for dugouts and soil reserves.

The snow trapping and wind reduction effect of field shelterbelts reduces wind erosion and can increase yields in dry years. Other benefits include habitat and travel corridors for wildlife and birds and offsetting carbon dioxide emissions. A recent independent study estimated the public good from shelterbelt trees provided through the Prairie Shelterbelt Program from 1981-2001 to be as much as \$600 million and the value of private good to be as much as \$340 million.

It is estimated that some 4,747,000 trees and shrubs planted in shelterbelts in 2004 alone will sequester 1,790,000 tonnes of CO<sub>2</sub> by 2054. To encourage plantings for this and other conservation goals a new program will supply equipment for laying down a 3-foot wide strip of plastic 'mulch' along field belts. This eliminates the need for cultivation and chemicals for weed control.

Wherever people build dwellings, one the first things they turn to is planting trees for shade, shelter and beauty. The longevity of the PFRA Shelterbelt Centre is a testament to these and the many other benefits of trees.

For more information visit <http://www.agr.gc.ca/pfra/shelterbelt.htm>

## 7. The Prairie Farm Rehabilitation Administration (PFRA)

The Prairie Farm Rehabilitation Administration (PFRA), a branch of Agriculture and Agri-Food Canada (AAFC), was established by the federal government in 1935 to help mitigate the impacts of a prolonged and disastrous drought, which forced thousands of people to leave the prairies between 1931 and 1941. PFRA's original mandate was to deal with the problems of soil erosion and lack of water resources required for agricultural development in the drought-affected areas of Manitoba, Saskatchewan and Alberta. Emergency programs included on-farm dugouts for the conservation of water, strip farming to prevent extensive soil drifting, seeding of abandoned land to curb erosion and create Community Pastures, and extensive tree-planting projects to

protect the soil from wind erosion. As a result of another drought in 1961, the federal government expanded PFRA's work area to include all agricultural areas of the Prairie Provinces—more than 80% of Canada's agricultural land base.

## Encyclopedia of Saskatchewan

### A Personal Reminiscence (P124 Lyleton History)

Vera Murray recalls that "during the 'never-to-be-forgotten dirty thirties'", Father remember the countless areas of trees on all Ontario farms and assumed that trees might prevent the soil from drifting from quarter to quarter. In the Manitoba government there was very slow response to the dire need in southwestern portion of Manitoba. After much opposition, the Prairie Farm Rehabilitation Act was passed in 1935 (to mitigate the effects of drought in the future). Father convinced his nephew, Andrew Gardiner, of the value of trees and Andrew became one of the first in the area to plant miles and miles of tree strips in each quarter according to the government plan which called for 40 rods between strips. These strips consisted of caragana, maple, ash, elm, chokecherry or plum. Father's choice for the Experimental Farm for the country was on the Charles Edgar's half section, one quarter mile north of Lyleton, where the soil was badly eroded. After such persuasion, there was consent and Jack Parsons gladly agreed to have his adjoining half-section the sub-station. The weather conditions improved, fortunately, and the land became productive once more. However, the \$5.00-a-mile for planting the trees and \$15-a-mile annually for maintenance for five years helped to put change in the farmers' pockets. Farmers have come from other areas in Manitoba, from Saskatchewan, and from North Dakota in recent years, to evaluate the worth of tree-stripping and to consider the promotion of similar action in their own areas."

## 8. The Gerald W. Malaher Wildlife Management Area

by Ken McPhail / Melita History

The Gerald W. Malaher W.M.A. is located one and one half miles west of Melita and is 148 acres in size. The area was declared an upland game preserve in 1948, after purchase by the crown. The intent of the former director of the Game Branch, Mr. Gerald Malaher, was to determine what types of food and cover plants could be grown on poor quality land that would be of benefit to pheasants during the winter. It was under his direction that this land, much of which had been severely eroded, was revegetated over a 15 year period. The area became known as the Melita Cover Plot and in 1974 was designated the Gerald W. Malaher W.M.A.



The land is essentially flat with relatively little relief. A small ravine bisects the area, running west to east. In the early 1950's a dam was constructed across the ravine to collect runoff water and form a permanent pond. The soils are primarily Souris fine sandy loam and are susceptible to surface drought and soil drifting due to their light texture.

Very little native tree cover exists on the area except for a few patches of willow along the ravine and two or three small groups of aspen and maple. Approximately 50% of the area was planted, in the early 1950's, to a wide variety of indigenous and exotic tree and shrub species, in both shelterbelt and block plantings. Many fruit bearing species

were planted in an effort to provide food for pheasants. Complete records of species and numbers planted were not kept or have been lost, but many thousands of "stems" were planted, including the following species.



