Chapter 3 Study Area and Methodology

3.1 Field Study Area

Emily Township is located in the southeast portion of Victoria County in southern Ontario (Figure 3.1), and has an area of about ninety-three square miles (241 km^2) or 59,533 acres (24,093 ha.) (Ontario Geological Survey Paper 19 1980,p.9). Pigeon Creek flows into the township near the southwest corner and runs in a generally northeast direction to the opposite corner, where it widens into Pigeon Lake (Figure 3.2). In the early nineteenth century before dams were constructed at the Buckhorn outlet, much of the present-day Pigeon River and Pigeon Lake waterways was low-lying, swampy areas. Chemung (Mud) Lake lies on the eastern boundary of the township near Fowler's Corners, and Emily Lake straddles Emily's northern border with Verulam Township.

Emily Township is underlain by bedrock of the Lindsay and Verulam Formations (Ontario Geological Survey Paper 19 1980,p.v). Emily's physical landscape is a result of the erosional and depositional effects of ice and of melt-waters associated with the Late Wisconsinan Substage of the Pleistocene Epoch between 23,000 and 10,000 years ago (Ecclestone 1985,p.7). The surficial geology (Figure 3.3) comprises large areas of ground moraine (mainly sandy till), close to 100 drumlins (most in the southern concessions), and a fairly large kame complex of sand and gravel in the south-central region of the township. A lake plain of sand, silt, and clay is located in the west-central area. Swampy,

