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A Spatial Analysis Of Individual Settlement In Southern London District, Upper Canada, 1800-1836

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A SPATIAL ANALYSIS OF INDIVIDUAL SETTLEMENT IN SOUTHERN LONDON DISTRICT, UPPER CANADA, 1800-1836

by

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ABSTRACT

The migration and settlement of people has formed the substantive focus for many studies in geography. The descriptions of the pattern and sequence of occupance of particular regions form the earliest attempts of this kind and provide general impressions on a unique regional basis. In more recent years, the approach to migration and settlement study has attempted to become more scientific, utilising hypothesis-testing and rigorously selected data. The generalizations derived from work of this kind have greater versatality and provide a basis for comparison and understanding in other regions.

Building upon a framework of previous findings, this thesis tests several hypotheses with regard to the factors that influenced the individual settler in the London District during the early nineteenth century. Important influences in settlement at a continental and regional scale appear to have been (i) the role of official authority, (ii) the ease of access to personal communication with relatives and friends, (iii) the ease of access to principal transportation and communication routes, and to mills, particularly for grinding of grain, and (iv) the land quality of the potential settlement site particularly from the point of view of agriculture.

The first factor of official authority rarely extended to the individual settlement location having largely regional influence in this regard. In the study area of the southern London District of Upper Canada however, the representative of official authority, Colonel Thomas Talbot, had apparently exerted a prolonged and close influence over the settlement of individuals and the progress of the area as a whole.

Detailed records revealed considerable variation in settlement and suggested that Talbot's authority was by no means uniform and may have been much less real than has been suggested in the literature. Records of individual settlement provided data of location, settlement date, origin and kinship of settlers. Scattered descriptions of the study area provided evidence of grist mills and survey notes gave details of the original vegetation for interpretation of land quality.

The factor of Talbot's authority was incorporated in a hypothesis linking settlement date and location along the principal routes of the Talbot Road East and North. The results of simple regression suggested that although elements of planned settlement exist, the degree of control by Talbot was far from uniform.

Ease of access to personal communications was examined on the basis of origin of settlers and the kinship pattern expressed by common surnames. Assuming that later-arriving settlers would attempt to minimize the distance of their selected location from earlier settlers with shared personal characteristics, [illegible] that kinship played a large role in the overall distribution of settlers and involved approximately one-third of settlers before 1818. Origins, expressed by American, Loyalist or "natural-born", British, background were not of evident importance in this regard.

Ease of access to principal routes was incorporated into hypotheses relating location date and distance from the shore of Lake Erie and the nearest main road. The correlation, although significant, proved very weak and access in this form appears to have been of little importance. Access to the site of grist mills was examined by association with early

settled lots and appears to have played a significant role in attracting earliest settlers.

Characteristics of vegetation on the individual settled lots were included in a clustering analysis to identify differences in land quality and associated settlement date. The complexity of the forest association complicated the analysis and may have reflected the futility of attempting to summarize early perception of vegetation. Broad differences in the regional vegetation could be identified however and analysis of variance revealed differences in settlement date between lots having certain specific combinations of vegetation indicators of land quality.

The thesis concludes that the role of Colonel Talbot played a partial, if not substantial, role in the location of settlers in the study area with the factor of kinship having been relatively important in settlement location. Access to mills may have determined important structural aspects to settlement with major routes and land quality, which was not locally very diverse, occupying relatively minor positions in overall settlement.

The conclusions of this study tend to contradict certain generalizations derived from work in other areas. Results in this case tend to reduce the role of accessibility to main routeways and emphasize the importance of access to relations and to a lesser degree compatriots and grist mills. This suggests that accessibility to the mere tangible artifacts of communications networks such as roads is a measure too crude to reflect real influences on settler decision-making. Where accessibility to roads and other communications links has appeared elsewhere to explain the process of settlement, it may merely have coincided in those areas

with the seemingly more telling influences of kinship, acquaintance and access to mills.

The results suggest that in order to explain the selection of individual settlement locations, recourse must be made to information of kinship and acquaintance for those people seeking land in the area. The detailed level of inquiry of this sort may defy analysis by means of normative hypothesis-testing owing to variation in personal levels of satisfaction. Perhaps after much preliminary descriptive work on detailed records of individual settlers, a set of standard measures may be arrived at to represent meaningfully the perception of access for particular regions, periods or groups of people.

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The author is indebted to the following people for invaluable help in production of the thesis; the members of the Geography Department, Trent University and in particular, Dr. Peter Adams, Chairman, for his support and encouragement at all times, Ken Bauman for preparation of figures and to my wife, Cathy, for her constant encouragement and painstaking typing and re-typing of the thesis.

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The conceptual basis for this present historical geographical study of settlement is derived from writing of both a traditional and a more scientific character. The generalizations of the traditional works are less explicit in most cases than in the latter but are essential to the present study owing to a general dearth of scientific findings in the field. Hypotheses are postulated largely on the basis of findings couched in somewhat vague terms and often having only an oblique relevance to the hypothesis to be tested here. Nevertheless the hypotheses postulated in the thesis are not plucked from thin air. Rather they fall into the a posteriori[8] category of hypothesis having been built on the findings of previous research and adapted to the particular circumstances of the study area.

Methodology

The methodology of the thesis is essentially scientific and despite the relatively few theses in historical geography under this aegis attempts to employ historical data to test hypotheses relating to the substantive focus of interest. In simple terms the central problem attacked in the study is the explanation of the choice of location for settlement by individuals within the southern London District, part of the Talbot Settlement, in the early nineteenth century.

The records on settlement by individual people in London District and Upper Canada as a whole appear voluminous at first glance. The relative recency of much settlement and the excellence of archival preservation has ensured such documents are extant. At a closer inspection however many recorded activities of individuals provide relatively

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[8] Ibid., p.35.

Other approaches are essentially descriptive and exceptionalist,[4] seeking to define distinct regions and periods and avoiding generalization and universal truths.

The philosophical thrust of these relatively early works has been replaced in more recent years by the paradigm of scientific inquiry in which hypothesis-formulation and testing has anteceded the formulation of laws and general theory.[5] Evidence of widespread regularities in human society and a conscious effort to examine spatial relations between terrestrial locations rather than the locations themselves, has contributed to the scientific trend in geography. Ancillary factors such as the increase in the volume of data, necessitating greater organization and efficiency, and the emergence of the computer, have also stimulated statistical testing of hypotheses. Generalizations concerning geographical phenomena are now sought explicitly, ideally building upon concepts and previous theory and contributing to an ever expanding set of universal laws.

The difficulties of pursuing the scientific approach completely in geography are akin to those experienced in any non-experimental research.[6]

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[4]Schaefer, F.K., Exceptionalism in Geography, A.A.A.G., V.43, p.226-249.

[5]Chorley and Haggett, op. cit., p.33.
Abler R., Adams, J.S., and Gould, P., Spatial Organization - The Geographer's View of the World, New Jersey, 1971, p.31.

[6]Blaylock, H.M. Jr., Causal Inferences in Non-experimental Research, New York, 1961, p.22.

A sequence of events is observed with greater or lesser accuracy of measurement and the researcher attempts to explain the effect of the sequence in terms of the preceding events. If the latter are few in number a relatively direct link may be found. If the sequence of events is complex, as is usual in the real world, the number of human decisions may be almost infinite and defies ready description or analysis.

The problem of creating an experimental situation in which the chain of events, or process, is simulated, becomes exaggerated in geography when the topic of study is set in the remote past. In this case the data themselves are fugitive and mere description of the events leading to the final situation is very difficult. Harvey has described four alternative ways of explaining cause in historical geographical study. He identified the ideal as involving a detailed examination of all pertinent events contributing to the process in question and noted this has rarely ever been carried out. The less complex methodology of narration of facts in a "story-telling" type of explanation has been for more in evidence.[7] In human geographical explanation the available evidence is employed in such a way as to provide an impression of the locational relationship of individual decision-makers. The characteristics of both people and their environment offer clues to the factors influencing decisions and reflect the perceived locational relationships of the decision-makers. Each individual decision represents an event and the sequence of decisions a chain of events. Viewed individually or in aggregate, the decisions, or events, may be cited as causal factors in geographical patterns or processes.

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[7] Harvey, David, Explanation in Geography, London, 1969, p.421.

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[8] Ibid., p.35.

poor data on the actual decision-making behind settlement. The most rudimentary information required for locating the decision-maker spatially and temporally is rarely available, the former being more commonly recorded than the latter. In order to date the decision of importance in the analysis at hand, considerable interpretation of the temporal data is necessary and assumptions are introduced for purposes of using such information.

The sequence of settlement events at the scale of the individual decision-maker provides the basic means of describing the overall settlement process. The spatial and temporal measures of individual settlement are necessary in addition for testing hypotheses incorporating factors believed to have influenced settlers' decisions. These factors include the character and intention of individuals, such as major decision-makers in the settlement process as well as the ordinary settler, and such factors include environmental characteristics of the settled area including the tangible network of communications, the functional establishments within it and the natural resources, such as agricultural land quality. Information on these aspects of the historical scene is available in a variety of records and is selected for inclusion in the analysis if it corresponds locationally to the settlement events.

If the social, economic and environmental factors are described at the scale of the individual decision-maker so that their spatial and temporal location is comparable, then these factors may be incorporated into the analysis. This step may involve considerable interpretation and introduction of assumptions into the analysis. Data of location may be aggregated in certain instances where less detail is available in terms of a factor believed to have been important in decision-making.

As a result the somewhat weak data are reduced to a form in which they may be a sound basis for hypotheses-testing and explanatory conclusions.

The method of analysis chosen in this study is to employ several hypotheses, each relating the settlers' locational decision to factors of a social, economic or environmental character. In each hypothesis one factor is described and linked causally with the spatial location of settlement. An assumption behind the analysis is that the postulated factors have a mutually exclusive influence such that each was related in a particular manner to the decision to settle. This assumption underlies the separate testing of hypotheses which was necessary principally because of the difficulties of employing the same level of measurement with each explanatory factor. The results of hypothesis-testing are to collectively contribute to the explanation of the central problem attacked in the study; that of the choice of settlement location by individual people. The factors that affected the decision-making underlying this choice were hinted at by Guillet in his comment that:-

> Some settlers came to Canada under complete government supervision, while others, having attached themselves to emigration societies, had most of their choices made for them. The vast majority, however, had some control over the location of their new home, and if they had not already decided to settle near relatives or friends there was an important problem to be solved.[9]

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[9] Guillet, E.C., The Pioneer Farmer and Backwoodsman, Toronto, 1963, Vol. 1, p.263.

The problem concerned the choice of land on which to settle and its solution obliged the settler to make a decision that reflected his assessment of both natural and socio-economic conditions confronting him. The existence of several factors that may have influenced the individual settler in his decision-making poses a problem of causal explanation and analysis. The principal factors have been identified from the literature as having been the authority of Colonel Talbot, the government official in charge of settlement; the accessibility of locations for settlement to various points of importance to immigrant settlers and the character of the locations available for settlement for the livelihood and way of life of the settlers. The individual factors are included in individual hypotheses which are postulated separately to bring full focus on the factor in question and to utilize available data to the fullest extent. The sequence of hypothesis-testing is that of the following factors; first and foremost, the factor with the greatest potential influence is Colonel Talbot's own scheme for settlement; access is considered next in terms of distance from relatives or compatriots, from principal routes and from grist mills, the functional establishment of paramount importance to most farmers. The third principal type of influence on individual settlement, that of the environmental character of selected locations, is considered last.

The hypothesis is tested in each case in the most appropriate manner considering the level of measurement and the strength of the underlying assumptions. The most important assumption employed in the analysis is that the settlers obeyed normative laws which can be arrived at through the postulation of deterministic models

of behaviour.[10] In every stage of analysis certain causal factors are identified such as that of Colonel Talbot or accessibility to relatives, as having inspired a particular response in the location of settlers.

Previous Work In Settlement Geography

As Kohn[11] suggested, much of the literature in the ill-defined area of settlement geography may be divided into studies of form, largely European in origin, and of settlement process, which until recently, owing to the impact of Turner's frontier thesis,[12] have been predominantly North American. This is reflected on the one hand in the work of such georgaphers as Meitzen and Dickinson[13] on the form of rural settlement in Germany and on the other by Bowman[14] and Mackintosh and Joerg,[15] in their studies of the contemporary frontier and pioneer fringe. Only in the period since World War II have a substantial number of studies of settlement pattern and form emerged in North America as a result, at

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[10] Abler, Adams and Gould, op. cit., p.456.

[11] James, P.E., and C.F. Jones, (eds), American Geography; Inventory and Prospect, Syracuse, 1954, Kohn, C.F., Chapter Five, "Settlement Geography", p.124-141.

[12] Turner, F.J., The Frontier in American History, New York, 1962.

[13] Meitzen, op. cit., Dickinson, op. cit.

[14] Bowman, op. cit.

[15] Mackintosh, W.A. & Joerg, W.L.G., Canadian Frontiers of Settlement, Toronto, 1934-1936 (9 volumes).

least partially, of stimulus from previous European efforts.[16] Recent studies of settlement process in Scandinavia have been completed by Stone,[17] Mead,[18] Enequist,[19] and Bylund,[20] in which the latter in particular, introduced a normative analytical approach to the problem. Approaching the subject of rural agricultural settlement from a more global viewpoint, Chisholm[21] attempted to deduce the general influences that contributed to locational decision-making by the individual farmer. This and other related studies have identified the following natural and socio-economic environmental factors which with varied emphasis are proposed as having importance in the settlement decision.

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[16] Christaller, Walter, Die Centralen Orte in Suddeudtschland, Jena 1933, republished as Central Places in Southern Germany, translated by C.W. Baskin, Englewood Cliffs, New Jersey, 1966. Christaller's seminal study of the central place hierarchy and spatial pattern stimulated location theory in North America and Europe. Studies of rural settlements in North America include; Trewartha, G.T., The unincorporated hamlet: one element in the American Settlement fabric, A.A.A.G., V. 33, 1943, p.32-81, Hudson, J.C., A location theory for rural settlements, A.A.A.G., V. LIX, No. 2, 1969, p.365-381, Kniffen, F., Louisiana House Types, A.A.A.G., V. 26, 1936, p.179-193; and Folk Housing--a key to Diffusion, A.A.A.G., V. 55, 1965, p.549-577.

[17] Stone, K.H., Norway's Internal Migration to New Farms since 1920, European Demographic Monographs, No. 1, The Hague, 1971.

[18] Mead, W.R., Frontier Themes in Finland, Geography, Vol. XLIV, 1959, p.145-156.

[19] Enequist, Gerd, Geographical changes of rural settlement in Northwestern Sweden since 1523, Uppsala Universitets arsskrift, 1959, No. 8, Uppsala and Advance Retreat of Rural Settlement in Northwestern Sweden, Geografiska Annaler, Vol. XLII, No. 4, 1960, p.211-220.

[20] Bylund, Erik, Theoretical Considerations regarding the distribution of settlement in Inner North Sweden, Geografiska Annaler, Vol. XLII, No. 4, 1960, p.225-231.

[21] Chisholm, Michael, Rural Settlement and Land Use, London, 1962, p.41.

Official government planning and assistance has been of increasing importance in settlement, affecting both individuals and groups of settlers. As Bowman[22] suggests, official authority has been a factor of particular importance in settlement during the present century although present at earlier times as well to a varying degree.

The ease of access to social institutions, groups and members of the same family is a factor of great importance in settlement. The isolation and quality of life of the settler may be greatly influenced by the accessibility of social contacts to be found in religious and cultural institutions, in those of common background and particularly among those in the same family. Widespread recognition of the importance of social contact emphasises its role in settlement location.

The quality of life is also closely related to the economic success of the settlement and two factors have been identified in the literature that may be of great importance in this regard. The first, ease of access to transportation and communication routes, relates to the accessibility of potential markets and supplies to the settlement. Separate components of this factor reflect particular needs of settlement, and include the ease of access to water-supply, building-materials, fuel, in addition to major transportation routes. The second factor of economic importance may be termed the quality of the settled land. The general pedologic and climatic characteristics of the land determined to a great extent its agricultural potential and were a fundamental consideration in the settlement decision. All four factors described

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[22] Op. cit., 1937, p.1.

have been identified with varying regional and local significance in studies of agricultural settlement.[23]

Many regional studies in North America have also contributed to our knowledge of the decision to settle, although they are frequently addressed to problems other than the settlement process. The conclusions reached by Bidwell and Falconer[24] and by P.W. Gates[25] are of this order and tend to confirm those listed above. In affirming the importance of accessibility in pioneer settlement, both suggested that apart from markets, access to sources of credit was important in early settlement.[26] These and other writers have concluded that the ability to discriminate with regard to the quality of land for agricultural settlement varied according to the background and nationality of the settlers. Recent findings of Lemon[27] and A.H. Clark[28] dispute this conclusion and support the importance of the abovementioned factors in settlement rather than the "cultural baggage" of a group of settlers.

Research in the field of Upper Canadian settlement and statements

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[23]Guillet, op. cit., Bowman, op. cit., 1931, p.12, Stone, op. cit., Mead, op. cit., p.152-3, Bylund, op. cit., p. 231 and Chisholm, op. cit., p.114.

[24]Bidwell, P.W. and J.I. Falconer, History of Agriculture in the Northern United States, 1620-1860, Carnegie Institute Publication, No. 38, New York, 1941.

[25]Gates, P.W., Problems in Agricultural History, 1790-1840, Agricultural History, Vol. 46, No. 1, 1972, p.41.

[26]Bidwell and Falconer, op. cit., p.75, and 153 and Gates, P.W., op. cit., p.42.

[27]Lemon, J.T., The agricultural practices of national groups in eighteenth century south-eastern Pennsylvania, Geographical Review, Vol. LVI, No. 4, 1966, p.465.

[28]Clark, A.H., Suggestions for the geographical study of agricultural change in the United States, 1790-1840, Agricultural History, Vol. 46, No. 1, 1972, p.159.

by contemporary writers have emphasised the importance of all the above factors including the nationality of settlers. Reaman[29] concluded that German settlers were more successful than English or Scotch Irish settlers in Upper Canada owing to the tendency for all those groups to settle on land similar to that in their own countries. In the case of the German settlers the soils selected were heavy and forested and generally fertile, the other British settlers tended to select lighter soils and hillier terrain which was generally less fertile than the European equivalent. The conclusions reached by Reaman are disputed by the findings of Lemon, in particular.

Government control of land alienation[30] may have been the most important influence on settlement in Upper Canada particularly during the period of military vigilance before this. During this period the geometrical patterns of townships, concessions and lots were surveyed and relatively large proportions were reserved from settlement for specific official purposes. The government sought to gain financial income from Crown, Clergy and School reserves and to set aside important locations by creating townsite, Indian and masting, or timber reserves.[31] The reserves persisted for varying lengths of time depending both upon category and location and owing to their presence, large areas of the province were virtually excluded from settlement.

