The Demographic, Social, and Economic Diversity of Rural and Small Town Southern Ontario

Phil Keddie

Phillip Keddie, now retired, was an associate professor of geographyat the University of Guelph where he taught from 1967-1995. He took his B.A. (Honours, Geography) at the University of Manitoba, his M.A. (Geography) at the University of Wisconsin, and his Ph.D. (Geography) at the University of Waterloo. Prior to coming to Guelph, he taught at the University of Auckland (New Zealand) and the University of Manitoba. His major areas of research are in agricultural and rural geography with a focus on Canadian and particularly on Ontario topics.

ABSTRACT

Sponsored by:

This research was conducted independently by the author, supported by the University of Guelph, Department of Geography.

Purpose:

To identify the diversity of rural and small town southern Ontario and address the notion that rural Canada is largely a homogeneous residential area.

Method:

Literature review.
Utilizing primarily Statistics Canada data comparing change over time for a number of social and economic factors.
Explains results in terms of current social-economic realities.

Results:

The author has organized results into fifteen social-economic topic areas. Each topic is explained in terms of research method, results and extensive analysis by the author. The topics are as follows:

Population Trends
Settlement Landscape 1991
Population Change 1971 - 199 1
Population Age Cohorts
Fertility
Out-Migration of Youth
Birthplace of Population

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Introduction

This contribution to our consideration of the New Rural Economy of Huron County consists of a selection of 6 of 15 sections drawn from a larger study by Philip Keddie in 1997 entitled The *Demographic, Social and Economic Diversity of Rural and ,Small Town Southern Ontario.* The entire study area consists of the counties of Dufferin, Wellington, Perth, Huron, Bruce and Grey but excludes the four major urban centres of Guelph, Stratford, Owen Sound and Orangeville. The study area encompasses 127 census subdivisions (CSDs); 77 townships and 50 incorporated towns and villages. These 127 CSDs constitute the observations for the study. Among these 127 observations are the 16 townships and 10 incorporated towns and villages of Huron County. This makes it possible to compare selected attributes of the CSDs of Huron County with those of CSDs in adjacent counties. On the accompanying figures the Huron County boundary has been demarcated.

To provide a more comparative framework in which to view the of Huron a modest amount of additional descriptive text has been added. Since only 6 of the original 15 sections are presented here some of the spatial associations between and among the attributes (variables) presented and the additional attributes included in the original study are not observable. However, the six sections provide a descriptive introduction to some of the main characteristics of Huron County and raise questions for the studies which follow.

Mobility Status
Place of work of the employed labour force
Selected Income Attributes
Selected Employment Attributes
Selected Housing Attributes
Selected Educational Attributes
Population with no Religious Affiliation

Conclusions and Recommendations:

Conclusions and recommendations are integrated into the discussion of each of the topics.
Themes include the following:
Rural Southern Ontario is diverse and unhomogeneous.
Significant social/economic differences exist in rural areas between townships and towns villages.

Copies of the Report:

Copies of the Book of Maps and Commentary (2 vols.) can be obtained by contacting author at the Department of Geography, University of Guelph (519) 824-4120.

1: Population Trends 18714 991

An Overview of Trends

Table 1.1 provides, by decade, the population trends for the study area and for its constituent townships and towns and villages. To assist in putting the trends in fuller perspective data on rates of natural increase, by decade, are also provided.

Table 1.1: Study Area, Population Numbers (1000's) and Percentage Population Change by Decade, 1871-1991

	Townships		Towns & Villages		Total		Ontario
Year	Nos.	% Change	Nos.*	% Change	Nos.	% Change	% N.I.
1871	254		21(11)	-	275		
1881	272	6.9	55 (35)	166.9	327	18.8	18.4
1891	243	-10.4	61 (39)	11.6	305	-6.7	17.2
1901	219	-9.9	64 (46)	4.7	283	-7.0	16.2
1911	183	-16.4	62 (46)	-2.6	246	-13.3	18.4
1921	159	-13.3	62 (49)	-1.2	221	-10.2	17.2
1931	151	-5.2	63 (48)	2.2	214	-3.1	11.7
1941	143	-5.1	64 (48)	1.8	207	-3.1	8.1
1951	143	0.2	73 (48)	13.9	217	4.4	13.3
1961	149	3.7	84 (49)	15.5	233	7.7	20.7
1971	151	1.8	96 (50)	13.6	247	6.1	13.8
1981	172	13.5	113 (50)	17.4	322 285	15.0	8.2
1991	195	13.4	**127 (50)**	12.3		13.0	7.8

Number of incorporated places in brackets. Excludes Wroxeter incorporated between 1881 and 1921. Its population is added to Howick township for these dates and is included in the township column.

Note: Ontario rates of natural increase for the decades from 187 1 to 192 1 were calculated from estimates of crude birth rates and death rates for Canada as reported in D.B.S. Canada Year Book, 1967, pp. 241 and 25 1. From 1921 to 199 1 the rate is based on the vital statistics record of annual births and deaths, as reported in Ministry of Treasury and Economics, Ontario Statistics, 1986 and Statistics Canada (1994) Report of the Demographic Situation in Canada. 1993, and the reported population of the province at the start of each decade.

The study area reached its maximum population of nearly 327,000 in 1881, recording an 18.8% growth across the previous decade. The population declined every decade from 1881 to 1941. The rate of decline ranged from a high of -13.3 % to a low of -3.1%, evidence, given rates of natural increase, of substantial net out-migration. For example, while the population decline across the period 1881 to 1891 was about 22,000, the net out-migration would be considerably greater. Given rates of natural increase, the "expected" population in 1891 would have been about 383,000 rather than the 305,000 recorded.

From 1941 to 1971 growth was modest, ranging by decade from 4.4% to 7.7%. Since rates of growth were below those of natural increase, the study area still experienced a net out-migration, although for the most part at lower rates than in the previous six decades. In contrast, the last two decades are marked by growth rates well in excess of natural increase, indicating substantial levels of net in-migration.

As indicated on Table 1.1, except for the two most recent decades, the townships of the study area experienced rather different population trends than did the towns and villages. The townships recorded their population maximum in 188 1 and recorded substantial and continuous decline (rates ranging by decade from -5.1% to -16.4%) from 1881 to 1941. From 1941 to 1971 growth, which was modest, was only a small part of the rate of natural increase, while from 197 1 to 199 1 growth was well in excess of rates of natural increase.

Presentation of trends for towns and villages, particularly from 187 1 to 190 1, is complicated by the marked increase in the number of incorporated places from 11 to 46. Incorporation involves a transfer of population from the township column to the towns and villages column. These transfers, however, never represent more than a fraction of township decline. For example, from 1891 to 1901 township population declined by about 24,000 and, while the number of incorporated places increased from 39 to 46, town and village population grew by only 3,000. From 1891 to 1941 town and village population only grew from 61,000 to 64,000 (a period of substantial township decline), rates were both positive and negative, and net out-migration was experienced every decade. In contrast, for every decade since 1941 growth was sustained and substantial (12.3 to 17.4%). For the decades 1941 to 1951 and 1961 to 1971 growth was around the provincial rate of natural increase but the substantial growth from 195 1 to 1961 was below the rate of natural increase. In the last two decades rates of growth well in excess of natural increase are indicative of substantial net in-migration, as was the case for the townships across the same period.

Figure 1.2 provides a histogram for each township with 1941=100.0. As Table 1.2 reveals most townships recorded their maximum population by 1901 (65 of 77), in most cases in 1881 or 1871. **Virtually** all the histograms have a similar early form, exhibiting a profile of uninterrupted population decline from the early maximum until about 194 1. The relatively uniform nature of decline to 1941 is not, however, matched by uniform patterns of growth when township population begins in aggregate to grow again. In many cases little if any growth is recorded (reverse J shape histograms), while in other instances one finds U shaped histograms with varying degrees of asymmetry. Eleven townships recorded their study period population maximum in 1991. (Table 1.2).

Table 1.2: Census Date of Maximum Township Population: 1871-1991

county	1871	1881	1891	1901	1961	1991	Total
Bruce	5	6	-	3	-	2	16
Dufferin		2	1	1	-	2	6
Grey	2	10	2	-	-	2	16
Huron	6	10	-	-	-	-	16
Perth	6	4	1	-	-	-	11
Wellington	3	2	-	1	1	5	12
Total	22	34	4	5	1	11	77

Trends for towns and villages (Figure 1.3) are more variable than for the townships. Many that were incorporated as early as 1871 or 1881 have shallow U shaped histograms, indicating modest decline until about 1931 or 1941 followed by equally modest growth until 1991 (e.g. Lucknow, Blyth, Brussels, Palmerston). Others, such as Fergus, Shelburne and Port Elgin, experienced little if any decline in the early decades and very high rates of growth over the last 3 or 4 decades, resulting in exaggerated J shaped histograms. Yet others, like Mitchell, Listowel and Walkerton, have rather shallow J shaped histograms indicating relative stability or only modest decline until about 193 1 or 194 1, followed by sustained but moderate rates of growth to 199 1. Unlike the townships, where 65 of 77 recorded their study period population maximum in 1901 or earlier (Table 1.2) 199 1 was the census year of maximum population for the towns and village in all but 10 cases. However, only three (Hanover, Milverton and Zurich) have experienced continuous population growth since incorporation.

Township Trends

As is evident from Figure 1.2, with some variation in starting dates, the period to 1941 was one of near universal decline in rural township population. The size of the net out-migration does, however, need to be seen in the context of rates of natural increase which, assuming the macro data are representative of the study area, declined every decade from 1901 to 194 1. In addition, there is ample evidence (MacDougall, 1913; Watson, 1947) to support the contention that the trends documented for the townships of the study area are a reflection of similar processes, albeit somewhat variable in timing, that occurred across both southern Ontario and eastern Canada more generally. The spatial extent of this net out-migration is effectively documented by McInnis (1990) by decade for the period 1891 to 193 1.

While township decline was more than the decline of farm population, the massive nature of the decline must be largely attributed to the loss of farm population, both of "surplus" youth and farm families. MacDougall (1913) effectively documents this "rural depletion" across southern Ontario for the decade 1901- 19 11. The process would seem to accord well with general observations by Zelinsky (1971) as related to Phase II and the early stages of Phase III of what he calls the mobility transition. As outlined by Zelinsky, the onset of modernization and a general rise in material welfare or expectations and improvements in transportation and communications brings with it "a great shaking loose of migrants from the countryside." He notes further that four types of destinations have been available to the out-migrant: "cities in the native country; cities in alien lands with an expanding economy; rural settlement frontiers, if these are to be found in one's own land; and the pioneer zone in a hospitable foreign country" (Zelinsky 1971, p. 236). To varying degrees the cities and expanding agricultural frontiers of both Canada and the United States were the destination of an out-migrating eastern Canadian rural population during this period.

Since most Canadians think of Canada as a nation of irnrnigrants, it is sometimes forgotten that for every decade from 1851 to 1901 Canada as a whole experienced net out-migration (Keyfitz, 1961). The massive migration of Canadians to the United States has been documented by Hanson and Brebner (1940). As they note, the Canadian born population in the United States stood at about 147,000 in 1851 but increased such that by 1901 it was nearly 1,200,000. By 1901 Canadian born in the United States represented 22% of Canada's population of nearly 5,400,000 at the same date, and was just over one quarter the size of the Canadian born population in Canada (Census of Canada, 1901).

Watson (1947) observes that between 188 1 and 1891 rural Ontario lost 188,000 people, about two-thirds of whom were farmers and their families who left Ontario to seek better prospects in

western Canada or the rnidwestem States, and notes further the comment by Goldwin Smith in 189 1 that "if Americans do not annex Canada they are annexing the Canadians." In the context of the loss between 188 1 and 1891 Watson stated that Ontario born residents in the Canadian west increased by 50,648 in this decade. To this one could add an increase of another 47,000 between 1891 and 1901, and a further 153,000 between 1901 and 1911 such that, despite attrition not only through death but through return and onward migration, the Canadian west in 19 11 recorded an Ontario born population of over 272,000 (Censuses of Canada 1891, 1901 and 1911). McInnis (1990) observes that Ontario was overwhelmingly the source of Canadians who settled the Prairie region. He notes that furthermore they came especially from the farming districts of the old Huron Tract (Grey, Bruce, Huron and Perth). As he explains:

"That region had been one of the later areas of southern Ontario to be settled. Birth rates had remained high for longer there and by 1891 the region had an even greater surplus of young adults than elsewhere in the province. The district was relatively remote from the growing centres of industrial employment in Ontario and the northeastern United States and thus migration to the agricultural West was an attractive option." (McInnis, 1990, Plate 27).

A delay in the onset of major out-migration from the study area compared to most of the rest of rural southern Ontario probably means that more of it was directed to western Canada, rather than to the United States, than would generally be the case.
After 1896 in particular, the effects of the national policy (tariff protection, railway construction, immigration, and western settlement) began to be felt in the rapid industrialization and urbanization of southern Ontario. Toronto, a city of 59,000 in 1871, recorded a population of 208,000 in 1901 and 522,000 by 1921 (611,000 for the area later defined as the Toronto Metropolitan Municipality). Other centres recorded impressive gains as well. Presumably from this time on, a within Ontario rural to urban migration became progressively a more important stream in the out-migration of Ontario's and the study area's rural population.

As noted by MacDougall(l9 13), the rural decline was not solely due to the decline of farm population. As he goes on to state, "the decline in two other classes contribute to the general result. First the village crafts decayed, and now village commerce is waning." (MacDougall, 1913, p. 57). As the small hamlets and villages lost craft industries and retail/commercial functions centralised the population of hundreds of villages and hamlets declined. Watson (1947) claims that out-migration started with the non-farm population as economic and social changes impacted village functions, and that these processes were reinforced by improved transportation and the automobile. Dahms (198 1) discusses the processes of centralisation of the Guelph central place system from 19 11 to 1941, including the role of improved highways, increased automobile ownership and rural mail delivery. He also notes the demise of functions such as saddlers, tanners and carriage works. Across the 30 year period he observes that the number of places with one or more functions declined from 62 to 38. All 24 places so affected were unincorporated hamlets and villages whose population would be a part of the township population.

While a net out-migration of rural township population continued across the period from 1941 to 1971, 1941 represents a turning point in that township population began to increase again after this date (Table 1.1). As is evident from Table 1.3, however, the farm population continued to decline from 116,000 in 1941 (81% of township population) to 79,000 in 1971 (52% of township population). Therefore, while the growth of township population was quite modest (8,253) across the 30 year period, rural non-farm population grew from 27,050 to 72,249, a growth of 45,199 or 167%. While much of this growth was definitional (a transfer from farm to non-farm), the evidence for the beginnings of the repopulation of the countryside is clear. Dahms (1981) talks in terms of "the resurgence of a number of hamlets which had 'disappeared' between 1911 and

1941" in the Guelph Central Place System of 1970 and notes further that "The southern half of the Guelph Central Place System housed numerous relatively affluent commuters who work in Guelph and Toronto and its suburbs, Kitchener or Hamilton" (Dahms, 198 1, p. 197-198). The detailed work by Joseph and Smit (1985) documents the increase in dispersed non-farm residences in Puslinch township (40 in 1955 to 376 in 1972).

Modest beginnings across the period 194 1 to 197 1 became a floodtide from 1971 to 1991. While the farm population continued to decline, as evidenced by a decline in farm operations since 197 1 (Table 1.3), the township population increased from 151,000 to 195,000 and rates of growth were well in excess of natural increase (Table 1.1). The macro trends for the 197 1 to 199 1 period were, as noted earlier with reference to Figure 1.2, by no means uniform across the townships.

