

FLOS TOWNSHIP
A STUDY IN SETTLEMENT AND LAND UTILIZATION

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T A B L E O F C O N T E N T S

	<u>PAGE</u>
Title Page	(1)
Acknowledgements	(ii)
Table of Contents	(iii)
List of Maps and Graphs	(iv)
List of Photographs	(v)
Chapter one General Introduction	1
Introduction to Thesis	1
Introduction to Flos Township	3
Transportation	3
Chapter two Physical Geography of Flos	
Township	6
Geological History	6
Physiography	10
Climate	14
Natural Vegetation	17
Soils	19
Chapter three Historical Development of	
Flos Township	40
Chapter four Present Land Use of Flos	
Township	55
Agricultural Land Use	55
Woodlands of Flos Township	62
Urban Land Use	65
Village of Elmvale	66
Recreational Areas	79
Chapter five Summary and Conclusion	85
Reference Books	88

LIST OF MAPS AND GRAPHS

FIGURE	SUBJECT	PAGE
1	Key map	Front Cover
2	Location Map	2
3	Early Stage In Development of Lake Algonquin	5
4	Shorelines of Lake Algonquin in Flos Township	8
5	Shorelines of Lake Nipissing in Flos Township	8
6	Greatest Extension of L. Algonquin	9
7	Physiographic Map	11
8	Block Diagram	13
9	Climatic Graph	16
10	General Vegetation Pattern	18
11	Soil Map	20
12	Profiles of Dundonald Sandy Loam and Guerin Loam	29
13	Profiles of Smithfield Clay Loam and Schomberg Clay Loam	32
14	Flos Township 1880	44
15	Population Graph	46
16	Graph of Farm Sizes	48
17	Crop Acreage Graph	50
18	Village of Elmvale	68
19	Elmvale Business Block	70
20	Umland of Elmvale	72
21	Land Use Map	Rear Cover

LIST OF PHOTOGRAPHS

FIGURE	SUBJECT	PAGE
1A	Field of Boulder Pavement	7
2A	Abandoned Farmstead	52
3A	Cattle Grazing on Upland	57
4A	Apiary	57
5A	Cattle Grazing Along Nottawa- saga	60
6A	Reforestation in East Flos	63
7A	Impassable Road	62
8A	Flos Rolling Mills	70
9A	Elmvale Arena	72
10A	Fishermen at Mouth of Nottawasaga River	81
11A	Summer Cottages at Orr Lake	81

Chapter one

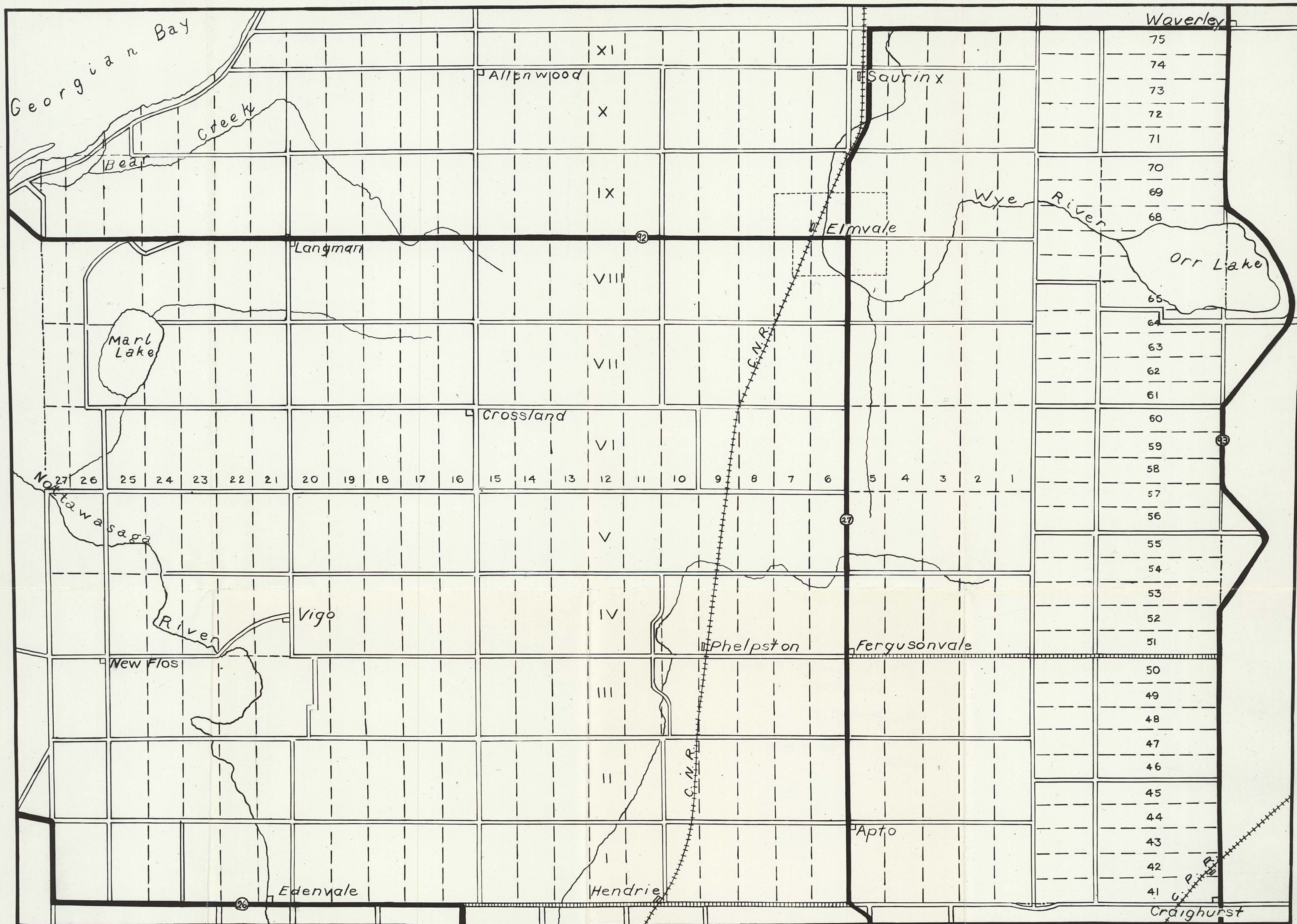
GENERAL INTRODUCTION

Introduction To Thesis

Progress can be marked by the degree to which man is able to adjust himself to his environment. In the early stages of development man was in every way limited by his natural environment but as his intelligence increased the advantages of nature became more obvious while the disadvantages were in many cases overcome. The limits to which our environment bind us appear to withdraw with each succeeding generation until it seems that man controls nature rather than nature man. Although man often finds himself in a position to ignore nature's way it is not without more cost and fewer permanent results. It is the adjustment to environment, making use of all the advantages offered by it, and recognizing its obvious limits, that ensures the greatest success.

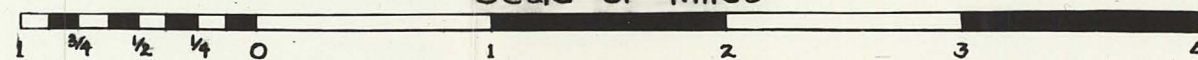
In this thesis a geographical study of a specified area (Flos Township) has been completed in which the use that the inhabitants have made of the land has been recorded. Accompanied by a presentation of the physical geography and historical development of the area it will be possible to see if there is or has been any favourable or unfavourable correlation between natural environment and man's adapted land use.

Although this thesis does not go beyond presenting and commenting upon the present and past land use it is hoped that it may be of some value to others who in the future might undertake to improve on a large



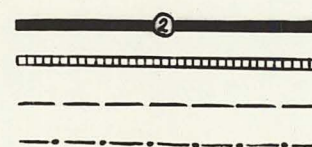
KEY MAP of FLOS TOWNSHIP

Scale of Miles



Legend

Provincial Highways
County Roads
Concession Lines
County Lines



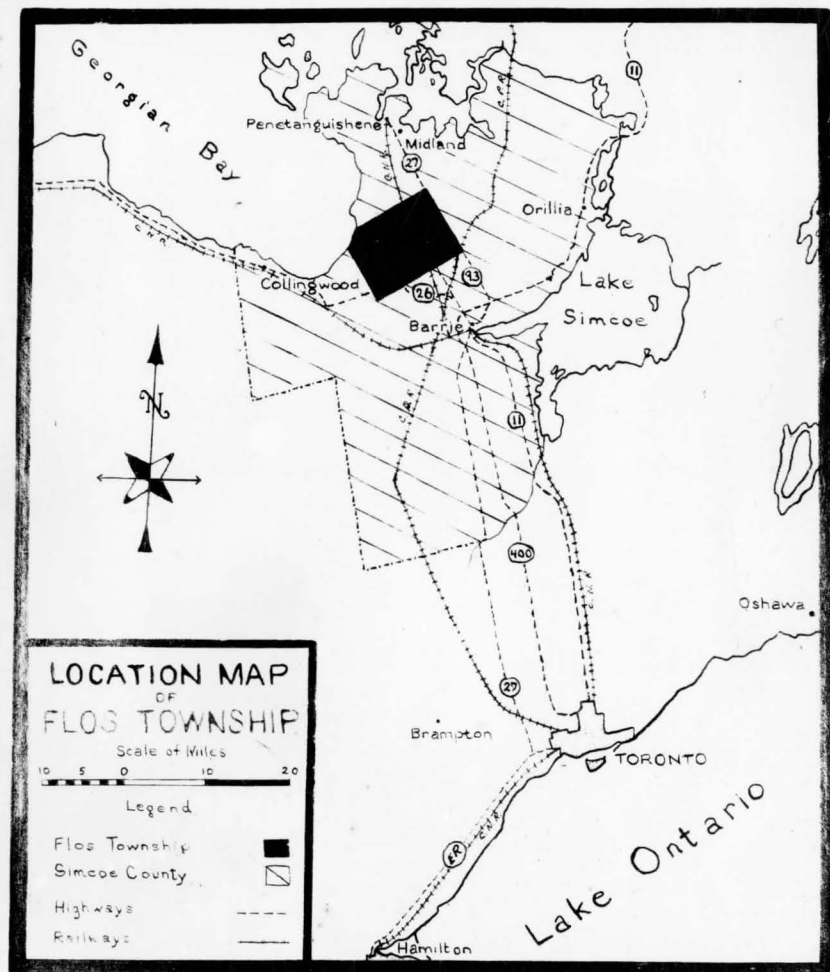


Fig. 2

scale, or in a minor way the usefulness of the land within the township.

Introduction to Flos Township

Flos Township is one of sixteen townships in Simcoe County. Its location within the county as well as its position in respect to the larger centres in the province is shown on figure 2 page 2.

In shape the township is rectangular, nine miles wide by twelve miles long. However the north west corner is cut by Nottawasaga Bay thereby limiting the total area to about one hundred and six square miles comprising approximately sixty thousand acres of occupied land.

Transportation

Transportation facilities both for external and internal communication are reasonably good (see figure 1 front and see figure 2 page 2). Flos has more provincial highways than any other municipality in the county. Four provincial highways numbers 26, 27, 92, 93, serve the township. All are paved except 92 which is an improved gravel road. Highways numbers 26, and 27 are kept in excellent condition. Flos Township also has seven and one half miles of county roads. Most of the township roads are composed of dirt and gravel. Therefore mud and dust are often disagreeable aspects of travel during the summer months. There are a few miles of road which have degenerated into wagon tracks practically impassable by modern automobiles. A few other roads, once maintained, have ceased to exist through disuse.

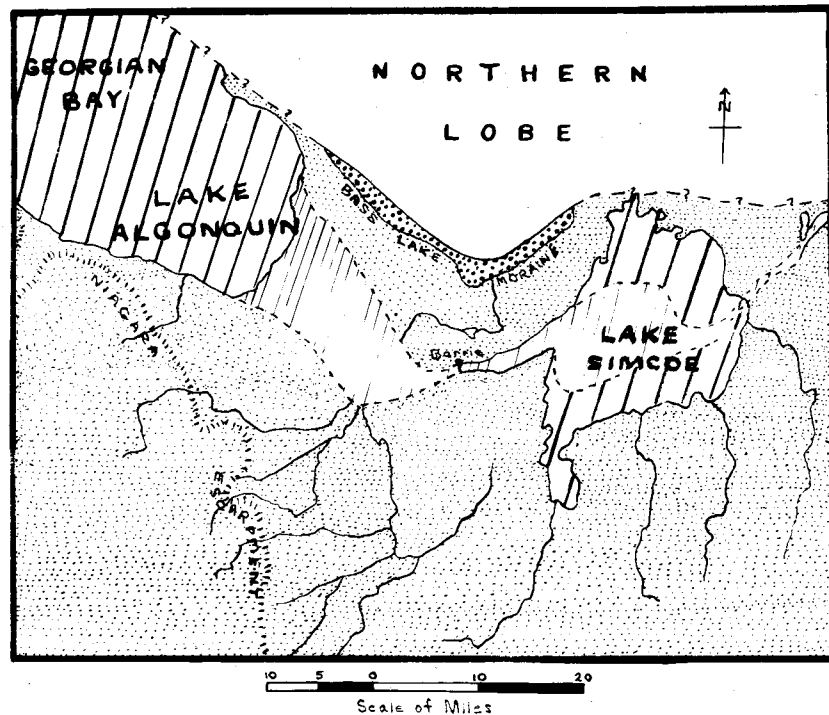
4

The provincial highways are kept open throughout the winter and for the past eight years an attempt has been made to keep all other roads open. Four snow removal units are used at the present time. They are two snow blowers, a four wheel-drive truck with mounted plough, and a grader plough.

With increasing traffic over its roads the township council is much concerned with expanding its road programme. During the past year (1953) one new bridge, the Strath Bridge, has been built. Flos Township still has two bridges which need to be rebuilt.

There are two railways serving the township. The Canadian National Railway branch line from Colwell to Penetanguishene passes through Phelpston and Elmvale and links the township with Toronto. However, only one train operates on this line, a daily going north to Penetanguishene in the morning and returning south to Colwell in the evening. The Canadian Pacific Railway main line north nips the south east corner of the township at Craighurst. This line receives some heavy traffic, twelve freight and five passenger trains passing through Craighurst each day. Two local trains stop at this station, one going in each direction. Two other trains will stop on flag.

AN EARLY STAGE IN THE DEVELOPMENT OF LAKE ALGONQUIN



Legend

Land Area	
Present Lakes	
Glacial Lakes	
Moraine	

Fig. 3

Chapter two

THE PHYSICAL GEOGRAPHY OF FLOS TOWNSHIP

Geological History

Flos Township is underlain by a bedrock of Trenton Black River limestone. This has been so deeply covered by deposition during glacial times that although numerous wells have been dug nowhere has the bedrock been reached.

The area has been completely glaciated four times during the Pleistocene Epoch. This was an epoch in which glaciers moved from the north in four great advances and covered over half the North American continent. The last of these advances known as the Wisconsin glaciation occurred forty to fifty thousand years ago. The events and results of this last glacial retreat are of major significance in determining the present geography of this area.

Locally, in the initial stages of retreat the glacier covered the township and stood high up on the Niagara escarpment. The ice slowly retreated ponding melt-water in front of it. At this time to the west of Flos glacial Lake Algonquin was beginning to form in the Huron depression. As the township was uncovered in a series of ice front retreats its lower elevations were rapidly occupied by Lake Algonquin which was swelling from glacial melt-water (see figures 3 page 5). When the glacier retreated beyond Fenelon Falls the Trent Valley depression was exposed providing an outlet through which the waters of Lake Algonquin flowed eastward to Lake Iroquois (a swollen glacial form of the present Lake Ontario).



Fig. 1A
Large rock-strewn field of
boulder pavement marking the
edge of an old shoreline in
eastern Flos

This outlet however was later blocked by a temporary readvancement of the glacier. It was at this time that Lake Algonquin reached its greatest extension in which Flos Township was completely submerged except for two sections of higher elevation which became islands in the inland sea (see figure 6 page 9).