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[29] Reaman, G.E., The Trail of the Black Walnut, London, 1957, p.131.

[30] Paterson, G.C., Land Settlement in Upper Canada, 1783-1840, Government of Ontario, Department of Archives, Annual Report, No. 16, 1920, Macdonald, Norman, Canada 1763-1841 Immigration and Settlement, London, 1939, Gates, L.F., Land Policies of Upper Canada, Toronto, 1968, Wilson, G.A., The Clergy Reserves of Upper Canada, Toronto, 1968.

[31] Richards, J.H.B., Lands and Policies; Attitudes and Controls in the Alienation of Lands in Ontario during the First Century of Settlement, Ontario History, 1958, V. 50, p.194.

Apart from government reserves, the authorities had, from the inception of the province, disposed of relatively large areas of land to privileged individuals either for settlement under their supervision or merely in payment for military or other service. Many of these grants remained in private often non-resident hands for a long time, acting as a speculative investment for the owners and a burden on genuine settlement attempts. The inability of the authorities to correct such a situation by means of effective property taxation, or similar measures, may have exerted an indirect effect on settlement, in that wise settlers would have avoided areas with much land of this type.

Both Gentilcore[32] and C.J.B. Wood[33] have noted the fundamental effect of official control on settlement although C.J.B. Wood correctly distinguished between its effect at the province-wide, and the local or individual settler, scale. Individual settlers were not involved with overall policy on land disposal but rather with selection from that land available for settlement. Official control of land did not generally extend to the point of allocating particular parcels to particular settlers although where control was this close the individual settlement location was directly affected by the official decision rather than that of the settler.

The ease of access to those of common family or social background was apparently an important factor in Upper Canadian settlement. Many

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[32] Adams, W.P. and Helleiner, F.M., (eds), International Geography, 1972, La geographie Internationale, Gentilcore, R.L., Change in settlement in Ontario (Canada), 1800-1850's, a correlation analysis of historical source materials, Toronto, 1972, p.419, and Gentilcore, R.L., Lines on the Land, Ontario History, V. LXI, 1969, p.57.

[33] Wood, C.J.B., Human Settlement in the Long Point Region, 1790-1825, unpublished M.A. thesis, McMaster University, 1966, p.72.

cultural characteristics exist as bases for classification of settlers although only a few may meaningfully represent a trait or influence of importance in the settlement decision. The sharing of certain cultural characteristics such as race or language may have been insufficient to exert a locational influence in the settlement process. Other characteristics such as family and kinship almost undoubtedly played a major role in settlement.

Catharine Parr Traill's personal experience serves as an example of operation of the factor of access to relatives on settler location:-

> "We are then to remain with my brother...till we have got a few acres chopped and a log-house put up on our land... which we have been so fortunate to draw in the neighbourhood of (his lot)... A creek divides our lot from my brother's settlement...so that we shall not be quite so lonely."[34]

Specific evidence of location close to relatives such as the above is rare in Upper Canada and has been deduced for the most part as having been important. The evidence of kinship and family ties itself is thin and lies behind the absence of definitive statements with regard to the operation of this factor.

Although more is known generally in the case of shared characteristics such as nationality, religion or others that may influence location of settlers, the explanation of settlement in the same area is often restricted by poor sequential information or inadequate knowledge of decision-making and leadership within the group in question.

Many examples of group immigration and settlement existed in

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[34]Traill, C.P., The Backwoods of Canada, London, 1836, p.80.

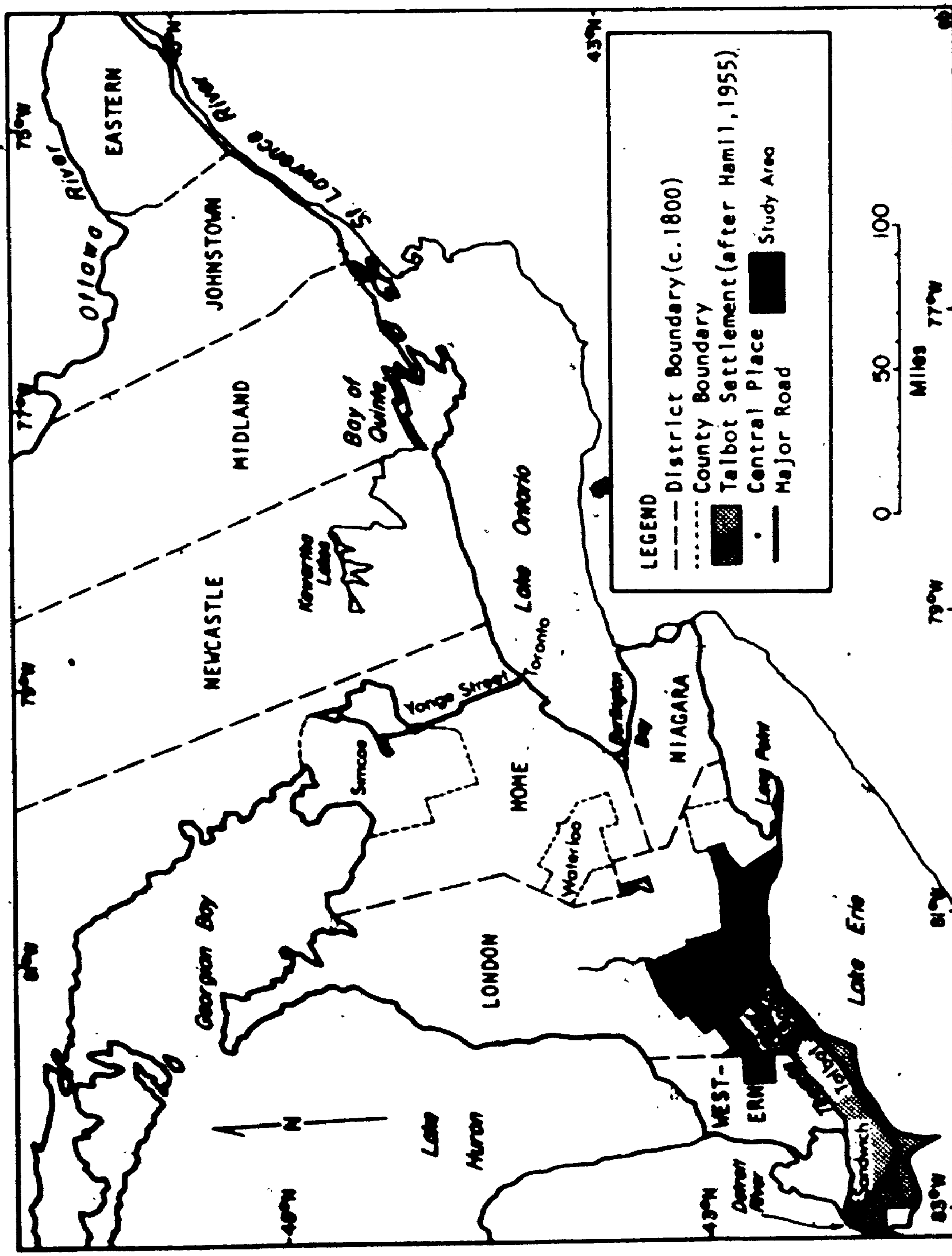
LEGEND
District Boundary (c.1800)
County Boundary
Talbot Settlement (after Hamil, 1955)
Central Place
Major Road
Study Area
0 50 100
Miles
EASTERN
JOHNSTOWN
MIDLAND
NEWCASTLE
HOME
LONDON
NIAGARA
WEST-
ERN
Ottawa River
St. Lawrence River
Bay of Quinte
Lake Ontario
Toronto
Yonge Street
Simcoe
Waterloo
Burlington Bay
Long Point
Lake Erie
Georgian Bay
Lake Huron
Sandwich
Detroit River
N

Figure 1.1

Upper Canada in which supervision by the government played a principal role in the location to be chosen. One such settlement scheme was that supervised by Peter Robinson in 1825 in the Newcastle District of Upper Canada,[35] Figure 1.1. Settlers were placed on land largely in six townships and formed quite compact groups. The extent to which social factors, such as kin- and friendship, influenced settler location, may be examined in this case. Preliminary findings suggest that common parish origins and common emigration ships may have been the basis for acquaintances that created groups of settlers in Upper Canada.[36]

In cases where supervision was less evident, certain groups of settlers appear to have responded to particular common characteristics in their locational choice. Howison mentioned "the condensed population" of the Talbot Settlement making it attractive to settlers in contrast, presumably, to land without continuous settlement owing to speculation, or reserves of land.[37] Haldane suggests that the Mennonite farmers who settled in the Waterloo County area of Upper Canada in 1800 deliberately located close together because of their communal interdependency,[38] and Guillet cited an example of Scottish settlers tending to locate close together whether, or not, they were closely related, or even acquainted, prior to settlement.[39] Other groups such as the Irish and the amorphous

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[35]Pammett, H.T., Assisted Emigration from Ireland to Upper Canada under Peter Robinson in 1825, Ontario History, V. 31, 1936, p.178-214.

[36]Ferguson, G.R., The Peter Robinson Emigration of 1825, unpublished B.A. thesis, Trent University, 1972, p.65-69.

[37]Howison, John, Sketches of Upper Canada, Edinburgh, 1821, p.167.

[38]Haldane, E.A., The Historical Geography of Waterloo Township, 1800-1855, unpublished M.A. thesis, McMaster University, 1963, p.44.

[39]Guillet, op. cit., p.232.

"gentry" class of settlers sought those areas and communities which would have a source of familiarity for them. Kelly,[40] in a study of Simcoe County, identified the "neighbourhood" as an entity in early settlement, which possessed characteristics of both common settler background and shared social and economic life. The recognition of "neighbourhoods" in the early settlement phase may throw light on the aggregate behaviour of settlers in Upper Canada although provides a relatively blunt instrument for the analysis of individual decisions.

The influence of accessibility with regard to personal communication through social and cultural contact appears to have been important in the overall settlement of Upper Canada. The recognition of the operation of particular characteristics on the individual settlement decision has not been attempted by and large and yet is a necessary step in the explanation of such settlement.

Accessibility of potential settlement to the network of transportation and communication was mentioned by early writers as a factor important in determining the value of land for agricultural settlement. The St. Lawrence river and the Great Lakes formed the principal artery of communication in Upper Canada and Boulton, in 1805, described the value of land as being "more or less in proportion to its situation and goodness, although poor land is very rare."[41]

The importance of accessibility has been stressed by numerous later writers in describing the progress of settlement in early Ontario.

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[40] Kelly, Kenneth, The Agricultural Geography of Simcoe County, Ontario, 1820-1880, unpublished Ph.D. thesis, University of Toronto, 1968, p.24-25.

[41] Boulton, D'Arcy, A Sketch of His Majesty's Province of Upper Canada, London, 1805, p.6.

The network of communications may be thought of as having an important function both for travel and trade to other regions and countries and also for contact of a social nature with other people which sometimes involved relatively short distances.

The importance of natural or water-based communication and travel as a basic factor in settlement was recognized by several writers, including Jackson, Kirk, Richards, and Gentilcore.[42] Kirk noted that river and lake transport was superior to land communication and was the main reason for the extension of riparian settlement in the province. He pointed out, however, that access points, or natural harbours, on the southern coast of the province were few owing to high cliffs for great distances.[43] Entry from the lakes was restricted as a result to a few ports which attained importance in the period of settlement.

Several workers have described the significant role played by roads, in directing settlement away from the major lakes and rivers.[44]

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[42] Jackson, W.A.D., A geographical study of early settlement in southern Ontario, unpublished M.A. thesis, University of Toronto, 1949, p.62, Kirk, D.W., Southwestern Ontario; the areal pattern of urban settlements in 1850, unpublished Ph.D. thesis, Northwestern University, 1949, p.10, Richards, J.H.B., Land use and settlement patterns on the fringe of the shield in southern Ontario, Chapter Seven, unpublished Ph.D. thesis, University of Toronto, 1954, and Gentilcore, R.L., Beginnings of Settlement in the Niagara Peninsula (1782-1792), Canadian Geographer, Vol. VII, No. 2, 1963, p.73.

[43] Kirk, ibid., p.26.

[44] Whebell, C.F.J., The Geographical Basis of Local Government in Southern Ontario, unpublished Ph.D. thesis, University of London, 1961, p.76, Haldane, op. cit., p.33, Wood, C.J.B., op. cit., p.74, Kelly, op. cit., p.20, and Gentilcore, R.L., ed., Ontario-Studies in Canadian Geography, 2, Settlement, Toronto, 1972, p.24.

The principal roads of Upper Canada responsible for settlement spread in this way were Yonge Street, acting as a link in the route between Lake Ontario and Georgian Bay, and the Commissioners Road, linking the western end of Lake Ontario with the River Thames valley. Later roads achieved prominence, including the Talbot Roads developed in the second and third decades of the nineteenth century in the southwest portion of the province. Further support for the importance of accessibility to land communications links is found in C.J.B. Wood's work in the Long Point, Norfolk County area. He found that individual settlers located on lots of land both sides of main trails such that "the occurrence of locations from the trails shows that there is a regularity that is maintained through time."[45]

In his analysis of individual settlement in the Western District of Upper Canada, Clarke used the distribution of extreme positive residuals from a cubic trend surface to interpret the importance of accessibility to lines of communication. He identified the influence on settlement of "...access via the coast, and the Thames (River) and the road network particularly the Talbot Road."[46]

In a study of settlement in York County McIlwraith arrived at somewhat different conclusions. Early settlers did not require road access

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[45] Wood, C.J.B., op. cit., p.74.

[46] Clarke, John, A geographical Analysis of Colonial Settlement in the Western District of Upper Canada, 1788-1850, unpublished Ph.D. thesis, University of Western Ontario, 1970, p.172.

to their lots at the outset and roads were not found to have been an important influence at first although they subsequently became important because they appeared in the vicinity of active settlement and thus attracted later immigrants.[47]

The ever-present need for purchasing power by the individual and the widespread absence of cash in Upper Canada established a need for credit in the early settlement period.[48] Credit may have varied considerably in form being cash, goods or services and sources of credit may have likewise varied from the bank, or similar financial establishment at one extreme, to a neighbouring settler at the other. The need for and access to, credit varied among individuals and without detailed information very little may be said with regard to the influence of credit on settlement. The general scarcity of cash sources is reflected in the experience of Edward Ermatinger, who arrived in the village of St. Thomas in 1830, then the chief centre of the Talbot Settlement, and was told that "there is some opening for business at some risk, as credit must be given."[49] In this same area, the general poverty of many of the settlers[50] increased their dependence for assistance, or credit of one kind or another, from other inhabitants and the principal source of assistance with regard to actually acquiring land was Colonel Talbot,

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[47] McIlwraith, T.L., The Adequacy of Rural Roads Before Railways: An Illustration from Upper Canada, Canadian Geographer, Vol. XIV, No. 4, 1970, p.350.

[48] Jones, R.L., History of Agriculture in Ontario, 1613-1880, University of Toronto Studies, History and Economics Series, V. XI, Toronto, 1946, p.67.

[49] Ermatinger, C.O., The Talbot Regime, St. Thomas, 1904, p.135, the author quotes from the diary of his father, Edward Ermatinger, from July 6th, 1830.

[50] Coyne, J.H., (ed.), The Talbot Papers, Transactions of the Royal Society of Canada, 1907-08, V.1, Section II., p.38.

for in Hamil's words, "the unlimited credit accorded his settlers for the payment of fees brought in very little revenue to the government..."[51] The variation that may have existed in terms of individual need and access with regard to credit and the concomitant lack of information necessitates the elimination of this factor from further consideration.

Other important requirements in agricultural settlement in Upper Canada may be summarised by the location of water-supply and the location of timber both for fuel and building-material. Water may not have been as important a locational factor as in less humid areas for as Boulton noted, "...the climate here is so good, and the springs so numerous, that large quantities of cattle may be raised at little expense."[52] C.J.B. Wood's findings in the settlement of the Norfolk County area support the idea that water-supply was of locational significance in that lots with "plains and oak association...where water is not available" were avoided, although "only the occasional or chance lot is without water."[53] In limited areas of poor natural drainage, settlement was delayed by and large until the latter part of the nineteenth century and the advent of artificial drainage practices.[54] Dalgleish, Jackson, Kirk, L.J. Wood

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[51] Hamil, F.C., Lake Erie Baron, Toronto, 1955, p.122.

[52] Boulton, op. cit., p.60

[53] Wood, C.J.B., op. cit., p.76

[54] Clarke, op. cit., p.187.

and Gentilcore[55] noted the early importance of water-powered mills in settlement and suggested that the presence of water in sufficient volume for power-supply may have been a primary locational factor for nucleated settlement. The ease of access to water-powered mills may have been an important influence at the level of the individual settlement decision.

The requirement of fuel and building-material may be discussed together in terms of the ease of access of individual settlers to these resources, primarily wood in the Upper Canadian context. Settlers in the Province, as in north-east North America as a whole, were surrounded by forests covering large areas. Certain trees, such as white pine, may have been long-established locational factors for those, entrepreneurial by nature, who engaged in lumbering.[56] Pine was reserved for government purposes although illegal exploitation undoubtedly occurred but its distribution in the province was scattered and played only a local role in locational terms, particularly in the south-western part of the province.[57] The ubiquitous forest cover was interrupted by clear areas called "oak plains" at scattered locations, which may have both attracted and deterred settlement according to different interpretations of settler perception.[58]

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[55] Dalgleish, W.M., The Economic History of the County of Middlesex, Canada, prior to the building of railways, unpublished M.A. thesis, University of Western Ontario, 1923, p.93, Jackson, op. cit., p.193, Kirk, op. cit., p.10, Wood, L.J., Settlement of the Mt. Elgin Ridges, Ontario, unpublished M.A. thesis, University of Western Ontario, 1966, p.41, Gentilcore, op. cit., 1963, p.78.

[56] Jackson, op. cit., p.68.

[57] Talbot, E.A., Five Years Residence in the Canadas, London, 1824, p.160.

[58] Warkentin, John, Canada-A Geographical Interpretation, Spelt, Jacot, Chapter 11, Southern Ontario, Toronto, 1967, p.340 and Wood, J.D., The Historical Geography of Dumfries Township, Upper Canada, 1816-1852, unpublished M.A. thesis, University of Toronto, 1958, p.49, and The Woodland-Oak Plains Transition Zone in the Settlement of Western Upper Canada, Canadian Geographer, Vol. V, No.1, 1961, p.43-47.

The requirements of fuel and building-material appear to have been relatively easily satisfied in most areas of the province and did not play a fundamental locational role in individual settlement.