Population Trends by Decade: 1871 to 1991

1941 = 100

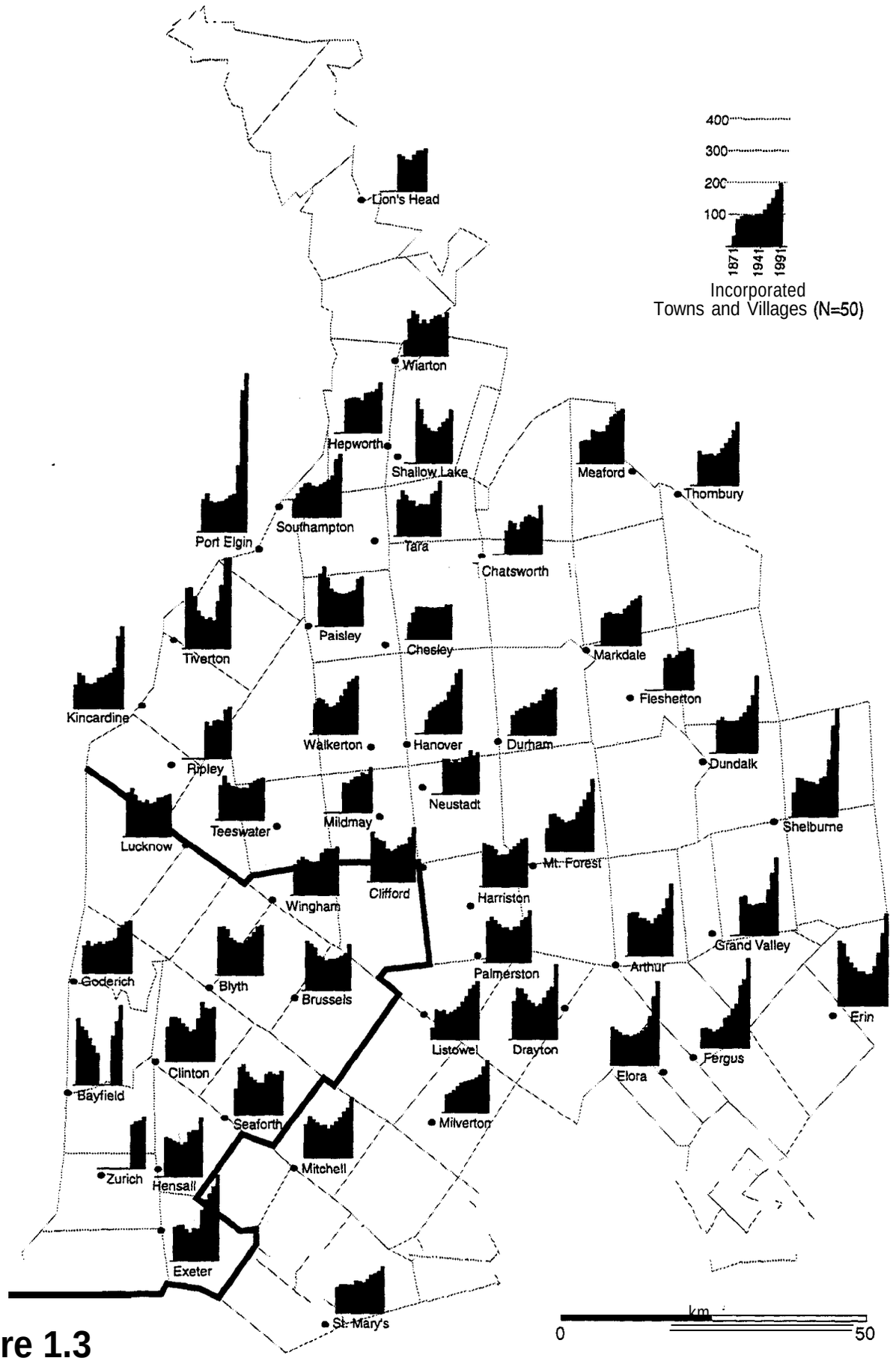


Figure 1.3

Table 1.3: Study Area Townships, Total and Farm Population and Households

	Total Population	Farm Population	% Farm
1941	143,146	116,096	80.8
1951	143,411	110,681	77.2
1961	148,708	97,402	65.5
1971	151,399	79,150	52.2

	Total Private Households	Farm Operations * (Farm Households)	
1971	N.D.	20,112	
1981	52,360	17,965	34.3
1991	63,180	15,785	25.0

N.D. = no data.

Includes farm operations within the boundaries of incorporated places assigned to adjacent townships and therefore exaggerates slightly farm operations (farm households) as a percentage of township private households. On the other hand, since farm households are on average somewhat larger than non-farm households and some farm operations may include more than one private household, the farm population proportion in 1981 and 1991 is probably somewhat larger than the share based on farm operations as a proportion of private households.

Most of the townships of Huron county (12 of 16) have recorded little if any population growth since 1941 and exhibit reverse J shaped histograms indicative of continued net out-migration albeit at more modest rates than across the decades from 1871 to 1941. The exceptions to this trend are Goderich and Colborne townships, both lakefront in location, and located on either side of the town of Goderich, the largest centre in the county, and Stephen and Tuckersmith, both of which were the location of air force bases. They both experienced rapid growth from 1941 to 195 1 followed by subsequent stability and are the respective locations of Huron Park and Vanastra, unincorporated communities based on a housing stock originally constructed for the military.

Trends for incorporated Towns and Villages

The incorporated towns and villages, for the most part larger places than the vast majority of unincorporated hamlets and villages, fared better than the townships in terms of population decline. However, apart from early substantial growth with new incorporations from 1871 to 189 1, as a group they too experienced net out-migration from 189 1 to 194 1 and across the period 1901 to 192 1 actually recorded population decline (Table 1.1). As indicated on Table 1.4, between 187 1 and 1941 only 5 of them recorded their population maximum for the 70 year period in 194 1, while 189 1 was the date of maximum population for 18.

Table 1.4: Towns and Villages, Year of Census Population Maximum: 1871-1941

Year	1871	1881	1891	1901	1911	1921	1931	1941	Total
No. of places	1	7	18	8	4	3	3	5	49”

* Zurich was not incorporated until after **1941**

There is no reason to assume that the numerous out-migrants from the incorporated towns and villages did not also participate in the flow to western Canada and the United States. A farm background was not a requirement for taking up a prairie homestead. In addition, not only were urban centres such as Winnipeg booming, but hundreds of towns and villages were springing up along the railways of the prairie region. Rapid urbanization in the nearby American mid-west also proved attractive to Canadians. For example, by 1930 Detroit had a Canadian born population of nearly 95,000 and there were an additional 30,000 in Chicago (McInnis, 1990).

That the towns and villages fared as well as they did, given the levels of out-migration from the townships, presumably reflects the fact that they continued to provide the centralising service centre functions for the surrounding countryside. In addition, some of them grew as centres of manufacturing in an industrializing southern Ontario, for all such growth was not restricted to the major urban centres.

As noted earlier, the decades after 1941 mark a significant turnaround in the growth rates of the incorporated towns and villages (Table 1.1) although only in the last two decades is there evidence of significant net in-migration. Across the 50 year period (194 l-9 1) town and village population grew by 97.1% (94.6% for the 48 places incorporated at both dates). Growth rates, however, ranged from a low of 8.5% (Chesley) to a high of 398.8% (Erin). While Figure 1.3 provides graphic evidence of the variable fortunes of towns and villages in terms of population change Table 1.5 provides additional insights. With the towns and villages divided into growth quartiles we see for example, that the 12 places with the highest growth rates recorded an average growth of nearly 200% and accounted for 46% of the absolute growth, a huge contrast with the 12 slowest growing places (about 36% average and 8% of the absolute). Equally instructive is the fact that the 12 fastest growing places were second lowest in average size in 1941 (1,176). There is no evidence to suggest that larger places in 1941 enjoyed some initial advantage and consequently experienced more rapid growth. On the other hand, there is evidence of a locational bias to growth. Eight of the top twelve are located toward the south eastern margins of the study area, the area closest to the Toronto CMA and to Guelph and Kitchener-Waterloo. Three of the remaining four were obviously impacted on in a major way by the development of the Bruce nuclear power facility.

Table 1.5: Towns and Villages, Growth by Quartiles, 1941-91*

	First	Second	Third	Fourth	Total
No. of places	12	12	12	12	48
Average growth (%)	35.8	58.3	88.3	199.3	94.6
Range (%)	8.5-50.5	5 1 .O-66.1	69.0-125.5	126.5-398.8	8.5-398.8
Absolute growth	4,776	9,011	18,772	28,111	60,670
% of absolute	7.9	14.9	30.9	46.3	100.0
Average size:					
1941	1,112	1,287	1,773	1,176	1,337
1991	1,510	2,038	3,337	3,518	2,601

Zurich and Bayfield were incorporated after 1941 and are excluded from the above. Zurich grew by 18.9% from 1961 to 1991 and Bayfield by 61.7% from 1971 to 1991. Bayfield was included on Table 1.4 (n=49) as it was incorporated across the census years 1881 to 1921.

Huron County contains 10 incorporated towns and villages. While most of these experienced periods of population decline prior to 1941 they have recorded population growth since that date. In this regard Bayfield (which lost incorporated status for a time) and Exeter have experienced the most impressive gains.

6: Out-Migration of the Young

The net out-migration of young people is a long-standing feature of rural and small town Canada, particularly in the more agriculturally dependent areas. Across the period 1986 to 1991 this feature is characteristic of the study area, for in 1991 the 20-24 age cohort of the population was only 80% of the size of the 15-19 age cohort in 1986 (79% for females and 81% for males).

In 1986 the census recorded a total population of 22,925 in the 15- 19 age cohort for the study area (11,990 males and 10,935 females). Five years later the recorded count for the 20-24 age cohort stood at 18,355 (9,725 males and 8,630 females). If one applied provincial age-sex specific mortality rates to this population the "expected" number of 20-24 year olds would be only slightly smaller (about 22,854) than the number of 15-19 year olds in 1986. Consequently there was a net out-migration of around 4,500 and this, by and large, would account for the 20-24 cohort in 1991 being only 80% of the 15-19 cohort 5 years earlier.

This contrasts markedly with the value for Ontario as a whole across the same period, where the 20-24 age cohort in 1991 was nearly 108% of the 15-19 cohort in 1986 (110% for females and 105% for males). This presumably reflects the fact that Ontario has been a net gainer of young people as a consequence of both net inter-provincial migration and net international migration.

Data for Huron County (Table 6. 1), one of the constituent census divisions of the study area, provides a longer term perspective on the out-migration of the young. On the accompanying table we see, for five year intervals, the 20-24 year cohort as a percentage of the 15-19 cohort five years earlier. While the percentages range from 99.3% for females across 1951-56 to 64.3% for males across the 1966-71 period, the evidence for a long terrn and substantial net out-migration is unequivocal.

Table 6.1 Huron Country, Number in the 20-24 Year Age Cohort at the End Year as a Percentage of the Number in the 15-19 Year Age Cohort at the Start Year

Start Year	End Year	Males	Females	Total
1951	1956	91.4	99.3	94.6
1956	1961	**78.0**	**75.7**	76.9
1961	1966	**81.7**	**66.6**	**74.7**
1966	1971	**64.3**	**72.1**	**67.6**
1971	1976	**85.6**	**81.5**	**83.7**
1976	1981	**75.9**	**75.3**	**75.6**
1981	1986	**77.8**	**75.7**	**76.8**
1986	1991	**79.0**	**74.1**	**76.6**

As Figure 6.1 reveals, the net out-migration of young adults is highly variable across the 127 townships, towns and villages of the study area. The values for 20-24 year olds in 199 1 as a

percentage of 15-19 year olds in 1986 range from a low of 54% to a high of 150%. A note of caution should be added, however. In many instances we are dealing with small numbers that have been rounded at both dates; and local events such as a terrible traffic accident could mean that provincial age-sex specific mortality rates do not apply.

As is evident from the summary frequency distribution on Figure 6.1 low values (higher rates of net out-migration) are more characteristic of the townships (23 of the 25 members in the 1"' quintile), while high values are more characteristic of the towns and villages (23 of 26 in the 5^{th} quintile). Despite this, it should be noted that for probably all but about 20 of the 127 observations there was a net out-migration of the age group in question. Consequently, the key contrast between townships and towns and villages is higher rates of net out-migration from the townships. The majority of the towns and villages (31 of 50) still experienced net out-migration.

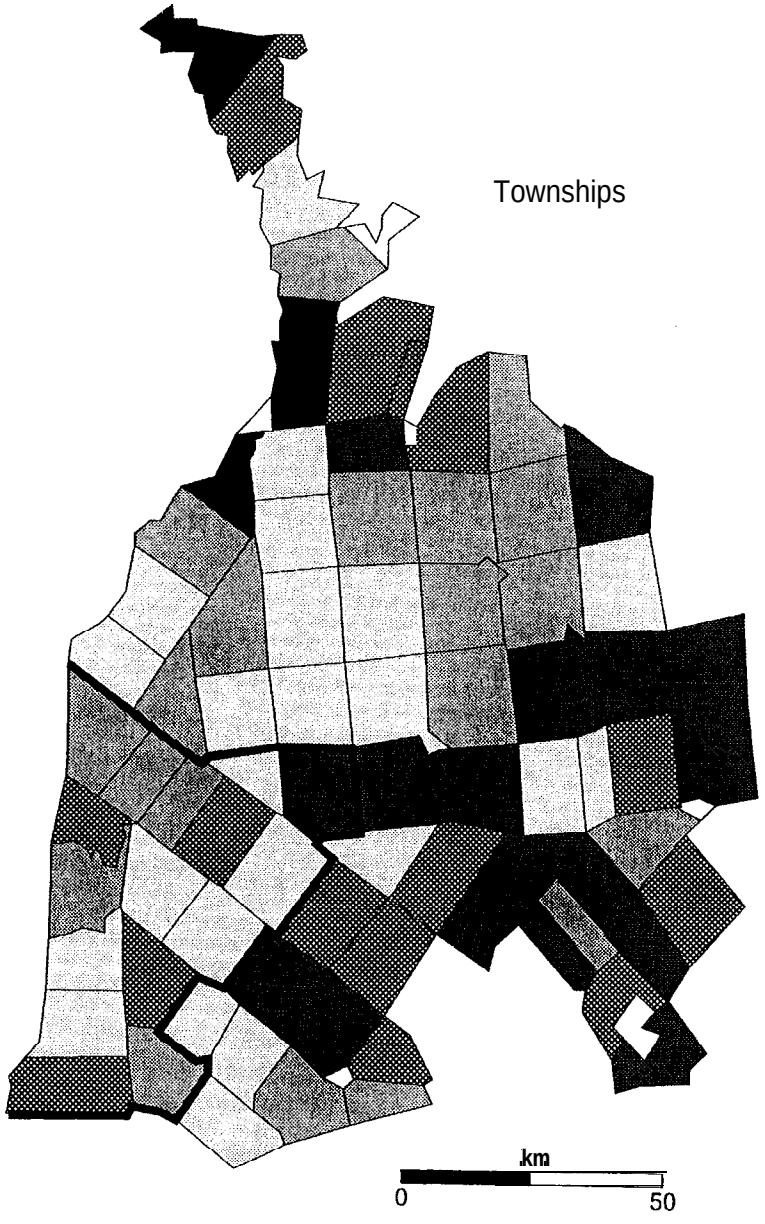
A higher retention of young adults (lower rates of out-migration) correlates positively and significantly with the rate of population growth across the 198 1-91 period (r = .740 for the towns and villages and r = .522 for the townships). If population growth is associated with employment opportunities, then part of the variation in rates of out-migration may be "explained" by this association. Given contemporary realities, it could also be related to the fact that some young adults are "tied" migrants still attached to the parental home. This could help to offset the out-migration of others. One significant social change over the past few decades has been the appreciable increase in the number of 20-24 year olds still "living at home".

For the townships, the variable in question also correlates negatively and significantly with census farm operations as a percentage of private households (r = -.502). This suggests that rates of out-migration of the young are higher in townships with a stronger farm presence.

In the literature the out-migration of this age cohort is viewed, in part, as a consequence of the lack of employment opportunities for the young or their departure for further educational opportunities not available locally. In part then, such departures may be a temporary phenomenon, although no data are available that make it possible to address the question of return migration. It is of interest to note that over the period in question the 25-29 age cohort in 1991 was larger than the 20-24 age cohort in 1986, and if one applies cohort survival calculations to these data one arrives at a net in-migration of approximately 1,500. It is worth noting, however, that the 20-39 age cohort for the study area is 5.3 percentage points lower (28.3 vs 33.6) than the provincial average. While probably a long term net out-migration of the young plays a role in this, a sound interpretation would only be possible via a comprehensive study of net migration using cohort survival procedures.