When the ice front retreated again it was accompanied by differential uplifting (a slow rebounding of the earth's crust from its depressed state under former glacial pressure). Therefore

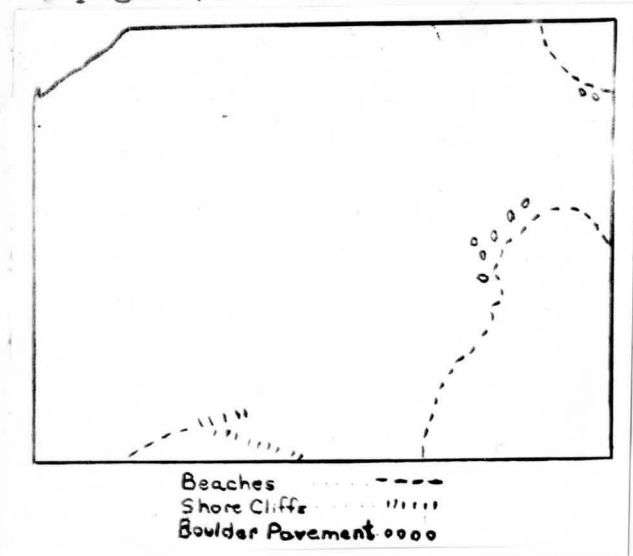


Fig. 4

when the Fenelon Falls outlet was again opened, because of its higher elevation, a smaller volume of water escaped by this route than formerly. At this stage the waters of Lake Algonquin retained a constant level for the longest time in its history. Thus its shorelines were well developed and are clearly distinguishable to-day.

Figur 4 shows the shorelines of Flos Township developed in this period.

As the glacier continued to retreat lower outlets were uncovered to the north of Flos Township. Therefore the waters of Lake Algonquin were

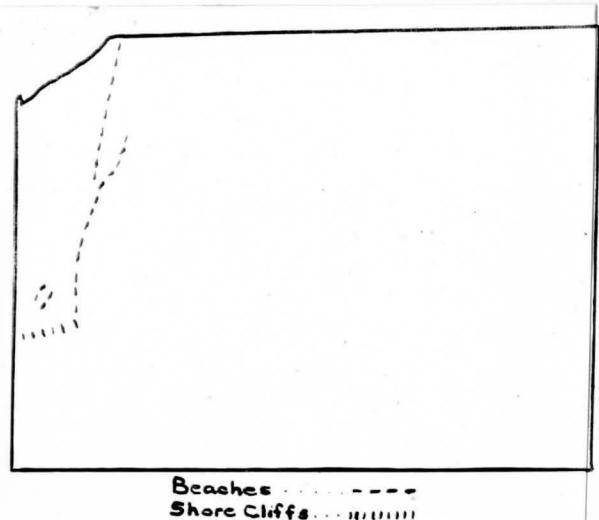
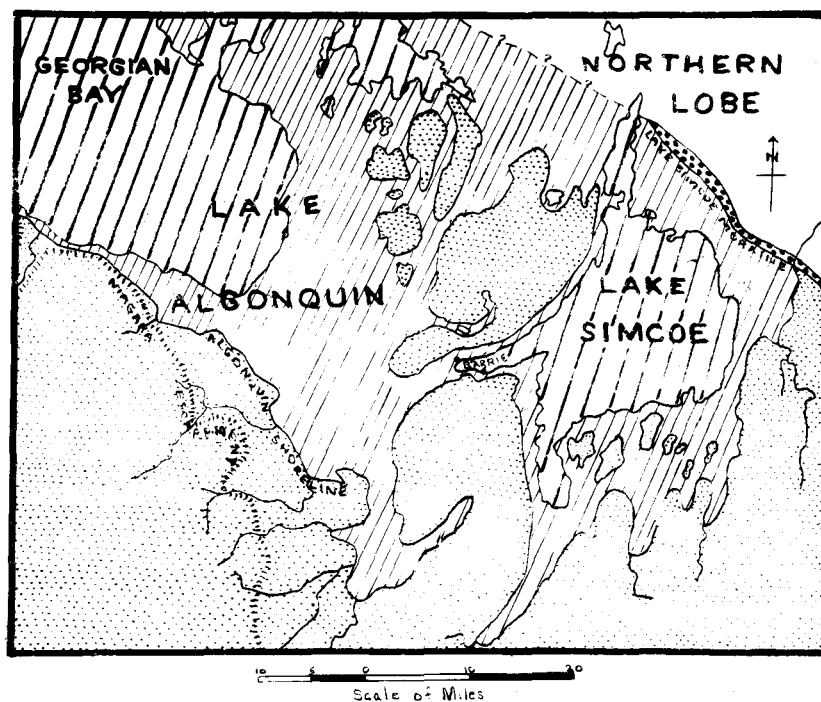


Fig. 5

GREATEST EXTENSION OF LAKE ALGONQUIN



Legend





Land Area	
Present Lakes	
Glacial Lakes	
Moraine	

Fig. 6

slowly drained away and greater areas of the township became exposed. This was followed by a period of general differential uplifting common over the whole area. By the time the glaciers had fallen back beyond the Mattawa-Ottawa outlet only a few hundred feet of Flos Township was included in the newly formed Lake Nipissing. Figure 5 shows the shoreline established during this period.

Later the Mattawa-Ottawa outlet was also raised by differential uplifting so that of Lake Nipissing had to seek a new outlet through Port Huron. Thus as the new outlet was cut the lake level and the shoreline along Flos Township took up its present position.

During the period that this region lay submerged beneath the glacial lakes its former glaciated surface was covered by sediments consisting of sands, silts, and clays. During its maximum inundation by Lake Algonquin and during its successive lower stages, sands were deposited close to the shorelines, silts were carried some distance offshore and clays were deposited in the deeper waters. Thus, everywhere over the township there is evidence of its existence as a former lake bottom.

Physiography

Flos Township can be divided into several physiographic regions. In the eastern portion bordering the Flos Medonte township line and extending over approximately one quarter of the area is the upland region. The highest parts of the township stand one hundred to one hundred and fifty feet above the adjoining area to the west and consist of till plains. These

PHYSIOGRAPHIC MAP OF FLOC TOWNSHIP

from Chapman and Putnam

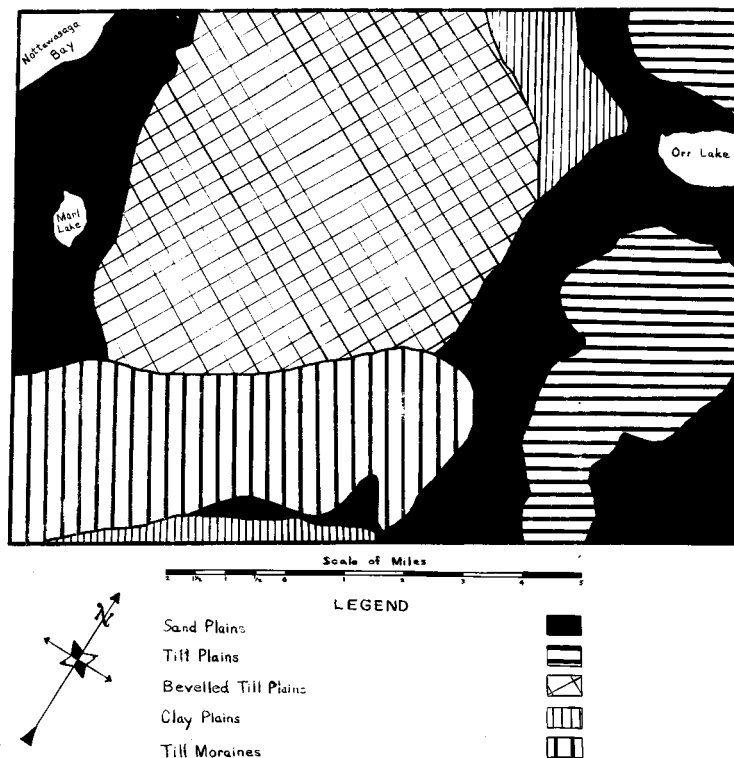


Fig. 7

till plains which are in two portions were originally islands in Lake Algonquin as shown today by their encirclement by boulder pavement , old beaches, and shore cliffs. Since they remained above water the materials dropped by the passing glaciers were not covered by following lake deposits.

The till is mainly composed of precambrian rock. It is quite bouldery and has a gritty sandy loam texture. Because of the dirth of limestone in the till its profile development is related to the Brown Podsollic soils of the shield. The soil is moderately acid and not very fertile. However the topography is undulating and eroded slopes are rare. The sandy till allows the downward percolation of water so that in the upland there are few stbeams.

Surrounding the till islands and extending to the west over approximately one third of the area are found low undulating hills composed largely of sands. It is not uncommon for springs to issue from these sands in areas which are underlain by clays, which trap the water draining underground from the surrounding hills. The largest and most important of these springs is responsible for the creation of Orr Lake. This lake lies in a sandy depression between the two till islands and finds an outlet to Georgian Bay via the Wye River, a very shallow, narrow, sluggish stream.

The central part of the township north west of Phelpsston consists of a level clay plain physiographic-ally classified as the Elmvale Clay Plain. The larger portion of this plain lying to the west of Elmvale

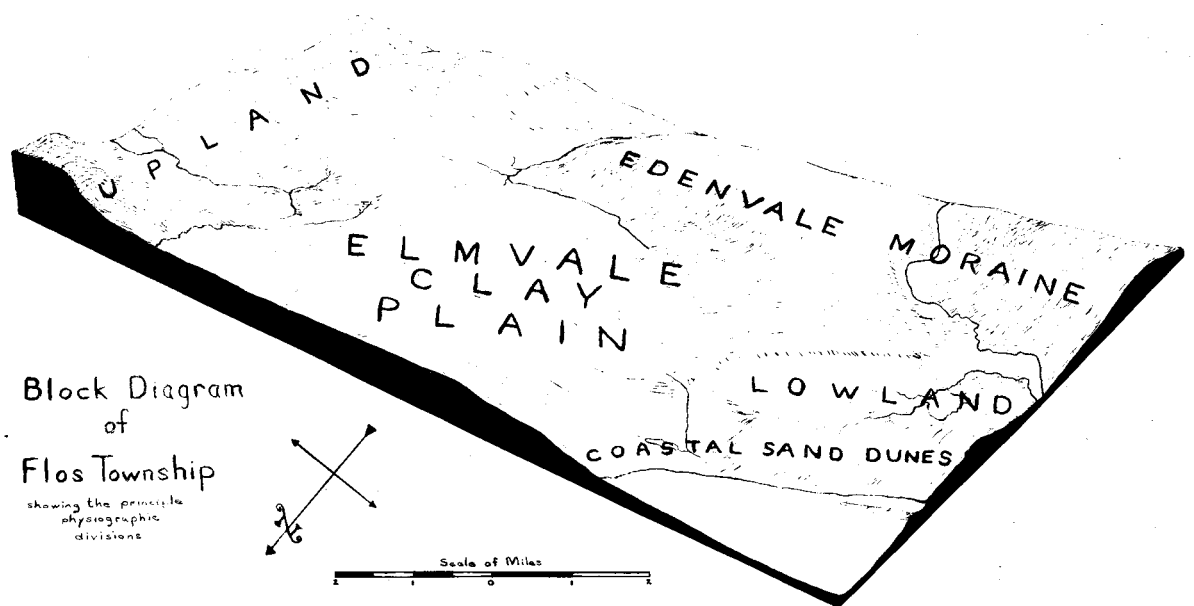


Fig. 8

is largely composed of bevelled till with pebbly till appearing on or near the surface.

Around Crossland Allenwood boulder clay is found at the surface and the soil is pebbly. East of Elmvale the stratified clay is deep and marly.

Parallel to the Flos Vespra township line and extending from Phelpston to Edenvale lies the Edenvale moraine. This is a ridge of boulder clay, the surface of which has been smoothed by additional deposits of clay, gravel, and sand. This strip is better drained than the Elmvale Clays.

Through the Edenvale moraine the Nottawasaga River, in its search for Nottawasaga Bay, has cut a canyon about one hundred feet deep, in places a quarter of a mile wide, and four miles long.

Along Nottawasaga Bay there is an area of broad sandy beaches and rolling sand dunes which have been pushed back over a hundred yards from the shoreline. Behind the coastal sand dunes lies a flat lowland area not far above the level of Georgian Bay. It contains Marl Lake which finds an outlet to the bay via Marl Creek and the Nottawasaga River. This lowland was originally a lagoon formed by a beach barrier in Lake Nipissing time. Its eastern limit is well marked by a low abandoned shoreline of that period.

Climate

Climate is an important factor in determining the natural vegetation and agriculture of any region. Therefore in the study of Flos Township climatic conditions should be considered in some detail.

There are several factors which determine the climate of Flos Township. Lying between $44^{\circ} 27'$ and $44^{\circ} 39'$ north latitude it is part of a large continental land area. In such middle latitudes continental climates are marked by severe winters and hot summers. Conditions are modified, however, by the nearness of the township to the Great Lakes. Offshore breezes from Georgian Bay blow south east across the township making the temperature $2-3^{\circ}$ warmer in winter than in nearby counties-Dufferin and Wellington- which enjoy a more southerly latitude.

The township is only slightly influenced by the westerly winds which blow from west to east across the continent bringing cyclonic weather to most of the province. The lowland plain of Flos lies to the lee of the western Ontario Uplands which take the full brunt of these winds and deviate the larger portion of them south of the township. However there is adequate precipitation because of the presence of the winds off Georgian Bay.

Difficulties in accumulating accurate climatic data resulted from the absence of a weather recording station in Flos Township. The closest stations to the township are located at Collingwood, Barrie, Orillia, and Coldwater.

Most of the climatic information recorded here is derived from isotherm maps of southern Ontario by Putnam and Chapman.

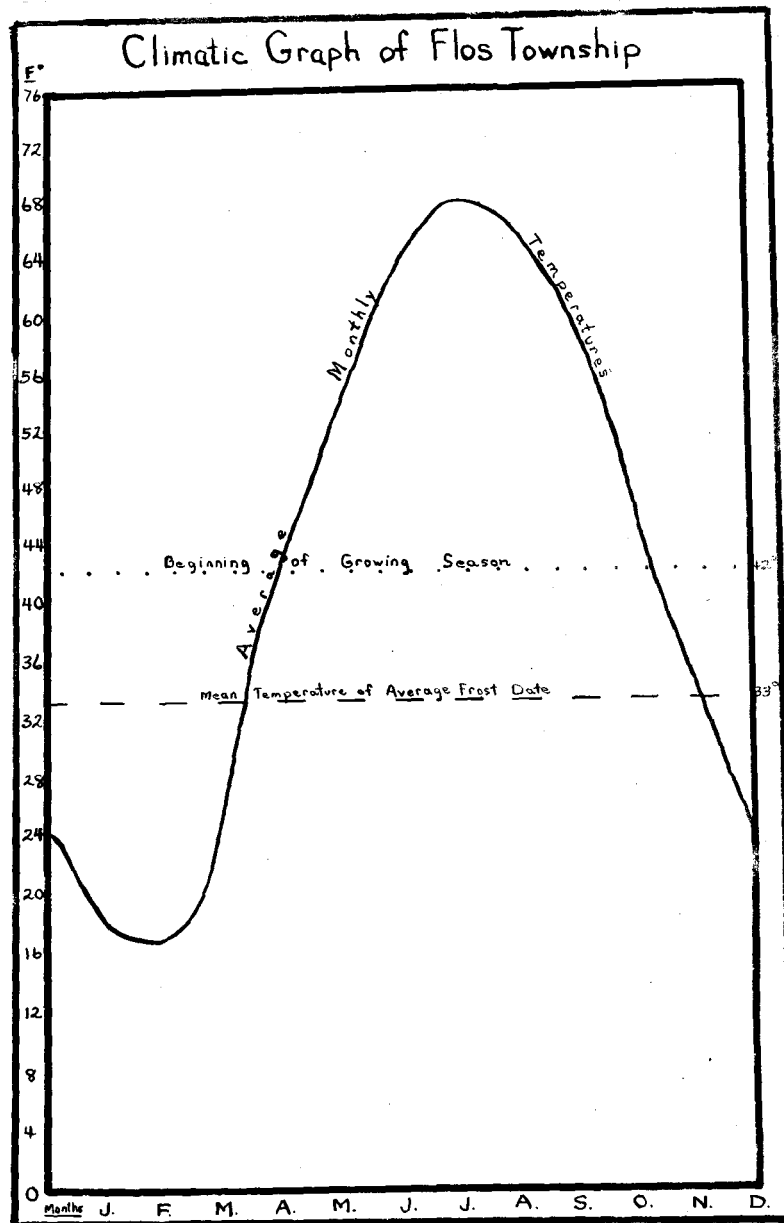


Fig 4

MEAN TEMPERATURES OF FLOS DEGREES F.