The fourth factor identified as primarily important in the settlement decision was that of the quality of land and its significance at the provincial scale is confirmed by numerous contemporary and later writers.[59] A survey by Kelly of the published guides for aiding potential settlers in Upper Canada, noted that the guides emphasised use of indicators of forest vegetation and local drainage conditions as the fundamental means to determine land quality.[60]

In a more rigorous analysis of settlement in the Western District of Upper Canada, Clarke demonstrated a significant association between land quality and the spread of individual settlement throughout the area.[61] In direct contrast to the majority of the above statements are rather more recent findings by Gentilcore,[62] Brunger[63] and Johnson[64] which re-

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[59] Boulton, op. cit., p.6, Howison, op. cit., p. 167, Talbot, E.A., op. cit., p.159, Dunlop, W.H., Statistical Sketches of Upper Canada, for the Benefit of Emigrants by a Backwoodsman, London, 1832, p.112, Pickering, Joseph, Inquiries of an Emigrent being the Narrative of an English Farmer, from the Year 1824 to 1830, London, 1832, p.69, Jackson, op. cit., p.1, Kirk, op. cit., p.17, Reaman, op. cit., p.163, Wood, J.D., op. cit., 1958, p.60, Gentilcore, op. cit., 1963, p.73, Gibson, E.M.W., A Sequent Occupance Study of the Norfolk Sand Plain with special reference to urbanism, unpublished M.A. thesis, University of Western Ontario, 1963, p.20.

[60] Kelly, Kenneth, The Evaluation of Land for Wheat Cultivation, Ontario History, Vol. LXII, 1970, p.57-64.

[61] Clarke, op. cit., 1970, p.173, and p.192.

[62] Adams and Helleiner, (eds), op. cit., p.419.

[63] Ibid., Brunger, A.G., Analysis of Site Factors in Nineteenth Century Ontario Settlement, p.402.

[64] Johnson, L.A., Land Policy, Population Growth and Social Structure in the Home District, 1793-1851, Ontario History, Vol. LXIII, 1971, p.44.

ported that no significant relationship was apparent between early settlement in Upper Canada and physical conditions of land quality. Agricultural land quality may have had a significant influence upon individual settlement in parts of the province although the numerous generalizations to this effect require further substantiation.

An additional factor related to land quality in a general sense has received brief mention in the literature on provincial settlement and may be termed the element of amenity. Both Guillet[65] and Wagner[66] have noted that the picturesque quality of the Kawartha Lakes landscape, for example, appears to have been a major factor in the decision of certain educated and prosperous people to settle there in the 1830s and '40s. Similar response to the grandeur of the scenery may have occurred in other areas of the province[67] and may have greatly influenced such settlers as Colonel Thomas Talbot,[68] but the proportion of total settlers so influenced was probably minute considering the relatively harsh conditions of colonial life, the poverty of many new settlers and the near illiteracy of others.

Settlement in Upper Canada as a whole was initially closely linked to the pattern established by the United Empire Loyalist centres in the 1780s which created nuclei of administrative Districts established in

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[65] Guillet, op. cit., 1963, p.280.

[66] Wagner, M.J., Gentry Perception and Land Utilization in the Peterborough-Kawartha Lakes region, 1818-1851, unpublished M.A. thesis, University of Toronto, 1968.

[67] Kelly, op. cit., 1968, p.14.

[68] Jameson, Anna, Winter Studies and Summer Rambles in Canada, London, 1838, (reprinted Toronto, 1963, p.93), Guillet, E.C., Early Life in Upper Canada, Toronto, 1933, p.119.

1791.[69] These early settled areas were linked essentially to communications routes along principal waterways whereas subsequent government planning in the form of an overall scheme for the province devised by Lieutenant Governor-Simcoe "directed settlement inland, away from the water and the American frontier"[70] although the plan was only partly realized.[71] The subsequent development of the province may be explained in broad terms by the factors of government authority, accessibility to principal communication routes and agricultural land quality. More precise measurement of these factors is required to explain settlement location in which the mass of settlers is reduced to separate individuals on particular lots of land in the local area of the Talbot Settlement.

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[69] Whebell, op. cit., p.59.

[70] Gentilcore, op. cit., 1972, p.24.

[71] Kirk, op. cit., p.51-54.

Chapter Two

THE STUDY AREA AND ITS SETTLEMENT

The Talbot Settlement has been linked to the life and career of Colonal Talbot although writers have addressed themselves more to the latter topic, the man, than to the settlement per se.[1] Talbot was granted land in 1803 amounting to 5,000 acres in Dunwich and Aldborough townships in the London District of Upper Canada, Figure 2.1. His intentions were those of supervising settlement on his grant by which he gained an additional 150 acres for each settler located on fifty acres of his land.[2] Having been granted this initial privilege of settlement supervision Talbot gradually expanded his superintendence to include twenty-eight townships in south-western Upper Canada during the period from 1803 to 1826. He was influenced by the plans of J.G. Simcoe for developing roads and by using his political influence in England was able to by-pass the provincial authorities in many of his

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[1] Ermatinger, Edward, Life of Colonel Talbot and the Talbot Settlement, St. Thomas, 1859; Ermatinger, C.O., op. cit.,; Coyne, J.H., op. cit., 1907-08, p.15-20, and 1909-10, V.III, Section II, p.67-196; Middleton, J.E. and Landon, F., The Province of Ontario - A History, 1615-1927, (5 vols.), Toronto, 1927, V.1, "The Talbot Settlement", by Landon, F., p.113-136; Guillet, E.C., op. cit., 1933, Book III, Chapter V, "Colonel Talbot and [illegible] Settlement", p.117-139; Macdonald, op. cit., Chapter V, 1. "The Talbot Settlement", p.128-150; Hamil, F.C., Colonel Talbot's Principality, Ontario History, V.XLIV, 1952, p.183-193 and op. cit., 1955; Baldwin, Paul, The Political Power of Colonel Thomas Talbot, Ontario History, V. LXI, 1969, p.9-18; Clarke, John, Mapping the Lands Supervised by Colonel the Honourable Thomas Talbot in the Western District of Upper Canada, 1811,1849, Canadian Cartographer, V.8, No. 1, 1971, p.8-18.

[2] P.A.C. Upper Canada Sundries, Simcoe to Hobart, February 11, 1803.

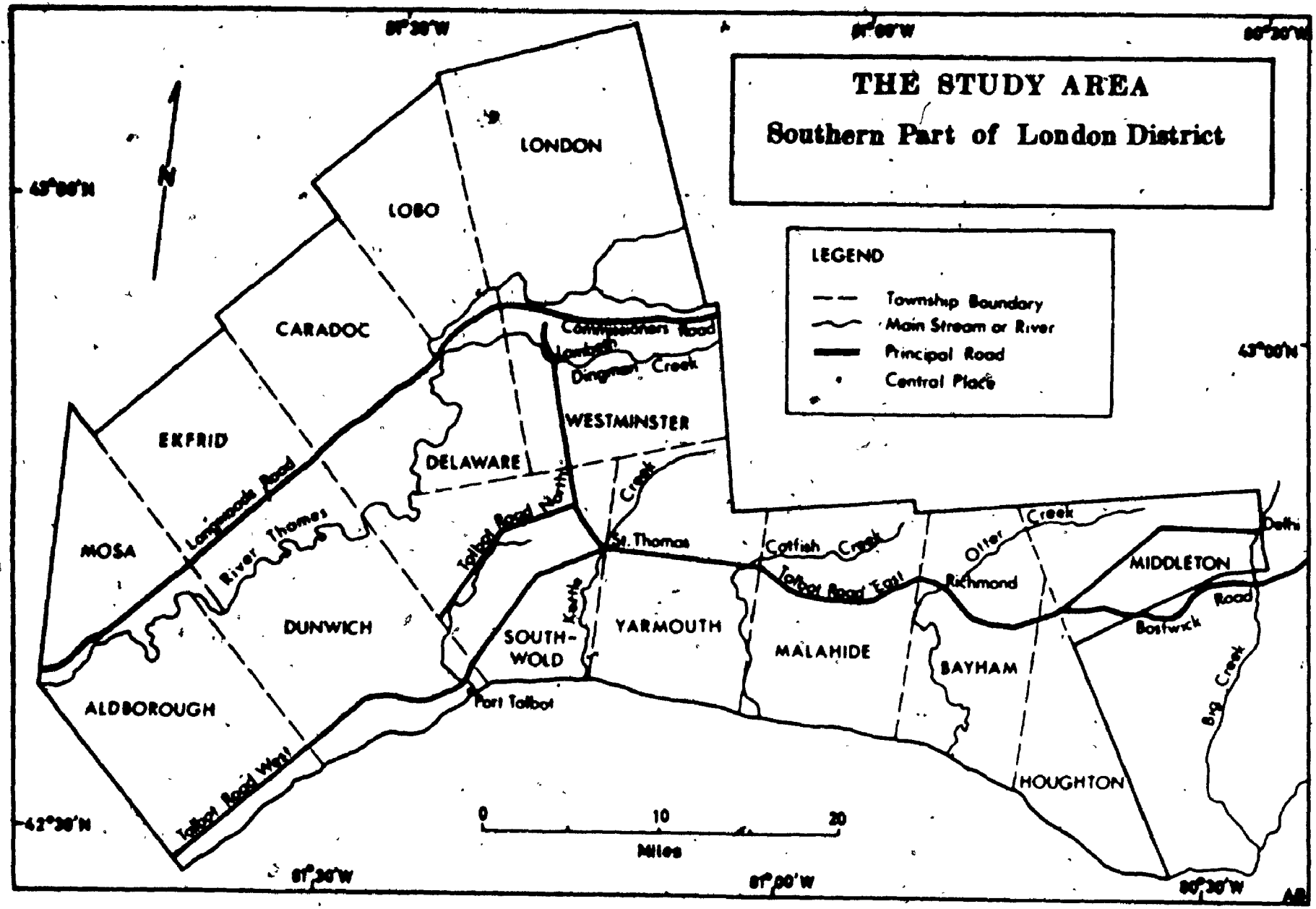
THE STUDY AREA
Southern Part of London District
LEGEND
Township Boundary
Main Stream or River
Principal Road
Central Place
LONDON
LOBO
CARADOC
EKFRID
MOSA
DUNWICH
ALDBOROUGH
DELAWARE
WESTMINSTER
SOUTH-WOLD
YARMOUTH
MALAHIDE
BAYHAM
HOUGHTON
MIDDLETON
Delhi
Richmond
Port Talbot
St. Thomas
Talbot Road North
Talbot Road West
Talbot Road East
Longwoods Road
River Thames
Kettle Creek
Catfish Creek
Otter Creek
Bostwick Road
Big Creek
Dingman Creek
Commissioners Road
43°00'N
42°30'N
81°30'W
81°00'W
80°30'W
0
10
20
Miles

Figure 2.1

administrative affairs. The Talbot Settlement grew sporadically in area and population and as a result defies simple description in spatial or temporal terms.

An impression of its geographical extent may be gained from Hamil's book, "Lake Erie Baron", although his map exaggerated the actual area supervised by Talbot.[3] This is evident when land allocated for reserves of various kinds, and land granted prior to Talbot's control is deducted, as has been done in the Western District by Clarke.[4]

Talbot's death in 1853 did not automatically terminate his Settlement as a fairly distinct event in the province's history. The process of settlement may have ended some time prior to his demise. Hamil and Craig noted that by the mid-1830s supervision of settlement by Talbot had almost finished, the only lands remaining being largely poorly-drained and in the Western District.[5] Although the land had been largely granted to settlers by the 1830s, Talbot's superintence may have lost much of its power as, according to Baldwin:-

> "After the mid-1820s, the Talbot establishment lost or defaulted political control of their region to the local Reformers and the central authorities. The once considerable political powers of Colonel Talbot had been eroded and by 1837, only his brusque mannerisms and notoreity remained."[6]

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[3] Hamil, ibid., 1955, end-paper map.

[4] Clarke, op. cit., 1971a, and Documentary and Map Sources for Reconstructing the History of the Reserved Lands in the Western District of Upper Canada, Canadian Cartographer, 1971b, V.8, No.2, p.75-82.

[5] Hamil, op. cit., 1955, p.135 and Craig, G.M., Upper Canada-The Formative Years, 1791-1841, Toronto, 1963, p.144.

[6] Baldwin, op. cit., p.18.

The study will be confined to the period from 1803 to 1830, during which Talbot's activity in settlement supervision reached its peak, within fourteen contiguous townships in the former London District.[7] It is believed that this area represented the "core" or "heart" of the Talbot Settlement and may thus be justified as meriting close examination. Nine townships south of the River Thames in London District were the first to be supervised by Talbot, whose powers expanded to five townships north of the river and subsequently to those in the Western District.[8] The latter was physiographically, as well as administratively, distinct from the London District owing to poorly drained land extending over much of their area.

Several writers have commented on the early distinctiveness of the Talbot Settlement in the London District. Ermatinger described the town of St. Thomas, in Yarmouth township, as Colonel Talbot's "capital"[9] and in tracing the evolution of the settlement, Hamil noted the relatively early settlement of London District and described the townships of Aldborough and Dunwich as "the heart of Colonel Talbot's principality,"[10] in recognition of the fact that his personal land-holdings were largely located there.

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[7]The study area townships are Aldborough, Bayham, Caradoc, Dunwich, Ekfrid, Houghton, Lobo, London, Malahide, Middleton, Mosa, Southwold, Westminster, Yarmouth.

[8]The nine townships south of the River Thames in London District are Aldborough, Bayham, Dunwich, Houghton, Malahide, Middleton, Southwold, Westminster, and Yarmouth. The five north of the river are Caradoc, Ekfrid, Lobo, London and Mosa.

[9]Ermatinger, E., op. cit., p.174.

[10]Hamil, op. cit., 1952, p.189 and 192 and, 1955, p.169.

The growth of the Talbot Settlement in areal terms involved the expansion from the initial grant in Dunwich and Aldborough to supervision of the concessions flanking the Talbot Roads which were surveyed between the year 1809 and 1812 throughout the southern part of London and Western Districts. Control then expanded after 1815 to the unreserved areas of the townships of Bayham, Malahide and London and after 1820 to the townships of Mosa, Ekfrid, Caradoc and Lobo on the north side of the Thames River. Subsequent expansion in the 1820s embraced available land in the townships of the southern part of the Western District. After the release of the school reserves Talbot supervised the sale of these lots as well as the remaining Crown land.

The authority held by Talbot as Commissioner of Land Settlement in the London and Western Districts permitted him to allocate Crown land to eligible settlers on a free grant basis upon the completion of settlement duties and payment of fees. A unique feature of the superintendence of Talbot was his virtual independence of the Commissioner of Crown Lands at York and the authorization of Talbot himself. The evidence that has survived of Talbot's use of his authority is by no means complete and where it exists suggests a considerable inconsistency in the exercise of his powers.

Talbot's Supervision of Settlement

Colonel Talbot did not apparently record for posterity the precise procedure by which he conducted his supervision of settlement. His relatively modest initial plan for locating settlers on his own land

in Dunwich township[11] was followed in 1809 by a plan for a road to link the settlement at Port Talbot with that at Long Point to be settled on similar principles to those initiated in the 1790s by Simcoe when Yonge Street was built.[12] The road was to be flanked by concessions from which reserves had been removed and in which settlers could be located continuously on adjacent lots. The settlers were required to complete settlement duties including clearing the trees from a portion of their lot, creating a residence of a certain size and most importantly, clearing the road in front of their lot within a period of two years. Only when the duties had been completed was the settler eligible for full title to his lot. This system was extended to the Crown Lands of the townships of Yarmouth, Malahide and Bayham, after 1811.[13] Talbot followed his plan of settlement apparently without major deviation from the general scheme and with a persistent energy that ensured each settler was dealt with on an individual basis. The Settlement had increased to an area of 540,000 acres occupying parts of 28 townships and containing 40,000 people in 1831, approximately twenty-eight years after Talbot's commencement of supervision.[14]

The success of Colonel Talbot's settlement had been referred to by numerous writers, who also refer to the system he used to supervise

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[11] Coyne, op. cit., 1907-08, p.75-77. In Dunwich and Aldborough Talbot had agreed to grant only fifty acres to each settler and this he did much to the disenchantment of the recipients. Elsewhere in the Settlement, 200 acres was granted to each settler, this being the size of the vast majority of the lots in the area which are shown in twelve maps in this thesis.

[12] Ibid., p.100-101, Memorial from Col. Talbot to Lieut-Gov. Gore, 9 February, 1809, and P.A.C. State Papers, Talbot Portfolio, Report of the Executive Council on the Subject of Col. Talbot's Proposals for a Road in London District, 15 February, 1809.

[13] Ibid., p.120-1, letter from Col. Talbot to Surveyor-General Ridout, 4 June, 1811.

[14] Ibid., p.37.

settlement. The aspect of this system that is of primary interest in the present study was the method by which individual settlers selected, or were allocated, land on which to locate. In spite of the number of descriptions of the settlement, relatively little emphasis has apparently been placed on the precise nature of this aspect of the settlement procedure.

Pickering described Talbot's operations in the mid-1820s and noted that "people are continually going to him for information regarding new lots to draw, (choose), as well as exchanging them (sometimes repeatedly) for others."[15] In 1830, Richards reported that Talbot "makes no reservations, but allows the settler to choose his lot where he pleases."[16] The impression that these statements give of freedom of choice of the settler tends to be offset by the statements of later historians on the subject; who imply that settlers were located by Talbot on specific lots. C.O. Ermatinger asserted that "...a number of settlers were located..."[17] Coyne stated that "settlers were...to be placed on Talbot's original grant..."[18] and Hamil referred to the procedure of settlement in which "...Talbot placed his settlers..." on the lots.[19] The question of settler choice has never apparently been broached explicitly in the literature and yet the possibility of such a choice existing apparently has

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[15]Pickering, op. cit., p.68.

[16]Richards, J., "Report of the Commission of Inquiry into the State of the North American Provinces, 1830," Imperial Blue Books on Affairs Relating to Canada, 1832, No.334, p.6.

[17]Ermatinger, C.O., op. cit., p.37.

[18]Coyne, op. cit., 1907-08, p.32.

[19]Hamil, op. cit., 1955, p.58.

a basis, if the observations by Pickering and Richards are correct. References to Talbot's method of supervision tend to relate to technical aspects rather than decisions surrounding the actual selection of a lot. C.O. Ermatinger, for example, stated:-

> "Colonel Talbot performed all the duties...entering the settler's name upon his lot, after the latter had passed inspection and satisfied the head of the settlement of his loyalty, moral character and general fitness."[20]

From the principal historical writing on the subject, very little change in his procedure appears to have occurred over the period of Talbot's superintendency, in spite of the increased number of settlers in the years after 1820. Isolated references indicate a variety of possible methods. Hamil, for example, noted that Talbot proposed useing a lottery method of allocating lots in Howard township where a large number of applicants existed in 1823.[21] A year earlier, on the other hand, a prospective settler was given several lots in london township from which to choose his location.[22] Several other writers have commented upon Talbot's manner of supervising settlement. Dalgleish suggested that "the colonists were at liberty to choose such lands as they cared to on which to settle."[23] Such contrasting evidence leaves the extent of Talbot's control of settlement in considerable doubt. Guillet suggested however, that Talbot may have selected locations for settlers and "followed the plan of placing those whom he liked least as

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[20] Ermatinger, C.O., op. cit., p.38.
[21] Hamil, op. cit., p.27.
[22] Ibid., p.156-7.
[23] Dalgleish, op. cit., p.54

settlers in Dunwich and Aldborough and this has tended to be the chief target of attack on his scheme. In recent statements concerning the Talbot Settlement criticism however has been more general and in sharp contrast to the "traditional" view.