As is evident from Table 6.1 for the period 1986-1991 Huron County experienced an out-migration of the young at a rate somewhat higher than for the study area as a whole. The 20-24 age cohort in 1991 was 76.6% the size of the 15-19 age cohort in 1986 vs a study area value of 80.0%. As is evident from Figure 6.1 15 of 16 townships in Huron County recorded values on this measure less than 80.0% and 6 of these recorded values under 67.0% indicative of a net out-migration of about one third or greater. As was the case for the study area as a whole the incorporated towns and villages of Huron County fared somewhat better, with only 3 of 10 recording values less than 80.0%.

Population 20-24 years of Age in 1991 as a Percentage of Population 15-19 Years of Age in 1986



1	54 - 66
2	67 - 72
3	73 -79
4	80 - 89
5	90 - 150

Mean: 80

Frequency Distribution

	TP	T&V	Tot.
1	23	2	25
2	20	6	26
3	15	9	24
4	16	10	26
5	3	23	26
Tot.	77	50	127

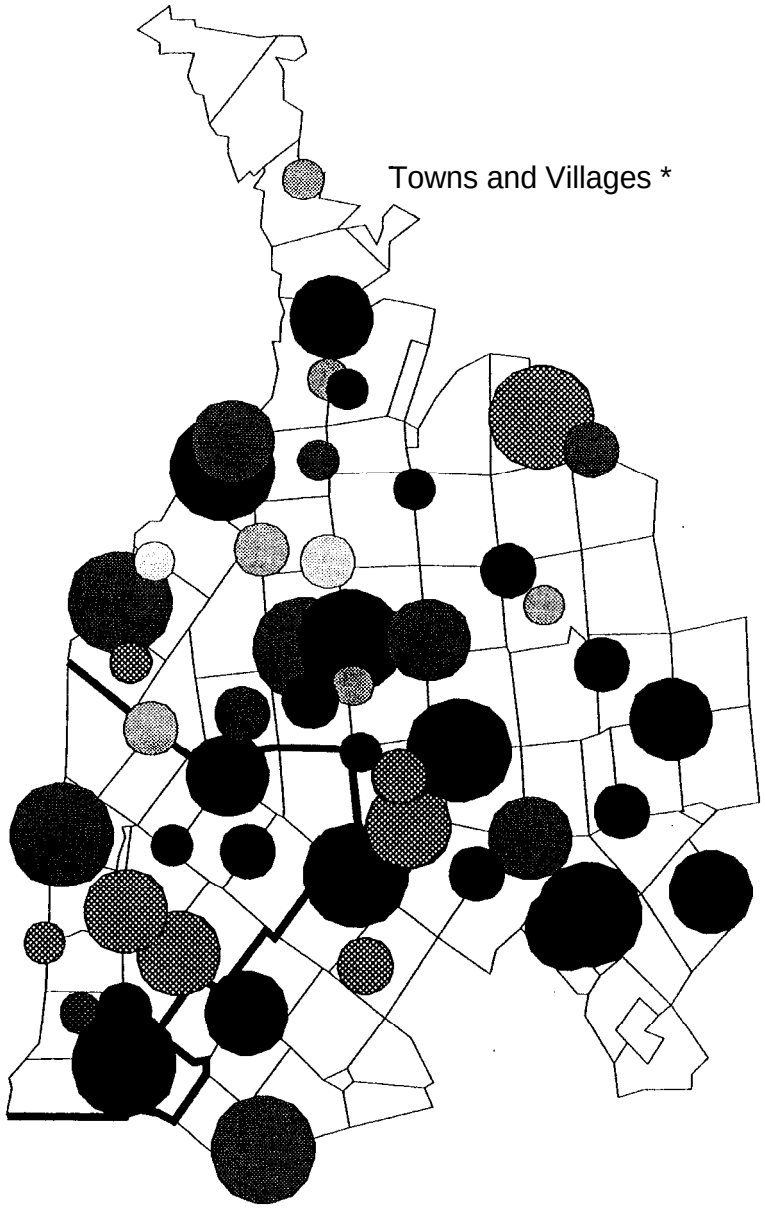


Figure 6.1

• **Circle symbols for towns and villages in four size categories based on 1991 population:** <1,000, 1,000-2,000, 2,000-4,000 **and** 4,000-8,000.

9: Place Of Work Of The Employed Labour Force

Figure 9.1, Percentage of Employed Labour Force Not Working in the Census Subdivision of Residence, is a measure of commuting. However, prior to a discussion of this variable it is useful to provide a broad overview of the data from which it is derived. In 1991, for the first time, detailed data were published at the CSD level for both employed males and females as to their usual place of work. While these data are inferior to those available in published form for all CSDs within CMAs, from which one can extract a complete commuting matrix, they nonetheless provide valuable insights into the complex question of place of residence/place of work. Table 9.1 gives a broad overview by providing a comparison between the study area and Ontario as a whole. A number of major differences between the two are immediately apparent. While a much higher proportion of the study area's labour force work at home, presumably a reflection in large part of a much higher proportion of the labour force working on the family farm, a much lower proportion work in the CSD of residence. Together, these two categories constitute the place of work of 5 1.4% of the Ontario labour force compared to 40.2% of the study area's labour force. This discrepancy is in turn largely accounted for by higher proportions of the study area's labour force either working in a different CSD in the same CD or working in a different CD. While one should exercise care in interpreting these data because of scale differences between CSDs (e.g. Mississauga vs a village in the study area), about 58% of study area's labour force vs 47% of the province's labour force leave their CSD of residence for another CSD for employment purposes. Whether or not this generally means a longer commute, in distance if not in time, is unclear.

Table 9.1: Proportional Place of Work of the Employed Labour Force, Ontario and Study Area, 1991

Usual Place of Work	Male		Female		Total	
	Ontario	Study Area	Ontario	Study Area	Ontario	Study Area
At home	6.9	20.3	6.8	16.8	6.8	18.8
CSD of residence	41.0	18.9	48.9	24.6	44.6	21.4
Different CSD/same CD	28.3	34.0	28.1	38.3	28.2	35.9
Different CD	22.0	25.1	15.4	19.5	19.0	22.6
Outside Canada	0.5	0.2	0.3	0.2	0.4	0.2
No usual place of work	1.4	1.5	0.5	0.6	1.0	1.1
Total	100.1	100.0	100.0	100.0	100.0	100.0

CSD=Census Sub Division, CD=Census Division

Table 9.2, providing a comparison between the townships and the towns and villages of the study area, is particularly instructive. Major contrasts are revealed regarding the place of work of township residents, in contrast to those members of the labour force residing in towns and villages, as follows:

- A much higher proportion of township residents work at home, presumably largely reflecting the role of farm employment in the townships.

- Only 5.0% of township residents (excluding those working at home) find employment in their township of residence, while 50.5% of the town and village labour force finds employment in their place of residence (56.5% including those working at home).
- Some 67.7% of the townships labour force leave their township of residence for employment elsewhere in their CD (42.5%) or in another CD (25.2%), in comparison to only 42.2% of the labour force in towns and villages doing so (24.1% same CD and 18.1% different CD).
- A comparison of the place of work of males and females, suggests that males travel further than do females to their place of work. This is particularly the case if one compares the places of work of males and females residing in towns and villages. While 49.7% of employed males work in their town or village of residence (at home and CSD of residence) such is the case for 65.0% of the females. Furthermore, of those out-commuting, 21.7% of males also leave their CD of residence compared to 13.7% of females.

Table 9.2: Proportional Place of Work of the Employed Labour Force, Study Area, 1991

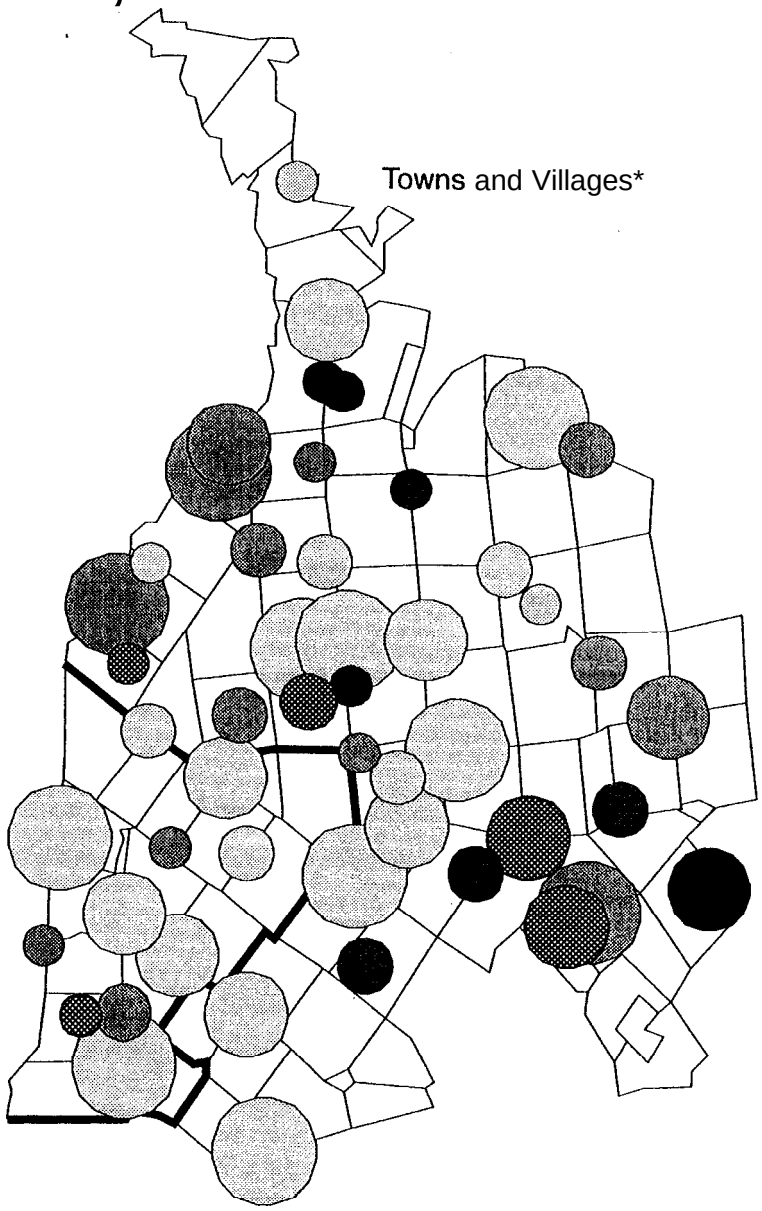
Usual Place of Work	Townships			Towns and Villages		
	Male	Female	Total	Male	Female	Total
At home	28.5	22.6	25.9	5.3	6.8	6.0
CSD of residence	4.9	5.2	5.0	44.4	58.2	50.5
Different CSD/same CD	37.8	48.6	42.5	27.0	20.5	24.1
Different CD	26.9	22.9	25.2	21.7	13.7	18.1
Outside Canada	0.3	0.2	0.2	0.3	0.2	0.2
No usual place of work	1.6	0.5	1.2	1.4	0.6	1.1
	100.0	100.0	100.0	100.1	100.0	100.0

Percentage of Employed Labour Force Not Working in the Census Sudivision of Residence, 1991

1	11.6 - 46.6
2	46.7 - 58.0
3	58.1 - 66.5
4	66.7 - 73.6
5	74.4 - 93.3
Mean:	59.9

Frequency Distrrbution

	TP	T&V	Tot.
1	3	23	26
2	11	14	25
3	20	5	25
4	21	4	25
5	22	4	26
Tot.	77	50	127



• Circle symbols for towns and villages in four size categories based on 1991 population: <1 ,000, 1 ,OOO-2,000, 2,000-4,000 and 4,000-8,000.

Figure 9.1

A more complete analysis is frustrated by the incomplete nature of the published data available. We know how many leave each CSD for employment with only imprecise data as to where they go, and the data tell us nothing directly as to the number of people m-commuting. Data that Hodge and Qadeer (1983) reported on in their seminal study of towns and villages in Canada, however, revealed for 1971 that while 28.9% of the resident labour force of towns and villages out-commuted, in-commuters accounted for 34.9% of the employed labour force, providing an index of non local job provision of 106.0. They argue that towns and villages play a substantial role "in providing jobs to their own residents and the inhabitants of the surrounding countryside and other nearby towns".

The level of out-commuting and in-commuting as noted above from Hodge and Qadeer, are national scale data. Additional data they provide at a provincial scale on out-commuting points to marked contrasts among provinces (range 19.1 to 42.8%), with out-commuting levels for Ontario's incorporated towns and villages at 35.8%. In comparison, in 1991 the incorporated towns and villages of the study area reported out-commuting levels averaging 42%.

Finally, unpublished Statistics Canada data for the town of Shelbume in Dufferin county, reported by Barrett (1994), while only for a single community in the study area, are instructive regarding commuting patterns. Table 9.3 presents these data. At least for this town m-commuting exceeds out-commuting, according with the more general observations in this regard by Hodge and Qadeer. More importantly, the source of the in-commuters to Shelbume is overwhelmingly from the surrounding countryside of Dufferin county (township out-commuters).

Table 9.3: Place of Work and Place of Residence, Town of Shelburne, 1986

	Place of Work of Resident Labour Force		Place of Residence of Employed Labour Force	
	No.	%	No.	%
Shelburne	718	59.4	718	38.9
Orangeville	132	10.9	69	3.7
Elsewhere in Dufferin CD	58	4.8	931	50.4
Other CDs	300	24.8	120	7.0
Total	1,208	99.9	1,847	100.0

Given the available evidence it is probably fair to claim that:

- apart from farm employment townships are overwhelmingly places of residence rather than work.
- towns and villages function as both residential and employment centres but on average probably have more in-commuters than out-commuters.

There are undoubtedly exceptions to both of these general observations. The Bruce nuclear power stations along Lake Huron are a massive locus of "township" employment. At the junction of highways 6 and 46 with the 401 in Puslinch township, south of Guelph, a centre of manufacturing and service employment has grown enormously in the recent past. Some towns and villages may have an overwhelmingly dormitory function with little if any in-commuting. Indeed, these examples merely reflect the reality that heterogeneity and complexity typify contemporary rural and small town Southern Ontario.

Figure 9.1 speaks to an aspect of the issues and questions discussed above by providing data on the proportion of the employed labour force not working in their CSD of residence. Values here range from a low of 11.6% to a high of 93.3%. Not unexpectedly, given contrasts in the aggregate data (Table 9.2), townships dominate the two top quintiles, accounting for 43 of the 5 1 observations. Nonetheless, both observations for the range noted above are towns and villages, while the township range is nearly equally impressive (11.7 to 89.5%).

Township values in levels of out-commuting (not working in CSD of residence) vary largely as a function of the proportion of the township labour force working at home, which in turn presumably largely reflects the importance of agricultural employment in the township. Most of the townships in the bottom three quintiles, accounting for 44% of the townships, form a contiguous area in adjacent parts of Huron, Perth and Wellington counties. As might be expected, there is a significant negative correlation (r=-.404) between levels of out-commuting (not working in CSD of residence) and census farm operations as a percentage of private households. That this relationship is not stronger may be related to the fact that on many farm operations one or both spouses may work off the farm and leave their township (CSD) of residence in so doing. There is a somewhat stronger negative correlation (r=-.524) between township levels of out-cornmuting and percentage of the labour force in prirnary (largely agricultural) industries. Again, however, the strength of this relationship probably reflects the fact that often one of the spouses, more likely the female, and possibly grown children still at home, are not part of the primary (largely agricultural) labour force, and their off-farm employment involves out-commuting.

Areas with extremely high values of out-commuting tend to be more peripheral in location, with major blocks of top quintile townships along the study area's south eastern margins, adjacent to Guelph and the Toronto CMA, and a block of five townships in the vicinity of Owen Sound.