Annual	"	"	"	"	43°
Winter	"	"	"	"	19 1/3°
Spring	"	"	"	"	39 2/3°
Summer	"	"	"	"	65 1/2°
Autumn	"	"	"	"	47 2/3°

Average date of last frost in Spring	May 23
Average date of first frost in Fall	September 26
Average length of frost free period	125 days
Average beginning of growing season	April 18
Average end of the growing season	October 27
Average length of growing season	193 days

Mean Annual Precipitation	30-31"
Average rainfall from April 1-October 1	14 1/2"
Average rainfall for June, July, August	7 1/2"
Mean Annual Snowfall	110"

Natural Vegetation

General forest classifications have been devised for large areas based on climate and bedrock which are largely responsible for the presence and form of natural vegetation. W. E. D. Halliday has devised such a classification for Canada in which Flos Township is included in the category "Great Lakes-St. Lawrence Forest Region". This region has a prevailing broad-leaved association.

Sugar maple and beech are dominant. With them are basswood, white elm, yellow birch, white ash, and some red maple and (Northern) red, white, and bur oak. Small groups of hemlock and balsom fur occur within the distribution as well as scattered distribution of large-tooth aspen, butternut, hickory, ~~bron~~wood, and black cherry. Blue beech, silver maple, slippery and rock elm, black ash, eastern white cedar and white and red pine are found locally on specialized sites.

Most of the above mentioned trees can be located in Flos Township. But before their exact distribution can be noted more consideration must be made of soils and drainage. These factors have been considered in drawing up the general vegetation pattern as seen in figure 10.

Zone one is predominantly maple and white elm. Sugar maple (the predominant maple in this area) requires moist, rich, well-drained soils for its best development. White elm thrives on a rich, moist, well-drained sandy loam or gravelly soil where the water table is near the surface.

Zone two is predominantly white pine and poplar. White pine does best on a moist sandy soil. Trembling aspen (poplar) does well on a wide variety of soils

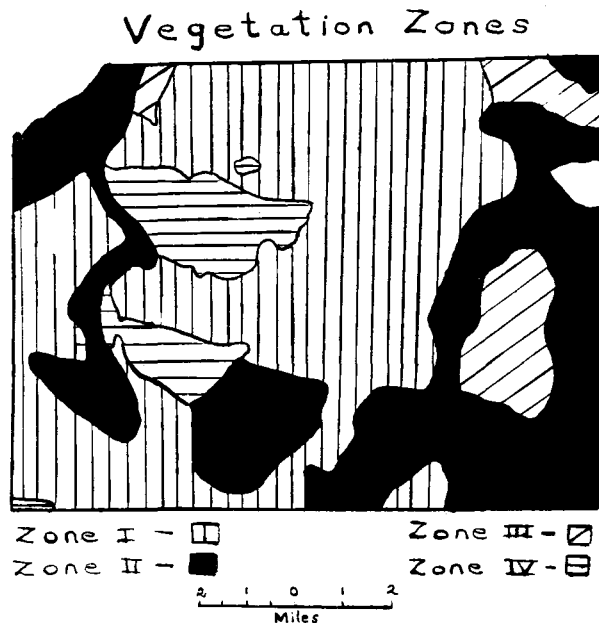


Fig. 10

but being intolerant of dense shade prefers the open type of forest. Large tooth aspen (poplar) seems to prefer moist sandy slopes on the border of streams.

Zone three consists of well drained sandy loam soils which support mixed stands of hardwood and soft-wood forests.

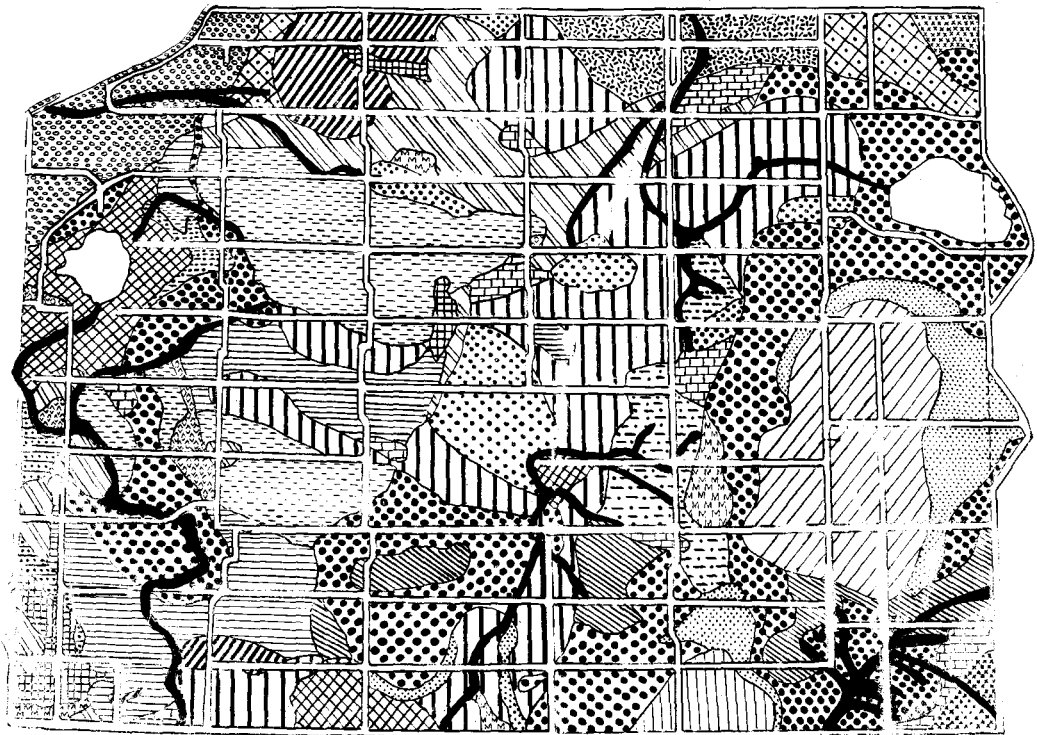
Zone four consists of areas predominantly of white cedar, hemlock, and tamarack. White cedar and hemlock commonly are found in swamps, around springs and lakes, or on similar wet sites, while tamarack is confined chiefly to bogs and swamps.

Following the severe forest fires which swept over western Flos Township secondary associations of aspen, principally large-tooth, and white birch became more dominant.

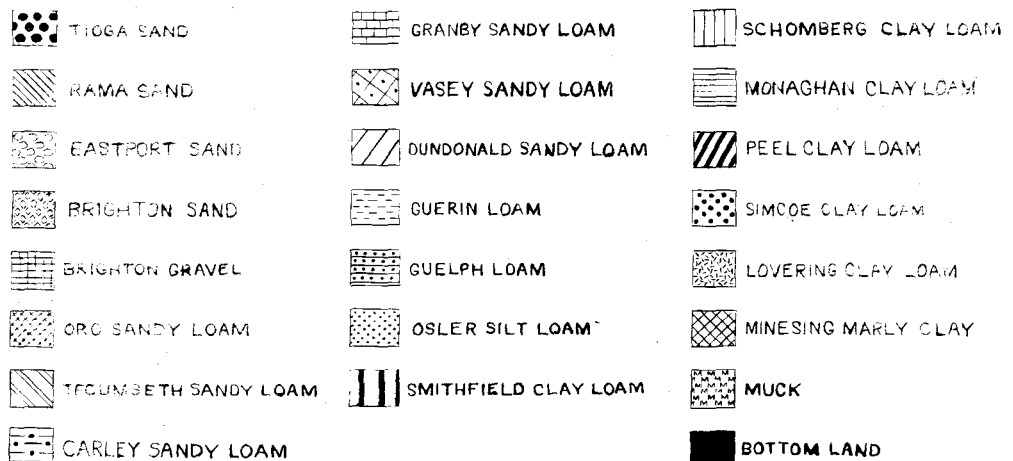
The original forest stands have been completely cut over. Most of the land has been denuded of trees and what remains consists of secondary stands. However, except in the burnt-over areas and in reforestation areas where the trees have been limited to coniferous types, the present forests are similar to their predecessors.

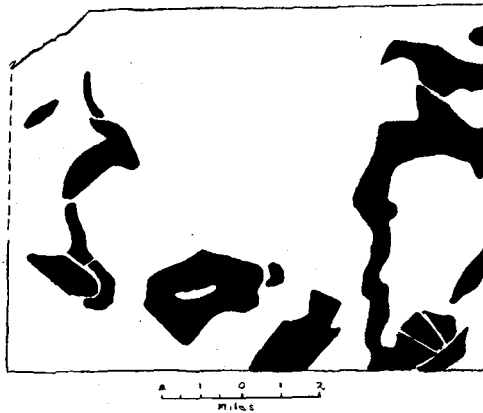
Soils

Since Flos is fundamentally an agricultural township, there is naturally a great interest in and dependence upon the soil. The location and distribution of the soil types play a major role in the development of the agricultural land-use pattern. The soil types of Flos Township have been mapped by the Soil's Department of the Ontario Agricultural College, Guelph. The following information is the result of their findings.



SOIL MAP OF FLOS TOWNSHIP





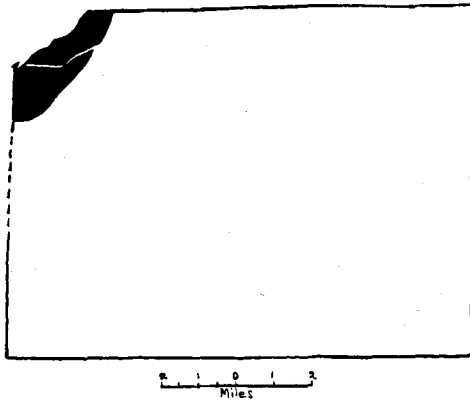
Tioga Sands (TIS)

The Tioga Sands are developed on low lime sandy outwash materials. They occur as well as developed podzols in the well drained position.

Profile (Virgin)

- A1 two inches grey sand, single grain structure, stonefree, p H 6.0
- A2p two inches light grey sand, single grain structure, stonefree, p H 5.8
- Bp seven inches brown sand, single grain structure, slightly compacted, stonefree, p H 6.0
- A2grptwenty four inches yellow brown sand, colour becoming less brown with increase in depth, single grain structure, stonefree, p H 6.0
- C1 grey sand, single grain structure, stonefree, occasional faint mottle, p H 6.8-7.0

The Tioga sands occur as smooth to undulating outwash plains. Internal drainage is good to excessive. Because of the topographic characteristics and the porous nature of the materials there is little external drainage. The dominant tree growth is white pine and poplar. General farming is practised on these soils. Because of the low fertility and susceptibility to erosion, large acreages have been reforested. These soils are fairly extensively used for pasture purposes.



Eastport Sand (E.S.)

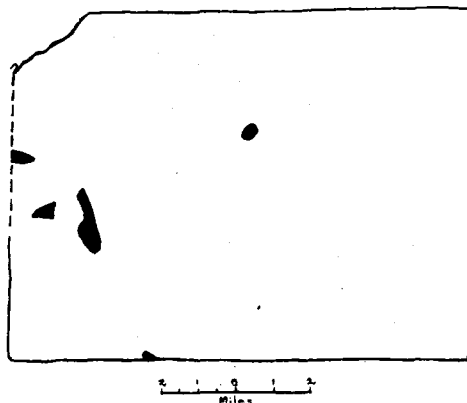
The Eastport Sand is a land type consisting of sand dunes and associated with marshy and poorly drained areas. There is practically no profile

development. If a vegetative cover is established there is a tendency for a shallow organic layer to develop. However, often after this layer is formed it becomes buried by sandy materials blown in from adjoining areas.

The materials consist of greyish sands and gravels. Where it is stabilized a brownish colour occurs, the chroma decreasing with depth until the grey sandy materials are reached. It usually contains free lime. They occur as sand dunes, old beaches, and recently uncovered lake beds, often nearly bare and subject to blowing.

The natural vegetation consists of poplar, pine, some white birch, and grasses.

The Eastport Sand is of no agricultural value, used for recreational purposes, building sites for summer cottages.



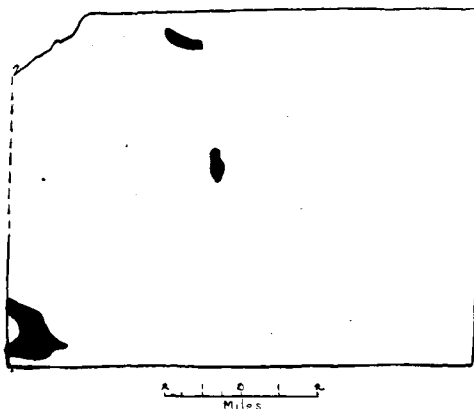
Brighton Sand

The Brighton Sands are developed in well sorted high lime soils. They are well drained and display the characteristics associated with the Grey Brown Podsollic Great Soil Group.

Profile

- A0 Decomposing leaf litter and twigs.
- A1 Dark brown sand-high organic matter, crumb structure
depth one inch-one and a half-two p H 6.2
- A2 yellowish brown-loose crumb structure, depth 24"
p H 6.0
- B1 very weakly nuciform yellowish brown sand, some
compaction evident, depth 12" P H 6.2
- B2 brown sand, some compaction, weakly nuciform,
massive structure in B horizon depth 2" P H 6.6
- C grey calcareous sand.

The topography is nearly level with blow outs in some places. The natural vegetation is dominantly maple. A considerable area is being farmed in which case the chief crops are hay, oats, and corn.

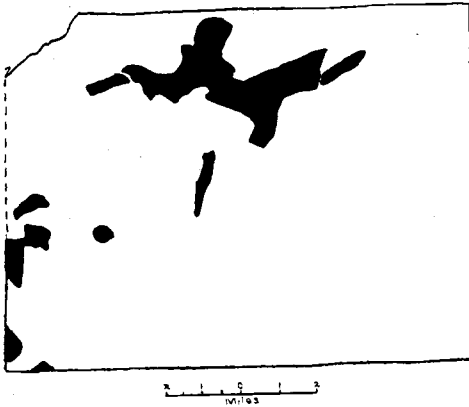


Brighton Gravel

This soil consists of large quantities of gravel and cobbles with some coarse light brown sand. It is underlain by grey coarse stratified gravel. The deposits are

usually low rounded ridges. They are excessively drained and unsuitable for agriculture. They are often exploited as gravel pits.

Tecumseth Sandy Loam



Tecumseth Sandy Loam is developed on high lime sandy materials.

The profile exhibits the characteristics of the Grey Brown Podsollic Great Soil Group and to a lesser extent Brown Forest type of development

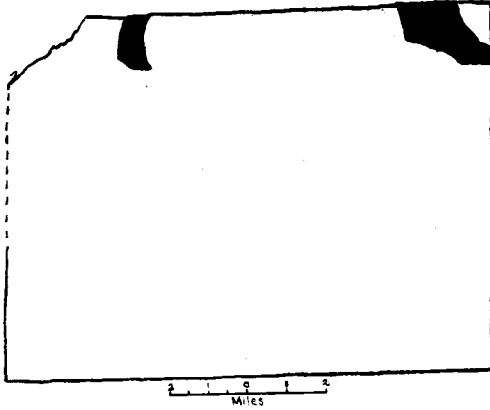
may be encountered.

Profile (cultivated)

- A1 0-4" sandy loam; grey brown granular structure; very friable; p H 7.0
- A2 4-8" sand yellowish brown; single grain structure; mottling above the B, p H 7.0
- B 8-12" sand; yellowish red; slightly cemented; readily becoming single grain on rupture; p H 7.2
- CC mottled grey calcareous sand.