Cowan acknowledged Colonel Talbot's colonizing achievement but expressed doubts as to the overall success of his scheme.

> "However successful he might be in transforming this vast area, almost one-quarter of the colony's best lands, into thriving farmsteads, as the years passed Talbot's imperium in imperio, as John Strachan described it, was less and less in accord with the spirit of the day. In 1831, only 785 of 6,000 settlers placed by Talbot had taken out patents and almost $40,000 of their fees were unpaid."[40]

L.F. Gates, in her work on land policies in Upper Canada, suggested that, Talbot's supervision of settlement may have been most rigorous along the main roads which were the parts of his settlement most visited and admired by writers and visitors.[41] Gates doubted the overall effectiveness of Talbot's supervision and questioned his estimate of land values in the Talbot Settlement which she suggested were somewhat lower than corresponding values elsewhere in Upper Canada and in New York State.

Clarke offered further criticism of the settlement on the basis of his research in the portion of the Talbot Settlement located in the former Western District of Upper Canada. He observed that:-

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[40] Cowan, H.I., British Emigration to British North America-The First Hundred Years, Toronto, 1961, p117.

[41] Gates, op. cit., p.129.

> and consists of two great roads, which extend 70 or 80 miles, besides back settlements."[27]

Howison clearly indicated that, in his opinion, the settlement provided a better opportunity than any other part of the province for poor settlers. Gourlay, in his "Statistical Account," described the Talbot Settlement in 1822 as "the most compact and flourishing in Upper Canada."[28] E.A. Talbot, a settler in London Township in 1818, recorded his experiences on a tour taken five years later and included a relatively brief verbal sketch of the Talbot Settlement. He mentioned the Talbot Road East, describing it and the settlement in the following way:-

> ".....a great public road, fifty miles in length...called Talbot Street...runs parallel to Lake Erie. This street passes through that extensive country designated 'The Talbot Settlement,' which comprises an extent of territory enclosing within its limits about one million five hundred thousand acres."[29]

The number of recorded descriptions of the Talbot Settlement increased in later years; a concentration occurring in the early 1830s. Bouchette commented in 1832 that the Settlement was prosperous and rapidly expanding. He mentioned, in passing, the "well-known wilds called the Long Woods, on the Thames,"[30] Dunlop, also writing in 1832, stated:-

> "This country owes its settlement solely to the persevering industry of my worthy and excellent

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[27] Howison, op. cit.

[28] Gourlay, Robert, Statistical Account of Upper Canada Compiled with a View to a Grand System of Emigration, London, 1822, V.II, p.460.

[29] Talbot, E.A., op. cit., p.121.

[30] Bouchette, J., The British Dominions in North America, 1832, p.105.

> friend, Colonel Talbot...he has now the pleasure of contemplating some hundreds of miles of best roads in the province, closely settled on each side by the most prosperous farmers within its bounds."[31]

Pickering described several months' experience in Colonel Talbot's employ, in a book published in 1832. He originally encountered the area of the Talbot Settlement having walked along the Talbot Street East in the summer of 1825. Proceeding westwards, Pickering mentioned:-

> "passed through several miles of pine wood to Big Creek, and twelve miles further of wood before coming into 'Talbot Street'...having houses on each side, at about one fourth of a mile distance from each other, or about eight in a mile, one on each lot of 200 acres."[32]

The impression gained is of distinct change between the Talbot Street settlement and the area of pine woods, to the east, through which Pickering first passed. The point at which he described "coming into Talbot Street" lies approximately at the eastern edge of Bayham township. At this point the Talbot Road was joined by the "Bostwick Road" which was an older route running west from Long Point which may have only slowly surrendered its pre-eminence as a route to the Talbot Road in this eastern area.[33]

Picken described the townships of each district in his 1832 text on the Canadas. Although his descriptions relate principally to soil and vegetation, he described the area of the Talbot Settlement, in

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[31] Dunlop, op. cit., p.112.

[32] Pickering, op. cit., p.67.

[33] P.A.O., Talbot Maps, Hamil, op. cit., 1955, p.53, and P.A.C., State Papers, Talbot Portfolio, 1804 Map of the Bostwick Road.

somewhat more general terms:-

> "From Otter Creek to Colonel Talbot's the land and crops were as fine as possible...new houses and barns either building or finished; good roads, in straight lines, the openings about a mile wide, etc. This is said to be the case all along the South Talbot Road to Sandwich, for about 150 miles,.. and that the North Talbot Road is nearly as long, so that Colonel Talbot must have had from 250 to 300 miles of road in all. He is rigid in the extraction of settling duties, and exhibits the best if not the only good roads in the province...although his settlement was begun before the late war with America, it was then so much broken in upon that he did not restore it until 1817. He has located in the whole about 30,000 souls, or 6,000 families."[34]

The appendix to Picken's text contains six letters written in 1831 from the Talbot Settlement by English settlers, all of whom eulogized the opportunities for settlement that they encountered. The overall impression is that the background for agriculture was good and in 1831 land could still be obtained relatively cheaply.[35]

Evans wrote an emigrant's guide in 1833 which included the following description of the Talbot Settlement:-

> "On the shore, and about the centre of Lake Erie is situated the celebrated settlement of Colonel Talbot...which he commenced in 1802: the progress which he has made is truly astonishing. Roads are now made from Port Talbot on every side, and

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[34] Picken, Andrew, The Canadas, as they at present commend themselves to the enterprise of emigrants, colonists and capitalists comprehending a variety of topographical reports concerning the quality of the land, etc., in different districts, and the fullest general information, London, 1832, p.300.

[35] Ibid., Appendix, Paper D, p.xxxiii-xiv.

> the whole presents one of the most highly improved and valuable tracts in the province: he has located nearly 30,000 souls, or 6,000 families."[36]

It is interesting that the figures quoted by Evans are identical to Picken's text published one year earlier implying that this and possibly other descriptions may have been based partly on published sources, rather than painstaking investigation in Upper Canada by the author himself.

A year later, in 1834, another travel journal described a journey on foot from St. Thomas along the Talbot Street East undertaken by the author, William Pope. He mentions a transition in the forest vegetation from hardwoods, principally beech and maple, to pine and fir on generally sandy ground. In the two mile-long section of the Talbot Street, east of St. Thomas, all front lots were settled by 1834. Further along the Talbot Road East, in what may have been Middleton township, Pope described miserably poor land with abandoned log houses adjacent to the road. Although from the road the land appeared to be abandoned, the clearing and log houses were merely evidence of compulsory settlement duties required on the Talbot Road end of the lots. Pope continued: "they (the settlers) all left their old habitations as above ralated and are now living upon the other ends, or the rears, of their farms whence the soil is much better and more productive."[37]

Contemporary references to the Talbot Settlement tend to have been

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[36] Evans, F.A., The Emigrant's Directory and Guide to Obtain Lands and Effect a Settlement in the Canadas, Dublin, 1833, p.152-153.

[37] Pope, William, Journal of travel in Upper Canada and United States, 1834, Western Ontario Historical Nuggets, 1963, p.27.

made by visitors to the area, other non-residents and by St. Thomas newspaper editors, who reflected a particular political viewpoint. Talbot was subjected to considerable personal criticism by the Reform newspaper, the St. Thomas "Liberal", which directed its attacks at both his political views and his manner of controlling the Talbot Settlement particularly in the townships of Dunwich and Aldborough where he had built his "principality".[38]

Historiographic Assessment of Settlement

The historiographic record moreover is not free from bias[39] and objective assessments of Colonel Talbot, let alone the progress of the Talbot Settlement, are unknown. Characteristic conclusions of histories of Colonel Talbot and his settlement appear to be the general success that accompanied the plan for settlement and the prosperity enjoyed by most settlers with the noteable exception of settlers who had occupied land in the townships of Aldborough and Dunwich where Talbot owned a large proportion of the land. The roads and farms that were found in the remainder of the Talbot Settlement had not been developed by the 1850s in these two townships, much to the annoyance of the residents.

Colonel Talbot has been widely criticized for his neglect of the

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[38] Baldwin, op. cit., p.11-13, Hamil, op. cit., 1952, p.189 and 192, and St. Thomas Liberal, V.1, No.10, Nov.29, 1932, described the first election in Middlesex in 1812 at which the incumbant Mallory was challenged by Mahlon Burwell, Talbot's friend and colleague. The paper claimed that at the poll "...they found the "Father of the Talbot Settlement", providing votes for his favourite...by furnishings all who are willing to support the claims of the Young Aspirant to office, and who were not already qualified, with LOCATION TICKETS. At the next election there was no opposition whatever. And at the succeeding one, it was ascertained that the Scotch Settlers, would not comply with the wishes of the Talbot Monarchy, and their votes were refused on the plea of their not having obtained their deeds!"

[39] Ibid., p.9.

settlers in Dunwich and Aldborough and this has tended to be the chief target of attack on his scheme. In recent statements concerning the Talbot Settlement criticism however has been more general and in sharp contrast to the "traditional" view.

Cowan acknowledged Colonel Talbot's colonizing achievement but expressed doubts as to the overall success of his scheme.

> "However successful he might be in transforming this vast area, almost one-quarter of the colony's best lands, into thriving farmsteads, as the years passed Talbot's imperium in imperio, as John Strachan described it, was less and less in accord with the spirit of the day. In 1831, only 785 of 6,000 settlers placed by Talbot had taken out patents and almost $40,000 of their fees were unpaid."[40]

L.F. Gates, in her work on land policies in Upper Canada, suggested that, Talbot's supervision of settlement may have been most rigorous along the main roads which were the parts of his settlement most visited and admired by writers and visitors.[41] Gates doubted the overall effectiveness of Talbot's supervision and questioned his estimate of land values in the Talbot Settlement which she suggested were somewhat lower than corresponding values elsewhere in Upper Canada and in New York State.

Clarke offered further criticism of the settlement on the basis of his research in the portion of the Talbot Settlement located in the former Western District of Upper Canada. He observed that:-

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[40] Cowan, H.I., British Emigration to British North America-The First Hundred Years, Toronto, 1961, p117.

[41] Gates, op. cit., p.129.

> "in 1836, most of Talbot's land was still in its natural state. In the whole District... when both patented and located lands are considered together, it would seem that no more than 7.2 per cent of the land entrusted to Talbot had passed into the hands of actual residents."[42]

The delay in settling the Western District may have been related to the unattractive character of much of the land in that it was quite flat, low-lying underlain by clay and consequently poorly-drained. The land under Talbot's supervision in this area was scattered for the most part on individual lots and concessions in many instances isolated from both the Talbot and Middle Road and the lakeshore.[43] The combination of poor land quality and accessibility may have delayed settlement for many years.

Talbot's active supervision of settlement was, according to Craig, completed before the great wave of immigration to Upper Canada during the 1830s.[44] The decline of Talbot's control has been described by Baldwin who identified the peak of his power at, and immediately following the year 1823.[45] He had settled most people during the period from 1815 to 1830 and much of his land that was vacant in the mid-1830s remained so until some years after his demise.

Basic Manuscript Sources on Settlement

A record of settlement progress on a lot-by-lot basis exists for the year 1818, for the seven townships then under Talbot's supervision

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[42] Clarke, op. cit., 1971a, p.13-16.
[43] Ibid., Figure 2.
[44] Craig, op. cit., p.144.
[45] Baldwin, op. cit., p.18.

in London District (Bayham, Houghton, Malahide, Middleton, Southwold, Westminster, Yarmouth).[46] Later records of individual settlement are available only for isolated townships in the form of infrequent assessment records that have survived to the present. No other complete impression of the area of the Settlement is available at the individual level until the 1840s or 1850s. In 1836, a summary of the aggregate level of the concession was published describing the amount of land either patented, located or ungranted by Talbot. The extent of settlement at the sub-township level may be gauged by these records.

The Return made in 1818 on 537 settlers supervised by Colonel Talbot contains information on a lot-by-lot basis and permits a relatively close scrutiny of progress achieved to that date, particularly when the length of individual settlement is also considered.[47]

The 1818 Return contains the following categories of information:-

1. Name of settler
2. Location of lot settled
3. Acres of land cleared
4. Acres of land cut-down
5. Dimension of house, in feet
6. Dimension of barn, in feet
7. Dimension of stable, in feet
8. Proportion of road cleared
9. Proportion of road cut down
10. Settler's character as a subject
11. If the oath of allegiance was taken?
12. If settler has received land grants elsewhere in the province?
13. If Land was held directly from Colonel Talbot or any other person?

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[46] The settlers in question located up to 1818 on land supervised by Colonel Talbot and represent almost all the settlers in the study area at the time.

[47] P.A.C., State Papers, Talbot Portfolio, Return of the State of the Talbot Settlement in the Townships of Middleton, Houghton, Bayham, Malahide, Yarmouth, Westminster and Southwold, District of London, Upper Canada, 13 June, 1818.

14. Amount of patent fees paid
15. Remarks and to whom fees paid

Unfortunately, no data are included on farm-produce, either in the form of arable, crops or livestock. In addition, interpretation of the items is hampered in certain instances by their definition. This applies in particular to the categories of cleared and cut-down land (No. 3, 4, 8, and 9.) All presumably refer to the general process of removing the forest from land required for agriculture, although which of the two stages in the process was first, is not clear.

In discussing the general topic of land clearance Guillet does not deal specifically with this distinction, but he implies that "clearance" of forest may have been a more complete process than that of "cutting down".[48] In the latter, trees and other vegetation might be left lying on the ground to await removal, or burning, in order to achieve full clearance. This, in itself, did not "usually include the immediate removal of stumps,"[49] which had to await considerable resources of capital and labour before they were considered worth removing. In the 1818 Return, categories 8 and 9 refer to the progress of creating the road, and the same general rule is assumed to apply to these areas, in which forested land was first "cut-down" and only subsequently "cleared".

The average acreage of cleared land was 5.1 acres per farm whereas only 2.6 acres were cut-down. Cleared land might be more accurately termed, "cleared-and-cut-down land." The individual farmer may have only cut-down an area of forest which he could have reasonably expected

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[48] Guillet, op. cit., 1963, V.I, p.312.

[49] Ibid., p.325.

to clear within a short time, which may have explained the relatively low average acreage of cut-down land.

Location dates for settlers on the Return for 1818, are derived from other sources.[50] At the date of the compilation of information in the Return, settlement had occurred for nine years, the first settler having located on the Talbot Road East in Yarmouth township in 1809. The Talbot Settlement had developed in that time to embrace concessions flanking Talbot Roads East and North, available lots in Yarmouth, Malahide, and Bayham, the Commissioners' Road concessions in Westminster and parts of Dunwich and Aldborough townships, although details of the last two areas, are absent from the 1818 Return.

In order to improve the coverage of settlement data, other lesser sources were examined and found to approximate the type of data in the large 1818 Return. Areas covered by these smaller sources are:-

1. Westminster township: Commissioners' Road concessions, 1816 (33 settlers).[51]
2. Westminster township: "New Settlement" on Talbot Road North, 1817 (21 settlers).[52]
3. Southwold township: Talbot Road East and North, 1817 (25 settlers).[53]
4. Aldborough township: Talbot Road West, 1820 (86 settlers).[54]
5. Aldborough and Dunwich townships: Talbot Road West, no date, after 1820, (136 settlers).[55]

The information from these sources includes a large proportion of the

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[50] P.A.O., Talbot Maps, Book C, D, and E, and P.A.C. State Papers, Talbot Portfolio, Return of Lands Located at Port Talbot in London and Western District, 23rd December, 1815.

[51] Ontario Government, Department of Lands and Forests, List of Persons Settled in Westminster, taken by M. Burwell, Deputy Surveyor, 1st January, 1816.

[52] Gourlay, op. cit., V.1, p.306-7.

[53] Ibid., V.1, p.352-3.

[54] Assessment Roll of the Township of Aldborough, The Elgin Historical and Scientific Institute, Papers and Records, 1895, V.4, p.94-96.

[55] Coyne, op. cit., 1909-10, p.75-77.

total number of settlers at that time, whose settlement progress may be summarized from several viewpoints.

i. Spread

The spatial growth of the Talbot Settlement is illustrated by the map, Figure 2.2, showing successive dates of location by individual lot in the 1809-1818 period. The map shows that settlement began in several locations prior to the outbreak of war in 1812. Those in 1809 and 1810 were many miles apart although all but one, on the south side of the Thames in Westminster, were adjacent to the Talbot Road East. In the next two years relatively rapid settlement occurred in several locations, both along the Talbot Roads and in the back concessions. Notably, Yarmouth, Malahide and Bayham were rapidly settled while more isolated clusters developed in Westminster and Southwold. Earliest settlement appeared to be on riparian sites, on Kettle, Catfish and Otter Creeks and the River Thames. An exception is the node of early settlement in Southwold located near the western edge of the township and situated close to Colonel Talbot's own farm in Port Talbot.

ii. Origins of settlers

In the Return of 1818, the "character" of the individual settler was described in terms of his nationality with additional information as to Loyalism or religion added. Settlers were distinguished as being British in which case they were "natural born" or a United Empire Loyalist (U.E.L.), born in the United States prior to the Revolutionary war. The offspring of Loyalists were identified, if born in British North America as "natural born", son (or daughter) of "U.E.L." Religion was identified in the rare case of Quaker settlers, in addition to their nationality.