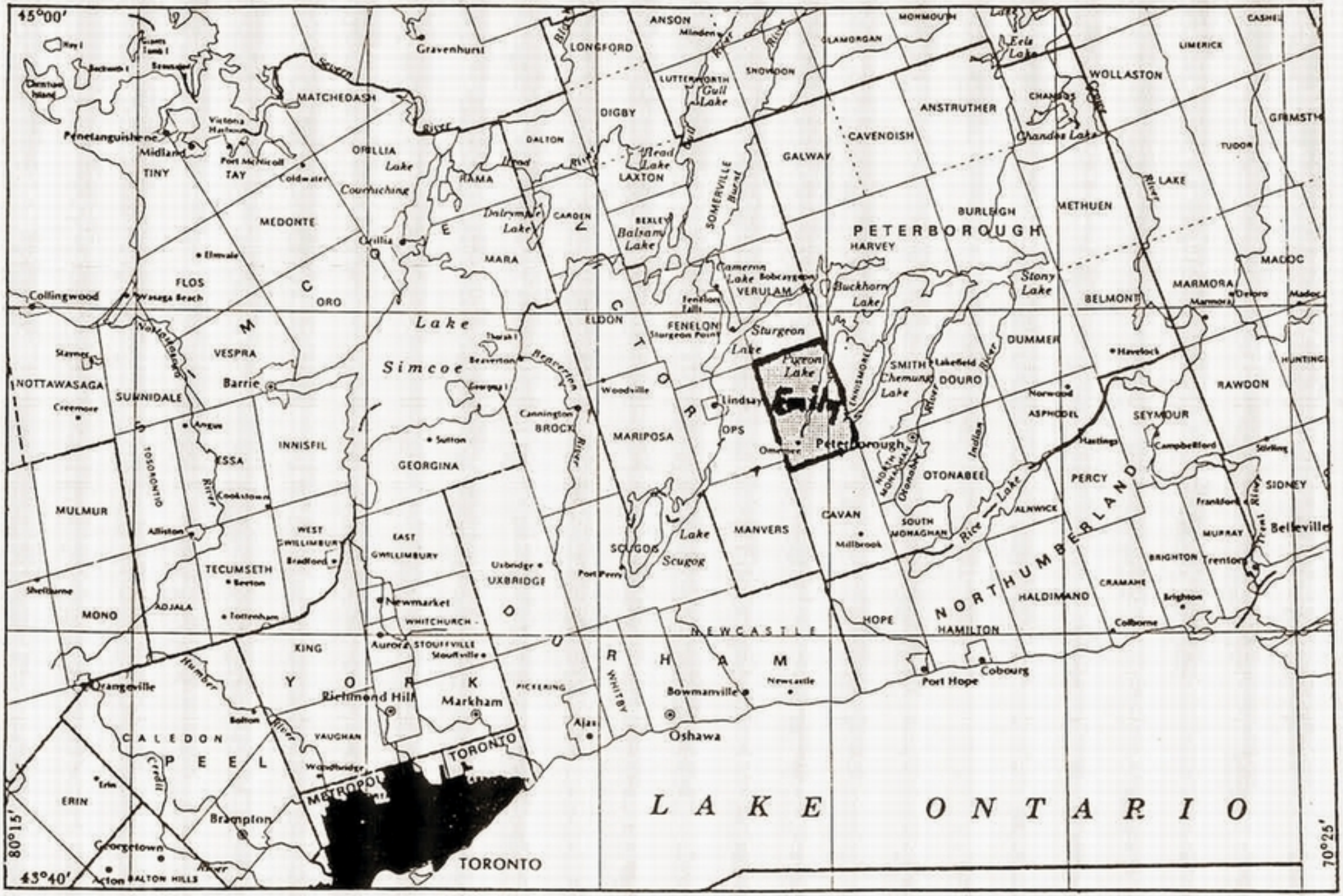

Figure 3.1: Key Map Showing Location of Emily Township. Scale 1:1 800 000.