As noted earlier, levels of out-commuting are lower for the towns and villages than for the townships. High levels of out-commuting are a feature of places near to the Toronto CMA, Guelph and Kitchener-Waterloo and of three small villages near Owen Sound. Lower values are offset to the west but more central in location. Figure 9.2 reflects another feature of town and village out-commuting. There would seem to be an inverse relationship between the size of a connnunity's labour force and the level of out-commuting, and indeed there is a weak but significant negative correlation between the two (r=-.347). Hodge and Qadeer's study, on the other hand, found nearly identical levels of out-commuting across towns and villages in four size categories. A closer inspection of the data for the 50 towns and villages in the data set also suggests that, for towns and villages in the same size class, out-commuting levels are higher for places closer to major urban centres than for ones more distant. These preliminary findings suggest that the size of the "dormitory function" of towns and villages bears an inverse relationship with the size of the community, tempered by the distance of the centre in question to a major urban centre. For example, Fergus reported 54.7% out-commuting in contrast to Goderich, with a similar size labour force, reporting 11.6%. Even more dramatic contrasts are evident on Figure 9.2 between Erin, on the edge of the Toronto CMA, and Wingham; and between Shallow Lake, near Owen Sound, and Lion's Head far up the Bruce peninsula. Seeming contradictions such as Kincardine, distant from any major urban centre, may reflect high levels of commuting to the Bruce nuclear power station. A good understanding of the patterns of commuting is only possible if one has available the type of data published for CSDs within CMAs. A few studies, such as that by Hallman (1991), report on and discuss these patterns for limited areas based on custom tabulations purchased from Statistics Canada. The high levels of commuting and the complexities of the patterns are an aspect of what Fuller (1994), in discussing the contemporary rural communities of southern Ontario, refers to as the "arena society". In

Towns and Villages of Study Area, 1991
Percentage not Working in CSD of Residence by Size of Resident Labour Force

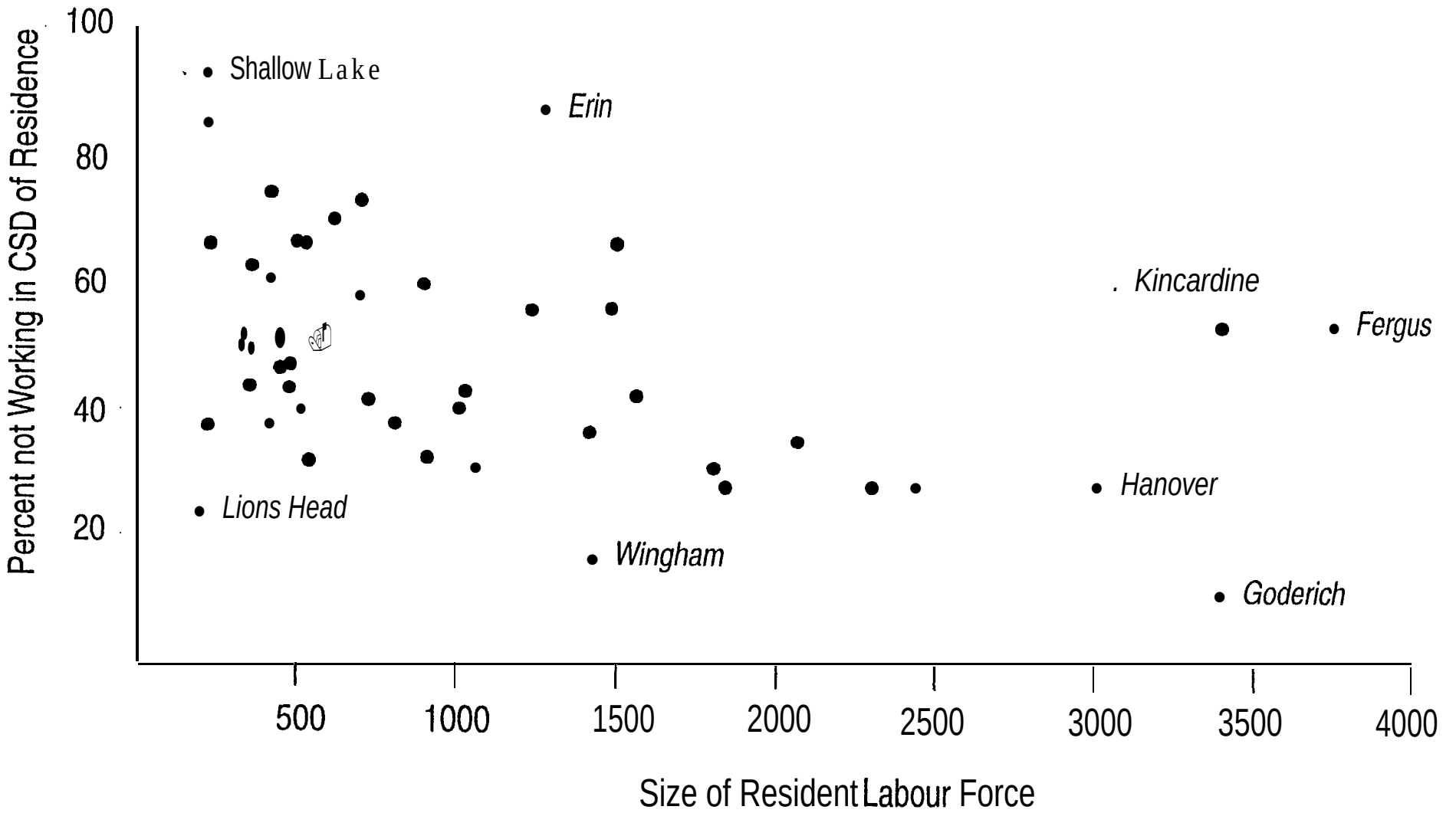


Figure 9.2

discussing commuting as an aspect of contemporary small settlements (towns and villages) in southern Ontario well removed from major urban centres, Dahms (1988) argues that the dispersed city, as suggested by Hart, may be an appropriate theoretical construct.

In 1991, Huron county recorded an appreciably lower proportion of its labour force not working in its census subdivision of residence than was the case for the study area as a whole (49.6% vs 59.9%). The contrast between Huron County and the rest of the study area is reflected in a number of ways on Figure 9.1. On the township map 10 of 16 (63%) Huron County townships are in the three lowest quintiles on this measure compared to only 24 of 61 (39%) townships in the rest of the study area. In a similar vein 9 of 10 (90%) of Huron's incorporated towns and villages are in the two lowest quintiles compared to 26 of 40 (65%) of the incorporated towns and villages in the remainder of the study area. Despite the generally lower values on this measure for Huron County three townships (Colbome, Stanley and Tuckersmith) occupy top quintile positions.

11: Selected Employment Attributes

As is apparent from Table 11.1, the major contrast between provincial employment and study area employment by industry division is in the proportion employed in primary industries (3.5 vs 15.3%). This largely accounts for the substantial differences between the relative size of the goods producing vs. service providing sectors. These differences are, in turn, largely attributable to the employment profile of the townships where the role of primary employment (21.5%) is overwhelmingly a reflection of the relative importance of agriculture.

Table 11.1: % Employment by Industry Division, 1991

		Study Area		
Industry Division	Ontario	Total	Towns & Villages	Townships
Primary	3.5	15.3	3.8	21.5
Manufacturing	17.3	15.4	17.6	14.3
Construction	6.6	8.6	7.6	9.2
GOODS PRODUCING	**27.4**	**39.4**	**29.0**	**45.0**
Transportation & storage	3.5	3.4	3.3	3.5
Communication & other utilities	3.5	5.2	8.0	3.8
Trade	17.2	15.7	18.4	14.2
Finance, insurance & real estate	6.5	3.8	4.4	3.5
Other services industries*	19.2	13.6	15.1	12.9
Government service	7.6	4.8	5.8	4.3
Educational service	6.7	5.4	5.7	5.2
Health and social service	8.4	8.6	10.3	7.7
SERVICE PROVIDING	72.6	60.6	71.0	55.0
TOTAL	100.0	100.0	100.0	100.0

* includes business service industries, accommodation, food & beverage

The employment structure for the towns and villages is very similar to that for the province. The largest contrast between them is the 4.5 percentage point difference in the communications and other utilities industries. This reflects the major role employment in this division plays in the towns and villages in the vicinity of the Bruce nuclear power station.

If one sets aside primary industry employment (a distinctive feature of the townships) from the calculations, the most striking feature of the employment profiles between the towns and villages and townships of the study area, and between the study area and the province is the basic similarities between and among all four. The residents of the townships not engaged in primary industries have an employment structure by industry division almost identical to town and village residents, and the study area has, in turn, an employment profile resembling that of the province as a whole.

While the above reveals the employment structure of the study area's labour force it is a record of employment by place of residence. In section 9 it was established that about 68% of the township labour force and 42% of the town and village labour force work some place other than their CSD (township, town or village) of residence. Consequently, while we know what residents of townships and towns and villages do for a living, for many of them we do not know where they do it. While a good deal of the commuting is undoubtedly largely local in nature, with township residents working in nearby towns, and residents of one town working in another nearby town, the four larger centres within the study area (Guelph, Stratford, Owen Sound and Orangeville) likely draw more labour from nearby townships, towns and villages than they send to such locales. It also seems likely that the study area as a whole experiences net out-commuting in the exchange with neighbouring areas, particularly along the area's south eastern margins where it borders the Toronto CMA.

Table 11.2 provides another perspective on the employment structure of the study area. Using Huron county data by way of example, it demonstrates the enormous changes that have occurred across the post WWII period. In 1951 employment in Huron county was dominated by the goods producing sector (59.0%), the bulk of which was in primary industries (41.9%) which was in turn overwhelmingly in agriculture (99.3% of primary industry employment). By 1991 employment in the goods producing sector stood at about 42%, a 17 percentage point decline. This decline is entirely attributable to the decline of agricultural employment, and is a reflection of the enormous transformation of agriculture across the four decades as capital was progressively substituted for labour, farm numbers declined and farm sizes increased. Troughton (1984) describes this as "the process whereby agriculture (farming) is being transformed from an activity generally carried out at a relatively small scale and at a low level of capital intensity, to one in which the major portion of production comes from a reduced number of large-scale and/or highly capitalized units". Keddie and Mage (1991), using data for the period 195 1 to 1986, provide a succinct discussion of many of the processes involved and the way in which they are transforming Ontario's agriculture. Huron county experienced similar processes and transformations.

While primary employment recorded an absolute decline (-30.3%), the goods producing sector recorded modest growth (13.5%) due to a more than doubling of the numbers employed in both manufacturing and construction. An excellent succinct discussion of the growth of manufacturing in rural areas can be found in Robinson (1990). Among the reasons offered, from his review of the literature, for manufacturing firms preferring rural locations are the following which may have applicability for Huron county and the study area are more generally:

- the lower cost of land and water
- the belief that there is more of a 'work ethic' among residents of small towns and rural areas

- substantial geographic differences in hourly wage rates
- excellent highway and trucking facilities giving greater geographic flexibility in plant location
- widespread automobile ownership which has greatly extended labour sheds and permitted deconcentration of industrial location

Table 11.2: Huron County, % Employment by Industry Division

INDUSTRY DIVISION	1951	1971	1991	% CHANGE 1951-91
Primary	41.9	26.6	18.3	-30.3
Manufacturing	11.3	15.6	15.9	125.3
Construction	5.7	6.1	7.7	113.4
GOODS PRODUCING	59.0	48.3	41.8	13.5
Transportation & storage		2.9	3.0	
	5.2	4.8	5.4	**64.5**
Communication & other utilities		2.0	2.4	
Trade	10.1	13.7	16.1	154.3
F.I.R.E.	1.3	2.5	3.4	316.0
Government service		6.1	5.4	
Educational services		4.5	4.9	
	24.4	30.7	33.3	118.3
Health & social services		7.1	9.6	
Other service industries		13.0*	13.4	
SERVICE PERFORMING	41.0	51.7	58.2	126.8
Total labour force	18,807	21,960	30,095	**60.0**
% male	84.7	67.7	56.2	**6.1**
% female	15.3	32.3	43.8	**359.6**
Total population	49,280	52,951	59,065	**19.9**
% in labour force	38.2	41.5	50.9	

* Includes 1,250 employees in the category industry unspecified or undefined.

Only a detailed analysis of the types and structure of manufacturing in Huron county and the study area, how these have changed over time, and what have been the attractions for new firms to locate in the area, could provide an explanation for the growth of manufacturing and the prospects regarding its sustainability.

Since only about 13% of the total employment growth in Huron county occurred in the goods producing sector one must look to the service providing sector for the balance (87%). This trend is not unique to Huron county, nor of necessity more pronounced in rural areas. Ontario scale Statistics Canada data provide a similar picture, with the service sector accounting for 86% of employment growth across the same period. Here, however, both the primary and secondary (manufacturing and construction) sectors recorded a relative decline in employment, from 13.7 to 3.5% and 39.4 to 23.9% respectively. Similar to Huron county, if somewhat less pronounced, the primary sector recorded an absolute decline in employment of about 26% while the secondary sector (manufacturing and construction) recorded an absolute growth of 75%.

As Table 11.2 indicates, the service performing sector experienced a growth rate of nearly 127% across the four decades, compared to an overall growth of 60%. Although data limitations in 195 1 make it impossible to document this growth for every service performing division, available data demonstrate that this growth ranged from a low of 64.5% to a high of 316.0%. A number of explanations have been put forward to account for the growth of the service performing sector (Economic Council of Canada, 1990).

- the growing share of service employment simply reflects the poorer productivity performance of the service sector relative to the goods producing sector
- the share of final demand allocated to services has increased as incomes have risen and as more women have entered the work force
- goods producers are now purchasing some services from outside the firm that they used to produce in house
- services have increasingly become part of the final product sold to the consumer

While the Economic Council report argues for the last of these explanations as being of paramount importance, its focus was particularly on what it calls dynamic services. These were found to be particularly dependent on demand from the goods industries for their output. However, across the period of the council's analysis, traditional (main street services) and non market (health, education and government) services grew as rapidly as did the dynamic services, and the link of these services to the last explanation is less clear. What is clear is that, whatever the appropriate balance of explanation, employment growth in Huron county, across the study area, and for Ontario, has been overwhelmingly in the service providing sector.

The final feature of the changing employment structure of Huron county to be noted is possibly the most dramatic and important of all. As indicated on Table 11.2, and noted earlier, the labour force grew by 60.0% across the four decades. However, the total population grew by only about 20%. This discrepancy is almost entirely attributable to the enormous growth of female employment in the formal economy. The increase in female employment accounts for 91.4% of the total labour force growth of 11,288. The following table (Table 11.3) shows the proportional change in the number of both men and women 15+ years of age reported in the labour force in both 195 1 and 1991. Trends for Huron county approximate those for the province but the female "participation rate" for Huron county, while still lower than for the province, increased across the four decades even more dramatically.

Table 11.3: Reported Labour Force as a % of the Population 15+ Years of Age

	1951	1991
Male		
Ontario	85.7	76.6
Huron County	86.2	75.6
Female		
Ontario	26.5	61.1
Huron Country	17.0	57.5

Note: Labour force data for 1951 includes an unknown number of 14 year olds, but their inclusion can only be very minor in impact.

Primary Industries

Figure 11.1 portrays the proportions of the labour force employed in primary industries. Since primary industry employment is overwhelmingly in agriculture, the township mean of 21.5% contrasts markedly with the town and village mean of 3.8%. As the frequency distribution shows, the two distributions have only minimal overlap. Primary industry employment for town and village residents undoubtedly includes some agricultural employment as well as employment in such activities as sand and gravel extraction. A variable but relatively small portion of township employment is also in primary industries other than agriculture.

For the townships, employment in primary industries ranges from a low of 2.9% to a high of 45.7%. High values have a south central location, while lower values are found particularly on the study area's eastern margins and the Bruce peninsula. For the townships, employment in primary industries has a high positive correlation (r=.885) with census farm operations as a percentage of private households and a positive correlation (r=.669) with census farmland as a percentage of total township area. The high values for these three in combination help in defining the agricultural core townships of the study area in 199 1.