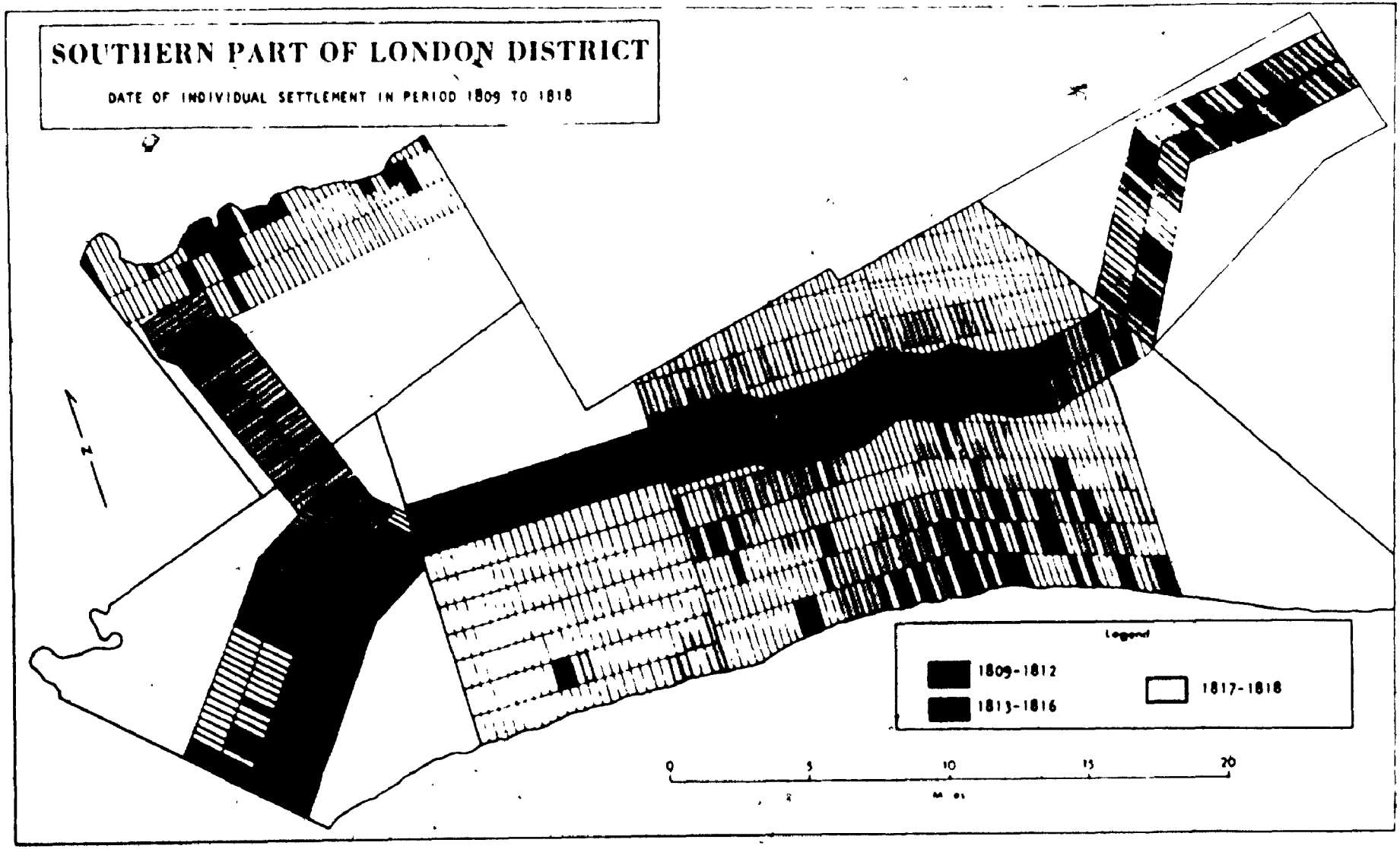
SOUTHERN PART OF LONDON DISTRICT
DATE OF INDIVIDUAL SETTLEMENT IN PERIOD 1809 TO 1818
N
Legend
1809-1812
1813-1816
1817-1818
0
5
10
15
20

Figure 2.2

Despite official concern that Americans should not be granted land in Canada, it was ironic that a large proportion of Talbot Settlers were American-born, although a number of them had been in the province for ten years or more.

iii. Land clearing

The progress of agriculture is reflected in the maps, Figure 2.3, 2.4 and 2.5, showing the distribution on a lot-by-lot basis of acreage cut-down, cleared and combined cut-down and cleared, respectively. The spatial distribution of cut-down and cleared land suggests locally uniform conditions prevailed in that the Talbot Road North, for example, was generally laggardly having few lots with more than ten acres in either category. The Talbot Road East in Malahide and Bayham, however, had far more cleared land than any other part of the 1818 settlement and generally more cut-down acreage. The latter was never more than 30 acres on a 200 acre lot and usually less than ten acres.

The combined acreage of cleared and cut-down land, Figure 2.5, gives an impression of a number of farm clusters, usually on the road-side concessions. In 1818, 94 lots, or 17.4 per cent, had no cleared or cut down land. Of the Talbot Road lots, 35, or 9.4 per cent, had no cut-down or cleared land. Concentrations of well-cleared farms occurred at the following four locations; the Dingman's Creek area in Westminster on Talbot Road North, the Kettle Creek area on Talbot Road East, around Catfish and Otter Creek in Malahide and Bayham on Talbot Road East and in less concentrated cleared lots in the southern part of Bayham.

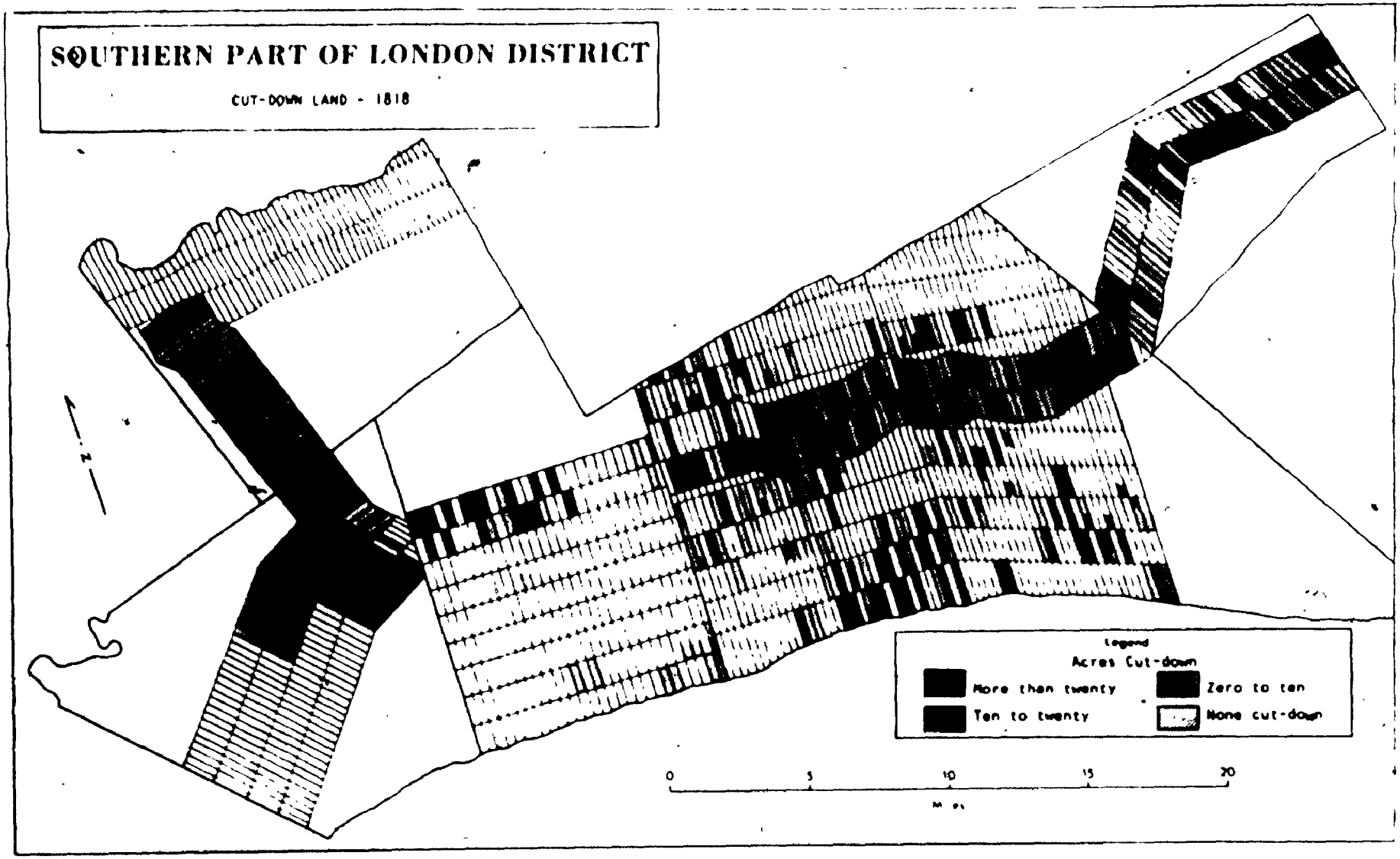
SOUTHERN PART OF LONDON DISTRICT
CUT-DOWN LAND - 1818
N
Legend
Acres Cut-down
More than twenty
Zero to ten
Ten to twenty
None cut-down
0
5
10
15
20

Figure 2.3

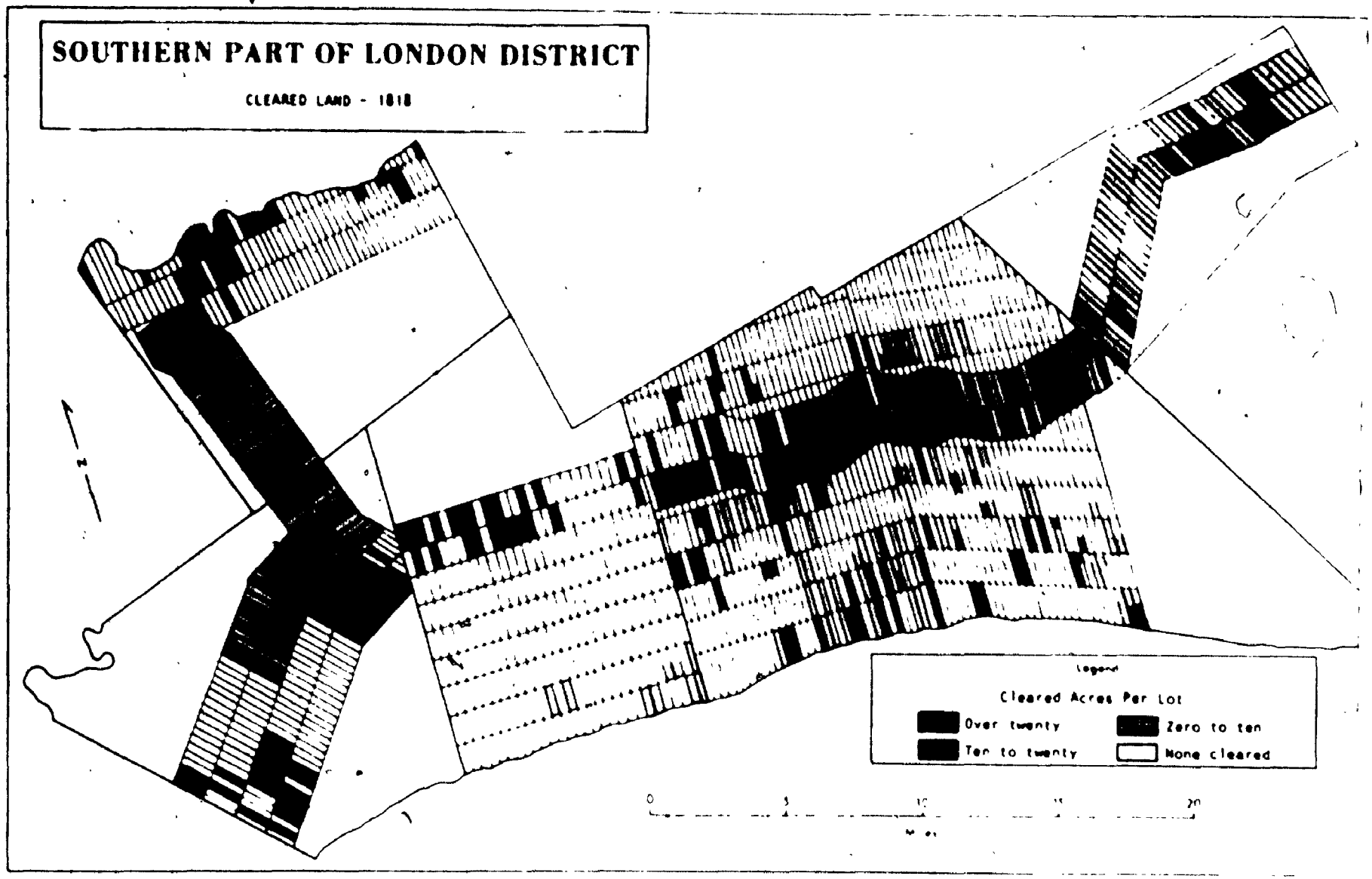
SOUTHERN PART OF LONDON DISTRICT
CLEARED LAND - 1818
Legend
Cleared Acres Per Lot
Over twenty
Zero to ten
Ten to twenty
None cleared

Figure 2.4

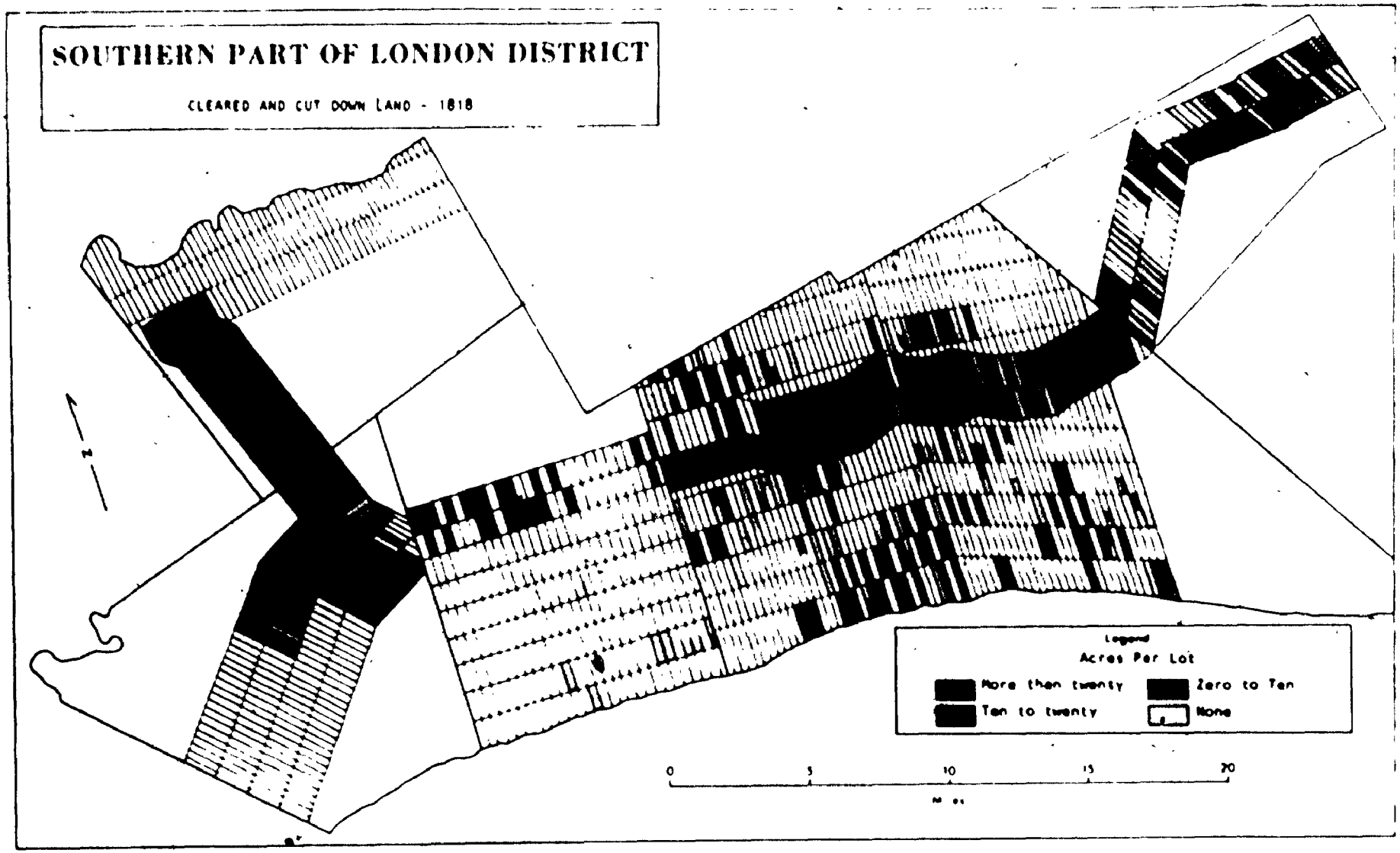
SOUTHERN PART OF LONDON DISTRICT
CLEARED AND CUT DOWN LAND - 1818
N
Legend
Acres Per Lot
More than twenty
Zero to Ten
Ten to twenty
None
0
5
10
15
20

Figure 2.5

Little or no clearance had occurred in the following areas: western Middleton, eastern Bayham, the back concessions of Malahide, south-east Yarmouth and the Talbot Road North in Southwold and Westminster. The possibility that in these areas settlement was very brief and abandoned before the observations were made, may explain some cases of little or no clearance. Settlement before and after December, 1815, is distinguished in the map, Figure 2.6, which also compared cleared and cut down acreages. Lots settled prior to December, 1815, were occupied at least two years by the time of the 1818 observations. Clearance should have taken place by this date on such lots, if only to satisfy the settlement duties specified by Colonel Talbot with regard to land which were that 10 acres should be cleared and farmed within two years of settlement. Twenty four lots had nothing in terms of clearance in 1818 although their settlement preceded December, 1815. They constituted 10.6 per cent of such early settled lots. The lots in this category were in Middleton, Bayham and Malahide, and may be associated with poorer sandy soils, which were less attractive to farmers. The proportion of lots settled after December, 1815 on which more land had been cut-down than cleared, appears to increase in these townships. Timber resources, in the form of pine, may have partly explained this pattern as they were largely confined to the townships of Middleton, Houghton and Bayham. Generally speaking, the Talbot Road East concessions settled after 1815 in eastern Bayham and Middleton were more cut-down than cleared by 1818. The concessions of the Talbot Road East in the other three townships, and eastern Bayham, contained lots settled before 1816, with more cleared than cut-down land in 1818. The Talbot Road North, settled by and large after December, 1815, was characterized by lots with a wide range of cut-down to cleared acreage ratio values.