Source: Ontario Geological Survey Paper 19

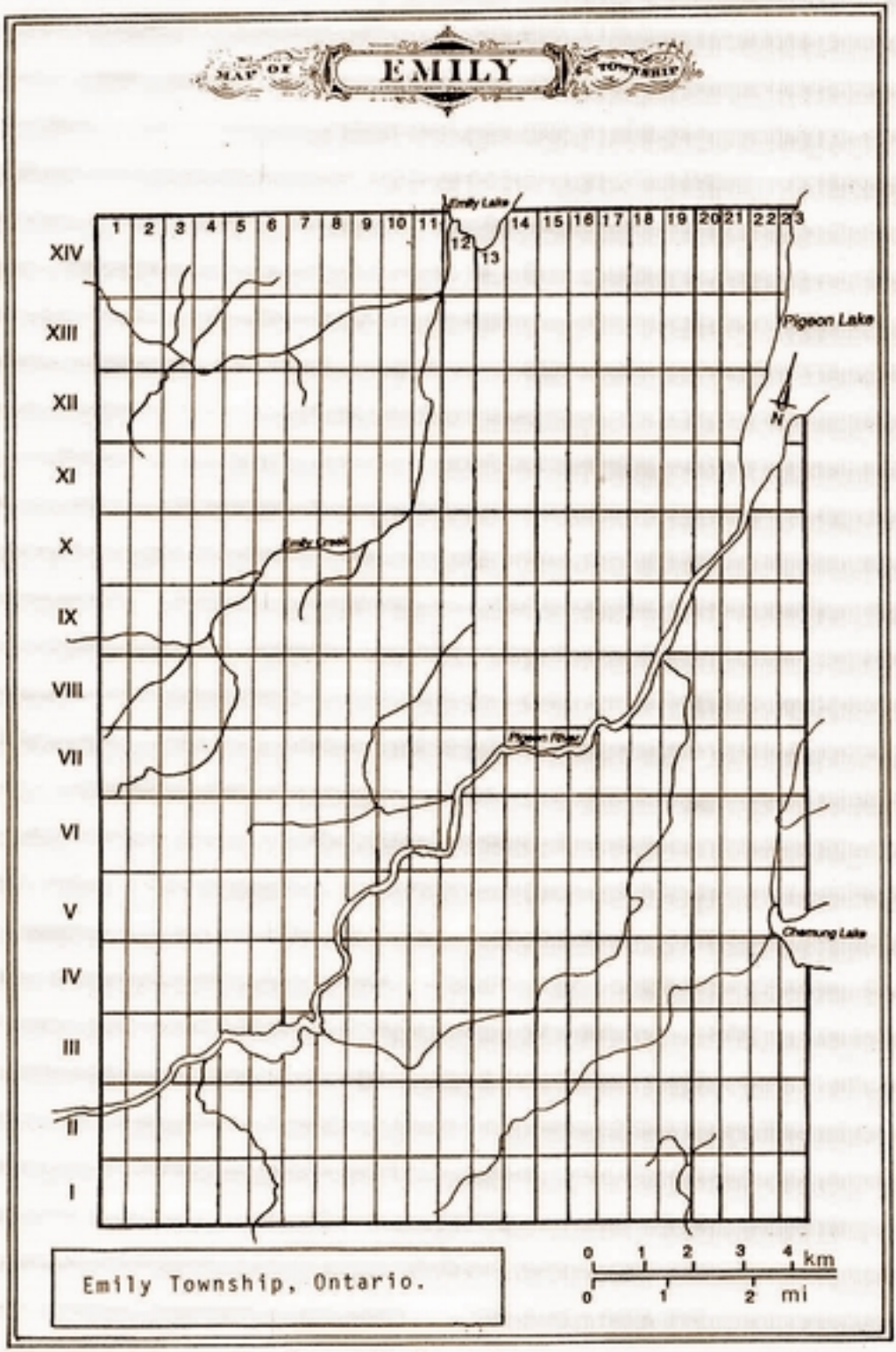

Figure 3.2 : Emily Township Base Map

Figure 3.3 : Emily Township - Surficial Geology

LEGEND:

1 Ground Moraine: mainly sandy till

2 Drumlin: till; till and stratified drift

3 Interlobate Kame Moraine: sand, gravel minor till

4 Esker: gravel, sand, silt

5 Outwash Plain: sand; minor gravel

6 Lake Plain

7 Swamp, Muck

0 1 2 3 4 km.

0 1 2 mi.

Source : Geological Survey of Canada - Map 1050A

mucky valleys enclose many of the small creeks. The Omemee esker, a bumpy ridge of gravel and sand, runs from the extreme south-west of the township, north to the Downeyville area and Pigeon Lake.

Emily's basic subsoil is made up of glacial clays and is 'commendably fertile' (Kirkconnell 1967,p.16). The wide variety of 'parent' glacial deposits has resulted in a similar broad range of soils within a relatively small area (Figure 3.4). In southern Emily the predominant soil is a rich, sandy loam of grey-brown colour, suitable for a wide variety of crops and easy to cultivate; other types of imperfectly-drained thinner sandy and clay loams, including 'Emily loam,' are found increasingly toward the north part of the township (Pammett 1974,p.3).

Surveyor Samuel Wilmot's field notes of his 1818 'chaining' of Emily provide an excellent description of pre-settlement landscape features including cedar, hemlock, and tamarack swamps, elm, beech, oak, birch, and maple forests on ridges, numerous brooks, springs, beaver dams, cranberry marshes, and the Pigeon River with three feet of water (Wilmot,1818). Guillet (1957,p.34) adds that beaver meadows were frequent and were 'very serviceable' to the new settler.

3.2 Data Collection

Data for mapping settlement patterns, analysis, and hypothesis testing have been collected from several sources including: microfilm records of the Newcastle District Census and Assessment Records (1820-1841), ii) nominal and agricultural Canada Census data (1851), iii) the Ontario

Figure 3.4 : Emily Township Soils

LEGEND:

- Class I - Good Soil
- Class II - Good to Fair Soil
- Class III - Fair Soil
- Class IV - Fair to Poor Soil
- Class V - Poor Soil
- Class VI - Non-Agricultural
- Class VI - Swamp or Muck

0 1 2 3 4 km.