Further insights can be gamed by considering other correlates of primary employment. For example, percentage primary employment has a negative correlation with both absolute and proportional population change from 1971 to 1991 of r=-.607 and r=-.718 respectively. Conversely, one finds a positive correlation with percentage of private dwellings built before 1946 (r=.802) and percentage of population non-movers 1986-91 (r=.533). Thus, not surprisingly, there is a tendency for townships where primary employment was high in 1991 to be townships that experienced little if any population growth across the 1971 to 1991 period and to be areas dominated by an older housing stock and greater than average residential stability.

There is also a positive correlation between percentage primary employment and both percentage of population O-19 (r=.633) and fertility as measured by children ever-born per 1000 ever-married women 15-44 years of age (r=.599), two measures which in turn vary together (r=.737). This association is indicative of a tendency for rural farm birth rates to be higher than for other rural residents.

In comparison to the study area as a whole Huron County recorded a somewhat higher proportion of its labour force in primary industries (18.3% vs a study area average of 15.3%). This is reflected on Figure 11.1 by the fact that 62.5% of Huron County townships (10 of 16) record values on this measure in the upper quintile compared to 26.2% of the townships in the rest of the study area (16 of 61).

Manufacturing Industries

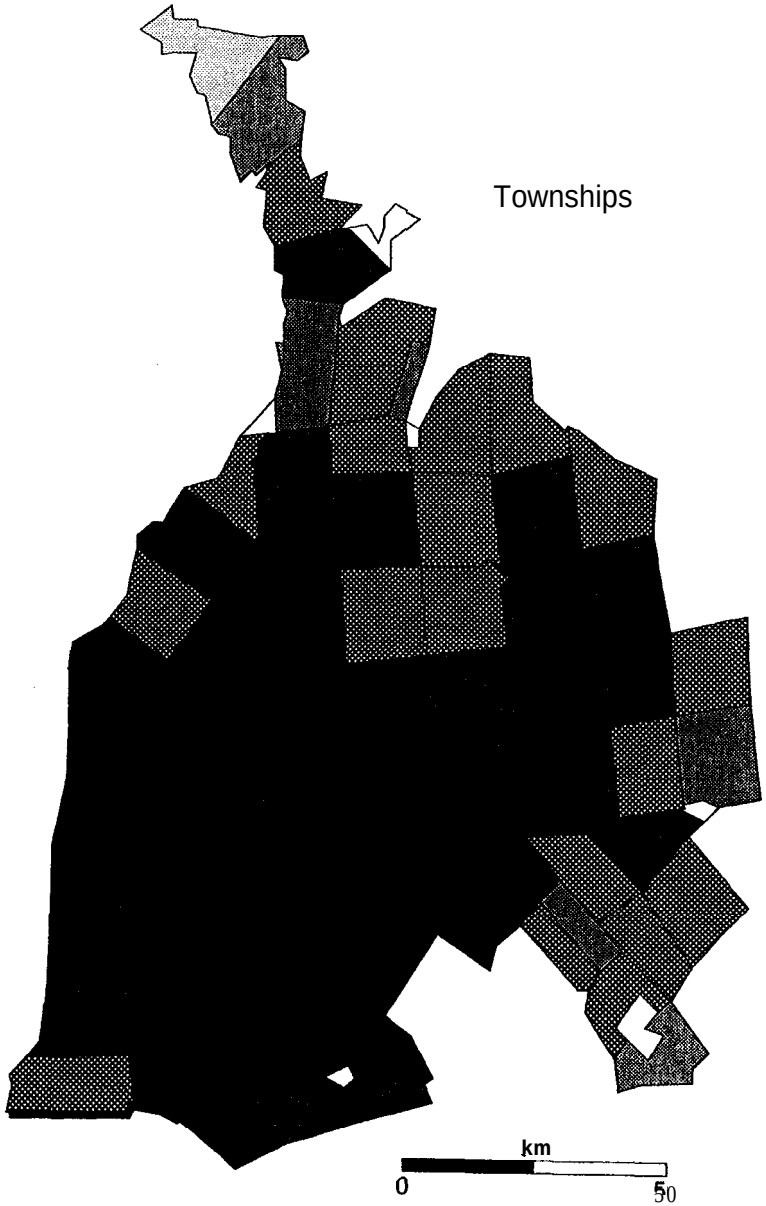
The variable proportion of the labour force employed in manufacturing is portrayed on Figure 11.2. As indicated on the figure this attribute has a mean of 15.4% and ranges from 0.0 to 3 1.2%. On the frequency distribution one finds 17(34.0%) towns and villages but only nine (11.7%) townships in the top quintile. This is a reflection of the differences in means between towns and villages (17.6%) and townships (14.3%) as presented on Table 11.1.

On the township map higher values tend to be located toward the southern and south eastern margins of the study area. This pattern is somewhat less apparent on the town and village map. Another feature of the distribution is a strip of lowest quintile values encompassing both the townships and the towns and villages along the Lake Huron shore of Bruce county including most of the Bruce peninsula. This grouping accounts for 20 of the 26 observations in the lowest quintile. For a portion of this area in the vicinity of the Bruce nuclear power plant it was earlier established that employment in the "communication and other utility industries" dominates the employment profile.

For the towns and villages the percentage of the labour force in manufacturing industries has a statistically significant, if relatively low, positive correlation with both percentage of population 20-39 years of age (r=.380) and population 20-24 years of age in 1991 as a percentage of population 15-19 years of age in 1986 (r=.361). This indicates a tendency for towns and villages with above average levels of manufacturing employment to have higher than average proportions of 20-39 year olds and to have experienced a lower rate of net out-migration of young adults across the 1986-91 period, if not a net in-migration of those 20-24 years of age in 1991. For the towns and villages manufacturing employment also has a statistically significant negative correlation (r=-.447) with percentage of the labour force in "white collar" occupations. For the townships the percentage of the labour force in manufacturing has no statistically significant correlations with any of the other attributes considered in this study.

Further insights can possibly be gained by comparing data available for 1990-9 1 from Scott's Directory with data on manufacturing employment from the 199 1 census. Using Huron county as an example, one finds in the 1990-9 1 directory 110 manufacturing firms with 4,407 employees. This compares with 4,790 Huron county residents recorded as employed in manufacturing in the 1991 census. At the county scale this translates into a net out-commute of about 400 persons employed in manufacturing. However, for the ten incorporated towns and villages the directory listed 3,502 employees in manufacturing while the census recorded 2,165 residents in these same places employed in manufacturing. This is indicative of a net in-commute for manufacturing employment of over 1,300 if the firms listed by town and village are located in the place of postal address. Presumably most of the net in-commuters are residents of Huron county townships. The balance of the directory listed manufacturing jobs, 4,407 minus 3,502 or 905, are located by postal address in nine unincorporated places. Of these 758 were listed as located in Centralia, adjacent to which is the community of Huron Park, an unincorporated community on the site of a former air force base.

Percentage of Total Labour Force 15 Years and Over in Primary Industries, 1991

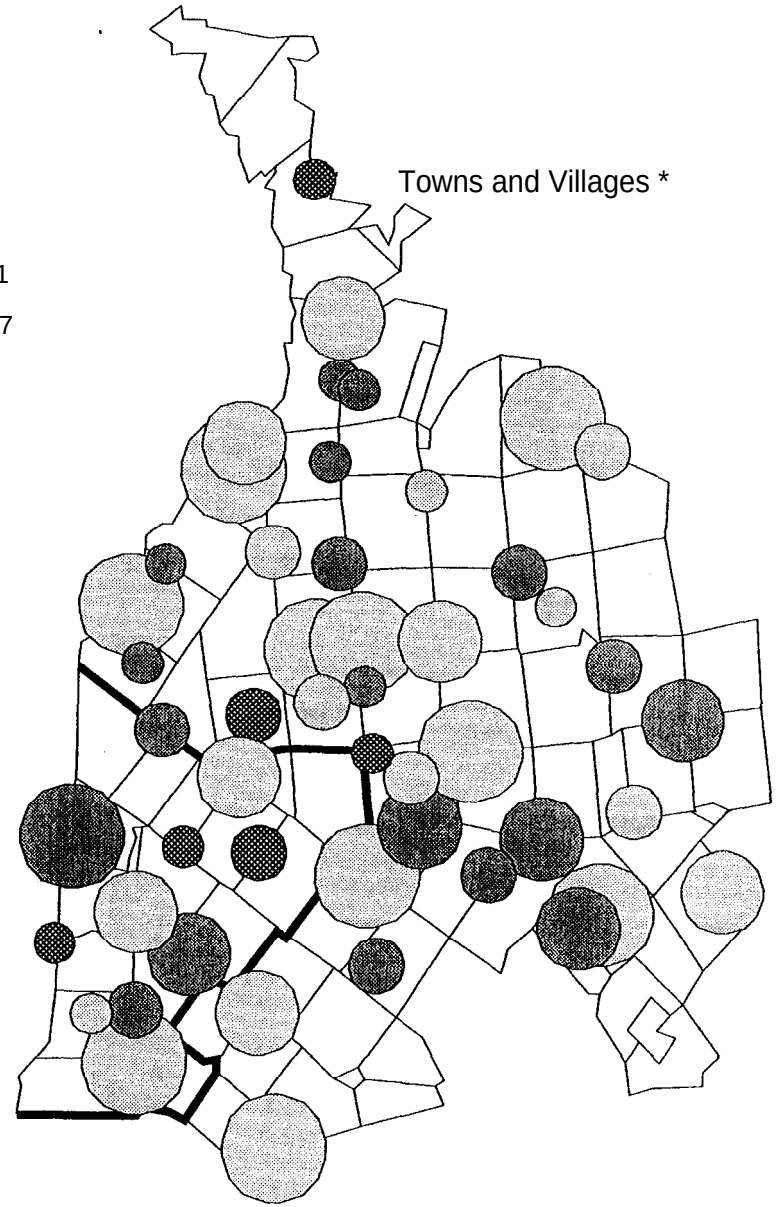


1	0 - 3.8
2	4.0 - 8.9
3	9.2 - 18.7
4	18.8 - 28.1
5	28.2 - 45.7

Mean: 15.3

Frequency Distribution

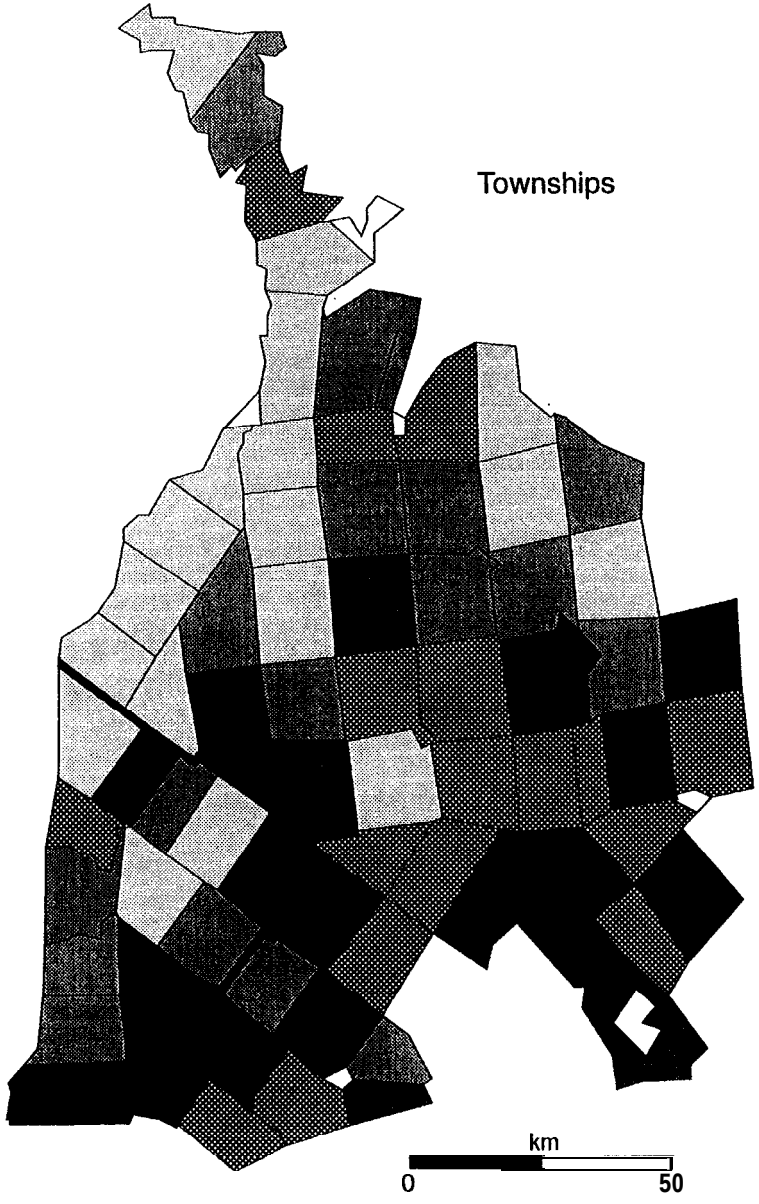
	TP	T&V	Tot.
1	1	25	26
2	6	19	25
3	19	6	25
4	25	0	25
5	26	0	26
Tot.	77	50	127



* Circle symbols for towns and villages in four size categories based on 1991 population: ~1,000, 1,000-2,000, 2,000-4,000 and 4,000-8,000.

Figure 11.1

Percentage of Total Labour Force 15 Years and Over in Manufacturing, 1991



1	0 - 8.5
2	8.6 - 13.1
3	13.2 - 16.2
4	16.3 - 20.0
5	20.2 - 31.2

Mean: 15.4

Frequency Distribution

	TP	T&V	Tot.
1	17	9	26
2	19	6	25
3	17	8	25
4	15	10	25
5	9	17	26
Tot.	77	50	127

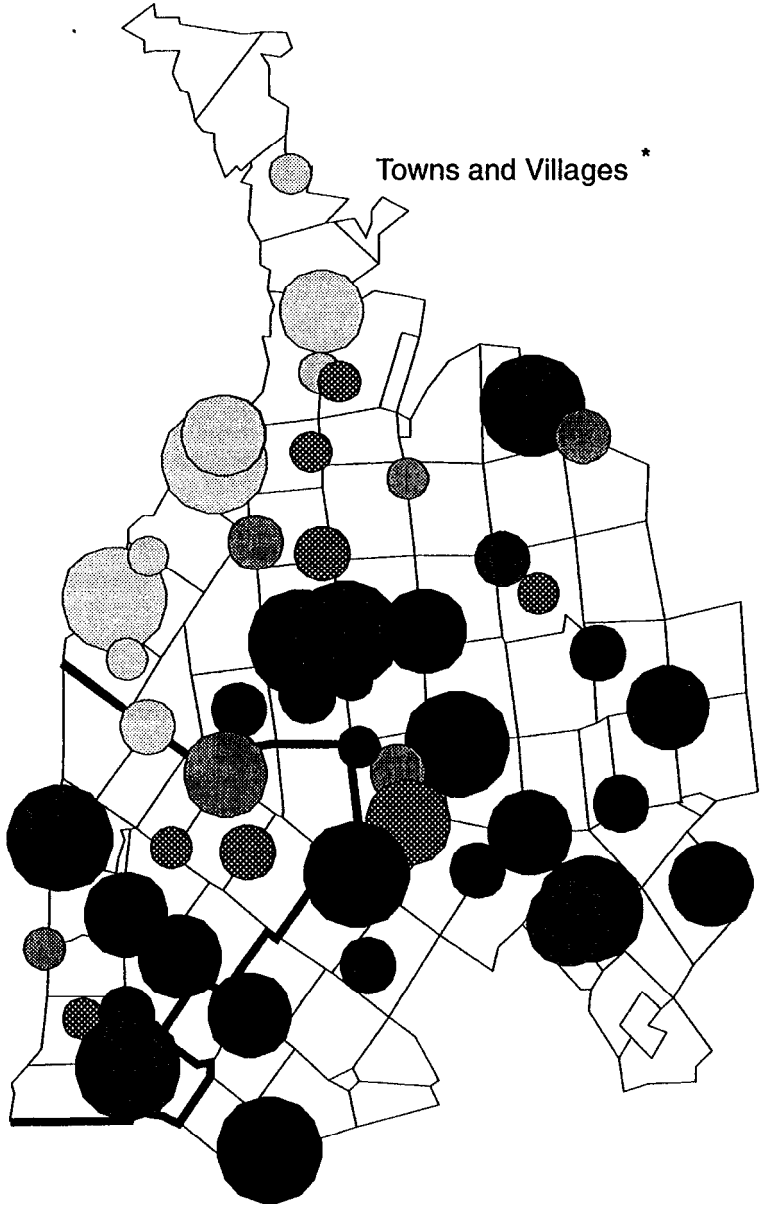


Figure 11.2

. Circle symbols for towns and villages in four size categories based on 1991 population: <1,000, 1,000-2,000, 2,000-4,000 and 4,000-8,000.