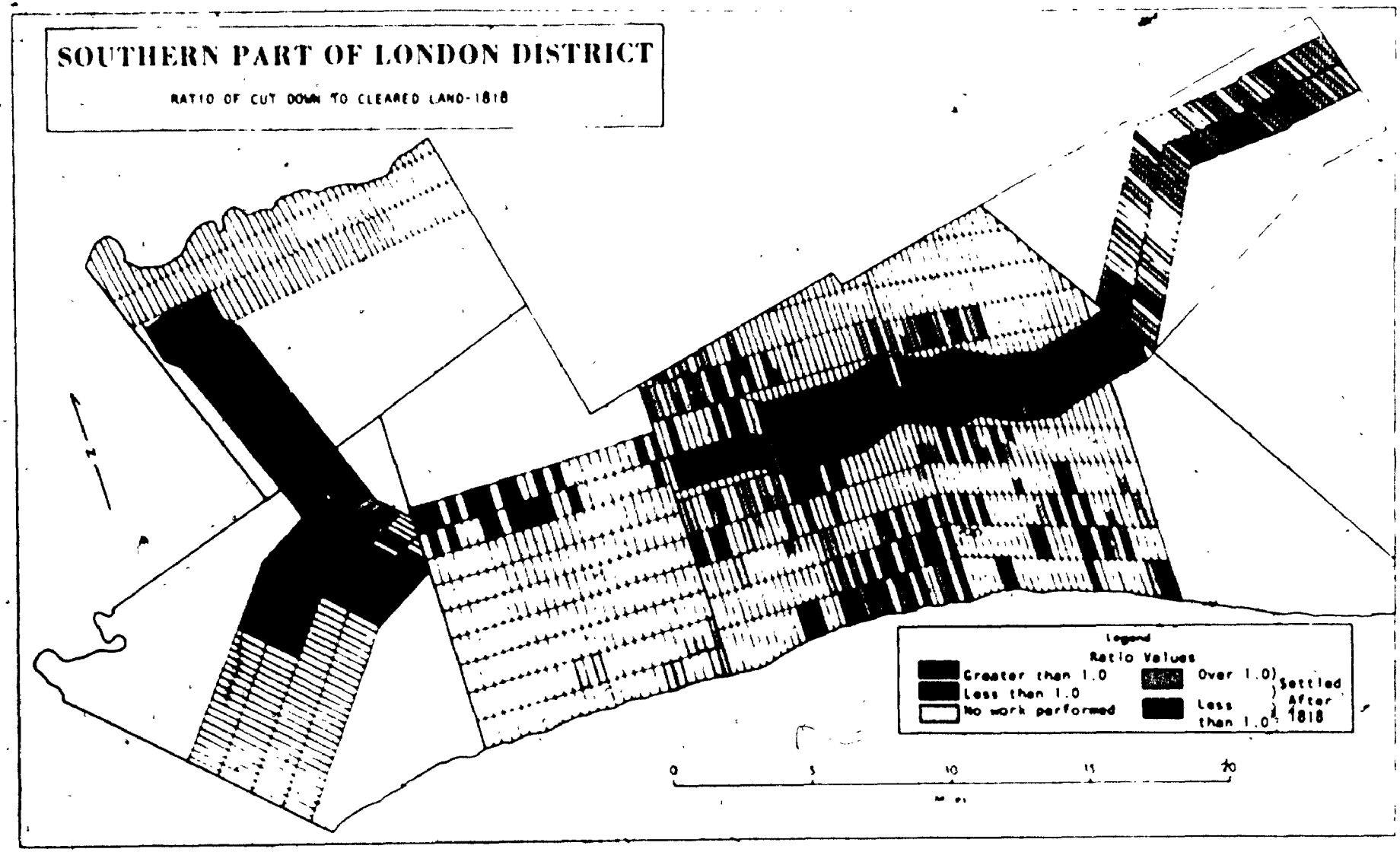
SOUTHERN PART OF LONDON DISTRICT
RATIO OF CUT DOWN TO CLEARED LAND-1818
N
Legend
Ratio Values
Greater than 1.0
Less than 1.0
No work performed
Over 1.0
Less than 1.0
Settled After 1818
0
5
10
15
20

Figure 2.6

iv. Houses

Buildings on farms observed in 1818 fall into two categories, houses, with six different types recorded, and farm buildings, comprising barn and stable. The former category of houses is mapped, Figure 2.7, and in addition to the two types distinguished, lots are marked if the house character is unknown or where no house stood. Only half the lots definitely had a residence in 1818, and 206 of these, or seventy-five per cent, were log buildings. Single- and two-storey, either log or frame, houses numbered seventeen, only 6.2 per cent of the total number, and were distributed over a relatively broad area with all but four in this category on Talbot Road concessions and eleven of the seventeen located in Malahide and Bayham. Malahide township possessed a relatively large proportion of the square log houses and few lots without houses. As a result it appears to have been somewhat advanced in terms of settlement. Frame houses seemed to be noticeably absent in Middleton, Houghton and eastern Bayham townships, in the eastern portion of the study area. Huts, which may have represented the most rudimentary house type, occurred on Talbot Road-side concessions in Middleton, Southwold and Westminster and in the back concessions. They may indicate a very preliminary stage in settlement although give no hint as to the degree of commitment of the settler to further agricultural effort.

v. Farm buildings

The distribution of farm buildings, is shown in map form, Figure 2.8 and indicates the relative scarcity of these structures in 1818. Only 85 farms, or 15.8 per cent, had such buildings in 1818 and only eleven, or 2 per cent, had both barn and stable. Barns were almost twice as

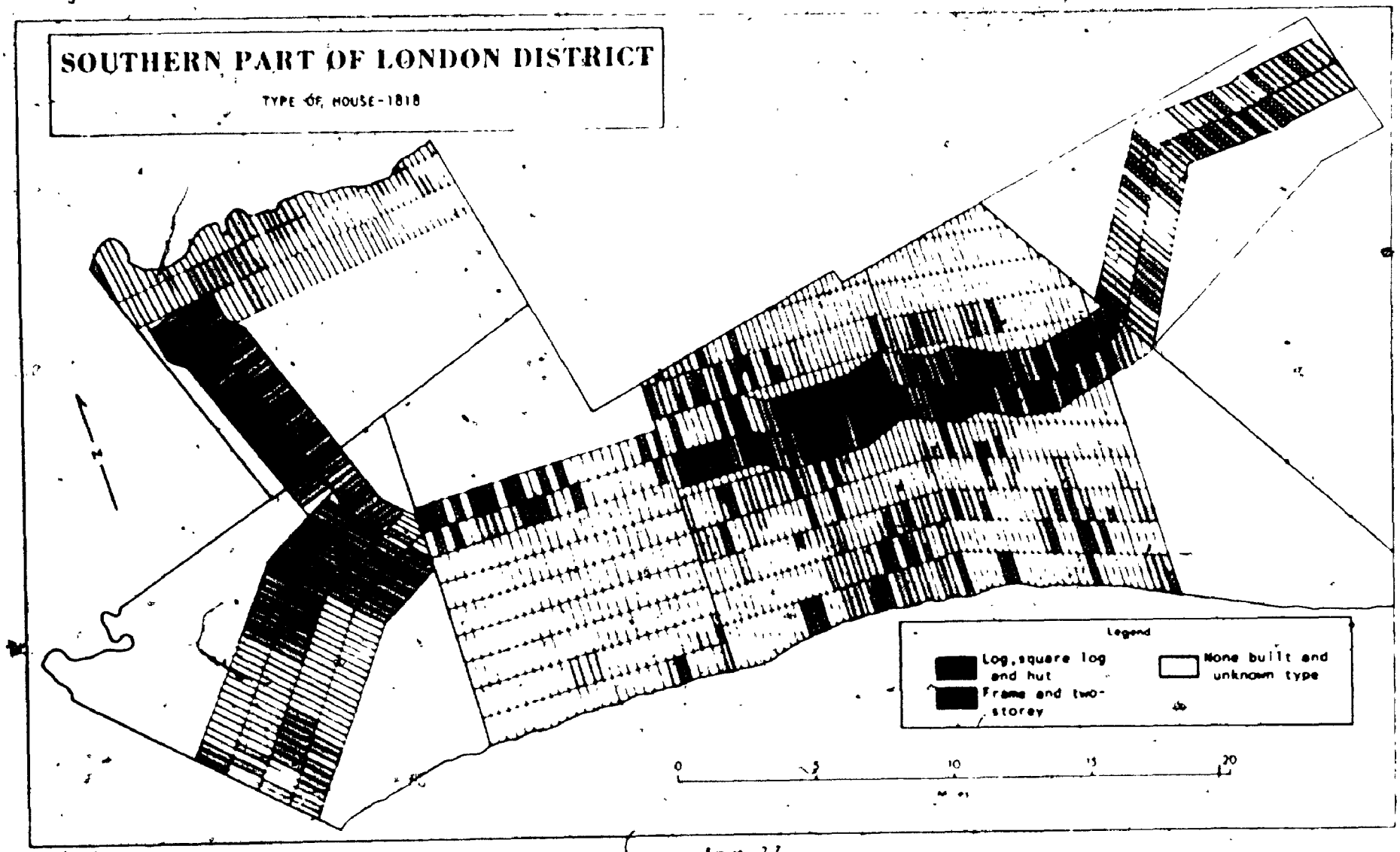
SOUTHERN PART OF LONDON DISTRICT
TYPE OF HOUSE - 1818
Legend
Log, square log and hut
Frame and two-storey
None built and unknown type
0
5
10
15
20

Figure 27

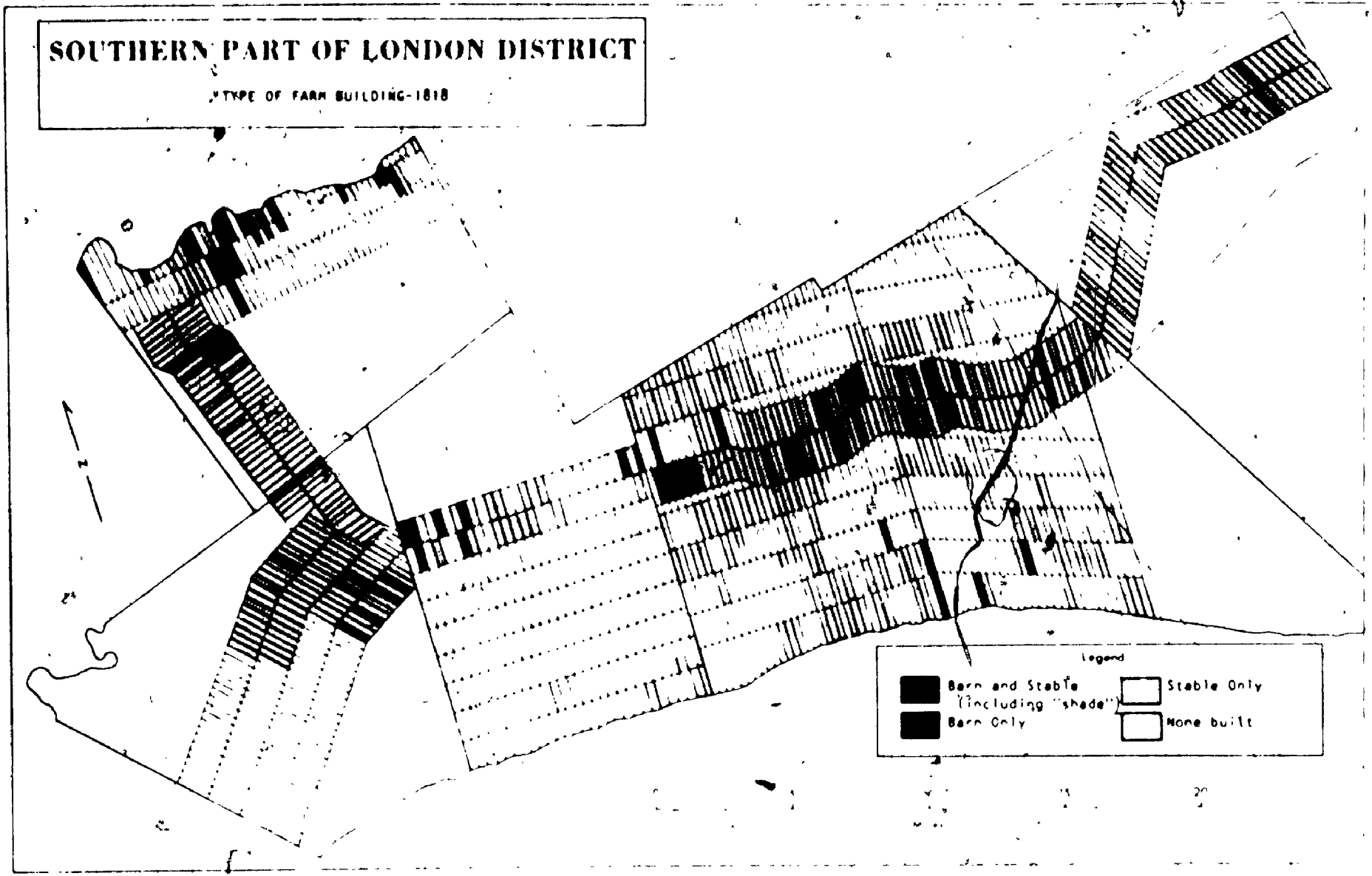
SOUTHERN PART OF LONDON DISTRICT
TYPE OF FARM BUILDING-1818
Legend
Barn and Stable (including "shade")
Barn Only
Stable Only
None built

Figure 2.8

numerous as stables on farms with only single buildings, although the precise use of the barn as opposed to the stable is not clear.

The concentration of buildings occurred in similar locations to the earliest settlements, suggesting a direct relationship existed between the length of settlement and the number and the character of buildings. The single and two-storey frame and the square-log houses are associated with the more established farms. The apparent advanced state of agriculture in the townships of western Bayham, Malahide and Westminster may be related to the relatively high density of settled lots in these areas.

Summary of Manuscript Information on Settlement for 1816-1820

The information on settlement between the years 1816 and 1820 indicates, in some detail, the relative fortunes of individual settlers. The general conclusion derived from the examination of the mapped data for these years is that certain localities were relatively advanced in 1820 in contrast to the majority of settled lots. These areas were close to major streams, on which a mill-site may have existed for potential development to grind grain or saw lumber. The Talbot Road-side concessions were by no means uniformly settled but greatest development appeared to coincide with the intersections of the main road and large streams. Subsequent development appears to bear out this generalization in that these sites witnessed the growth of a village or town. In this way, central places developed on the Talbot Roads at the sites of major streams in several locations, Lambeth on Dingman Creek, St. Thomas on Kettle Creek, and Richmond on Otter Creek.

In the years from 1817 to 1820, the available evidence of settlement in the townships under consideration suggest that many settled lots had

improved relatively little in agricultural terms. The lack of uniformity in settlement applied both to the spatial distribution of the date of occupancy and to agriculture. The majority of settled lots were somewhat neglected although farms that appear to have been more advanced were scattered throughout the settled area in identifiable concentrations.

The extent to which the settlement duties were completed is indicated in Table 2.1. The figures reflect both the aspiration of the inhabitants of the area and the effectiveness of Talbot's supervision. A distinction is drawn between those who settled after 1815, and those settlers located before December 1815, who were required to have completed all the settlement duties. The remainder had completed a part of the duties although a few settlers had apparently abandoned their lots having accomplished no improvements at all.

Some of the incompleted duties were not far from the minimum permitted limit. The area of the house, although specified as a minimum of 320 square feet, may have been accepted even if less than this figure, because in all other respects the building may have been adequate. Such cases scarcely represent a serious avoidance of the settlement duties.

A large proportion of settlers however, had a relatively small part of their settlement duties completed. Sixty-two settlers, or 28.7 per cent, had not completed any of the principal requirements in terms of land clearance, house building or road clearance. This suggests a lack of vigorous supervision on Talbot's part and contradicts the reputed excellence of his system of supervision.[56]

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[56] See for example, Craig, op. cit., 1963, p.143.

TABLE 2.1

COMPLETION OF SETTLEMENT DUTIES, TALBOT SETTLEMENT, 1818*

No.	Degree of Completion	Number of Settlers	Proportion (%)
1	Settlement Duties Completed	43	19.9
2	Settlement Duties Completed except House area is too small (i.e. less than 320 sq. feet)	9	4.2
3	Settlement Duties Completed except Land area cleared is insufficient (i.e. less than 10 acres)	4	1.8
4	Settlement Duties Completed except Road area cleared is insufficient (i.e. less than 100%)	36	16.7
5	Settlement Duties Completed except both House and Land area cleared are insufficient	1	0.5
6	Settlement Duties Completed except both House and Road area cleared are insufficient	12	5.5
7	Settlement Duties Completed except both Land and Road area cleared are insufficient	49	22.7
8	Settlement Duties Completed except House, Land area and Road area cleared are insufficient	62	28.7
	Total	216	100.0

* Only settlers located two years or longer are included, i.e. before January, 1816; 216 of 537 in 1818 (40.4%)

Basic Manuscript Sources After 1818

The record of detailed settlement of Colonel Talbot's lands is poor in the years following 1818. Although lot-by-lot descriptions of the townships are extant as assessment or collection roll entries for most of Upper Canada after 1850, few remain for the preceding period. Summaries at the township level are available for most years from 1824 onwards but at this scale are not readily comparable to earlier records between 1817 and 1820. A exception to this rule is a statement made on the Talbot Settlement in 1836, at the areal scale below that of the township, although by concession rather than by individual lot.[57] Each concession in which Colonel Talbot had the authority to grant land is included with details of patented, settled and ungranted land. As a result, the proportion of land allocated to settlers and actually developed in terms of completed settlement duties may be ascertained for a date approximately eighteen years after the previous detailed records. The Statement was made at a time that may be regarded as a terminal date in terms of Colonel Talbot's settlement scheme, for as Hamil noted, by the mid-1830's "the only free land still available for location in the Talbot Settlement was in the townships of Zone, Raleigh, Tilbury, Rochester, and Malden."[58]

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[57] J.L.A./U.C., 1836, Appendix No.22, Statement of Lands in the London and Western Districts which have been placed in the hands of the Hon. Thomas Talbot under Orders in Council and Orders from the Lieutenant Governor of this Province for the time being. Shewing the number of lots and number of acres under Patent; the number of lots and number of acres under location, and the number of lots and number of acres which have not as yet been returned by Colonel Talbot.

[58] Hamil, ibid., p.135.

The 1836 information presents a partial impression of both the extent of settlement and the degree of spatial uniformity it possessed at that time. The percentage of land by concession in each category is represented in Figure 2.9 to 2.12 and Table 2.2.[59]

Frequency histograms, Figure 2.9, for i) patented, ii) located, iii) settled ((i) and (ii) combined) and (iv)returned land, indicate that the percentage of land in each category varied greatly from concession to concession. Settled land constituted the category with the largest modal value, as this was a combination of both patented and located (settled, but unpatented) land. Nineteen of thirty-eight concessions were from 90 to 100 per cent settled in 1836. Ten concessions on the other hand were less than fifty per cent settled at the same date. The average proportion patented in each concession (41.6%) was somewhat higher than that merely located (31.6%) or that returned as unsettled (26.5%).

The distribution of patented land, Figure 2.10, shows the highest proportion is scattered rather than associated with roads or other specific localities. Coastal areas in Yarmouth, Malahide and Bayham townships, appear to have been settled and permanently occupied relatively rapidly. Southwold and Westminster show only a moderate proportion of patented land and other areas are characterized by low values.