0 1 2 3 mi.

Source: Gillespie and Richards (1957)

Land Records Index, iv) the Index to Land Patents, v) Pammett's (1974,pp.307-15) summary of Land Board grants, vi) the 1957 Soil Survey of Victoria County. For census year 1841, the distance of each settler from a 'main road' (at this point in time likely little more than ox-cart tracks) has been measured. Mill-sites and distance from a farm to the closest mill were measured using Sandford Fleming's (1848) map of Newcastle and Colborne Districts. The microfilm records were photocopied, checked for discrepancies, and recorded by hand. The data were then entered on the Trent University Vax computer system in order to utilize the Statistical Package for the Social Sciences (SPSS-X).

The reliability and accuracy of the census and assessment rolls may be questioned. Interpreting the old census reports with many scrawled or faded illegible areas is extremely tedious and time-consuming work. In many instances, conflicting figures are recorded for names, lot location, and population. Identifying settlers from year to year, with the many variations in name spelling, can be difficult. Many settlers could neither read nor write, and it would appear the assessors recorded certain names on a basis of how they were pronounced ('Holroyd,' for instance, was recorded as 'Alright').

In early pioneer times the census and assessment figures covered a very limited number of population and agricultural characteristics, and on a year-to-year basis many discrepancies in returns are apparent. Ross (1977) noted that, in comparing aggregate assessment returns of the Appendices

to the Journals of the Assembly from year to year, remarkable discrepancies occur. Pammett (1974,pp.13-20) commented that census figures often tended to differ, depending on which level of government was counting, or upon the local township assessors who often did not include single men or those away working. Russell (1982) maintained that, even though responsibility for the accuracy of the total list fell on the assessor, the ratepayer's own statement of rateable property was taken as valid. With the Assessment Act rating cultivated land at twenty shillings compared to four shillings for uncultivated land, we have to assume that estimates of cultivated land were consistently (severely) conservative, subject to the constraints of the assessor's (and neighbor's) scrutiny (Russell,1982).

The census and assessment data have therefore been adjusted or extrapolated by the author to correct obvious discrepancies or to include individuals who were missed. Generally speaking, if a great deal of census information was illegible or missing for a particular case, the data were not used. These cases were few, though, with the data being 95% to 100% complete.

Another factor in assessment figure reliability is the primitive measurement techniques used to estimate cleared or cultivated land, which in reality was little more than a field full of stumps with crops sown between or around them. In some years the census/assessment was split between two assessors or was done by a different person from the previous year, who perhaps deemed certain statistics more important than those which his predecessor had tallied. Poor

travelling conditions over primitive nineteenth century roads or trails likely resulted in a few assessments being just guesswork by an assessor who decided he had better not risk life or limb trying to reach some remote farm location.

As early as 1826, a number of pioneers began acquiring additional lands for their family members or for woodlots. For the purposes of this paper, only the original farm lot of a settler has been used for statistical analysis in the period prior to 1841. Beginning in 1841, some of these additional lands were sufficiently cleared to be included in measuring a settlers' performance. Farms of less than thirty acres were not included; they were usually town or village residential plots, and had little to do with agriculture.

The 1851 Canada Census has been criticized for its limitations and inaccuracies, with McInnis (1992) suggesting that the data are usable but require careful editing. The Emily census figures for the most part appear to be quite reliable with only a few errors in location, names, and sums.

Soil types for each settler's location have been identified using the Victoria County Soil Survey (Gillespie and Richards, 1957). For the census years 1820 to 1826, nearest neighbor distances and nearest kinfolk distances have been measured. Surname analysis is used between 1827 and 1851 in order to further assess settler propinquity. For census year 1841, the distance of each settler from the nearest 'main road' (direct distance) has been measured. The distance of each settler from the nearest grist-mill in the 1851 census year was also measured (direct distance).