



Potato field by Anglican school and rectory, Hay River, N.W.T., 1928.

## History of Gardening in the N.W.T.

by Karen LeGresley

Gardening in the north has a relatively short history. Both in the Arctic and subarctic, indigenous groups have traditional dietary patterns based on hunting and fishing. A variety of berries, leaves and roots have been used to supplement the diets, but the nomadic lifestyles were not conducive to any forms of gardening. The climate and soil also work against the gardener, though at least there are few insect species in the Arctic to eat the plants.

The best areas for gardening, in terms of climate and soil, are along the rivers. The early settlers from the Hudson's Bay Company took advantage of these areas. George Simpson, Governor of the HBC when it merged with the North West Company, set up district headquarters of the company at Fort Simpson in 1821. By 1828, the Fort Simpson journal records the annual harvest:

"Men finished taking up the potatoes in all our gardens, runs thus 18 kegs barley, 42 do. (ditto) potatoes, 40 turnips - cabbages - carrots - onions - and a few quarts peas."<sup>1</sup>

Winter feeding of livestock was a continuing problem. The same journal a decade later refers to "1000 bundles of hay" gathered on the upper Mackenzie.

The system of gardens gradually expanded to other efforts along the Mackenzie River. By 1844:

"Even at Fort Norman they farm successfully, i.e. grow barley and potatoes. At Fort (Good) Hope nothing will come to perfection but the turnip. The smallest addition of vegetable food to the fish diet of the country is a great boom."<sup>2</sup>

The Hudson's Bay Company allowed missionaries into other Mackenzie Valley areas in 1858. Roman Catholics and Anglicans competed strenuously.<sup>3</sup> Since these missionaries were Europeans and came from countries that were essentially agrarian, they were not content to exist strictly on fresh moose, caribou and fish that they could obtain by bartering manufactured articles with the local inhabitants.<sup>4</sup>

Substantial gardens and farms were established at almost all the subarctic missions,<sup>5</sup> although probably the Roman Catholic's made a

greater effort at agriculture, wishing to be less dependent on the HBC.<sup>6</sup> Many of these gardens took substantial effort to establish. Brother Patrick Kearney at the Fort Good Hope Mission:

"... literally gathered handfuls of good soil from nearby lake bottoms. Eventually a tiny surplus was available to supply other missions at Arctic Red River and later at Aklavik."<sup>7</sup>

Gradually the size and scope of the religious institutions expanded to include schools and hospitals and the need for vegetables also increased.<sup>8</sup>

In early 1890s an Anglican farm and residential school were established at Hay River. Reverend A. Vale reported in 1922:

"About six acres of land are cultivated. This year we took up over 1,000 bushels of potatoes besides a good supply of cabbage, cauliflower, turnips, celery, tomatoes, cucumbers, onions, beets, peas, beans, carrots, etc."<sup>9</sup>

The HBC continued with gardening efforts, however with the introduction of steamboats on the Slave Mackenzie route in 1886, bulkier supplies could be transported for the south. The isolation of the area was lessened and gardening generally declined.<sup>10</sup> The HBC, other organizations such as the RCMP, and certain individuals continued their gardens. The HBC launched a gardening competition in 1941, publishing the results in their company magazine, the *Moccasin Telegraph*.<sup>11</sup> The competition was largely owing to a growing awareness of vitamins and concerns for good nutrition.<sup>12</sup> Some of the competitions were run by the communities. For example, Fort Smith held harvest festivals and Fort Smith had a resident agricultural superintendent who often judged these competitions.<sup>13</sup>

However, the main input from the government was at Fort Simpson. They set up the Dominion Experimental Substation of the Department of Agriculture in 1947, under John Gilbey.<sup>14</sup> The area was already a farm, set up by Dr. W.A.M. Truesdell, the medical officer and Indian agent. Gilbey demonstrated that with the exception of fruit trees, practically anything in cereals, small fruits and vegetables could be grown successfully at Fort Simpson.<sup>15</sup>





Dogs being used to plough fields, Hay River, N.W.T.

Government support of this substation was not particularly enthusiastic for a number of reasons. The government was more concerned with large scale agri-business in the south, larger efficient aircraft delivered fresh produce more cheaply from the south and native land claims put a halt to available lands. The closure of the Fort Simpson substation "was announced in late 1969, taking effect on March 31, 1970."<sup>10</sup> The Beaverlodge substation in Alberta handled requests for information after the closure.