Huron County recorded a marginally higher proportion of its labour force in manufacturing industries than is the case for the study area as a whole (15.9% vs 15.4%). For its 26 census subdivisions values range from a low of 7.0% to a high of 25.5%.

"White Collar" Occupations

Figure 11.3 presents the third and final aspect of the employment structure of the study area to be considered. It portrays the percentage of the labour forced employed in "white collar" occupations. As indicated on the figure, this measure is a composite measure of the proportions employed in the following occupational categories: managerial, administrative and related occupations; teaching and related occupations; occupations in medicine and health; natural and social sciences, religious, artistic and related occupations. The attempt here is to capture in one measure those occupations representing that portion of the service providing sector of the economy viewed as higher on the Blishen scale and representative of service jobs associated with both higher levels of education and income.

About one quarter (25.6%) of the study area's labour force was employed in this grouping in 1991. Values for this variable range from 9.3% to 40.4%. There is a tendency for towns and villages to be overrepresented in the two top quintiles (50% of towns and villages vs 34% of the townships).

On the township map, high values occur along the study area's south eastern margins near Guelph and bordering the Toronto CMA, (nine contiguous townships in the two top quintiles), around Owen Sound (commuter shed townships) and in a sporadic pattern along the Lake Huron shore. Low values are central in location, with 17 of the 21 lowest quintile townships forming a contiguous grouping. This same area tends to record high values on Figure 11.1 and there is a significant negative correlation (r=-.524) between percentage of the labour force in "white collar" occupations and percentage in primary industries.

A consideration of other statistically significant correlations between "white collar" employment and other attributes reveals a tendency for "while collar" employment to be higher in townships that:

- recorded higher proportional and absolute population growth across the 1971 to 199 1 period
- enjoyed higher incomes in 199 1
- reported higher levels of out-commuting in 1991
- recorded lower proportions without a secondary educational certificate in 1991 and higher proportions with a university degree in 199 1

Given these associations, one interpretation is that recent township population growth (residential development) has been weighted toward "white collar" employment, and that those so employed tend to have higher incomes and educational levels, and tend to out-commute to their places of employment.

The pattern on the town and village map defies spatial generalisation. Furthermore, only one of the attributes, percentage with a university degree, reported above as having a statistically significant correlation with "white collar" employment for the townships recorded a significant correlation for the towns and villages. For this variable the r value was only r=.395 for the towns and villages compared to a township association of r=.738. In addition, for the towns and villages "white collar" employment has, as noted in the discussion of manufacturing, a negative

correlation with the percentage engaged in manufacturing industries. Apart from these two attributes for the towns and villages "white collar" employment was not spatially associated with other attributes considered in this study.

Huron County recorded a marginally lower proportion of its labour force in "white collar" occupations than is the case for the study area as a whole (24.4% vs 25.6). As indicated on Figure 11.3, however, 8 of its 16 townships (50%) are in the lowest quintile on this measure compared to only 13 of 61 (21.3%) for the remainder of the study area. By way of contrast 6 of 10 (60%) of Huron County's incorporated towns and villages are in the top quintile compared to only 6 of 40 (15%) for the remainder of the study area. Clearly in Huron County compared to the remainder of the study area those employed in "white collar" occupations show a greater tendency to be residents of towns and villages rather than of townships then is generally the case.

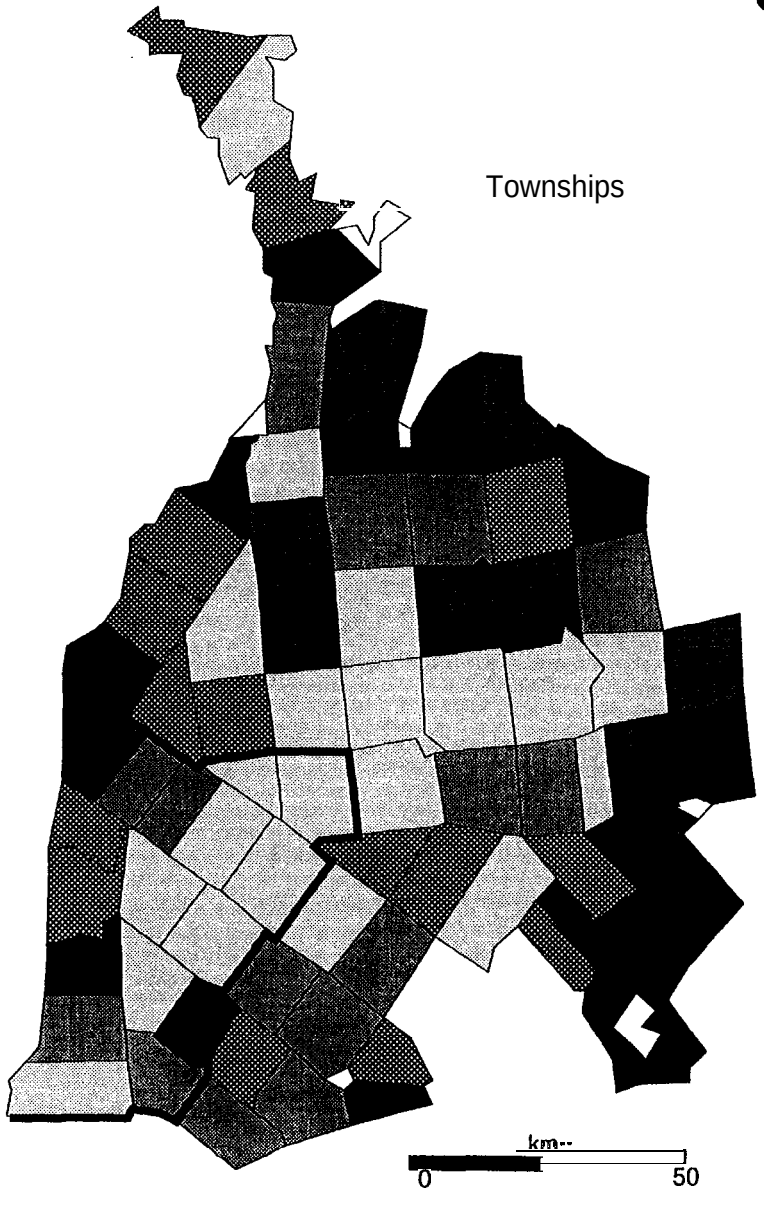
12: Average Value of Dwellings

Figure 12.4 portrays the average value of non-farm owner occupied dwellings. According to Statistics Canada the "value of dwellings refers to the dollar amount expected by the owner if the dwelling were to be sold". For the study area values for this attribute range from a low of $90,000 to a high of $3 15,000, an impressive range for a rural and small town environment. Townships have most of the high values with 53% of townships in the top two quintiles compared to 20% of the towns and villages. One reason for the somewhat skewed distribution, with townships dominating the high values, may be the current value of rural residential lots rather than the size and quality of the housing. This could particularly be the case for older rural non-farm residential properties, built at a time when an unserviced rural lot was no more expensive, if as expensive, as a serviced lot in a nearby city or town, but which has since inflated enormously in value. As early as 1974, Punter, in his study of the Toronto centred region, noted that while "in 1961 the cost of an unserviced lot in exurbia was about half that of a comparable fully serviced lot on the suburban fringe of Metro Toronto: by 1972 exurban lots were at least 20 percent more expensive". This gap has continued to widen as a consequence of limitations placed on the supply of building lots in the countryside. Particularly in the city's countryside or expanding rural-urban fringe, the rural residential option has increasingly become the preserve of the well-to-do, who can not only afford to pay the land cost but can also afford to build more substantial homes. Consequently the more recent housing stock tends to contrast markedly with the often more modest rural non-farm housing built earlier. But the market value of the latter will have built into it a land value reflecting the current reality.

On the township map, high values are concentrated along the study area's eastern margins, and decline as one moves westward, but tend to increase again somewhat along the Lake Huron shore townships. The most notable block of high values is formed by a contiguous grouping of 15 townships along the south eastern margins of the study area, part of which abuts the Toronto CMA to the east and is an area also impacted on by Guelph and Kitchener-Waterloo. This area includes the 10 highest housing values among the 127 CSDs in the study area, all in excess of $225,000 dollars. This same area is a region that for the most part experienced rapid population growth 197 1 to 1991 both in relative and, more particularly, in absolute terms. Much of it epitomizes more than any other part of the study area a landscape dominated by affluent "exurban" growth in the recent past. The same area constitutes the major block of townships with high levels of out-commuting.

Two somewhat smaller blocks of high values also have instructive locations. One of them is south central in location, around the city of Stratford, but also within commuting distance of both

Percentage of Total Labour Force 15 Years and Over in "White Collar"* Occupations, 1991

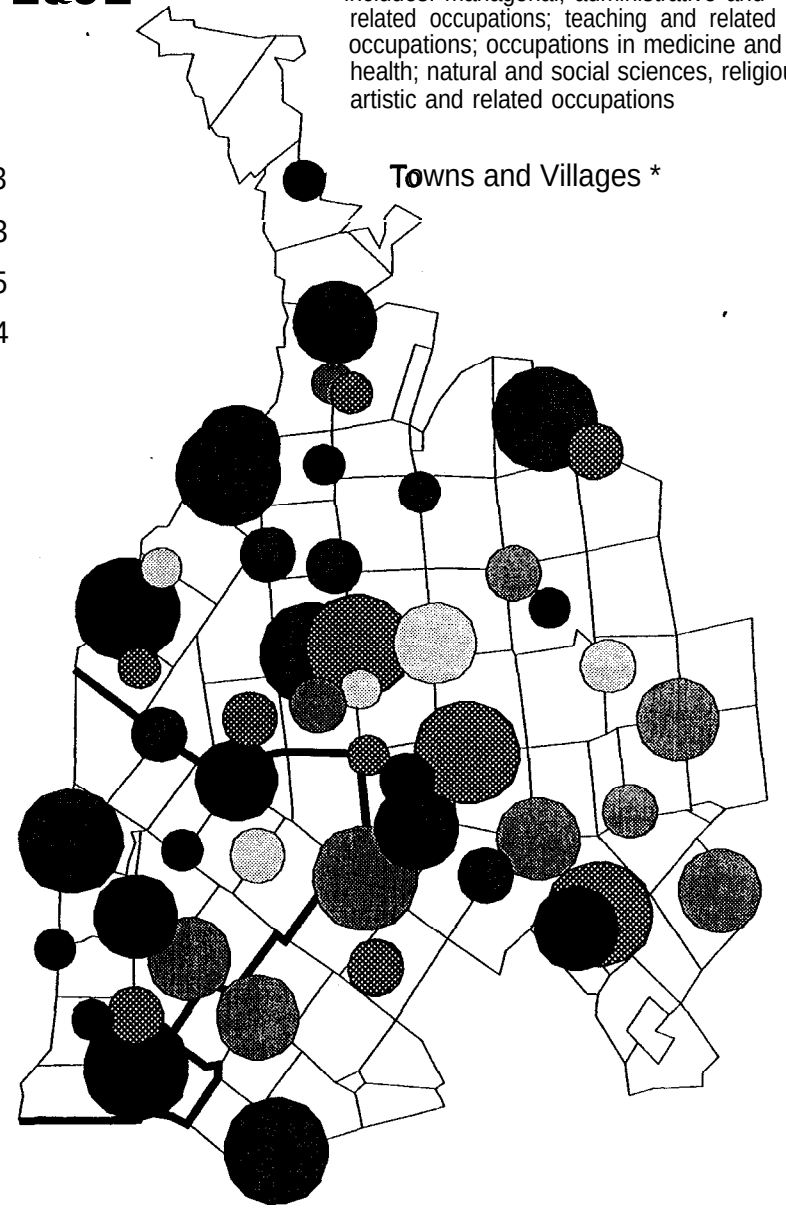


1	9.3 - 19.7
2	20.1 - 23.3
3	23.4 - 26.3
4	26.5 - 29.5
5	29.6 - 40.4

Mean: 25.6

Frequency Distribution

	TP	T&V	Tot.
1	21	5	26
2	15	10	25
3	15	10	25
4	13	13	25
5	13	12	26
Tot.	77	50	127



* includes: managerial, administrative and related occupations; teaching and related occupations; occupations in medicine and health; natural and social sciences, religious, artistic and related occupations

• Circle symbols for towns and villages in four size categories based on 1991 population: <1,000, 1,000-2,000, 2,000-4,000 and 4,000-8,000.

Figure 11.3

Average Value of Non-Farm Owner Occupied Dwellings ($1000s), 1991

1	90 - 107
2	108 - 127
3	128 - 151
4	152 - 178
5	179-315

Mean: 149

Frequency Distribution

	TP	T&V	Tot.
1	11	15	26
2	11	14	25
3	14	11	25
4	18	7	25
5	23	3	26
Tot.	77	50	127

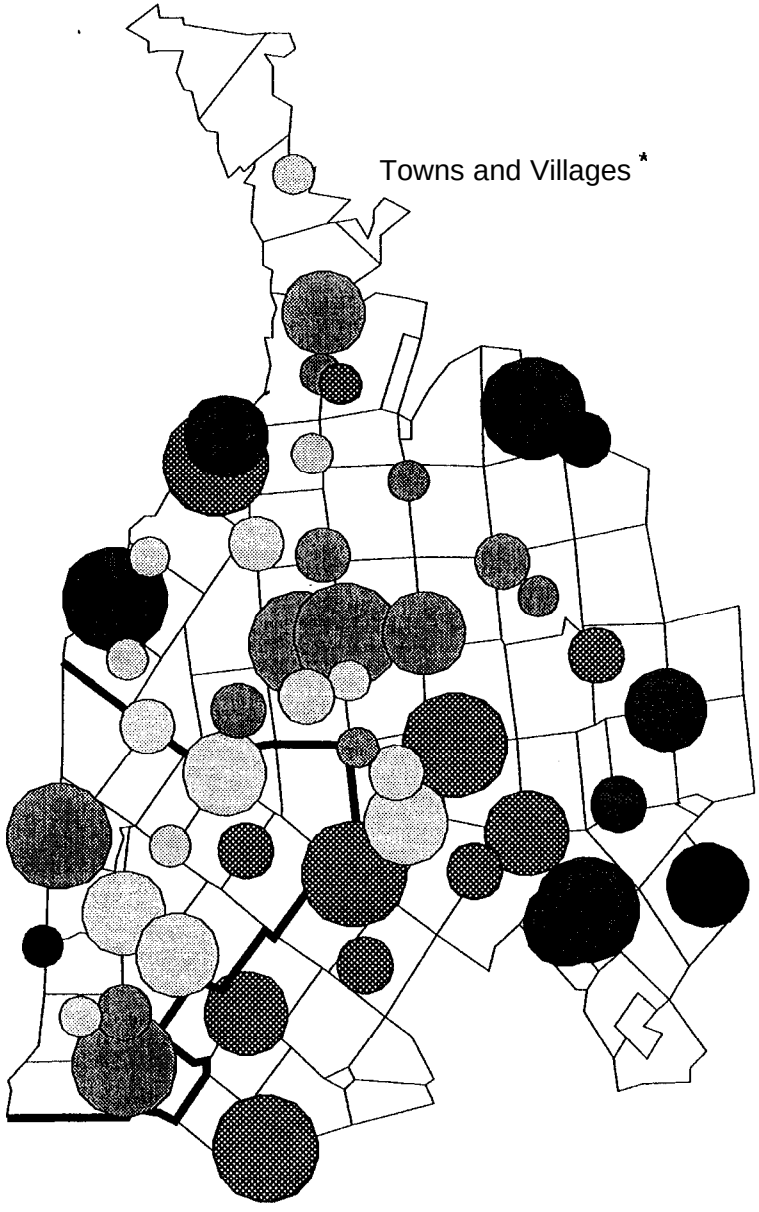


Figure 12.4

* Circle symbols for towns and villages in four size categories based on 1991 population: <1,000, 1,000-2,000, 2,000-4,000 and 4,000-8,000.