The topography is usually smooth, very gently sloping. The soil is essentially stonefree. The external drainage is low and the internal drainage slow-held up by heavier materials below the sand. This soil is used basically for general farming practices and produces good crops of clover, hay, corn, and fair to good crops of spring grains.

The sandy materials are generally low in fertilizers and require regular applications of manure and fertilizers. The soil should respond to improved drainage but care must be taken that it is not excessively drained.

Vasey Sandy Loam

Vasey Sandy Loam is developed on medium lime loamy materials with a fairly large proportion of igneous materials intermixed. This soil exhibits profile characteristics somewhat transitional between the

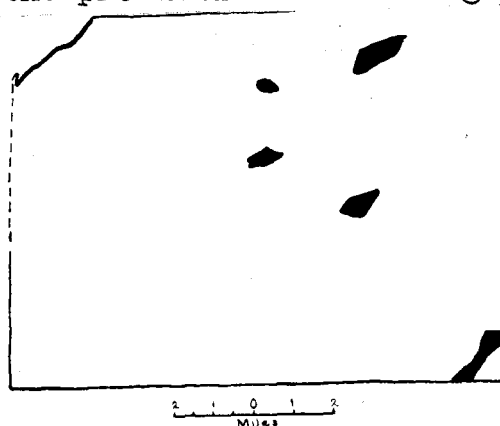
Brown podsollic and the Grey-Brown podsollic. Profile (Virgin)

- A0 partially decomposed leaf matter, twigs, etc.
- A1 3" dark greyish brown sandy loam; fine granular structure; very friable consistency; stony; pH 6.0
- A2 15-18" light yellow brown sandy loam; weak platy structure; very friable consistency; stony; pH 5.8
- A22 3-5" light yellowish brown sandy loam occasionally contains darker brown aggregates similar to B2 horizon; medium nuciform structure; friable consistency; stony; pH 5.8
- B2 3-5" dark brown loam; medium nuciform structure; friable consistency; stony; pH 6.2
- C grey calcareous, loamy till, dominantly of limestone origin with a fair proportion of igneous material.

The topography ranges from smooth to gently sloping to smooth steeply sloping. Both the internal and external drainage are good. The natural vegetation includes a mixture of deciduous and coniferous tree growth. Hard maple, pine, and beech predominate.

Vasey Sandy Loam is used largely for general farming

purposes. Liming may be necessary for the successful production of some crops. Usually the phosphate and potash content is low. Due to the type of topography sheet erosion is a hazard. The soil is well suited to the production of small grains, hay, and pasture.



Granby Sandy Loam

Granby Sandy Loam is developed on well sorted outwash sandy materials deposited in slowly moving or still water. It shows a dark

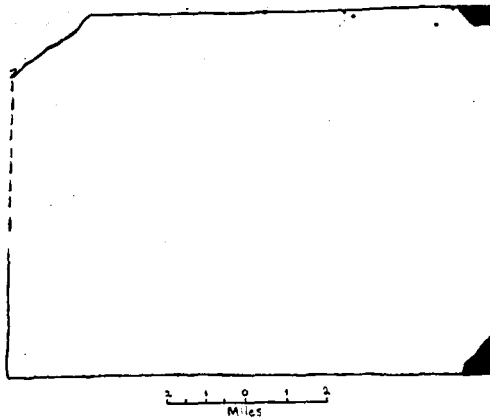
grey Gleizolic type of profile development.

Profile

- A0 shallow layer of leaf litter
- A1 8" very dark grey sandy loam, high in organic matter, friable, fine crumb and single grain structure, p H 6.5
- C1 5" grey single grain sand p H 6.7
- C2 10" pale brown sandy loam; faint rusty mottling occurs, friable single grain structure; pH 6.9
- C grey sand p H 7.0
- D clay may occur at depths up to three feet below the surface

The profile is stonefree except for occasional deposits of fine gravel and sea shells in the underlying sand. The topography ranges from almost level to depressional. Both the external and internal drainage are poor. The natural vegetation is predominantly willow, aspen, and elm. A large proportion of the Granby Sandy Loam remains in woodland or pasture. Poor drainage often disallows

early spring cultivation with the result that buckwheat is the only cereal grain planted. Areas in pasture support only mediocre stands of grasses. Scrub tree growth often encroaches on areas which have reverted to pasture thus lessening their usefulness as grazing land. When drainage improvement has been effectuated fair crops of cereal grains, hay, and pasture are produced.



Oro Sandy Loam

Oro Sandy Loam is developed on low lime poorly sorted outwash materials. The materials are sandy and occur in association with pockets of coarse till and gravel.

The profile exhibits the characteristics of the Brown Podsollic Great Soil Group.

Profile (Virgin)

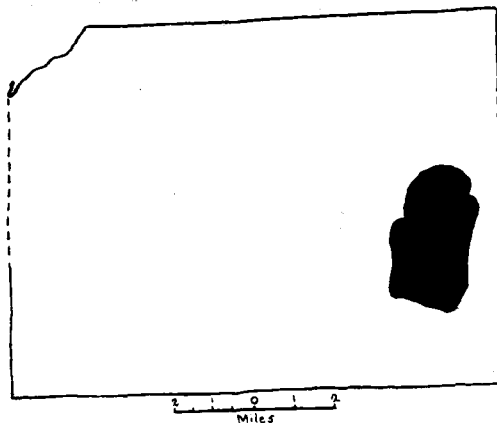
- A0 partially decomposed needles, leaves, twigs, etc.
- A1 1 1/2-3" dark brown sandy loam, single grain structure, usually stonefree p H 5.6
- A2 often the A2 horizon is indefinite and poorly defined. When present it usually ranges in depth from 1/2-1 1/2" light grey colour, single grain structure, very friable consistency, usually stonefree, p H 5.0
- BD 24" brown sandy loam; colour contains more of a reddish cast immediately below the A horizon and fades into a yellow brown in the lower depths, single grain structure dominates with a slight tendency towards very weak nuciform usually

stonefree, p H 5.2-5.4

C The C horizon usually consists of ~~gray~~ poorly sorted sand, gravel, or coarse till, a small amount of carbonates occur in the C horizon.

The topography ranges from irregular moderately sloping to irregular very steeply sloping. The internal drainage is excessive or good, the former usually occurring most frequently. Due to the type of topography the external drainage is good but there is little runoff because of the porous and open nature of the materials. The natural vegetation is dominantly coniferous trees with a minor proportion of beech and maple.

Where cleared Oro Sandy Loam is used for general farming and pasture land. The greatest limitations to satisfactory crop yields are low fertility and susceptibility to erosion particularly wind erosion. The steep slopes and severely eroded areas would serve a useful purpose if planted in trees.



Dundonald Sandy Loam

The profile is developed on stonefree outwash sandy materials deposited on parent material of high lime till. A profile and description are found in figure 12 page 29.

The topography is strongly rolling. The drainage is good with the lighter materials occasionally permitting an excessive rate of percolation.

Coniferous and hardwood trees are about equally

Dundonald Sandy Loam



- Ac 4-6 inches grey-brown sandy loam, approaching a single grain structure, generally low organic matter content, stonefree, p H 6.8
- A2 10-15 inches of light brownish sand, single grain structure, open and porous, p H 6.4
- B 2-3 inches brownish loam, soft friable structure, p H 6.8
- C grey calcareous till with frequent stones and boulders in some areas, very compact till, p H 7.8

Guerin Loam

- Ac 5-7 inches of dark loam, somewhat above average in organic matter, relatively stony, p H 7.4
- A2 5-10 inches greyish brown mottled loam, p H 7.4
- B relatively indistinct and not always present, p H 7.8
- C greyish calcareous stony till, moderately compact, p H 8.0



Fig. 12

distributed over the type. A shallow eroded profile and proximity to the till are often associated with the presence of hardwoods.

Agriculture is general in nature. Special practices are used in some localities to increase organic matter content of the surface soil by ploughing down green manuring crops. Erosion is common where the soils are cultivated up and down the slopes and when the surface is left unprotected for long periods of time.



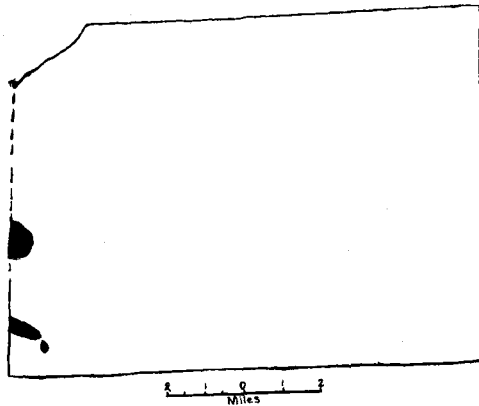
Guerin Loam

Guerin Loam is formed on high lime materials. The profile horizons are less distinct than in the well drained soils, due in large part to the imperfect drainage.

A profile and description can be found in figure 12 page 29.

The topography is nearly level to undulating. The smooth relief, often depressional location, compact parent material and the difficulty of obtaining adequate outlets are the chief causes of the imperfect drainage condition. White cedars, hemlock, tamarack, and some white birch are the principal trees found growing in the soil. Under present farming conditions the Guerin Loam is under regular cultivation. It is often used mainly as a semi-permanent pasture to provide grass during the dry summer months. Where local drainage conditions are better, the Guerin Loam does support some spring grains. Buckwheat is well adapted to this type.

Guelph Loam



This soil is developed on highly calcareous till. It is usually found on rolling to undulating topography with slopes ranging from 5-10 %. The external and

internal drainage are good with the former being excessive on the steeper slopes. The soil is moderately stony but not enough to interfere with farming practices. The forest cover is predominantly sugar maple and birch.

Smithfield Clay Loam



Smithfield Clay Loam represents the imperfectly drained and associate of the heavier lacustrine soils. Formed from high lime parent material free carbonates commonly

occur in the surface soil. This type is essentially stonefree. A profile and description can be found in figure 13. The topography is very gently sloping. Surface runoff is low and external drainage slow. The dominant tree growth is ash, red maple, willow, and elm.

Where the drainage has been artificially improved the type is fairly well adapted to general farming. This soil has many admirable qualities. It has a high level of fertility; its landscape features nullify the erosion hazard; its freedom from stones and boulders reduces labour costs and machinery upkeep. It will produce good

Smithfield Clay Loam



- Ac 5-7 inches of dark greyish brown clay loam, stonefree and alkaline, crumb structure, p H 7.3
- A2 6-10 inches greyish silty loam, marked by a rusty brown mottling, tending toward massive structure, p H 7.6
- B generally occurs as a stronger accumulation of mottling in the lower part of the A2 and immediately above the parent material, structure coarse blocky to massive, p H 7.8
- C greyish, calcareous clay, moderately compact and impervious, varves may be found in the deeper deposits, p H 8.0

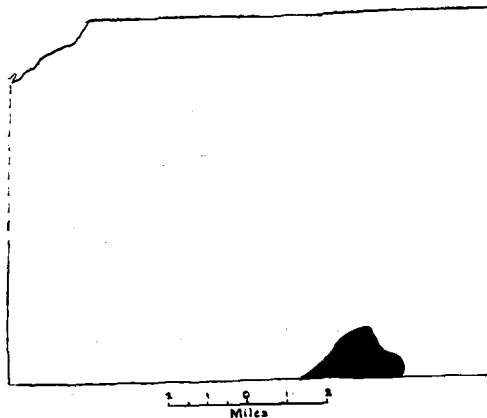
Schomberg Clay Loam

- Ac 4-6 inches moderately dark grey-brown silt loam or clay loam (a greyish surface indicates severe sheet erosion), crumb structure, nearly stonefree, free carbonates, p H 7.8
- A2 6-10 inches greyish silt loam, sharp demarcation, platy structure, p H 7.2
- B 3-6 inches brownish sticky clay, blocky nutlike structure, p H 7.6
- C dull grey or greyish silts and clays, lacustrine origin, highly calcareous, usually varved, till occurs where the lacustrine veneer is shallow, p H 8.0



Fig. 13

to fair crops of cereal grains, fall wheat, red clover, alsike, alfalfa and corn. It responds to phosphate fertilizers and being a heavy textured soil good cultural and tillage practices should be employed in order to maintain optimum structure.



Schomberg Clay Loam

Schomberg Clay Loams are developed on high lime lacustrine materials.

The profile is formed in the water laid sediments with the stony materials

occurring at variable depths. The profile is relatively shallow and frequently eroded. A profile and description can be found in figure 13. The internal drainage is good. The rapid runoff of excessive surface water frequently causes sheet erosion unless control measures are employed. Such soils respond to long rotations with a minimum of cultivated crops. Hardwoods consisting of maple and beech are commonly associated with this series.

Since the Schomberg Clay Loams are high lime soils they are well suited to clovers and alfalfa. Commercial fertilizers should contain relatively high percentages of phosphorous and potassium. This soil is moderately susceptible to sheet erosion.

Monaghan Clay Loam

Monaghan Clay Loam has developed on calcareous heavy textured till. The type is a member of the Grey Brown Podsollic Great Soil Group. The topography is smooth, gently sloping, and both internal and external



drainage are slow. The type has not suffered greatly from sheet erosion and chemical tests show it to be fairly well supplied with plant nutrients.

Profile (Virgin)

- AO thin layer of partially decomposed leaves and twigs
- A1 2-5" clay loam; very dark grey; medium granular structure; friable consistency; stonefree; p H 6.8
- A2 5-13" clay loam; brown, slightly mottled medium nuciform structure; friable consistency, stonefree p H 6.5
- B 13-25" clay; dark greyish brown; mottled, coarse blacky structure; hard consistency when dry; plastic when wet; calcareous; few stones; p H 7.0
- C clay till; brown; prismatic structure, hard consistency when dry, plastic when wet; calcareous few stones; p H 7.8

Although most of the land is cleared woodlots are dominantly soft maple and elm. Ash, ironwood, basswood , and beech are common.

Monaghan Clay Loams are used for general farming and dairying. Fairly good yields of cereal grains, hay and pasture can be obtained although crop production is limited to some extent by inadequate drainage. During dry seasons Monaghan soils produce good yields because of their fairly high moisture reserve.

The type is fairly well supplied with plant nutrients and the organic matter supply can be maintained by applying barnyard manure. Maintenance of good tilth is necessary for the successful management of the Monaghan soil.



Simcoe Clay Loam

Simcoe Clay Loam is developed on highly calcareous lacustrine deposits. The textural and colour horizons are very weakly developed. It is a poorly drained soil. The profile

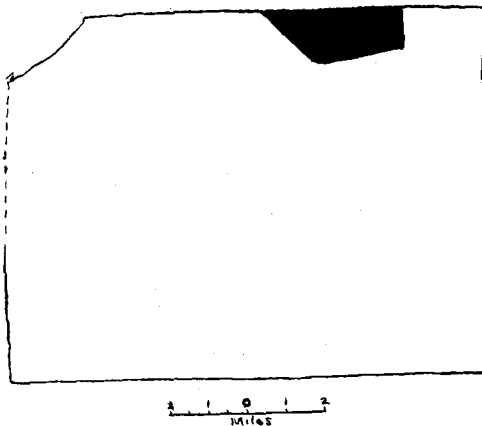
exhibits characteristics common to the Grey Hydromorphic Soils.

Profile (Virgin)

- A0 thin layer of leaf litter, twigs and other partially decomposed organic material.
- A1 5" dark grey clay loam, granular structure, soft consistency, stonefree, p H 7.0
- A2 4-6" grey clay loam with small to medium light yellowish brown mottling, structural aggregates weakly developed, stonefree, p H 7.0
- C 12" grey clay loam with light yellowish brown and yellowish brown mottling structure tending to massive or very coarse and blocky, firm consistency when dry, sticky when wet, stonefree, p H 7.4
- C highly calcareous grey clay loam, laminated, stonefree, p H 7.8

The topography is level to very slightly undulating. Both the external and the internal drainage are poor. The Simcoe Clay Loams have developed under deciduous tree cover consisting largely of elm and soft maple with a small sprinkling of ash.