The Government of the N.W.T. has revived efforts to encourage gardening. There are prospects for a horticultural testing and demonstration site in Hay River in 1988.<sup>17</sup> While backyard gardens in most communities are few, there had been an increasing interest in community gardens. In 1984, Fort Resolution began to establish a community garden. Members of the Mennonite community, assisted Fort Resolution in planning and preparation for the garden, and in 1986 the garden was planted. The experiment was not particularly successful, as the area may be turned into a fuel farm.<sup>18</sup> Other communities such as Fort Providence and Fort Good Hope have made preliminary attempts at community gardens.

Private gardens are virtually nonexistent in the Arctic. Horticulture north of the tree-line is so severely limited by the climate that the only way to protect temperate-climate plants from the elements is to grow them in a greenhouse.<sup>19</sup>

As early as 1820, growing vegetables under artificial conditions was attempted in the Arctic. Captain W.E. Parry tried, with very limited success, to grow vegetables on Melville Island.<sup>20</sup> In the 1930s most church missions and the HBC made some attempts at small scale greenhouses. These structures, usually less than 100 square feet, were the only way of getting "traditional" vegetables.<sup>21</sup> The advent of regular air transportation in the 1940s decreased the need for the greenhouses. However, as air freight costs have risen, there is once again an interest in small scale greenhouses.

The arctic soils are unsuitable for temperate plants. Various solutions are possible. Mixing soil from local "ingredients" of sand and peat is acceptable, provided appropriate nutrients are added. Hydroponic growing methods are feasible. Dr. Josef Svoboda, Associate Professor of Botany at the University of Toronto, has worked on methods of increasing the production of native and introduced species in specially constructed greenhouses. The fabric "Fabrene" is used as a covering, as it is translucent enough to admit heat and light yet tough enough to withstand high winds. Glass houses are not viable in most communities without road transportation. Dr. Svoboda used various containers to lift the root zone of the plants as far above the permafrost as possible.

Gardening exclusively for ornamental purposes has a relatively brief history in the north, though it is becoming manifest to an ever increasing extent in western arctic communities.

Use of imported species in ornamental gardening tends to be the norm in the south. The constraints of low temperatures, poor soils and lack of water restrict gardens to native species unless considerable manipulation of the landscape is done. These factors, and the lack of available nursery stock, leads to more use of native species and greater attention to perennials.

Compared to "garden loam" in the south, northern soils tend to be cold, acid and peaty. With permafrost often just below the surface, raised beds help increase the potential for gardens. The possibilities for developing peat gardens using native species is sometimes explored.



Dene children cutting seed potatoes for planting.

Besides the climate and soil constraints in the NWT, there are other factors which influence the pattern of landscaping. Snowmobiles and dogs are more prevalent than many southern communities, and considerable damage can be done by them. While space may not seem to be a limitation to northern gardens, given the vastness of the NWT, many community lots are kept small in order to keep servicing costs down. Innovation techniques such as planting vegetable gardens on the roofs of buildings and containerized gardens are used to manage this lack of space. The creation of warmer, relatively wind-free microclimates that are more amenable to the variety of plants is possible with these techniques. The fact that isolated clumps of willow trees are known to grow near Holman and Bathurst Inlet, well above the tree line, indicate that manipulation of microclimate to extend plant ranges is indeed possible. □

1. C.S. MacKinnon, Muskox, Summer, 1982.
2. Ibid.
3. Ibid.
4. LACO Hunt, North, Jan-Feb 1978.
5. Ibid.
6. C.S. MacKinnon, Muskox, Summer 1982.
7. Ibid.
8. LACO Hunt, North, Jan-Feb 1978.
9. C.S. MacKinnon, Muskox, Summer, 1982.
10. Ibid.
11. Beaver, Winter, 1970.
12. C.S. MacKinnon, Muskox, Summer, 1982.
13. LACO Hunt, North, Jan-Feb, 1978.
14. LACO Hunt, North, Jan-Feb, 1978.
15. Ibid.
16. C.S. MacKinnon, Muskox, Summer, 1982.
17. pers. comm. O.E. Hachey, ADE, Hay River, 1988.
18. O.E. Hachey
19. Ken Webb, North, August, 1977.
20. Ibid.
21. Ibid.