Kitchener-Waterloo to the east and London to the south. The second flanks Georgian Bay in the area of the Niagara escarpment (Blue Mountain) and the Beaver Valley, an area rich in scenic amenity value.

Low values are in large part coincidental in location with areas of population decline or slow growth during the 1971 to 1991 period. Consequently, unlike the study area's eastern margins, there would be less demand pushing housing prices. Generally values increase somewhat along the Lake Huron shore, especially for townships of more rapid population growth identified earlier as impacted upon by the development of the Bruce nuclear power station, but also for townships further south, possibly reflecting an amenity value.

The pattern for towns and villages bears some resemblance to that for the townships. Again, high values tend to be concentrated along the study area's eastern margins, decline as one moves westward, and tend to increase again along the Lake Huron shore. More particularly, five of the 10 towns and villages in the two top quintiles are located on the study area's south eastern margins, an area notable for the largest block of high township values. The two towns in the Georgian Bay area (Thornbury and Meaford) are also located in association with a grouping of high township values.

Only three towns and villages; Erin, Thornbury, and Bay-field, share the top quintile with 23 townships. Erin, adjacent to the Toronto CMA, is distinguished by an out-commuting level of 80%. Nearly nine in every 10 of Erin's out-commuters leave their CD of residence (Wellington County). Here and elsewhere along the study area's south eastern margins, high housing values probably reflect the impact, to use Hart's term (1991), of a "perimetropolitan bow wave", driving prices upward as a consequence of an overheated Metropolitan Toronto market. In the cases of Thombury (on Georgian Bay) and Bayfield (on Lake Huron) the explanation is probably more amenity related; both are communities that have become progressively "boutiquified" over the last few decades. Here, what Coppack (1988) refers to as "amenity as an economic commodity" may be particularly reflected in the "dollar amount expected by the owner if the dwelling were to be sold".

While the emphasis in the discussion has been on the higher values it is well to bear in mind that across a good deal of the study area values are quite modest. For about 29% of the townships and 58% of the towns and villages average values in 1991 were less than $128,000. Even on the study area's south eastern margins, the high values need to be seen in context. In the same year, the average was $287,000 for the Toronto Metropolitan Municipality, $334,000 in Caledon, immediately to the east of Erin township and a staggering $415,000 in King, bordering Caledon to the east.

Housing is a complex commodity and, as noted by Joseph, Smit and McIlravey (1989), "when one purchases a residential property one buys an entire 'residential bundle', consisting not only of physical features such as the house and lot, but also of more subjective attributes such as 'a surrounding social environment' or 'locational convenience' ." For retirement aged couples in Toronto, particularly those with small town roots, selling in Toronto and buying at half the price in a small town in the study area might be a very attractive proposition. But it is unlikely that price would be the only consideration. For urbanites seeking countryside living even the seemingly high housing value townships on the study area's south eastern margins may make a longer commute an attractive trade-off. Joseph, Smit and McIlravey (1989), through the use of conjoint analysis, illustrate the trade-offs involved and the most preferred attribute-level combination for individuals in the market for a permanent rural residence. Davies and Yeates (199 1) provide insights into the range of factors deemed to be important to exurban in-migrants to rural Oxford county, providing further information on similarities and differences between exurban-rural and exurban-village groups. For the town of Shelbume, Barrett (1994 p.94) notes that:

"With the partial exception of the middle-class, the single most important motivation for relocating in the small town of Paradise was the possibility of having a home of one's own. In other words it was not quality of life that made these people become migrants; it was the prospect of increasing their purchasing power by buying into a less expensive market".

In 1991 the average value of dwellings for Shelbume, located on the study area's south eastern margins was $154,000, making price very attractive compared to the Toronto CMA. In Shelbume in 1991 about 56% of the resident labour force out-commuted, seven in every 10 of these leaving the CD of residence (Dufferin County) largely for somewhere in the Toronto CMA. Barrett (1994) also provides a fascinating discussion of a range of secondary reasons for urban to small town relocation.

There is now a substantial body of literature that directly or indirectly deals with the motivations behind urban to rural and small town relocation in which a complex of factors associated with housing preferences, including price, plays a role. Less is known regarding the residential

preferences of long term rural and small town residents and the housing market constraints in which they operate. The residential relocation of retired elderly farm couples to nearby towns and villages is one relatively well understood feature. The modest housing prices in many of the towns and villages has presumably facilitated this. Indeed the rural and small town elderly are an exception regarding the earlier claim, in that there is, in relative terms, a substantial body of literature concerned with their housing needs and gaps in the available housing supply in meeting those needs (see for example, Hodge, 1984; Hodge, 1987; Joseph and Fuller, 199 1; Ministry of Municipal Affairs, 1986).

It is apparent that across part of the study area dwelling values have been impacted on by urban generated pressure and the in-migration of exurbanites. How does this impact the longer term rural and small town resident with a more modest income who is competing in the same housing market? Beyond the question of price, how does the nature of the housing stock available, with the huge dominance of single-detached housing, relate to the supply and demand features of the market? Access to decent affordable housing is a very important quality of life indicator. Despite some of the questions just raised, and the more modest income position of many rural and small town individuals and families compared to their urban counterparts, it would be surprising if housing satisfaction across much of the study area was not higher than in the province's major urban centres. Assuming that cost is one aspect of housing satisfaction the following table is instructive.

Table 12.2: Housing Cost Attributes, Study Area and Provincial CMAs

Variable	Study Area	Prov. CMAs	Toronto CMA
Average gross rent ($)	533	691	747
% gross 3 30% household income	23.0	29.4	29.6
Average major payments for owners ($)	669	915	1,015
% major payments 3 30% household income	15.0	17.4	20.6

Table 12.2 provides a comparison between the study area, the province's CMAs and the Toronto CMA for a number of relevant housing cost attributes. For the study area average gross rents are only 77% of those of the province's CMAs and even further below those of the Toronto CMA. Despite lower average incomes for the study area a somewhat smaller percentage of renters (23.0% vs 29.4%) pay rents equal to or greater than 30% of household income. For the owner occupied portion of housing, average major payments are lower, at 73% of the average for provincial CMAs, and again there is a marginally smaller percentage for whom major payments are 30% or more of household income. These contrasts should be reviewed as suggestive rather than definitive, as both aggregates are made up of a large range of situations, and average rents and major payments tell us nothing about the quality of the shelter being compared. However, it is contrasts of this sort that lead Statistics Canada to designate different income levels by settlement size categories in making a determination of the number of low income unattached individuals and low income economic families.

While Table 12.2 provided a comparison between the study area and the province's CMAs for some housing cost attributes, Table 12.3 reveals that major contrasts can be found among the counties of the study area.

Table 12.3: Housing Cost Attributes, Study Area Counties*

Variable	Bruce	Huron	Perth	Grey	Well.	Duff.
Average gross rent ($)	480	488	482	540	630	644
% gross rent 3 30% household income	23.1	16.5	19.6	26.0	25.8	36.0
Average major payments for owners	588	555	623	574	841	1,001
% major payments 3 30% household income	11.8	10.8	12.4	15.0	18.7	26.9

* excludes Guelph (Wellington), Stratford (Perth), Owen Sound, (Grey) and Orangeville (Dufferin)

If, for example, one compares Huron and Bruce counties, furthest removed from major metropolitan impacts, with Wellington and especially Dufferin, closest to the Toronto CMA, one sees substantial differences in all four measures. Income contrasts may offset these differences in terms of general affordability. But in Huron one finds only 16.5% of renters paying rents equal to or greater than 30% of household income compared to 36% in Dufferin, and while 10.8% of owners in Huron have major payments • 30% of household income such is the case for 26.9% of Dufferin's owner occupiers. This reminds us of the scale specific nature of generalisations, for contrasts between study area counties are greater than between the study area and the Toronto CMA. The contrasts also remind us of the enormous diversity across this portion of rural and small town Ontario.

The average value of non-farm owner occupied dwellings in Huron County is well below the study area average with a mean of only $117,000, compared to a study area mean of $149,000. This contrast is clearly evident on Figure 12.4. On the township map 12 of 16 (75.0%) Huron County townships occupy the two lowest quintiles while only 10 of 61 (16.4%) townships in the remainder of the study area are also found in these two quintiles. Similarly 8 of 10 (80%) incorporated towns and villages in Huron County are found in the two lowest quintiles in contrast to 21 of 40 (52.5%) such places in the remainder of the study area. The village of Bayfield, with the value of non-farm owner occupied dwellings reported at $184,000, stands in marked contrast to the rest of the county. It is one of only 3 towns and villages among the 26 census subdivisions in the top quintile and its distinctive position was commented upon earlier.

13: Selected Educational Attributes

Two measures are used to provide some insights into differences in levels of education. Table 13.1 provides a comparison of the study area with the province and provincial CMAs for the two attributes selected. As is evident from the table the proportion of the population without a secondary certificate exceeds the provincial average by 6.3 percentage points, largely as a consequence of the lower percentage on this measure for the province's CMAs. If one excludes the CMAs the values for the study area (42.7%) and the rest of the province (41.8%) are nearly identical. Similarly, the contrasts between the study area and the province in terms of the percentage with a university degree (7.1 vs 13.0%) are largely a reflection of contrasts between the rest of the province and the CMAs (7.7 vs 15.1%).

Table 13.1: Total Population 15 Years and Over by Highest Level of Schooling, 1991

	% without a secondary certificate	% with a university degree
Study Area	**42.7**	**7.1**
Ontario	**36.4**	**13.0**
Ontario CMAs	34.2	15.1
Toronto CMA	33.6	16.6
Ontario excluding CMAs	41.8	7.7

Prior to a description of the two figures portraying these measures for the study area it is instructive to explore the associations between the two measures of educational attainment and other attributes considered in this study. To begin with it should be noted that the two measures, percentage without a secondary certificate and percentage with a university degree, with means of 42.7% and 7.1% respectively, have a high negative correlation (r=-.726). Consequently the two figures (Figure 13.1 and 13.2) displaying their patterns are to some degree a reverse image of each other.

Tables 13.2 and 13.3 set out the statistically significant correlations between each of the two measures and other attributes considered in this study. While one should refer to the tables for the details these associations can be summarized as follows:

Income measures:

- Percentage of total population 15 years and over without a secondary certificate has statistically significant negative correlations with average male, female and census family incomes and with percentage of census families with incomes of $60,000 and over. Conversely, percentage of population 15 years and over with a university degree has positive correlations with the same four income measures.

- Percentage without a secondary certificate is positively correlated with percentage of total income from government transfers which, in turn, has a negative correlation with percentage with a university degree.

Employment attributes:

- Percentage without a secondary certificate is for the townships positively correlated with percentage of the labour force in primary industries and is for the townships and the study area negatively correlated with both percentage of the labour force in "while collar" occupations and percentage of the labour force not working in the CSD of residence (out-commuting).

- Percentage with a university degree has, for the townships and towns and villages, a negative correlation with primary industry employment. It has a positive correlation with "white collar" occupations for the townships, towns and villages and study area and a positive correlation with out-commuting for the townships.

Population numbers and change:

- Percentage with a university degree is positively correlated with population size in 1991 and both absolute and percentage population change 1971-9 1. Percentage without a secondary certificate is negatively correlated with both absolute and percentage population change 1971-91.

Population attributes:

- Five population attributes have significant correlations with percentage without a secondary certificate; percentage Ontario born, percentage non-movers 1986-9 1, and fertility (children born/1000 women 15-44) have positive correlations, while percentage of population 40-64 and percentage immigrants have negative correlations. Four of these same attributes have significant correlations with percentage with a university degree but here percentage population 40-64 and percentage immigrants have positive correlations, while percentage Ontario born and the fertility measure have negative correlations.

Housing attributes:

- Percentage of dwelling built before 1946 and average dwelling values are, respectively, positively and negatively correlated with percentage without a secondary certificate and

conversely correlated with percentage with a university degree negatively and positively respectively.

Other attributes:

- For the townships farm operations as a percentage of households has a positive correlation with percentage without a secondary certificate and a negative correlation with percentage with a university degree.

For the townships and the study area percentage with a university degree is positively correlated with percentage with no religious affiliation.

Table 13.2: Significant* Correlations with Percentage of Total Population 15 Years and Over Without a Secondary Certificate, 1991

Variable	townships (n=77)	towns & villages (n=50)	total (n=127)
Income Measures			
Average male income	-.606	-.669	-.620
Average female income	-541	-.495	-.508
Average census family income	-.544	-.617	-.579
% families with incomes $60,000+	-.544	-.656	-.603
% incidence low income families	.393	_	_
% income gov't transfers	.380	.585	.496
Employment Attributes			
% labour force primary industry	.468	_	_
% labour force "white collar"	-.600	--	-.354
% labour force out-commuting	-.601	_	-.353
Population Change			
Absolute population change 1971-91	-.466	-.499	-.467
% population change 197 1-91	-.408	-.578	-.450
Population Attributes			
% population 40-64	-.410	_	-.371
% Ontario born	,477	.390	.450
% immigrants	-.438	-.461	-.476
% non-movers 1986-9 1	.309	.376	_
Children born.0000 women 15-44	.454	.387	.299
Housing Attributes			
% dwellings built before 1946	.367	.544	.380
Average dwelling value	-.560	-.611	-.557
Other Attributes			
Farm ops. as % of households	.394	N.D.	N.D.

*Significant at the 0.01 level (99.0% confidence)

Table 13.3: Significant* Correlations with Percentage of Total Population 15 Years and Over With a University Degree, 1991

Variable	townships (n=77)	towns & villages (n=50)	total (n=127)
Income Measures			
Average male income	.683	.693	.685
Average female income	.527	.583	.540
Average census family income	.567	.665	.598
% families with incomes $60,000+	.604	.671	.633
% incidence low income families	-.456	–	-.275
% income gov't transfers	-.403	-.528	-.436
Employment Attributes			
% labour force primary industry	-.510	-.386	--
% labour force "white collar"	.738	.395	.556
% labour force out-commuting	.462	–	–
Population Numbers and Change			
Population size 1991	.413	.425	.408
Absolute population change 197 l-9 1	.540	.482	.509
% population change 197 l-9 1	.446	.408	.414
Population Attributes			
% population 40-64	.375	.395	.370
% Ontario born	-.462	-.308	-.401
% immigrants	.367	.284	.341
Children born/1000 women 15-44	-.382	.-402	-.318
Housing Attributes			
% dwelling built before 1946	-.417	-.415	-.391
Average dwelling values	.680	.488	.582
Other Attributes			
% no religious affiliation	.318	--	.244
Farm ops. as % of households	-.452	N.D.	N.D.

*Significant at the 0.01 level (99.0% confidence)

Given the correlations between the two measures of educational attainment and other variables the level of education has considerable "explanatory" utility. The positive link between the level of education and the four measures of income (negative correlations for percentage without a secondary certificate and positive correlations for percentage with a university degree) is indicative of the generally well established association between education and income levels. In part this association is also reflected by the associations between the industry/occupational variables (employment attributes) and educational levels.

The association between levels of education and average dwelling value presumably is a reflection of an association via income levels.
Instructive associations between educational levels and other attributes are also apparent. Consequently the patterns displayed on Figure 13.1 and 13.2 have both positive and negative correlations with many of the other attributes. Tables 13.2 and 13.3 provide the r values of these statistically significant spatial associations.

Percentage Without a Secondary Certificate

On the township map (Figure 13.1) the lower values tend to be located on the outer margins of the study area. The largest block of low values are located on the study areas south eastern margins (nine contiguous townships) and along the Lake Huron shore of Bruce county. Six of the eight towns and villages in the lowest quintile also share these some locations. These areas were the two most notable areas of rapid relative and absolute population growth across the 1971 to 1991 period. We have already seen that there is significant negative correlation between this educational attribute and population growth. The likely explanation is that substantial in-migration brought with it improved levels of education, which are in turn reflected by the high income levels of the same two areas.