Provided the Simcoe is drained it grows good crops of cereal grains, hay, and pasture. It is used largely for general farming purposes. Although chemical tests show it to be well supplied with phosphorous the p H appears to make this nutrient unavailable and the soil responds to the application of phosphatic fertilizers.



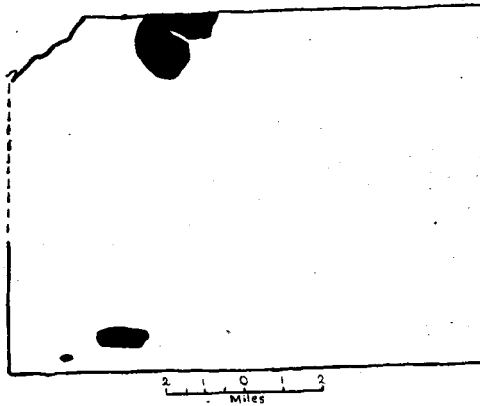
Lovering Clay Loam

The topography ranges from level to very gently sloping and both the internal and external drainage are very slow. The natural vegetation is elm. It is

generally used for pasture and growing of hay and grain for beef cattle. Most of the area requires drainage, either open ditches or tile drains.

Profile

- A0 0-5" brown clay loam, crumb structure, very friable, p H 5.0
- A2 5-6" light grey clay loam, mottled, platy structure, very friable consistency, p H 4.8
- B2 6-13" yellowish brown clay, mottled, medium to large muciform structure, friable, p H 6.0
- C brownish yellow clay, plastic, p H 6.2



Peel Clay Loam

Peel Clay Loam is developed on heavy lacustrine moraine materials. The lacustrine deposits overlie a calcareous till of limestone-shale composition. Peel Clay Loam

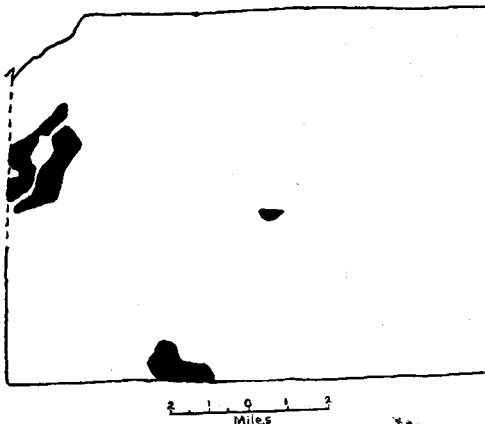
is a moderately well drained type, exhibiting well defined Grey Brown Podsollic characteristics.

Profile (Virgin)

- A0 partially decomposed leaf litter, twigs, etc.
- A1 3" dark grey clay loam, fine to medium granular structure, very friable consistency, stonefree.
- A2 3" pale brown clay loam, fine to medium nuciform structure, hard consistency, stonefree, some mottling in lower parts of horizon.
- B2 6" dark brown clay, medium blocky structure, hard consistency, some grit, colour not as dark as A1.
- C brownish grey calcareous till of limestone shale origin, gritty fragmental structure, hard consistency.

The topography is level to gently undulating.

The internal and external drainage are moderate.



Minesing Marly Clay

These clays are developed on highly calcareous lacustrine deposits which contain large quantities of calcareous shells. The textural and

colour horizons in the profile are weakly developed.

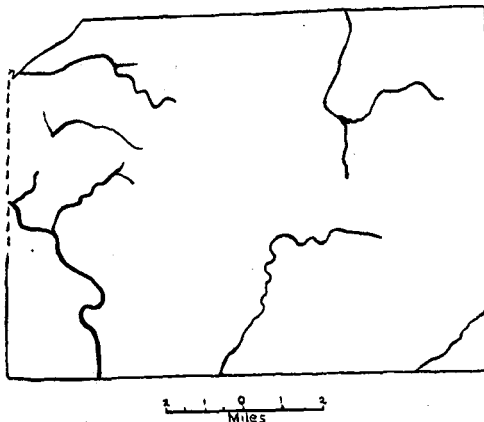
Profile (cultivated)

Ac 8-10" very dark grey marly clay, granular structure, soft consistency, stonefree, p H 7 ++ calcareous on surface.

G drab grey clay, slightly mottled, massive structure, stonefree, large numbers of calcareous shells, effervesces very freely with dilute hydrochloric acid p H 7.4

In some places the Ac horizon reaches almost a muck condition. Level topography characterizes this soil. Both the external and internal drainage are poor. Free water is found at shallow depths, often at 2 1/2-3 '. Soft maple and elm appear to be the most frequently occurring trees.

Some of this soil is cleared and is used for general farming purposes. Poor drainage limits the capacity of the series for growing many farm crops. Fair yields of cereal grains and hay are obtained provided climatic conditions are satisfactory.



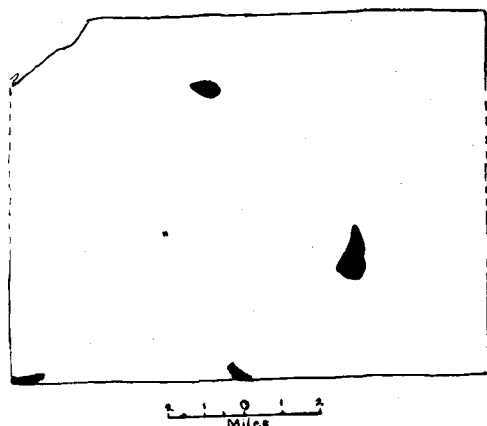
Bottom Land

Bottom land should be considered as a complex soil condition, adjoining stream courses. These areas are subject to flooding and surface-depositions of materials carried

by the streams. Under these conditions a variety of soil material is to be expected.

Frequently some form of layering appears which marks the yearly depositions. In other places the surface is well covered with gravel, stones, and boulders. The underlying material at greater depths is usually a compact heavy till.

Areas of bottom land often provide good areas for permanent pastures with water close at hand. The pastures are seldom of the improved type and are often looked upon as waste land. There is little agricultural development of the type beyond the use of the area for grazing.



Muck

Muck soils generally occur in depressions or along the slow streams. A muck profile consists of a blackish layer ranging in depth from one foot to

several feet composed of organic material fairly well decomposed. Frequently underlain by clay, till, or greyish marl. Water table is high.

Some muck areas provide a little pasture but nearly all is left in a wooded condition. Tamarack and white cedar are the common trees along with numerous grasses and sedges adapted to soils with a high water table.

Chapter three

HISTORICAL DEVELOPMENT OF FLOS TOWNSHIP

Before the coming of the white man the Georgian Bay region was the hunting ground of the Huron Indian tribes. The area in which Flos Township is situated was an unbroken wilderness of forest. Within the township Huron tribes are known to have settled at Orr Lake and at the mouth of the Nottawasaga River.

The shortest, easiest, and most direct route between Lake Simcoe and Lake Huron was the Indian Portage or "carrying place"-a distance of nine miles from the head of Kempenfeldt Bay to a point where the waters of the Nottawasaga would carry canoes and boats. This was the route often used by fur traders travelling north. Thus they were the first white men to penetrate this area both passing through it on their trips down the Nottawasaga and camping on its shores on Nottawasaga Bay.

It was the military occupation at the Nottawasaga end of the portage during the war of 1812 which gave the initiative for the first settlement of the country. However, this location was found unsatisfactory as a naval site because of poor anchorage and exposure to storms. Therefore the government decided to abandon the portage route and build a supply road through the bush to the new post at Penetanguishene. In 1814 the road from Lake Simcoe to Penetanguishene Bay was built under the direction of military authorities. This was the first road to reach Flos Township. It was little more than a mere backwoods trail with way stations erected at twenty mile intervals. The present Highway

number 93 is generally built over the old road bed of the Penetang Road (as this route locally became known).

In 1819 an Order in Council was passed allowing colonists to settle along this road. The government plan of allotting land was to give each settler, as he came, a farm beginning at the south end of the road and proceeding northwards. A farm was assigned first on one side of the road then the other.

In this fashion settlement began in Flos Township in the 1820's. The old system of Concession lines as they were originally set out along the Penetang Road is still in use and evident on present day maps. See Key Map front.

Except for this early settlement in what is known as Upper Flos the township did not become generally settled until years later. The geographical implications of this backwardness are obvious. West of the Penetang Road the land drops off and stretches out to Georgian Bay in a low flat plain. Parts of this plain were known to be swampy and the whole area was densely covered with forests. With such uninviting characteristics the area could not attract very many settlers. In 1842 the total population was only about two hundred most residing near the front of the township (a term frequently applied to Upper Flos).

Hillsdale, on the Penetang Road in Medonte Township, was developing as the centre for the district. Craighurst to the south, and Orr Lake to the north were secondary centres. Orr Lake, then known as Orr's Lake was looked upon as the northern limit of the community. A daily

stage coach ran from Hillsdale to Barrie. Most people travelled by horse or on foot so that inns for weary travellers became a necessity along the oft-frequented Penetang Road. Two such inns were located in Flos.

In 1843 the first settler to go west of Upper Flos settled near what is now Fergusonville, first called Cumming's Corners. He settled on a high bluff, the high land then being preferred to the flats.

In 1847 an Irish settler penetrated the dense western forests and dwelt by the Wye River in the area known as Elm Flats. Up to that time settlers had gone down to the flats only to look for stray cattle. By 1854 ten other families had settled in this area, approximately in the vicinity of Elmvale's present site. Elmvale was first known as the Four Corners because it linked a road branching from the Penetang Road with an old backwoods corduroy road (the present road base of Highway number 27). The land occupied by these settlers was considered at the time to be all the good land available in that district.

In 1850 Flos was united with Vespra but in 1854 became an independent municipality. Clearings were also being pushed further westward in the southern portion of the township. In this area the community of Apto began to develop after 1851.

It was a hard life which faced the early settler. Before he could crop his land the forests had to be cleared. He built his home from the felled trees. Flos was basically a log cabin township. Of the seventy three homes reported in the first census of 1851 all were of wood construction and sixty six were log.

The lands first utilized were almost the worst in the township for possible agricultural stability. The Penetang Road had followed the higher ground and sandier soils. There was a purpose in selecting this route. The higher sandier land was usually more lightly timbered which necessitated less work in cutting the road. Such land was also better drained which offered greater possibilities in keeping the road open during rainy seasons. The first farmers settling along this road were quite satisfied with their land. The smaller number of trees meant that the initial clearing and the first all important planting could be accomplished sooner. However these sandy soils were never well adapted for the production of general farm crops. The yields for the first few years were fairly good but soon the natural dark organic matter had disappeared from the soil and yields began to drop. Most of the farmers planted wheat, a crop unsuitable for sandy soils. In 1851 almost half the cultivated land was in wheat and the average yield was a low thirteen bushels to the acre. Other crops usually planted by farmers at this time were oats, peas, and potatoes.

Livestock were not numerous but there was an average of one horse, one or two cows, and three or four pigs for each farm. Some farmers kept small herds of cattle and most kept a few sheep. Wolves haunted the clearings and many sheep were victims of their fierce attacks. Oxen were still used as beasts of burden. The last of them disappeared about 1890.

The lumbering industry was the first boon to the township. Lumbering was responsible for the establishing

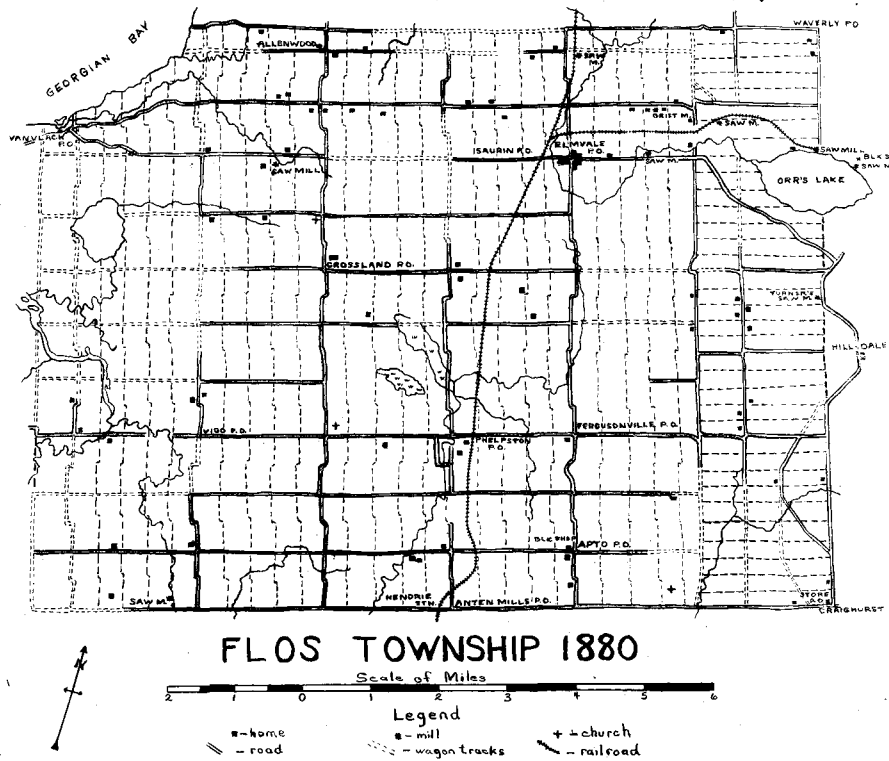


Fig. 14

of Anten Mills. In 1862 John Hunter established a saw mill near the mouth of the Nottawasaga River. The mill was built from an old sailing vessel, the last craft to enter the river. In the year 1870 O. J. Phelps came to Flos and purchased a saw mill on Marl Creek and from that time onward he became identified with the village of Phelpston which, in the year after his arrival, was established and named after him.

Mills were beginning to spring up all over the township. In 1879 the North Simcoe Branch Railway (the present Canadian National Railway) was built to service the area. Its chief purpose was to move out timber. There were two stations in the township, one at Elmvale, and the other at Phelpston. The Flos

Lumber Company applied to the Ontario Legislature and received permission to build a tramway from Elmvale to Hillsdale. During the fall of 1879 the tramway was constructed from Elmvale to Orr Lake and later on to Hillsdale.

Orr Lake was a popular place for mills. There were two on the north side of the lake and several others in the vicinity (see figure*page*). In the winter the frozen ice provided a large open area for dumping the logs. When the ice melted in the spring the logs were washed clean in the lake waters before being taken into the mills. The mills also utilized the lake water in producing steam.

During the eighties lumbering was carried on extensively. Pine was the most sought after tree. The principal markets were at Barrie and Stayner. The lumber was hauled from the south west portion of Flos to Stayner while most of the lumber moved by rail from the north east to Barrie.

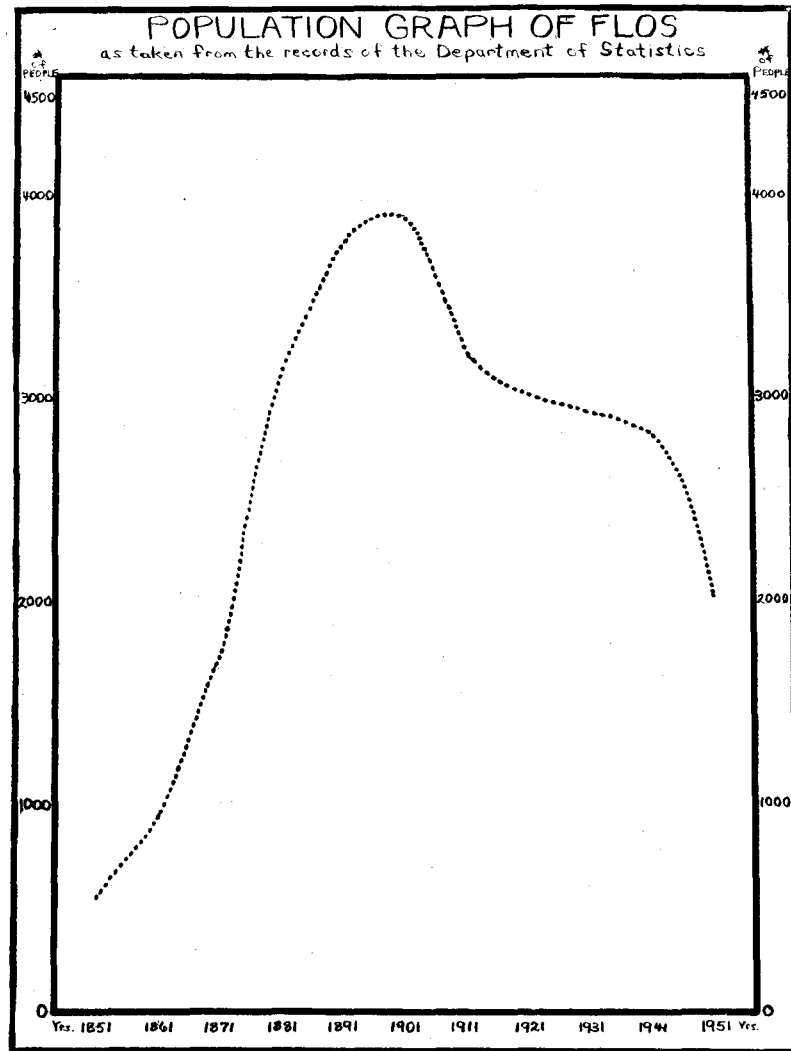


Fig. 15

An early township map to which reference has already been made gives a picture of the area during the lumbering age.