The proportion of land allocated to settlers, yet unpatented in 1836, is mapped in Figure 2.11. The roads in this instance are almost

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[59]The Statement in question and the Schedule published in 1836 were documents describing only the Talbot lands in the study area, i.e. those supervised by Colonel Talbot for settlement purposes. These lands formed the majority of lots in the area.

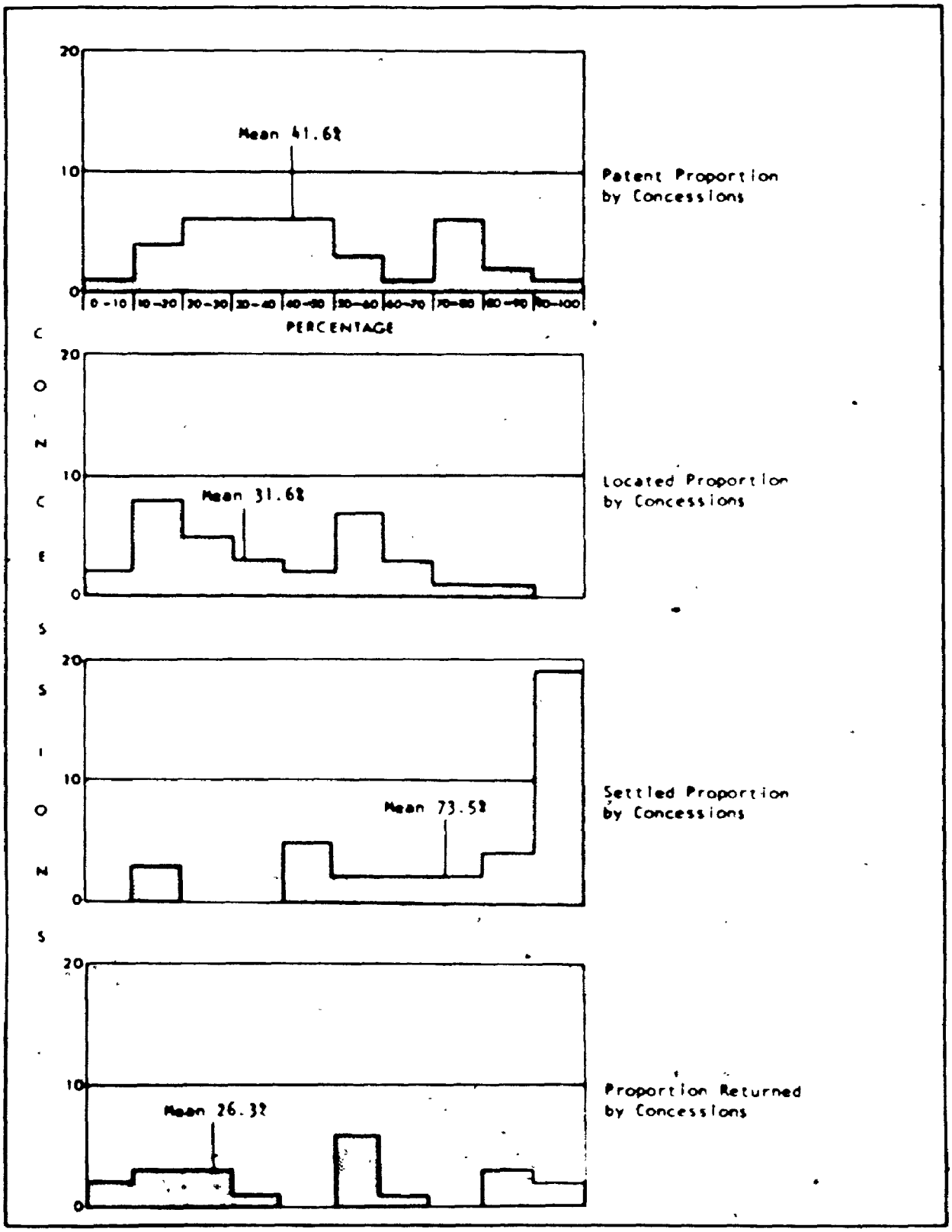

20
10
0
Mean 41.6%
Patent Proportion by Concessions
0-10
10-20
20-30
30-40
40-50
50-60
60-70
70-80
80-90
90-100
PERCENTAGE
CONCESSIONS
Mean 31.6%
Located Proportion by Concessions
Mean 73.5%
Settled Proportion by Concessions
Mean 26.3%
Proportion Returned by Concessions

Figure 2.9

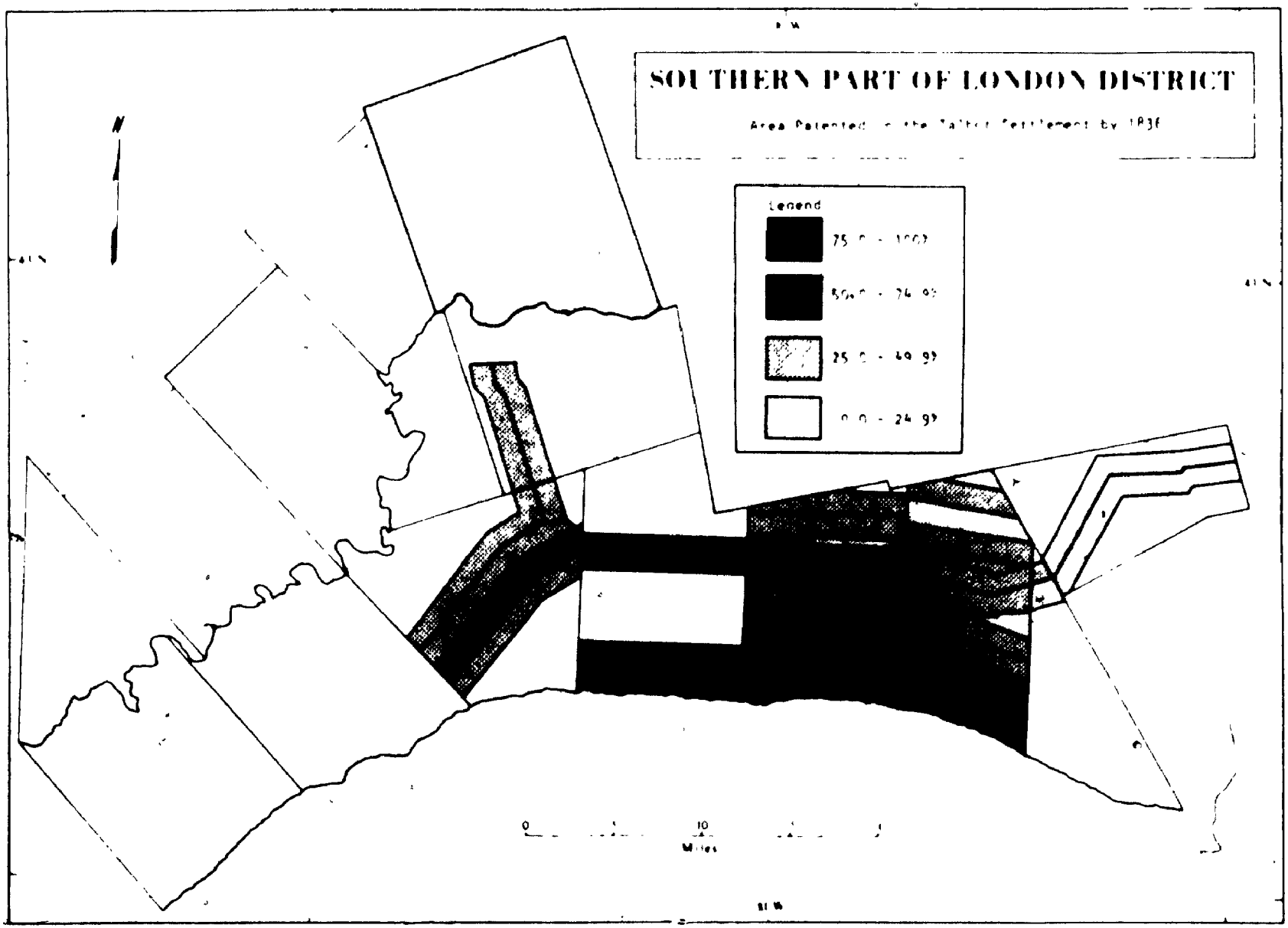
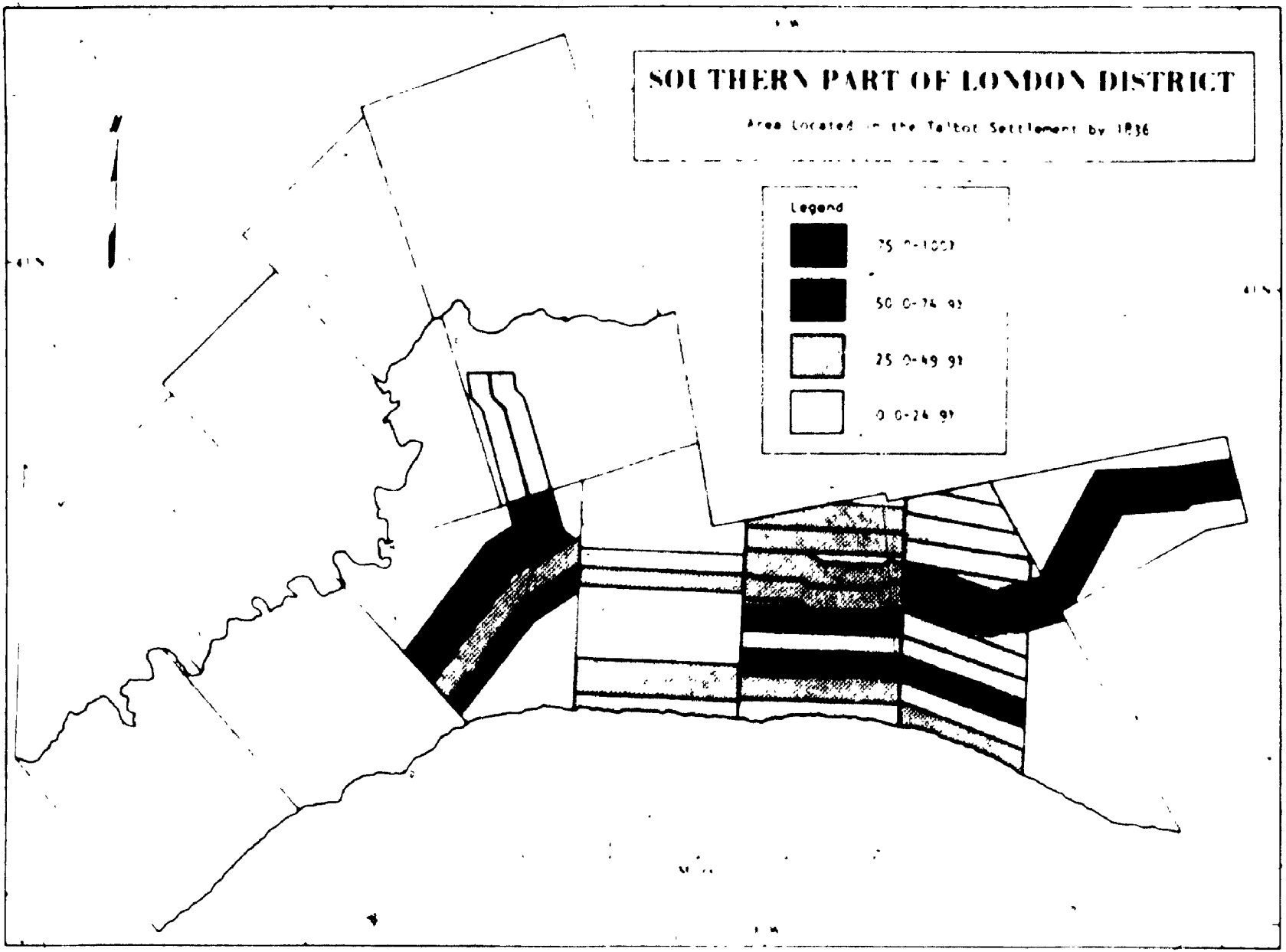


Figure 2.10


SOUTHERN PART OF LONDON DISTRICT
Legend

uniformly characterised by a high proportion of settlers except in the case of Westminster, Yarmouth and Malahide. In the two latter townships, the low proportions result from above average patenting of land, although in Westminster a number of lots appear to have been allocated to settlers even at this relatively late date. The back concessions in Yarmouth, Malahide, and Bayham are almost uniformly low in terms of the proportion of located lots. The overall pattern is irregular with no consistent trend in spatial terms.

Both patented and located land are combined to provide the basis for mapping settled land in each concession, Figure 2.12. The overwhelming impression is that of relatively dense settlement over most of the area, with less, on the Talbot North Road, in London township and in the northern concessions of Bayham. The Talbot Road East is densely settled as is the majority of the rear concessions in Yarmouth, Malahide and Bayham.

At the same time as the submission of the 1836 Statement on the Talbot Settlement, a Schedule of townships in the Settlement was published in which a brief verbal description of the settlement was given.[60] Locations (other than patented land) are described and townships included in the Statement appear from the Schedule to be largely allocated to settlers. Differences exist between the two lists, such as, the description of the Talbot Road North in Westminster being totally located in the Schedule, whereas the Statement records only 40 to 50 per cent in this category. Elsewhere in the Schedule, townships are described as all located, except for Clergy Reserves.

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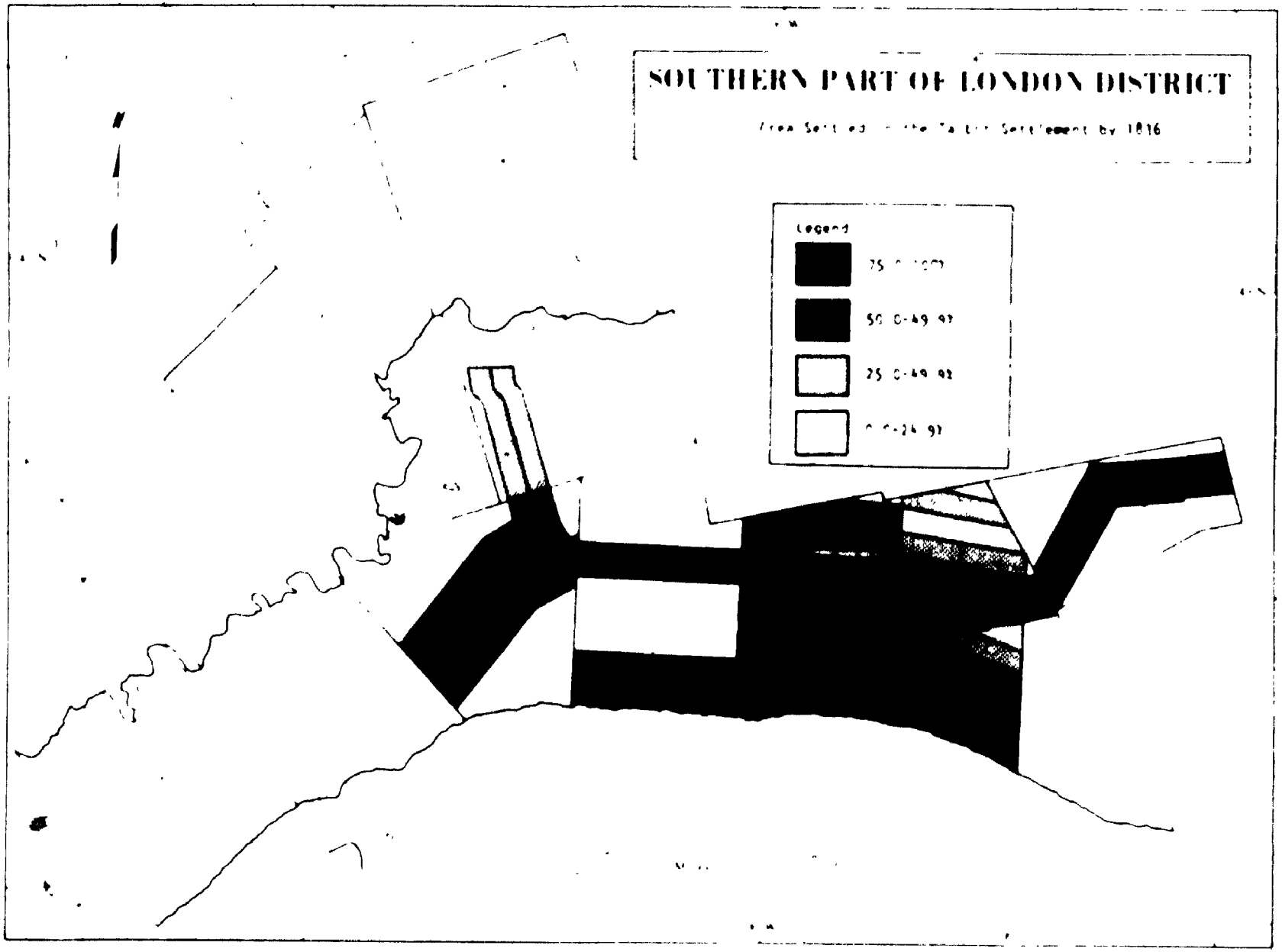
[60] J.L.A./U.C., 1836, Appendix 22, Schedule of the Townships in the London and Western Districts, that at present compose the Talbot Settlement.


SOUTHERN PART OF LONDON DISTRICT
Legend

The only concessions free from reserve lots of any kind, those bordering the principal roads, are noted as being totally located in every township in the Statement. The Schedule agrees with this evidence in every case except Houghton, Middleton and Westminster, where it records as much as sixty per cent of the roadside lots apparently unsettled in 1836. Absence of settlement in these townships may have resulted from the pattern of abandonment which characterized certain parts of the Talbot Settlement. Consequently land which had been allocated to settlers at a previous date may have appeared to be ungranted at the time of the record. The Longwoods Road is not precisely comparable in the two sources of evidence, although the implication from the Schedule is that the roadside concessions were all located.