Additional Photos by Ken Storie

Links:

<http://www.gov.mb.ca/watchablewildlife/geraldmalaher.html>

## Tree Stories

There is no mistaking the pioneers' love of trees. A scan of local histories reveals their attitudes clearly. As pioneers recall their early days in this land one is struck by their first impressions of the treeless prairie and the early attempts to break that endless horizon with trees.

That attitude or viewpoint might be summed up by this entry in the R.M. of Edward history:

"Later Mr. Minshull constructed wooden buildings on the NW 2-4-29 beside Graham Creek. Being a progressive farmer, he planted one of the first groves of trees in the community; ash, cottonwood, Russian poplar and Manitoba maple. All were supplied by Morden Nursery, except maples, which were grown from seeds probably picked up in bush along the creek. As time went on more shrubs and trees were planted - honeysuckles, lilacs and currant bushes and an ever present vegetable garden." \*P 556

That was the prevailing attitude...progressive farmers planted trees.

When we evaluate the benefits of planting trees we might just overlook their value as landmarks, as a story from the Melita History Illustrates:

**Marion J. (Reid) Robinson a teacher at West Brenda School tells of being storm stayed with several of her students in the school overnight in a blizzard. After a terrifying night when a parent, Mr. VanKleek arrived to escort them all home. The storm was still raging but they made their way to the school by keeping the wind in their backs, and didn't know where they were till they ran into the trees across the road from the school.**

In better conditions, farm sites were identified by their farmyard shelters. Stories, sometimes tragic, are often told about being lost in snowstorms. Many times the grove of trees might be the only thing visible on the bleak prairie.

### Excerpts from Local Histories

In no particular order, here are some brief excerpts that highlight the pioneer feeling for trees:

#### From "Ebor Echoes"

- May 16, 1912 (M.N.) Young Harry is very busy these days planting trees and otherwise improving his property. P7

- In 1912 he was busy planting trees on his property and around town. P85

- This was our home for 7 years. In 1943, we built a new house and barn, trees planted, and fences up. P99

- There were no trees around the buildings so we planted a windbreak of maple and ash trees along with a caragana hedge, which now is as high as the maples. P140

#### From "Melita: Our First Century"

- In 1901 the Souris River Agriculture Society promoted Forestry. A speaker came for the purpose of teaching the kinds of trees to plant and how to plant them. A committee was set up: A. B. Estlin, R. M. Graham, A. Wilson, J. L. Campbell, A. D. Wheeler, and A. E. Thompson M.P. to carry the matter through in regards to government assistance and the supervision of small tree plantings on homesteads, towns, and parks. John Crerar set out 8000 trees in May that year and Mr. Richardson set out 1500 one and two year old seedlings of ash, maple, cotton-wood, and elm and 500 Russian poplar.

- A carload of spruce trees arrived in Melita in May 1908 and 580 of these were planted in the area.

- In the spring of 1935, the year of the big rain, 4000 young trees were shipped from the Experimental Farm at Indian Head, Saskatchewan and planted around the farm buildings. They thrived, due in part to the care they received from George whose hobby was gardening. P409

- Because the Browns (William Henry) missed the trees back east so much, they drew small trees from the sandhills and river to plant a large grove of them to the west and north of the house, down both sides of their long lane to the road, finishing off with a row of evergreens to the east of the house. Many of these trees and all the evergreens were killed in the 1930's drought. P449

- Dr. Livingston has not neglected the 11th commandment for the farmers of Manitoba and states that he has set out on his farm about 1,000 trees. Most of these trees are now in a flourishing condition and add greatly to the appearance of his property which is particularly favoured by nature in this respect.

- They made their way to the school by keeping the wind in their backs, but didn't know where they were till they ran into the trees across the road from the school. P107

#### From "Trails Along the Pipestone"

- In the early 1900's, Reston was a grass land perpetuated by grass fires. Alf (Archer) promoted the planting of trees and flowers to anyone who was interested. He especially encouraged tree planting for "shelter belts" around farm lands and parks. In 1962, his work was recognized when he received an Honorary Life Membership to the Manitoba Horticultural Association. P529

- Lew (Berry) left a lasting memorial of his life when in the 1920's he planted a band of trees on the west side of the town of Cromer which has proven to be a great shelter for the little Village. There were about 9000 trees of numerous varieties planted in five or six rows. Should you ever visit the village, you will notice Lewis's trees behind the church, alive and thriving today. P119

- Mr. Archer consulted with a Mr. A. P. Stevenson who inspected shelter belts in the district.

- Perhaps most notably, Smith brought small spruce trees from Riding Mountain National Park and planted these where no trees grew before, giving the Reston Cemetery its distinctive appearance ever since. P602

## Arbor Day

Our love and appreciation for trees took shape in the form a day set aside just for trees.