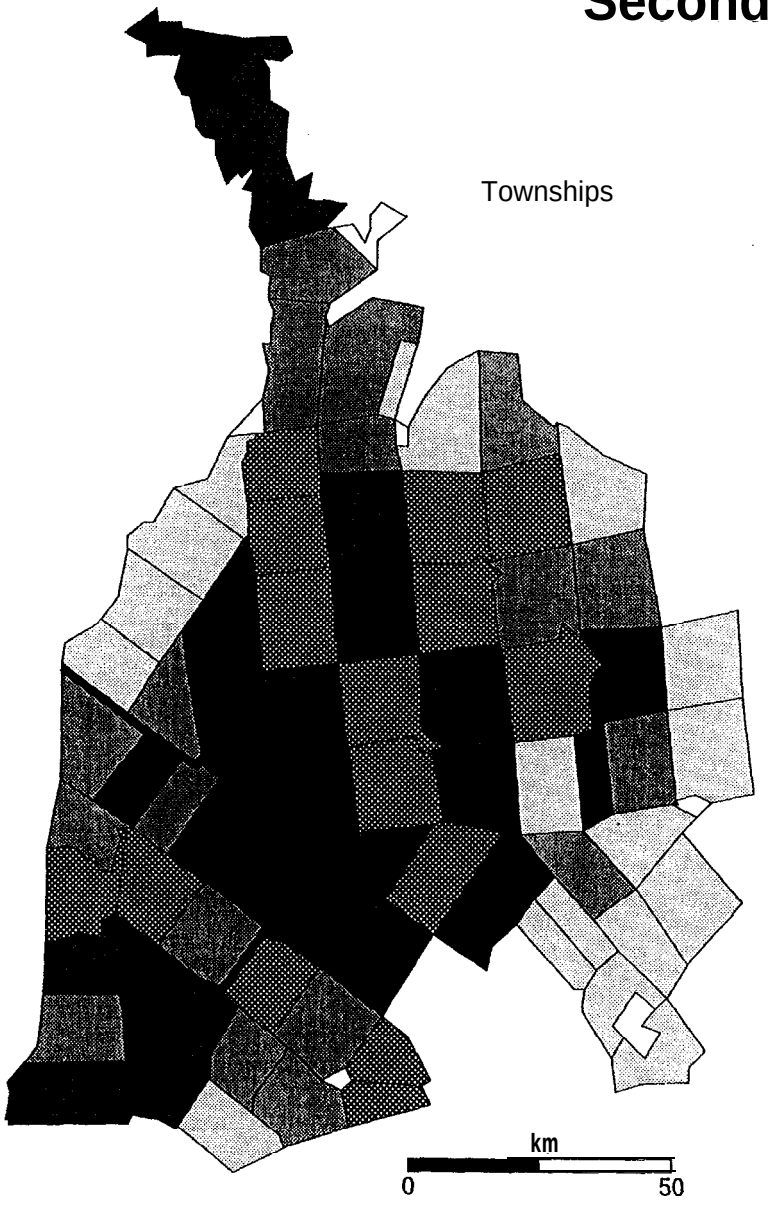
Most of the study area's central part is made up of townships in the two top quintiles, indicative of high proportions without a secondary certificate. This same general area tends to exhibit higher than average township levels of employment in primary industries (Figure 11. 1), farm operations as a percentage of households, Ontario born population and fertility. Towns and villages with high values on the measure also tend to be clustered in the same area.

Percentage With a University Degree

On this figure (Figure 13.2) high values (two top quintiles) for both townships and towns and villages tend to be located on the margins of the study area. While the attribute has a mean of 7.1 and a range of 0.0 to 15.6 nearly half of the range (45%) is captured by the upper quintile. Townships (17) in this quintile are notably clustered; eight form a contiguous block along the area's now familiar south eastern margins and an additional four are located in the amenity rich area of Georgian Bay (Blue Mountain and Beaver Valley) already commented on in connection with high housing values. These two areas also contain three of the nine towns and villages in the top quintile, Elora and Fergus to the south east and Thombury on Georgian Bay. In the area of the Bruce nuclear facility one finds two top quintile townships and an additional three top quintile towns and villages (Kincardine, Port Elgin and Paisley). Exeter, Wingham and the distinctive village of Bayfield complete the upper quintile town and village membership.

While on Figure 13.1 high values characterized the central part of the study area in this case low values for both townships and towns and village tend to characterize this same area. Indeed,

Percentage of Total Population 15 Years and Over Without a Secondary Certificate, 1991



1	27.5 - 36.9
2	37.6 - 42.2
3	42.7 - 46.2
4	46.3 - 49.9
5	50.1 - 70.8

Mean: 42.7

Frequency Distribution

	TP	T&V	Tot.
1	18	8	26
2	18	7	25
3	15	10	25
4	16	9	25
5	10	16	26
Tot.	77	50	127

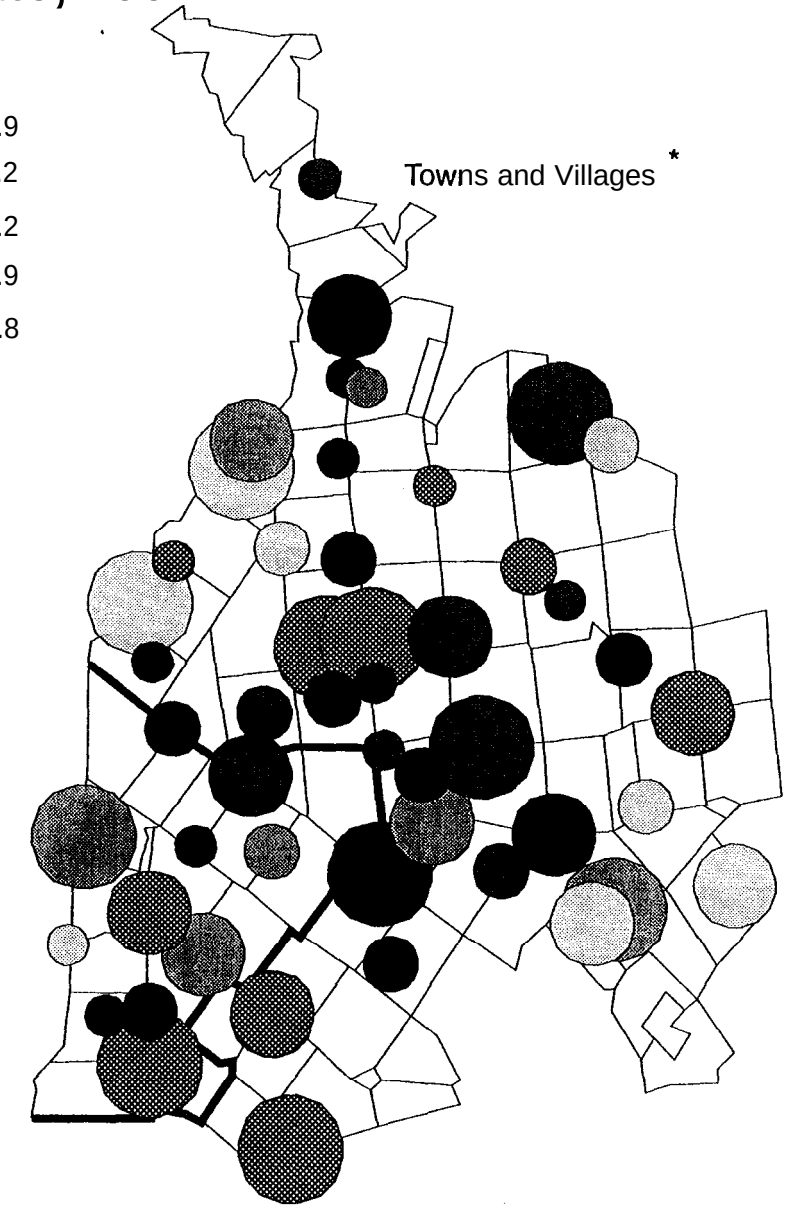
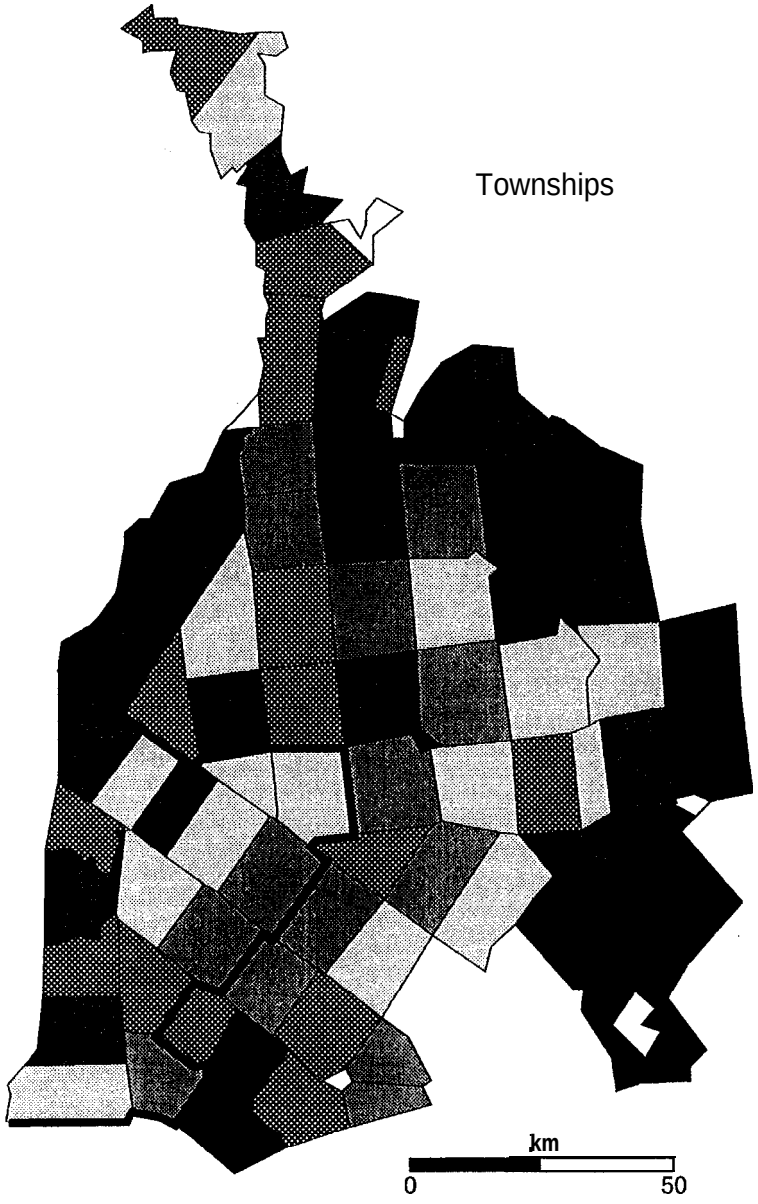


Figure 13.1

* Circle symbols for towns and villages in four size categories based on 1991 population: <1,000, 1 ,OOO-2,000, 2,000-4,000 and 4,000-8,000.

Percentage of Total Population 15 Years and Over With a University Degree, 1991



1	0 - 3.7
2	3.8 - 5.0
3	5.1 - 6.6
4	6.7 - 8.5
5	8.6 - 15.6

Mean: 7.1

Frequency Distribution

	TP	T&V	Tot.
1	15	11	26
2	14	12	26
3	15	9	24
4	16	9	25
5	17	9	26
Tot.	77	50	127

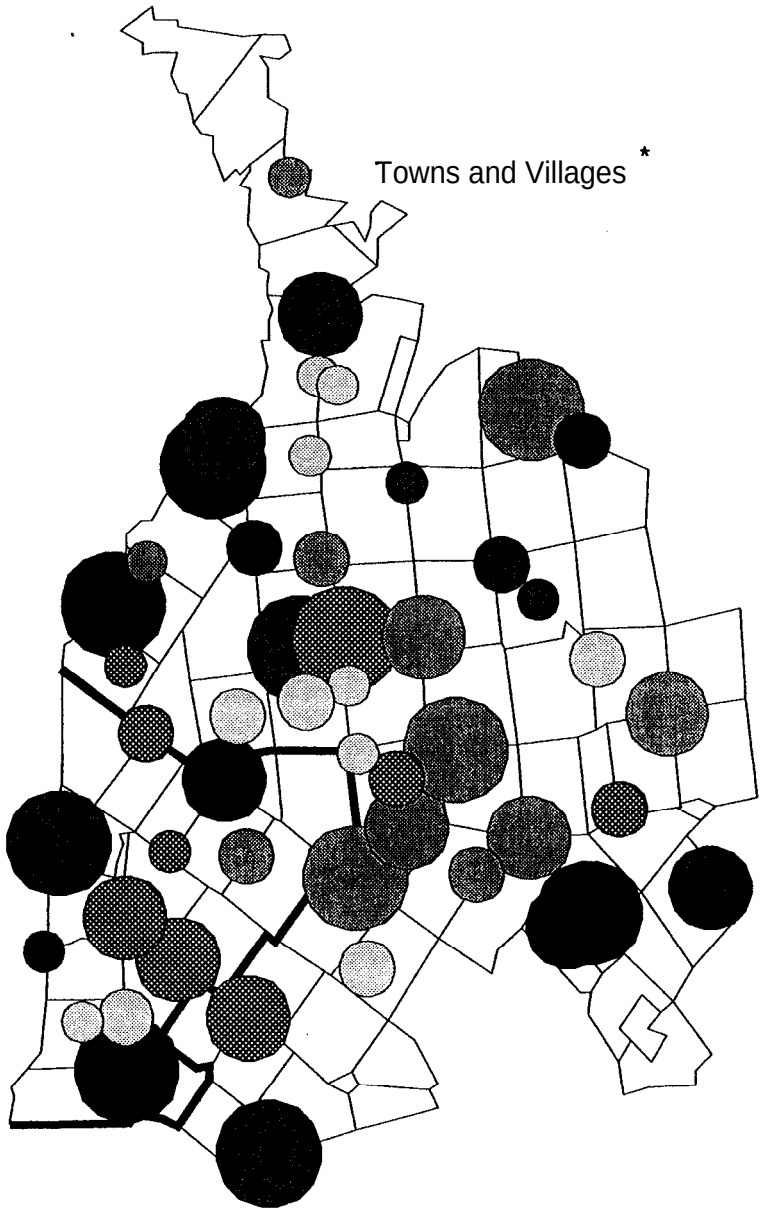


Figure 13.2

* Circle symbols for towns and villages in four size categories based on 1991 population: <1,000, 1,000-2,000, 2,000-4,000 and 4,000-8,000.

contrasts between the margins of the study area and the central part, albeit with somewhat different configurations, are a feature displayed by many of the figures.

The Comparative Position of Huron County

Huron County records a somewhat higher value on percentage of the total population 15 years and over without a secondary certificate than is the case for the study area as a whole (45.4% vs 42.7%), and a somewhat lower value on percentage of the total population 15 years and over with a university degree (5.8% vs 7.1%).
These contrasts are in evidence on Figure 13.1 where one finds 9 of 16 (56.3%) Huron County townships in the two top quintiles vs only 17 of 61 (27.9%) townships in these two quintiles for the remainder of the study area. For the incorporated towns and villages of Huron County, by way of contrast, one finds only 4 of 10 (40.0%) in the two top quintiles compared to 21 of 40 (52.5%) such places for the remainder of the study area.

On Figure 13.2 only 4 of 16 (25.0%) Huron County townships are in the two top quintiles vs 29 of 61 (47.5%) townships for the remainder of the study area. In contrast while 4 of 10 (40.0%) incorporated towns and villages in Huron are in the two top quintiles this is true of a lower proportion of towns and villages in the remainder of the study area where 14 of 40 (35.0%) are so positioned.
Based at least on quintile distribution it would appear that levels of education for the inhabitants of Huron County townships are somewhat below those of other townships in the study area, while the towns and villages of the county fare somewhat better than average.

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