During this period Elmvalle was a thriving little village of twenty or thirty houses extending from a corner on the ninth concession line to the North Simcoe Railway Station. Since this was the point where the Flos Lumber Tramway linked with the North Simcoe Railway much lumber moved through this centre. Considerable quantities of grain were also shipped from this point. The village has been described as having saw and shingle mills, a pump factory, a number of trade and mercantile establishments, two hotels, telegraph office, a large school building, and a Presbyterian Church.

Craighurst, the oldest established settlement in Flos Township was endowed in 1880 with a saw mill, a woollen mill, a trade shop, three general stores, two hotels, two churches, a school, a Temperance and an Orange Hall and a telegraph agency.

Phelpston had a saw mill close by and several others in the district.

Vigo Post Office near the Nottawasaga River had a steam saw mill and several shingle mills.

Vanvlack had a shingle mill built in 1876. The mill was enlarged and its capacity increased so that it turned out large quantities of lumber and shingles. The hamlet was composed chiefly of the homes of mill hands.

A steadily rising population accompanied the lumbering age. Between 1871 and 1881 the population grew from one thousand seven hundred and fifty six to three thousand

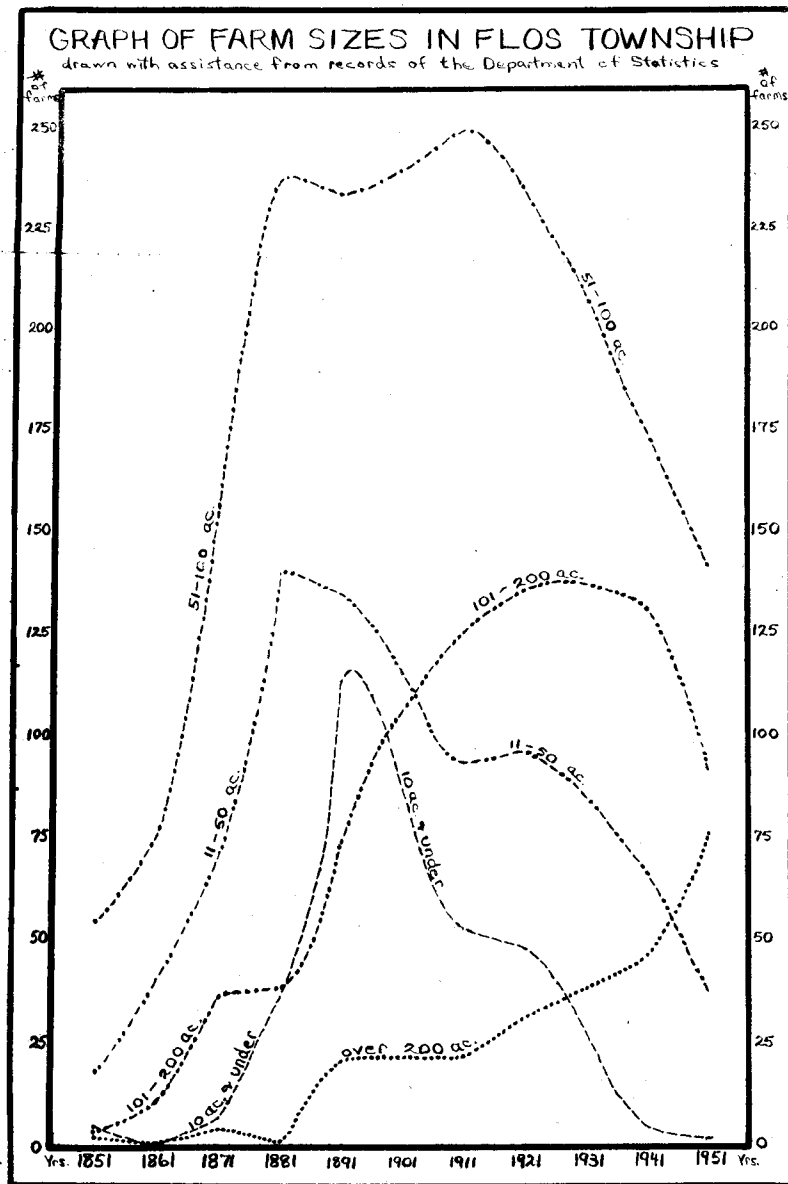


Fig. 16

one hundred and forty one. (See population graph page 46). As the clay lands of Lower Flos were denuded of their trees the farmers began to realize that these past neglected soils were better than average for growing crops. About sixty one per cent of the township had been claimed as occupied by 1881. However only thirty six per cent of the total had been improved. Much wild land still existed. This was a period of small farms. The one hundred acre farm was the most common type. There were fewer than forty farms greater than one hundred acres. (See graph page 48).

Wheat acreages were increasing rapidly as the better clay soils were occupied and yields had improved to twenty two bushels an acre. The acreage devoted to hay however had surpassed that of wheat, presumably as a result of the placing of more emphasis on milch cows and cattle. (See graph page 50). Farmers could now ship their cattle by rail to the growing market of Toronto. Oats formed the third major crop that paralleled the rise of hay and wheat. Basically a livestock feed, this crop remained on the farm and was fed back to the horses.

Following the dry period at the end of 1881 bush fires broke out over a large portion of western Flos Township. Many families in this area lost their homes and had to begin life anew.

As long as good agricultural soils were still available in the township the population had increased rapidly. However once discovered, these soils were soon occupied and by 1891 the ingression had almost ceased. 1901 was the peak year in which three thousand eight hundred and

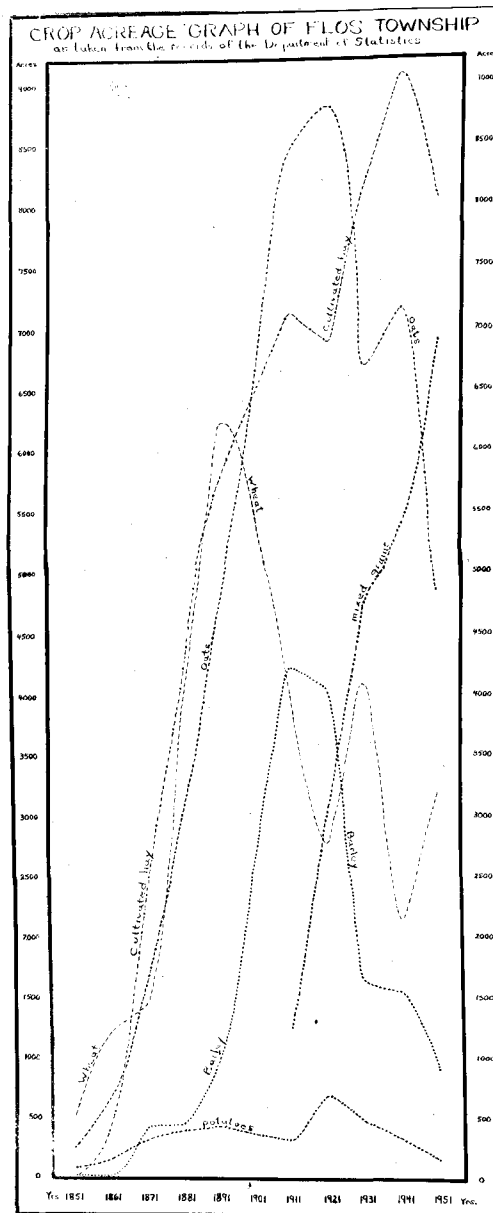


Fig- 17

ninety seven people were living in the township. From that point forth to the present day Flos Township has undergone a steady decrease. The loss of population has been largely the result of conditions which have originated outside the township. The depression which struck all Canada after 1896 started the initial drop. The small farmers, those occupying farms of fifty acres and less were not able to withstand the hard times and many lost their farms and drifted out of the township. The First Great War improved economic conditions further but drained the township's supply of manpower.

For a time after the war the exodus was partially checked. The depression years from 1929 on tended to keep the people tied to their land so that population decrease was less severe. The Second Great War accompanied by increased industrialization in the cities quickly drew off the excess farmers. Steady employment and high wages have continued in the cities to the present day and the younger natives of the township are lured away as soon as they become of age,,resulting in the current rapid rate of depopulation. The population graph previously referred to shows a rapid drop until 1911 followed by a general levelling up to 1941 after which the decrease becomes pronounced again.

The marked trend in depopulation was not accompanied by a reduction of held farm land. In fact farm land continued to increase to 1931 when a peak of fifty nine thousand seven hundred and fifty three acres were held in Flos Township. What happened was that the land abandoned by many was picked up by a few so that a swing



Fig. 2A

An abandoned farmstead in western Flos. This land, included in the holdings of another farmer, illustrates the prevailing movement to larger farms.

from small to large farms was taking place. This movement has been aided by increased farm mechanization which allows fewer men to farm larger areas. By 1911 the number of one hundred acre farms was at its greatest. Since that time there has been a marked increase in the number of larger farms. From 1921 on all farm sizes have been declining except those over two hundred acres. With the loss of the small farms subsistence farming ceased and a more uniform type of general farming has been ushered in.

From the time of the early settlements wheat had been one of the most popular crops. In 1891 it still was holding top acreage but from that time it has been on the decline. By 1911 the top three crops were oats, cultivated hay, and barley. Between 1911 and 1921 oats production was at its peak. This was the period when horses were very much in demand and farmers were raising horses for sale as well as keeping them for labour on their farms. But the tractor was slowly winning the race over the horse and after 1931 a downward trend was noticeable on the horse market. Oats acreage fell rapidly too. More concentration was placed on cultivated hay and this crop reached the all time high for any crop when a total of nine thousand and seventy acres were devoted to it in 1941. During this period farmers were slowly recognizing the value of planting mixed seed rather than pure so that at the present time mixed crops acreages are expanding at the expense of all other crops.

The emphasis in farming since 1891 has been on pay livestock rather than pay crops. While wheat was declining

milch cows and other horned cattle were increasing. As urban centres have developed outside the township (for example Barrie), Flos has been included in their milk districts so that farmers situated along the main highways have tended to place a greater emphasis on milch cows. A decreasing interest in sheep and a pronounced preference for hogs and chickens have resulted in a dwindling of the former and a steady increase in the latter.

Throughout the township general farming is the rule with wheat or potatoes, milch cows, cattle, hogs, and chickens being the pronounced saleable products. Emphasis swings from one product to another as the market demands. For example since the war a good market for wheat has been marked by increased wheat acreage and less emphasis on cattle.

With this brief background of agricultural and settlement development we are now prepared to investigate the present land use.

Chapter four

PRESENT LAND USE OF FLOS TOWNSHIP

Agricultural Land Use

Accompanying this thesis and found at the back of this book is a land use map of the township. On this map the land has been divided into several groups such as agricultural land (including cultivated land, temporary and permanent pasture), woodland (including natural and reforested areas), river and bottom land, urban and recreational areas. A glance at this map shows that the dominant use of land is for agricultural purposes. In the 1951 census the Dominion Department of Statistics records 51, 844 acres of occupied farm land within the township. The table found below records the condition of this land.

CONDITION OF OCCUPIED FARM LAND

TOTAL	<u>IMPROVED</u>				:	<u>UNIMPROVED</u>		
	UNDER CROPS	SUMMER FALLOW	PASTURE	OTHER	:	U TOTAL	WOODS	OTHER
35,223	25,169	2,824	5,873	1,357	:	16,621	6,854	9,767

On the land under cultivation the following field crops are recorded as being grown 1951.

WHEAT	BARLEY	OATS	RYE	FLAX FOR SEED	MIXED OR OTHER GRAINS	CULTIVATED HAY
320 1/2	898	4,845	193	53	6,906	8,045
	OTHER FODDER CROPS	POTATOES		OTHER FIELD CROPS	OTHER FIELD CROPS	
	768	171		24	5	acres

The following table lists the number and varieties of livestock found in the township 1951.

<u>HORSES</u>		<u>CATTLE</u>			<u>SHEEP</u>	<u>SWINE</u>
	TOTAL	COWS FOR MILK	AND HEIFERS FOR BEEF	OTHERS		
744	6,380	2,795	919	2,666	1,124	7,154

<u>POULTRY</u>	
HENS AND PULLETS	OTHERS
13,121	40,104

The best farm land in the township extends over the Elmvale Clay Flats. This area contains some of the more heavily textured soils such as Smithfield Clay Loam, Lovering Clay Loam, and Peel Clay Loam and some medium textured soils such as the Guerin Loam and the Tecumseth Sandy Loam. These soils have one thing in common in that they are all poorly drained. This has necessitated much time and expense on the part of the farmers, especially on the clay soils, in underdraining their farms with tiles or constructing open ditches. However their efforts have been worthwhile as good crop yields are obtained throughout this area.

Throughout the township mixed farming is the rule and this form of farming dominated the Elmvale Flats. A high percentage of the land is cultivated. Mixed grains, hay, oats, and barley are the most commonly grown crops. It is in this area that the majority of the 3,204 acres of wheat land are located. Most farms,



Fig. 3A

Cattle grazing on the hardy
alfalfa of the rolling uplands
of eastern Flos



Fig. 4A

One of the minor types of specialized farming-
an apiary in southwestern Flos

especially those on the Smithfield Clays, donate from ten to twenty acres to this cash crop.

Large numbers of cattle are found in this area although there are only a few acres of permanent pasture. Most farmers practice a rotational system of pasture or feed their cattle on stored hay and put them out to forage after the fields have been harvested. Shorthorn cattle are the most common type with Durhams predominating. Holsteins are also a favoured type because of their hardiness and because they are both good milk and meat producers. However no pure stock were observed and it is doubtful whether there are any in the township.

There is a slightly more pronounced emphasis on dairying along Highway number 27 where milk is picked up from the northern limits of the township and taken to the dairy in Elmvale. However none of these farms is based specifically on dairying.

A much less prosperous general farming area exists in the eastern uplands of Flos. Here the soils are predominantly light textured, of low fertility and susceptible to erosion. Therefore there is only a limited amount of cultivated land, while permanent pasture becomes the commonest type of agricultural land use. The better types of soil in the area are the Vasey Sandy Loam and the Dundonald Sandy Loam and it is on these types that most of the cultivated land is located. Mixed grains and hay are the basic crops with only a small acreage in wheat. There is some specializing in potatoes on these two types of soil but because of increased competition from the United States potato acreage has

lately been reduced. The census of 1951 listed only 171 acres in this crop. Most of the farmers are occupied in raising cattle, their farms being such that they usually have a little land for cultivation and the rest in permanent pasture. Those that are located almost entirely on the poorer soils must find some other occupation to supplement their cattle raising. This enables them to purchase enough hay to keep their stock over the winter. A pronounced example of this is one farmer who pastures some twenty head of cattle and operates a small dance hall on his farm.

The upland pastures are frequently owned or rented by farmers on the Elmvale Flats who send their cattle to this area for summer pasture and thus are able to allot more of their better soils to cultivated crops. There are mixed feelings on this subject but some farmers believe that they can produce much firmer cattle by pasturing them on the upland fields.