The first Arbor Day in Canada is believed to have been celebrated in 1906 in Ontario.

It was often an important annual activity in schools, where students were involved in a variety of activities to learn about and appreciate trees. Students also planted trees in their schoolyards and communities.

Many of us remember school-based activities and the observation of the day.

A few items from Local Histories remind us that it was an idea that really caught on in the settlement era.

For instance in Melita, in 1899 meeting was held in the Metropolitan Hotel to consider the proposal to set out trees in the park and cemetery. A committee of A. B. Estlin and T. A. Blackwell was set up to canvass town for assistance in this project. On Arbor Day, 100 young maples were set out in the park.



**Melita in the 1890's. The trees were not very tall but it is evident that tree planting was underway.**

And in 1924 on Arbor Day the Town Council under Councillor Schnell planted 65 trees from River Park, on Front Street to the Government Highway, and on Main Street in

front of the Fire Hall.

In fact in the Melita School around 1908 the day seemed to rank alongside other "Holidays". An item in an old school register states that: "Arbor Day, Labor Day and Thanksgiving Day were holidays since 1908."

It was the idea of Julius Sterling Morton, a Nebraskan journalist who later became the U.S. Agriculture Secretary, and was first celebrated in Nebraska on April 10, 1874.

By 1882, its observance had become a national event. Nebraska made Arbor Day a legal holiday in 1885, moving it to April 22, Morton's birthday. An estimated one million trees were planted during the first Arbor Day.

## 10. Shelterbelts and Modern Agriculture

Many of the first settlers to our region were from Ontario and they loved the wide-open prairie. Letters home to often included a reference to the ease with which they could break the treeless soil and plant their first crops. When the first soddy or shack was built along with some shelter for livestock, and the first few crops were harvested, they might then turn their attention to enhancing the farm yard. Part of that task would involve planting some trees. The first shelterbelts were primarily windbreaks around farmyards.

The early settlement years, from 1879 through 1884 were wet years on the prairies, and the main challenge for new farmers was marketing their crops. As the wet cycle ended it soon became apparent that farming practices that had served well in Ontario or Britain would need some modification to work here. For some time the focus was on new farming practices that would work in this new dry land. These new methods enabled farmers to establish themselves and even to prosper.

That all changed when the droughts of the thirties came, and it became apparent that in the drier parts of the prairies it was going to take a more proactive approach.

The establishment of shelterbelts became a priority for many farmers, in regions that lacked natural woodland shelter. These shelterbelts provided necessary protection the wind erosion that had devastated so many farms, and enabled farming on what would otherwise have been marginal land.

As we moved into the modern era other technological innovations appeared. Minimal tillage strategies, irrigation, advanced pesticides and artificial fertilizers all helped farmers increase production.

Shelterbelts as originally conceived were often seen as not compatible with modern farming. They interfered with large fields and large machinery. Pesticides harmed them. They used valuable crop land and made large scale irrigation difficult. They restricted the adaptability required in "modern" large-scale operations.

In addition to the cost of maintaining shelterbelts there were other drawbacks. They used productive land, in wet years shading and excess moisture could be an issue, they can become weed traps and they make aerial spraying in difficult.

In short, they were not cost-effective.



**Mature shelterbelts interfere with irrigation technology.**

Today there is a renewed interest in shelterbelts and in finding ways in which they can be used along with the large-scale farms. The multiple benefits have always been there; prevention of soil erosion, protection of crops and livestock, odor control around lagoons and hog barns, and increasingly, aesthetics. The problem is that, on the surface, the costs seem to outweigh the benefits.

To see the complete benefits, one has to look beyond individual parcels of land, and see the eco-system as a whole. There are benefits to the community at large and there are provincial, national and global implications that flow from our use of the land. Issues surrounding the advisability of carbon sequestration, of regional soil and water conservation, of the protection of aquifers, and the need for wildlife and habitat corridors are considerations.

With that in mind some jurisdictions are proposing incentives along with alternate strategies in an effort to revisit the use of shelterbelts. These strategies include finding optimal spacing as the traditional four rows per quarter section is not economically advantageous on the large farm.

In addition to new shelterbelt formats efforts are being made at education and awareness. One approach is to showcase additional possible benefits such as: the potential for timber harvesting, improved soil quality and retention, the use of fruits and non-timber products and the impact shelterbelts have in road dust control. Riparian protection and enhancement is also a factor

In short, an effort has been made to recognize and calculate the benefits beyond the individual farm operation. Any incentives offered to landowners can be justified by those external benefits.

**Based on:**

**Shelterbelts in Large-Scale Agriculture**

**Chris Reynolds – Whitemud Conservation District**

**Ralph Oliver – Reeve – R.M. of North Cypress**