The Marl Lake, Nottawasaga River area is very similar to the eastern uplands in that very much of the land is composed of poorer soils especially the Tioga Sands, which are not favourable to cultivation. Therefore there is also much permanent pasture in this area with the better soils such as the Monaghan Clay Loam being used for cultivation. General farming is again the rule. However here also we have occasional deviations where soils are too poor to carry out the characteristic standard of farming. For example on a section of poorly drained Minesing Marly Clay a prosperous milk farm was located. The land was used for pasture of old horses



Fig. 5A
Cattle grazing on the permanent pasture along the
sandy embankment of the Nottawasaga River

which were used for mink feed.

It should be noted that in this area as well as in the uplands the farmers who are located on the poorer lands and do not adopt some specialization other than general farming have a very difficult time maintaining their farms. There are numerous examples of this in these areas marked by vacant homesteads. Farmers have been forced to abandon or sell out their land because of their inability to adjust their farming to types which can best utilize the infertile soils.

Agriculture on the Edenvale Moraine is quite varied because of the mixed pockets of clay, gravel, and sand. However the sands predominate in the east so that pasture land is most common there. On the other hand the western portion is mostly composed of clay soils so that cultivated land with the typical fields of mixed grains, hay, oats, and occasional wheat and barley is most pronounced. These soils are similar to those of the Elmvale Flats being of the Smithfield Clay Loam and Monaghan Clay Loam varieties. But here the drainage is much better and there is not the same necessity for tiled drainage to ensure good yields.

Most of the farmers in the township are quite progressive and support and participate in the North Simcoe Soil and Crop Improvement Association, an organization for better land use and more profitable production. At the present time there are several farmers conducting experimental farm projects such as hay pasture build up, Trash Mulch Projects and Alfalfa Variety Tests under the direction of this association.

The agricultural land use over the township is based almost entirely on the soils. On the more heavily textured soils are located prosperous farms consisting largely of cultivated land. On the light textured soils are located poorer farms with a high percentage of agricultural land in pasture.

The overall farm value for the township as found in the 1951 census is given in the table below.

<u>FARM VALUE</u>		
TOTAL VALUE	LAND AND BUILDINGS	LIVESTOCK
\$ 5,512,697.	\$ 2,679,200.	\$1,799,738.
	IMPLEMENTS AND MACHINERY	
	\$ 1,033,759.	

Woodlands of Flos

A general survey of the natural woodlands of Flos has already been made in an earlier chapter. The distribution of woodland as it exists today appears in the Land Use Map (see back of book). There are two types of forest in Flos Township, the natural forests and the reforested areas. The natural forests follow an obvious pattern which corresponds almost exactly with the pattern found on the soils map of the Tioga Sand and Eastport Sand. These sands proved impractical for farming so much of their areas have never been cleared. The forests however do not contain any original stands of trees for they have been cut over from time to time and the larger trees removed. These wooded areas are chiefly utilized by the local farmers who spend their winters in the nearby



Fig. 6A
Reforestation in Eastern Flos
note sparse vegetation on
Tioga Sand in foreground



Fig. 7A
One of a few roads in Flos which has been
made impassable by overgrowth of bush

forests cutting fire wood. Most of the barns and many of the houses are built of local timber. There is at present a good market for cedar posts and many of this variety of tree are being cut and trimmed for export to the United States.

Reforested areas are quite extensive over the township, the greatest proportion being located in the eastern uplands. It was soon found that little could be grown on the infertile, quickly eroded sands, much of which was even unfavourable for pasture land. Therefore the Dominion government made an effort to return as much as possible of this poor land to forest.

Their greatest effort has been in the eastern upland where over a thousand acres have been purchased and reforested. This area is known as the Orr Lake Forest.

It extends over greater areas in Medonte Township than it does in Flos.

As well as the land purchased by the government, individual farmers are doing some reforesting on their own. Reforestation has become more popular in the last few years because of the short term profits made possible by the sale of young evergreens as Christmas

trees. The Christmas tree industry is growing as populations are expanding in the centres to the south. The long term projects are beginning to be remunerative also. Last year five carloads of pulp wood were cut from the Orr Lake Forest during their thinning out period. There are still many acres of land which are very poor for agriculture and the government is attempting to persuade the farmers to begin reforestation projects in these areas.

Urban Land Use

Very little of Flos Township can be classified as urban. There is only one community, Elmvale, which has reached the status of an incorporated village. All the other centres are mere hamlets and occupy comparatively little land that can be specifically classified as urban tract. Therefore they will warrant slight attention in this study. Emphasis will be given to Elmvale, the village which has become the centre of influence within the township.

Of the lesser centres Waverley, located at the junction of Highways number 27 and 93, Phelpsston, a Roman Catholic community on the Canadian National Railway line, and Craighurst, located where the Canadian Pacific Railway crosses Highway number 93, are the largest. Craighurst and Waverley, located on the old Penetang Road, were among the earliest centres to develop in the township. Although these towns have been suffering during the general rural decline they have maintained some semblance of hamlets because of their present relatively important rail and road connections. Each contains primarily a church, a local store, and a garage centred about a few houses. Railroad stations are located at Phelpsston and Craighurst.

The other centres in Flos Fergusonvale, Crossland, Allenwood, New Flos, Edenvale, Hendrie and Apto are not as well located as the above mentioned hamlets. At the present time they are dwindling away. Their locations are barely marked by more than one or two buildings such as a general store, a garage, a rural school and

a church.

The Village of Elmvale

The growth of the village of Elmvale has been continuous since its rather slow beginning after 1849. By 1853 about ten families had settled around the Four Corners as Elmvale was known at that time.

The first store was established in 1859. A second followed a few years later. The first place of worship was the Presbyterian Church built in 1864 about one quarter of a mile east of the village.

Elmvale received its first impetus when the North Simcoe Railway was built in 1879. In 1887 G. Copeland and Sons built a large flour mill with a capacity of one hundred and fifty barrels per day and with an elevator attached to the mill capable of storing thirty thousand bushels of wheat.

Elmvale was made a Police Village by a by-law of the County Council in June 1894. To-day Elmvale is one of the newest of Ontario's incorporated municipalities having reached this status in 1949. During the past decade its growth and accomplishments are remarkable.

Its Board of Trade has built and paid for a new community Hall and turned it over to the village. The hall is in use nearly every night fully serving its intended purpose as a community centre. The Elmvale District Lion's Club built a full sized arena which doubles as a building for the Elmvale Fall Fair. The village fathers have provided an excellent water service and a new modern fire truck. Streets are being hard surfaced

at the rate of a mile a year with the programme nearing completion. The latest addition to the village has been a modern high school opened in 1954 and accommodating one hundred and eighty pupils.

Although the other centres have stagnated during the general population decline, Elmvale has continued to grow to reach, in the census year of 1951, a new population maximum of eight hundred and eight. This growth has been possible because of the fine geographical location within the township. Set amid the rich farm land on the Elmvale Clay flats it occupies a position at the crossroads of Highways number 92 and 27, while a Canadian National Railway branch line also passes through the village.

In the early days one of the busiest routes of travel was the present Highway number 92. Wagons moved east and west to and from the mill and railroad station out over the township. Therefore the commercial section of the village naturally grew up between the "Corners" and the railway station along Highway number 92. Lately, since Highway number 27 has become increasingly used by automobile traffic the village has begun to expand along this highway in a north-south direction.

The chief function of the village of Elmvale, being located in a rural area, is to service the needs of the surrounding farming district. Since it has been able to do this better than the other communities in the township it has grown while they have declined. Secondly, in recent years, the last decade particularly, Elmvale has acquired a new function of serving two exceptionally

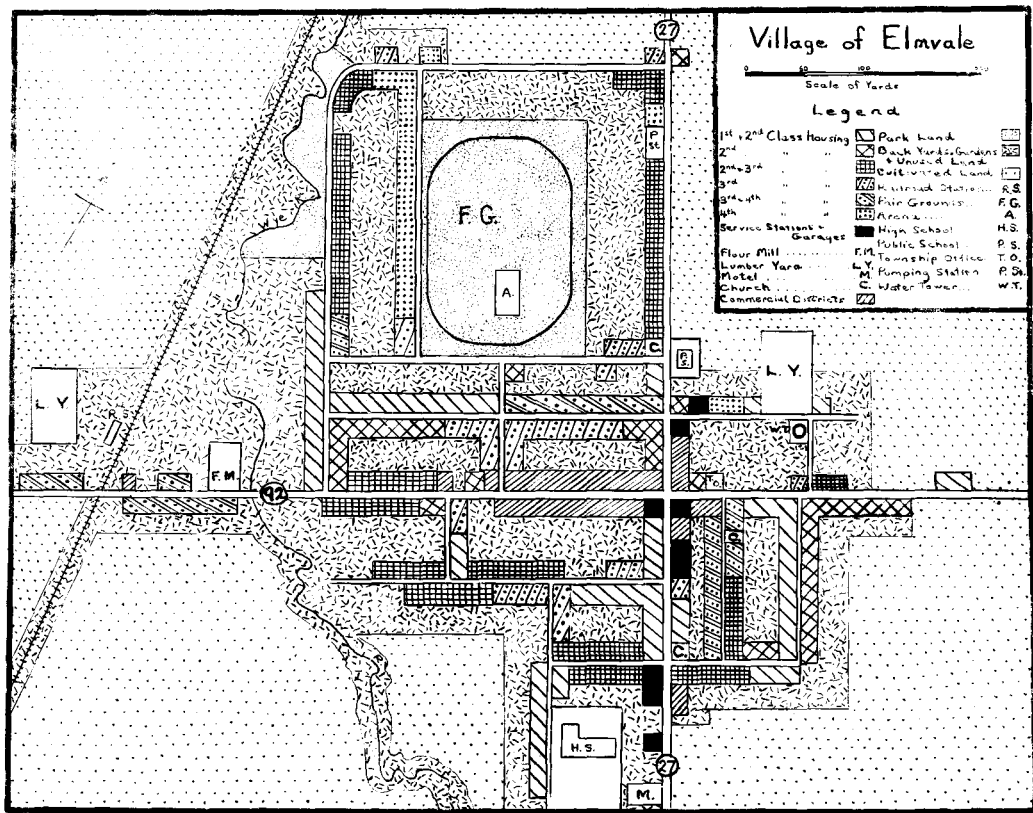


Fig. 18

fast growing tourist centres, the Wasaga Beach strip and the Orr Lake cottage development.

Holiday-makers normally pass through Elmvale via Highway number 27 and number 92 to reach Wasaga Beach, often stopping to shop and pick up supplies in the village. Cottage dwellers often drive the three miles from Orr Lake to the village to shop in the local stores.

Therefore Elmvale's growth and survival are dependent upon these two chief functions and all the services in the town are geared to the requirements of these two local groups-the farmers and the tourists. With this in mind we shall present a land use survey of Elmvale and see in what ways the village is fulfilling its functions.

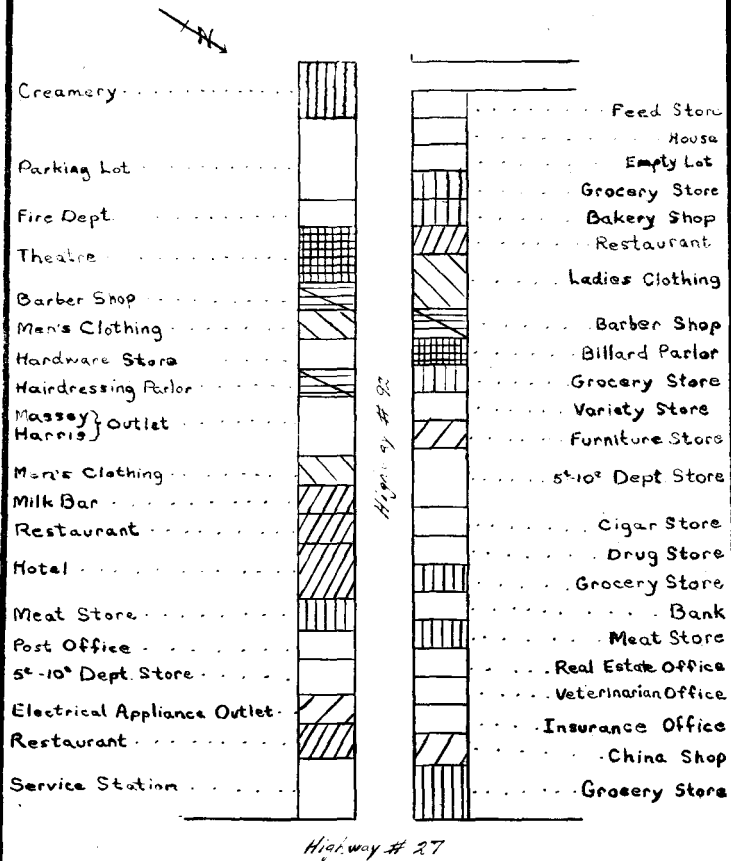
Map 18 page 68 is a land use survey of the village of Elmvale and figure 19 page 70 shows the major Elmvale business district. Frequent references to these two figures will augment the following information.

Elmvale has not any heavy industries. There are two lumber yards within the city limits and the Elmvale Planing Mill just outside the village located on Highway number 27 and Concession 8. These yards are supplied by some local timber but most of that now planed comes from further distances in Medonte.

Another industry based on local material is the Copeland Flour Mill. Grain is brought to the mill by the local farmers. Here it is either sold directly or milled and returned to the farmers.

A new industry, a chicken canning plant, is opening in the near future on the northern outskirts of the village.

Elmvale Business Block



Legend

Food Outlets
Eating Establishments
Entertainment Houses
Clothing Stores
Household Goods Outlets
Personal Services



Fig. 19

There are many smaller service industries which are characteristic of any town and usually proportional to the population. This includes the Elmvale Dairy which services the local area, drawing its milk supply from a small milk shed along Highway number 27 running for a few miles north of Highway number 92.

There is one bakery in Elmvale, a small local shop, which is doing a tremendous summer business since being discovered by the summer cottage dwellers.

There are a few building trade industries operating on a small scale such as the Bernie Pelon Bulldozing and Grading Company and the J.S. Ferguson Building Supplies also dealing in seed, feed, and coal. W.S. Watkins, and Heacock and Robertson are the building contractors in the village.

There is one blacksmith shop in the village which caters to rural needs. One of the newest and most familiar types of industry is the service station and garage of which there are nine all spread along Highway number 27. The motoring tourist is responsible for so many of these establishments within a small area (the junction of Highways number 27 and 92).

There is an increasing variety of commercial stores catering to both farmer and tourist. Located on the main street are four grocery stores, two meat stores, two clothing stores, one furniture store, and two electrical appliance outlets. There are also two five cent to one dollar department stores, a variety shop, and a china shop which handle a large portion of tourist goods. A cigar and a drug store are also established here and



Fig. 8A
Flos Rolling Mills- one of the
major industries of Elmvale



Fig. 9A
Elmvale arena-one of the
latest building additions to
the village

in the block west of the main business section a retail brewers' outlet is located.

There are also shops which cater specifically to the local farmers-such as two farm machinery outlets, a Massey Harris shop and an International Harvester dealer. A feed and seed store is located at the west end of the business block.

Two barber shops, which do most of their business on Saturday night, and one hairdressing parlour offer their services to the local inhabitants.

Those who wish to spend the day or seek overnight accommodation can be provided for in Elmvale. There are three restaurants, a milk bar, and a hotel, as well as a tourist lodge on Highway number 92 and a new motel on Highway number 27.

Elmvale lacks a hospital or medical centre of any sort but there is one doctor practising in the village and two veterinarians to care for the farm stock. The Odd Fellows and Rebekah Elmvale Lodges have provided four hospital beds, two wheel chairs, and crutches for use in Elmvale and district. This equipment is available without charge.

The village also serves as a township financial centre. A branch of the Bank of Toronto is located here and there is also an insurance office. Township inhabitants do not have to go beyond Elmvale to pay their taxes and transactions of land can be made through the local real estate office.

Another service which the village offers is a twenty four man volunteer fire brigade which, with two trucks,

answers both village and township calls. With the township office and garage located in the village, maintenance of all township roads is controlled from this centre.

Elmvale offers a degree of satisfaction to seekers of culture, recreation and entertainment. There is one motion picture theatre in the village and also a local billiard parlour. The local arena provides for winter sports such as hockey and curling. A large park area has been set aside as a Fair Ground and a track has been built for the annual horse races. In the north west part of the village a new park area has been set out along the Wye River. This park is to be equipped with roadside tables and a play area for the benefit of children and tourists.

Along more educational lines Elmvale has a small daily newspaper, the Elmvale Lance, which emphasizes local news. There is also the new community hall where town meetings of all sorts are held. Elmvale has two schools of education. There is the public school which for many years carried secondary school subjects and acted as a continuation school. Secondly, there is the new high school which serves the whole of Flos Township and the southern part of Tiny Township.

By classifying the homes in a town one receives a good indication of the prosperity of the settlement. There are about two hundred homes in Elmvale and these have all been given a general classification. The criteria used in classifying the homes was basically their monetary

value. A first class house was considered to be worth over ten thousand dollars. A second class house was valued at from five to ten thousand dollars and a third class house from three to five thousand dollars. A fourth class house would be worth less than three thousand dollars. For simplification, on the map (page 68) the classification appears for streets or sections of streets rather than for individual houses. The majority of the homes fell within the third class range. There was no marked pattern of housing development owing to any obvious geographical factors. There was some grouping of the newer and better type homes both in the north west and south east outskirts of the village, but poorer homes were found even in the midst of these. A very poor type of housing was found to parallel the west side of the Fair Grounds.

From this housing study we may conclude that the general level of prosperity within Elmvale is not very high. The better homes seem to be those most recently constructed, an indication that some of the inhabitants are becoming more prosperous in the last few years.

The population according to age groups as it appeared in the 1951 census appears below.

<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-34</u>
88	78	56	50	57	97
	<u>35-44</u>	<u>45-54</u>	<u>55-64</u>	<u>65-69</u>	<u>70+++</u>
	105	86	77	49	65

The village of Elmvale exerts an influence over the surrounding area. We have attempted to determine just how far this influence extends. Four concerns have been selected for individual study-the Elmvale High School, The Elmvale Lance, the Copeland Flour Mill, and the Ferguson Coal Company. The normal zone of influence of each has been mapped and appears on page. 72 .

The Elmvale High School serves an authorized district which includes the village of Elmvale, all of Flos Township, and the southern part of Tiny Township up to the sixth concession. This high school district is probably one of the best guides in determining the zone of influence of the whole village. This area is compressed between the Midland high school and Barrie high school districts and for many years was in danger of being dissolved into these two. That it has not and is now more firmly established with the construction of the new high school is very important in strengthening the zonal influence of Elmvale.

The delivery limits of the local newspaper is another excellent guide to the extent of influence of any centre. Local news is only interesting to those concerned. Thus the delivery boundary of the Elmvale Lance may be one of our safest guides in determining the maximum range of influence of the village.

The boundary determined for the Copeland Flour Mill marks the area from which farmers bring their grain to the mill to be ground. The boundary of the Ferguson Coal Company encloses the greatest area of those places studied but only occasional calls are made to the most

outlying districts of this zone.

If other concerns within the village had been studied it is to be assumed that similar patterns would be derived. Therefore the study as made should give a proper estimate of the area dominated by Elmvale.

Elmvale has great competition for influential control from all directions.

To the south the town of Barrie with a population in the 1951 census of twelve thousand five hundred and fourteen is exerting a noticeable influence throughout the entire Simcoe County. Farmers in Flos Township often go to this town for various services and its radio station is probably the most listened to throughout the township.

To the north Elmvale's influence is challenged by the town of Midland, to the east Coldwater, and to the west Stayner and Collingwood. The south west corner of Flos Township from the Nottawasaga River to Edenvale is more under the influence of Stayner than Elmvale because of this area's closer and more direct connection with Stayner via Highway number 26.

The dotted area on map 20 is an attempt to show the comparative degree of concentration of influence. North Flos and South Tiny Township from Orr Lake to Nottawasaga Bay is the area most influenced by Elmvale. Where better roads such as Highway number 27 give access to the village the influence of the village will extend out farther than in areas serviced by poorer roads.

Being surrounded on four sides by towns all larger than itself, Elmvale faces a difficult task in strengthening

and maintaining its present zone of influence.

Recreational Areas of Flos Township

Within Flos Township there are two areas which attract recreation seekers to the township. They are the New Wasaga Beach strip and Orr Lake.

New Wasaga Beach is located at the eastern edge of the township on Georgian Bay. It is easily reached by Highway number 92 from Elmvale. This recreational area is a semi-private summer cottage development, an expansion of the recreational area of Wasaga Beach in Sunnidale Township which continues on beyond Flos Township into Tiny Township where it is known as Woodland Beach.

The beach at New Wasaga is very broad (50-100 yards wide) and slopes gradually back to a ridge of sand dunes approximately forty feet high. Composed of fine white sand it provides a play area for both young and old and appeals to sunbathers.

The water bottom is sandy and free from rocks and weeds. Its slope is very gradual so that one must go, in some places, two hundred yards before six feet of water is reached. This makes the beach very safe for children and non-swimmers who like to wade or play in the shallow water. The shallowness has a tendency to keep the water warm which is preferred by most water enthusiasts. However the water is not so shallow that it seriously handicaps swimming but diving is naturally limited to the deeper water. The beach provides a good approach for small boats which can be easily brought ashore.

The cottage development has grown beyond the usual

single line of cottage dwellings fronting the water. At the present time a regular street pattern has developed in which three and sometimes four rows of cottages extend back and parallel to the bay. This limits the privacy of the area as people from all cottages use the beach, those living in the rear passing between the front cottages to reach the water.

There are many fine summer cottages in this area which would be worth at least five thousand dollars. Many of them are winterized and approach the status of permanent homes. All cottages are equipped with electricity but most have outside plumbing, a few being equipped with septic tanks. Grounds are well kept some cottages maintaining trimmed shrubs, rockeries, and flower gardens.

While most of the cottages are privately owned there are several places along the beach strip where small overnight cabins are located open to the general public. Outside of the odd grocery store there are no other types of commercial or recreational outlets.

At the southern end of New Wasaga Beach the Nottawasaga River empties into Georgian Bay. This has become a favoured spot for fly casting fishermen, especially while the rainbow trout are running. Hundreds flock to this point attempting to land this prized fish.

Back of the Eastport Sands on which the summer cottages are located is another area of Tioga Sand and Minesing Marly Clay which has proved very poor for agricultural purposes. With the growth of the summer resort on the bay front this land is now also being used for recreational purposes. Along Highway number 9² a dude ranch is located



Fig. 10 A
The mouth of the Nottawasaga River
showing fishermen casting for
speckled trout



Fig. 11 A
Summer cottages situated on
the higher ground on the
southern shore of Orr Lake

and back bordering the shallow marshy waters of Marl Lake, the beautiful Nottawasaga Golf Course has been constructed.

Although the bulk of the tourists are drawn to Wasaga Beach where the large hotels, dance halls, and general amusements are located, New Wasaga Beach has become a part of this long recreational area which is one of the most popular summer resorts in Ontario.

Orr Lake is the other important recreational area in Flos Township (the western portion of this lake lies in Medonte Township). It is easily accessible by Highway number 93 which runs parallel to the eastern shore of the lake. Orr Lake is spring fed and empties via the Wye River into Georgian Bay. Its water level is controlled by a small dam constructed at the western end of the lake where the lake waters enter the Wye River. This lake is noted for its fish and ducks. Good catches of bass and pike are taken from the lake each year. It is restocked by the Ontario Department of Fisheries. As for ducks, Orr Lake is a native habitat of Blacks, Mallards, Wood Duck, and Teal, while Bluebill, Whistlers, and Merganzers pass through the district from Hudson Bay.

Cottages began to spring up along the south shore during the late thirties and along the northern shore in the mid forties. Cottages are still being erected along the north shore, a large area of pasture land having been broken up into lots within the last year. There is still some low lying land at the western end of the lake which has not been opened to cottage seekers.

The land on the southern side of the lake is higher

than on the northern. The good drainage provided for cottage sites was enough of an advantage to overcome the handicap of a steep embankment which is found in most places along this shore. However, steps to the water and water level boat houses have greatly reduced this handicap. The water bottom is in most places sandy at the shoreline with a tendency to mud and weediness as the water deepens. Swimming and diving are possible all along the southern shore. The northern shore is somewhat different tending to be low lying and marshy. Water bottoms are generally muddy and weedy especially at the eastern end of the lake where silting problems are arising. This shoreline was for years planted in wild rice to attract ducks, but as the number of cottages has increased this practice has been dropped. Cottage dwellers from this side of the lake have spent much time clearing the mud and weeds from the front of their lots.

Cottages on this lake generally range in value from \$ 2,500. to \$ \$4000. with the better cottages being located on the southern side of the lake. All cottages front the lake in the single line pattern. Electricity is supplied to the cottages but none are equipped with plumbing. Drinking water is easily obtained by piping into the spring fed soil. Most cottages have outdoor food containers cooled by this water.

Orr Lake is almost entirely private. However, there is a group of overnight cabins on the southern shore and there are larger cottages for rent at the eastern end of the lake. In Medonte Township where Highway number 93 borders the lake a Snack Bar, Dance Hall, and a boat

renting establishment are located. The Orr Lake Race Track, where the annual county horse races are held, is located to the north of the lake.

The Orr Lake recreational area with its emphasis on fishing and hunting contrasts sharply with the New Wasaga Beach area specializing in water sports and sunbathing. Thus the township holds the advantage of attracting to its recreational areas tourists of many varied interests.

Chapter five

SUMMARY AND CONCLUSION

The present land use of Flos Township is influenced by occurrences which took place as far back as glacial times. For when this area lay at the bottom of the swollen waters of Lake Algonquin sands, silts, and clays were deposited from which the soils of today are composed. In Flos Township the soils are the most important criteria for delimiting land use. They have not always been, for at one time regardless of soil types the area was one huge forest used only as a hunting ground for Huron Indians. However, tree stands were lighter in the higher sandier soils and it was to these areas that the first settlers came and cleared the land for cultivation. Therefore in the first period of development all the farm land was located in the light textured soils while the heavier textured clays on the flats remained in dense forest. This pattern was soon to change as it was discovered, as the flats were cleared by lumbermen that the clay soils with proper drainage provided better crop land than the light textured soils which were currently being used. Today a pattern has developed in which the light textured soils remain forested or serve as permanent pasture while medium and heavily textured soils provide the cultivated crop land. This has proved to be a general principle of the soils and where it has been disregarded as in the early days when the first settlers cultivated the sandy soils, the lands have become desolate and impractical for agriculture. It is now realized that the sandy soils are best suited

for trees so they are slowly being reforested. Forest products are expected to some day again become an important export of the township.

Other factors such as the coming of the railway and highway and the growth of urban centres outside the township have made great changes in land use development. Small farms growing subsistence crops were very common before rail and highway facilities encouraged larger mixed farms to supply the needs of distant towns.

A new land use has been developed as improved highways and motor cars have made areas such as Georgian Bay and Orr Lake within easy travelling distance of larger Ontario cities. These sites have burst forth as recreational areas bringing entertainment and relaxation to weary industrialized town-dwellers. The recreational lands are located on sandy soils which had practically no former agricultural value. Therefore these areas have become exceptionally enriched by this development.

Accompanying this recreational movement has been the renewed growth of the village of Elmvale which is the chief service centre for the district.

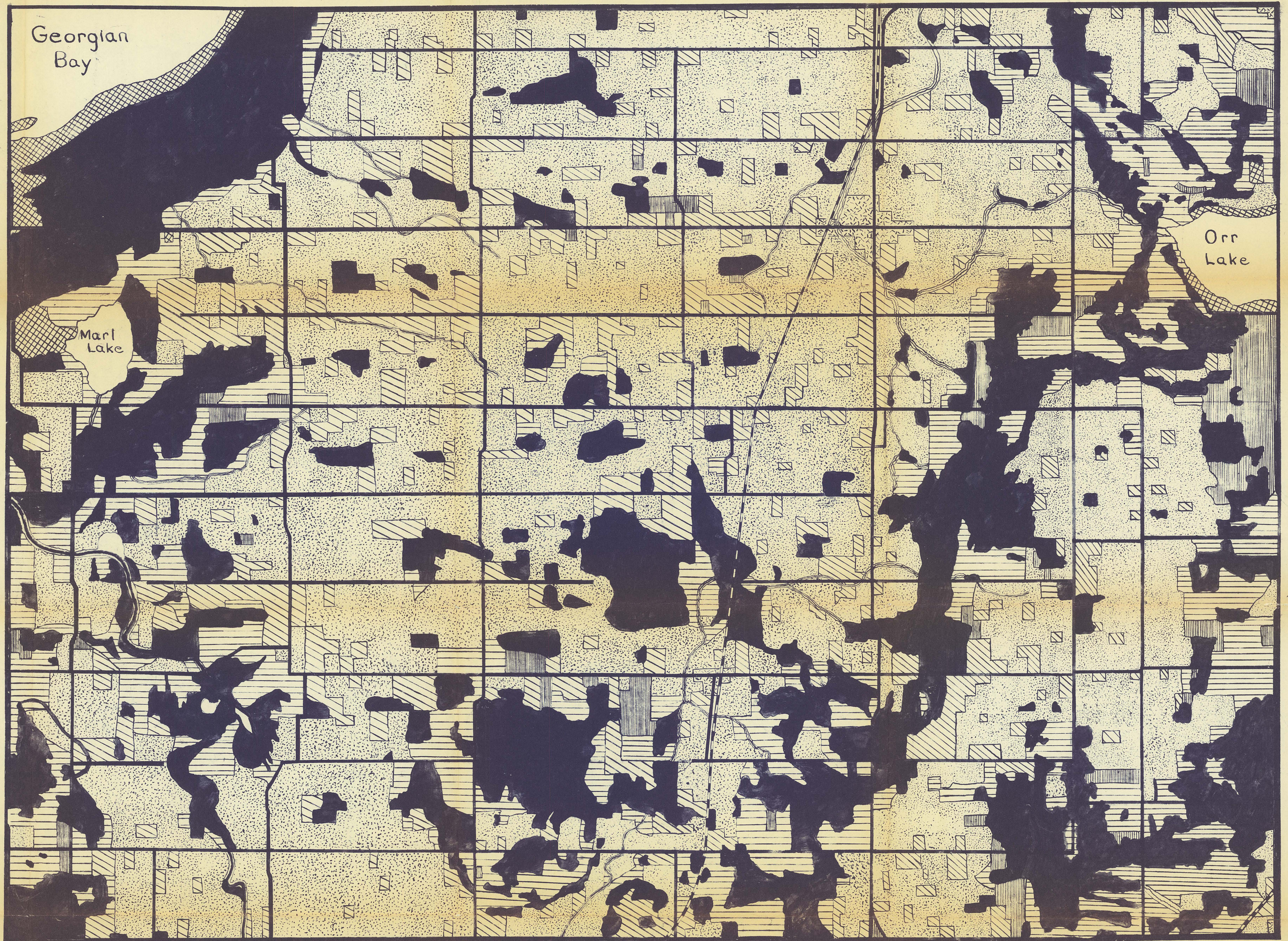
Further development of the recreational areas appears to be the most promising venture in the township at present. Increasing numbers of cottages are being winterized and used as permanent homes so that these areas may soon grow into stabilized communities.

Much energy and expense has been invested on the heavier textured soils of Flos Township making it one of the most agriculturally prosperous townships in

North Simcoe County. At the same time the agriculturally poor lands are being reforested or where possible developed for recreational purposes. Such a trend is a sign of progress as the inhabitants of Flos Township, to an increasing degree, adjust themselves to their natural environment.

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LAND USE MAP OF FLOS TOWNSHIP

Scale of Miles

0 1 2 3 4

Legend

Cultivated Land	River and Bottom Land	
Temporary Pasture	Urban Land	
Permanent Pasture	Recreational Land	
Natural Woodland	Roads	
Reforested Land	Railways	