The somewhat confused and contradictory impression gained from these two comtemporary records may reflect to a degree the actual state of the provincial administrators' knowledge of the details of Colonel Talbot's scheme of settlement. The Schedule, which is essentially a verbal record, suggests more located and settled land in 1836 than does the Statement of the same year. Greater numerical evidence in the latter however lends precision to deductions based on it rather than the Schedule. The overall impression of the Talbot Settlement's progress in the study area is that it was less advanced than implied in the Schedule. In terms of the number of lots under Talbot's supervision in eight townships, 798, or 64 per cent, were settled, totalling 206,561 acres, or 61 per cent, in terms of areal units. This figure compares relatively favourably with that for the Western District lands under his control, although the proportion of settled land is low by comparison with the impression of

continuous, completely settled land conveyed in contemporary and historical sources. The highest proportion of settled land was undoubtedly along the roadside concessions often reaching 100 per cent in these areas. The proportion in back concessions varied considerably, ranging from 100 per cent in Yarmouth to zero in the sixth concession of Malahide or the eleventh of Bayham. The doubt raised by L.F. Gates, appears confirmed by this source which, although contradicted by the Schedule of Talbot's lands of the same date, has greater numerical precision and has been accepted elsewhere as a sound basis for analysis.[61] Characteristics of discontinuous and incomplete settlement originally detected at the level of the individual lot in the 1817-1820 evidence, have been detected at the broader areal scale of the concession in the 1836 evidence. Such cross-sectional views omit intervening stages which may be significantly different but the observation of similar characteristics at both dates in the Talbot Settlement may cast doubts on the general validity of previous descriptions of both the settlement and the overall supervision of the scheme. The townships considered were traditionally the "heart" of the Settlement yet have been shown to be relatively unsettled by 1836, some thirty-three years after Talbot originally gained his commission to supervise the location of settlers. The lands may have been settled relatively rapidly after 1836 as the pressure of the migration from Europe was sustained, yet the conclusion remains that the Settlement did not proceed as uniformly or as continuously in areal terms as previously claimed.

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[61] Clarke, op. cit., 1971a.

The latter is assumed to be more closely and consistently juxtaposed with the decision to settle on a particular lot, than the date of patent or other temporal measure, such as the date of settlement duty completion.

Another principal source of information on land settlement is the patent information[11] which records the date of legal transfer of title of land to individuals. The patent date may have succeeded the initial location of a settler by a considerable period of time, particularly in the Talbot Settlement. Owing to the uncertainty that surrounds the mechanism by which the individual settler obtained full title to his land the date of location is preferred as an indicator of settlement. This view is supported by Talman who asserted that "the date of the patent had no relationship to the date of original settlement."[12] In a recent study of individual settlement however, Clarke made extensive use of patent date information largely because of the readily available nature of this type of data and the relative paucity of location dates. Clarke noted that the location ticket was not necessarily a proof of settlement owing to various factors such as the abandonment of settlement by the individual, transfer of the ticket to another non-resident individual and actual delay in occupying the lot by the bona fide settler.[13] The proportion of settlers who were allocated land through the Commissioner of Crown Lands rather than by Talbot was much higher in the Western District, Clarke's study area, than in the area of present interest.

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[11] Domesday Books, Department of Lands and Forests, Ontario, or P.A.O., Abstract Index to Deeds, Genealogical Society of Utah Microfilm.

[12] Talman, J.J., Early Ontario Land Records as a Source of Local History, Western Ontario Historical Nuggets, December, 1950, Vol.8, No.4, p.12.

[13] Clarke, op. cit., 1970, p.150.

national or family background. The previous discussion with regard to the behaviour of cultural or national groups in the settlement process indicated a degree of uncertainty as to the uniformity of this behaviour within such groups. Work by Lemon and Clarke suggested that particular national groups did not, for example, select uniformly better land for settlement than others, as had been alleged by writers such as Reaman. The tendency for particular groups to seek the company of their compatriots, or equals in other respects, has not been extensively studied although evidence suggests that many minority groups behaved in this way.[62] In the essentially plural society of Upper Canada particular religious or national groups may have attempted to seek out the companionship of a familiar group. The influence of family ties upon location may have been fundamental, irrespective of national or cultural background and may have been, as Guillet has suggested, a strong influence on settlement. The hypothesis is postulated that the location of individual settlers was as close as possible to those of common ethnic and family background.

The ease of access to communications and transportation routes of a regional scale constitutes the second factor under discussion and in this regard the hypothesis is postulated that the date of location of individual settlement was inversely proportional to the distance from the main communications route. Several main routes existed in the Talbot Settlement and the hypothesis will be tested with reference to two principal movement arteries, the lakeshore water route and the nearest main land route, such as the Talbot Road.

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[62] Numerous examples exist of particular national or religious groups settling in the same general area, including Pennsylvania Mennonites in Waterloo County, Quakers in Yarmouth township, Irish in London township, Scots in Aldborough township and Glengarry County, to name but a few.

Accessibility to water as an essential resource for nourishment of humans and animals, and for the purpose of providing water-power may have been a factor of importance in the settlement of the study area. Water has been mentioned at the provincial scale as having been in plentiful supply for basic requirements of life in the settlement period. The need for sawn lumber and ground cereal flour presented a demand for a cheap power supply for mills which was answered by the harnessing of streams and rivers. Mills were built at locations such as rapids, where a dam and a culvert may have been constructed to provide a fairly constant source of energy. Such sites were by no means common particularly in the south-western[63] part of the province and many were capable only of providing power for small mill operations with limited year-round capacity. The importance of mills in the provincial settlement process has been alluded to and the availability of evidence on mill-sites in the study is sufficient to attempt a partial reconstruction of the situation during the period under study. The hypothesis that is postulated in this case is as follows: the date of settlement had an direct relationship to the ease of access to water-powered mills.

The location of settlement in relation to sources of fuel and building-material may have been relatively unimportant owing to the hardwood forest cover of much of the study area with a scattered growth of coniferous trees, such as pine. The ubiquitous nature of the forest and the more or less uniform distribution of tree species throughout, may

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[63] Kirk, op. cit., p.37, and Figure 8, p.35.

have greatly reduced the importance of accessibility of fuel and building-material in the form of wood and as a result no hypothesis will be postulated in this case.

Land quality was discussed at some length in the previous chapter in terms of its influence on settlement in Upper Canada. The quality of land in the Talbot Settlement may be deduced from evidence of the original landscape as seen from the point of view of settlers of the early nineteenth century. Land quality may be derived at the level of the individual lot and may thus be included in the analysis of factors influencing individual settlement in the study area. The hypothesis with regard to the role of land quality is as follows:- date of settlement location had a direct relationship to the quality of land on the selected lot. In other words, the higher the quality of the land the earlier the settler may have located on that particular lot.

The final factor to be considered is that of amenity value of land. This variable may be identified as being partly one of accessibility to preferred nature landscape sites and partly one of the land quality of the parcel of land selection. The aforementioned poverty of the vast majority of Talbot's settlers obliged them to place little consequence on the luxury of the amenity value of their potential locations and this factor may have been of little importance in the study area. The factor may have had importance only in the case of relatively fortunate wealthy and educated immigrants who could appreciate the quality of the landscape. Apart from the case of Colonel Talbot himself, the factor of amenity is believed to have played a negligible role in the settlement of the study area and may be omitted from further analysis.

The role of Talbot's authority in individual settlement may be tested by incorporating in a hypothesis his principal aim, that of continuous

settlement alongside roads. Spread of settlement under such a plan may be assumed to have progressed from the end of the road closest to his own settlement at Port Talbot towards the uninhabited interior. The roadside lots may be expected to have been allocated to settlers before those lots in back concessions away from the road. The hypothesis postulated with reference to Talbot's authority is postulated as follows:- that the date of individual settlement possessed a direct relationship to distance from the settled, western end of the road.

The hypothesis will be tested using observations of settlement before 1818 during which the East and North branches of the Talbot Road were settled in the seven townships south of the River Thames. The interpretation of Talbot's intentions expressed in a plan for continuous settlement alongside roads may be substantially correct.[64] Variations from the plan may however have occurred because Talbot believed that a certain degree of variation from the plan was acceptable for its general overall fulfilment. As a result, he may have allocated lots in such a way that a more or less continuous spread of settlement took place along the roads.

Some uncertainty surrounds the question as to whether arbitrary decisions on Talbot's part would have resulted in deviations from the idealized plan of settlement. Arbitrary decisions may have included giving free choice of lot to a settler or allocating distinct locations, or particularly poor quality land, to those whom he found objectionable. Without specific

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[64] Government of Ontario, Department of Energy and Resources, Otter Creek Conservation Report, 1957, "History", by A.R.M. Lewis, p.20. Lewis studied the patent dates for Talbot Road East lots and concluded "It appears that Colonel Talbot...located his settlers progressively farther and farther from that focal point (Port Talbot)..."

documentation it may be impossible to pin-point such decisions merely on the basis of the evidence of date and place of location and the few other items of information usually available with regard to a settler.

Talbot may have had only a loosely conceived plan and may have given settlers a considerable choice of lots, while perhaps offering advice as to the general progress of land occupation and thus encouraging settlement in a more or less continuous fashion. If choice was possible, the settler may have selected his lot partly in response to Talbot's authority and partly, if not principally, in response to the factors identified previously. The possible primary importance of Talbot's control over settlement dictates however that analysis should proceed to consider the role of this factor before any other.

Chapter Three

SOURCES AND METHOD

Reference has been made to statistical material on the character of settlers and extent of individual settlement in or about the years 1818 and 1836.[1] These and other data have provided a basis for estimating the relative uniformity of settlement progress and the concomitant extent of Talbot's authority in settlement supervision. Temporal and spatial location of initial settlement may be accomplished by referring to a variety of sources related to the process of land alienation. The official procedure for disposing of land to settlers changed several times during the period of Upper Canada's existence. The system employed by Talbot did not however vary significantly over the period of his supervision and the government returned to a system very similar to his method after 1818, having abandoned it in 1804.[2]

Talbot had obtained his original grant on the condition that he locate families on fifty acre lots which were to be granted in perpetuity. Petitions for land from such individuals were submitted through Talbot to the Commissioner of Crown Lands. Talbot expanded his superintendence of settlement from a mere 5,000 acres in Dunwich township to the concessions flanking the Talbot Road in 1809. Initially appointed as a Commissioner to inspect the progress of settlement, his responsibilities were widened by the official approval of land-granting powers the next

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[1] See footnotes 46 and 49-54, Chapter Two.

[2] Hamil, op. cit., 1955, p.96.

year. Submission of petitions for land from settlers on the Talbot Road to the Executive Council was effected through the agency of Colonel Talbot[3] up to the year 1812 when outbreak of war effectively halted settlement. The submission of petitions resumed sporadically after the war,[4] Talbot retaining sole knowledge of the allocation of land to individuals in many cases.

Although the system by which he superintended land was established essentially in 1809 he had a relatively small area under his control at that date, comprising the two Talbot Road East concessions.[5] In 1811, however, the unreserved and unlocated land in the three townships of Yarmouth, Malahide and Bayham was placed under his control as was the Talbot Road North, a second road surveyed to link two newly surveyed concessions on the south side of the Thames River in Westminster township with the Talbot Road East.[6] The two concessions in Westminster came under Talbot's control in 1812. The provincial government's procedure for land alienation from 1804 to 1818 required the submission of a petition for land and simultaneous payment of fees whereupon full title was granted to the settler. Talbot's system delayed the payment of fees and the granting of land until settlement duties had been completed. The petition for land was still to be submitted however and as such provided the sole record of the transfer of the land from the Crown.

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[3] Ibid., p.67.

[4] Ibid., p.85, P.A.C., Land Petitions. During the eleven post-war years before the free land system ended in Upper Canada, relatively few petitions for land, with or without fees, appear to have been submitted to the Executive Council.

[5] Hamil, ibid., p.63.

[6] Ibid., p.67.

Two hundred and two settlers were located by Talbot prior to the 1812 war, on lots outside the townships of Dunwich and Aldborough. Later on settlers were located by a method which effectively eliminated the petition and left the sole record of the land alienation with Talbot. This system involved a pencilled description in the chosen lot on the appropriate township map of the settler's name and the date of location. The entry guaranteed the settler title to the land if the settlement duties were completed. If these were incomplete, Talbot erased them from the map and the lot was given to another settler.[7]

The maps that Talbot used are extant and the majority of the descriptions of settler and location date upon them are legible. No location ticket, or certificate, was given to the settler and consequently these do not exist to provide a check on the validity of the map information. Fragmentary evidence exists in the case of a few settlers to confirm the date and place of location but the single large documentary source of such information is a Return of lands located at Port Talbot before December, 1815.[8]

In 1816, regulations governing land-alienation were revised and resembled in their new form the system used by Talbot. Specific settlement duties were readopted involving land clearance and house construction within eighteen months of initial location. When a settler

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[7] See Coyne, op. cit., 1907-08, p.54, or Hamil, ibid., p.162-163, for details of Talbot's system of recording land transfer.

[8] P.A.C., State Papers, op. cit.

applied to the Commissioner for Crown Land for a lot he was given a location ticket which specified the settler's name, location and date of receiving the ticket. The settler had to complete settlement duties before being eligible for the grant of land whereupon fees were paid. The grant, or patent, was recorded in a similar manner to the location ticket and exists as a record of the official transfer of the land from the crown to the individual.

Talbot's method of supervision did not change in spite of changes to the provincial regulations. His superintendence expanded to embrace London township in 1818, some of the adjacent school reserves which he auctioned after 1819, and the Longwoods Road concessions and unlocated lots in the four townships of Mosa, Ekfrid, Caradoc and Lobo, as well as land in the Western District. Talbot did not issue location tickets in the older townships under his control. In the Longwoods townships however, location tickets are extant which have Talbot's signature and were apparently issued by him. In these instances an additional source to the Talbot maps exists for information on the date of location. Settlement of the Longwoods townships were initially controlled by the Commissioner of Crown Lands at York and location tickets issued for the first four years of settlement of these townships came from York rather than Talbot. The inefficiencies of supervision by the District Land Board caused by factors such as difficulty of travel to remote new settlements and the demands made on the Board members, resulted in considerable abuse of the system. Settlement duties were not completed on many lots and persons holding location tickets rarely occupied their land. The ticket of location cannot in these cases be interpreted as indicating settlement, for in 1843, Talbot maintained that not a single settler

existed on lots in the Longwoods townships, located at York, although they were still unavailable for settlement by others.[9]

The free grant system of allocating Crown land was abolished in 1826. Sale of land by auction replaced the former system and did away with settlement duties and separate location ticket and patent. After this date, records of Crown land sale provide the extant information with regard to land transfer although they make no distinction between resident and non-resident owner.

Talbot maintained his original method of demanding actual residence and settlement duties and as a result, many settlers appear to have applied for the patent for their lot only after many years of delay. Their tenure appeared to them to be assured by Talbot's authority alone and they apparently expressed little concern with regard to obtaining full title to their land from the provincial government.

In view of the variety of records on land-granting the problem arises as to the selection of a particular record or document as a reliable index of the decision to locate on the land. In the case of Crown land supervised by Talbot, the date of location may be derived from one or several sources, including the Talbot Maps, the Return of 1815, petitions for land, the Township Papers[10] and isolated records referring to individuals located in various archival sources. Talbot's records do not usually indicate the date at which the land title was transferred from the Crown to the individual settler but rather the date of location.

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[9] P.A.O., Crown Land Papers, A-I-6, Talbot to Surveyor General, Canada West, April 1, 1843.

[10] P.A.O., Township Papers, arranged by individual townships.

The latter is assumed to be more closely and consistently juxtaposed with the decision to settle on a particular lot, than the date of patent or other temporal measure, such as the date of settlement duty completion.

Another principal source of information on land settlement is the patent information[11] which records the date of legal transfer of title of land to individuals. The patent date may have succeeded the initial location of a settler by a considerable period of time, particularly in the Talbot Settlement. Owing to the uncertainty that surrounds the mechanism by which the individual settler obtained full title to his land the date of location is preferred as an indicator of settlement. This view is supported by Talman who asserted that "the date of the patent had no relationship to the date of original settlement."[12] In a recent study of individual settlement however, Clarke made extensive use of patent date information largely because of the readily available nature of this type of data and the relative paucity of location dates. Clarke noted that the location ticket was not necessarily a proof of settlement owing to various factors such as the abandonment of settlement by the individual, transfer of the ticket to another non-resident individual and actual delay in occupying the lot by the bona fide settler.[13] The proportion of settlers who were allocated land through the Commissioner of Crown Lands rather than by Talbot was much higher in the Western District, Clarke's study area, than in the area of present interest.

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[11] Domesday Books, Department of Lands and Forests, Ontario, or P.A.O., Abstract Index to Deeds, Genealogical Society of Utah Microfilm.

[12] Talman, J.J., Early Ontario Land Records as a Source of Local History, Western Ontario Historical Nuggets, December, 1950, Vol.8, No.4, p.12.

[13] Clarke, op. cit., 1970, p.150.

Owing to the relatively high proportion of Talbot settlers in the latter, the location date has been used in most cases to provide a temporal measure of individual settlement.

Exceptions to this rule included settlers that occupied land sold by Talbot as School reserves in which the record of sale[14] is used as the date of location in this study. Some Crown Land in the study area was allocated directly from the Commissioner of Crown Lands at York. In these cases the land may have been occupied immediately or may have remained unsettled for some time depending on the individual grantee. Many individuals attempted to obtain land for speculative purposes and some of these speculators may be identified in the existing records.

Previous attempts to identify particular individual speculators on a regional basis include those by Kelly and Clarke,[15] and the list of patents of land granted in the colony was used by both researchers. Kelly mapped the distribution of "patented, absentee-held land" in three townships of Simcoe County. Unfortunately he did not specify the criteria by which he identified non-residents from the list of patentees. Clarke identified speculators from the patent information on the basis of those individuals having at least 400 acres of land, an area of two whole lots in most areas of the province. Further sources of information used in his study of the Western District included records of tax-delinquent and Canada Company land.

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[14] P.A.O., Crown Land Papers, C-III-6, Vol.1, School Land Sales, 1824-1845.

[15] Kelly, op. cit., Clarke, op. cit..

Clarke noted that many lots may have been initially settled and only later acquired by speculators. As a result a general description of the speculative holdings in the region based on initial settlement data was in fact an understatement of the true case. The speculative land gained in this way in the study area would not have involved large areas and consequently any underestimate may be relatively small.

In the study area, speculators have been identified mainly on the basis of patent information. Interpretation of such relatively indirect data is aided by the fact that the majority of grants to non-residents was made from 1791 to 1812, the period preceding general settlement. Many of the grants were made moreover to retired British military officers and United Empire Loyalists who were relatively easily identified on the patent lists. Other speculators included:- "Americans, such as Andrew Westbrook, who entered the District towards the turn of the 19th Century and subsequently acquired large areas; surveyors, such as Mahlon Burwell, who was paid partly in land; and administrators such as Thomas Talbot, who acquired large areas of land beyond the initial 5000-acres to which he was entitled as a retired military officer. The total number of speculators identified from patent lists is seventy, all of whom held at least 500 acres. A slightly larger unit area was taken than in Clarke's work in order to eliminate legitimate settlers with two whole lots, or 400 acres, in their possession. Such a situation may have arisen from several cuases including a settler gaining a lot, both for himself and through his wife's or his son's claim. The possession of merely one more lot than the normal 200 acre parcel is scarcely evidence of speculation although in toto the effect may be similar. Additional information to that contained in patent records was used to identify those individuals possessing land of less than 500 acres. On the basis of

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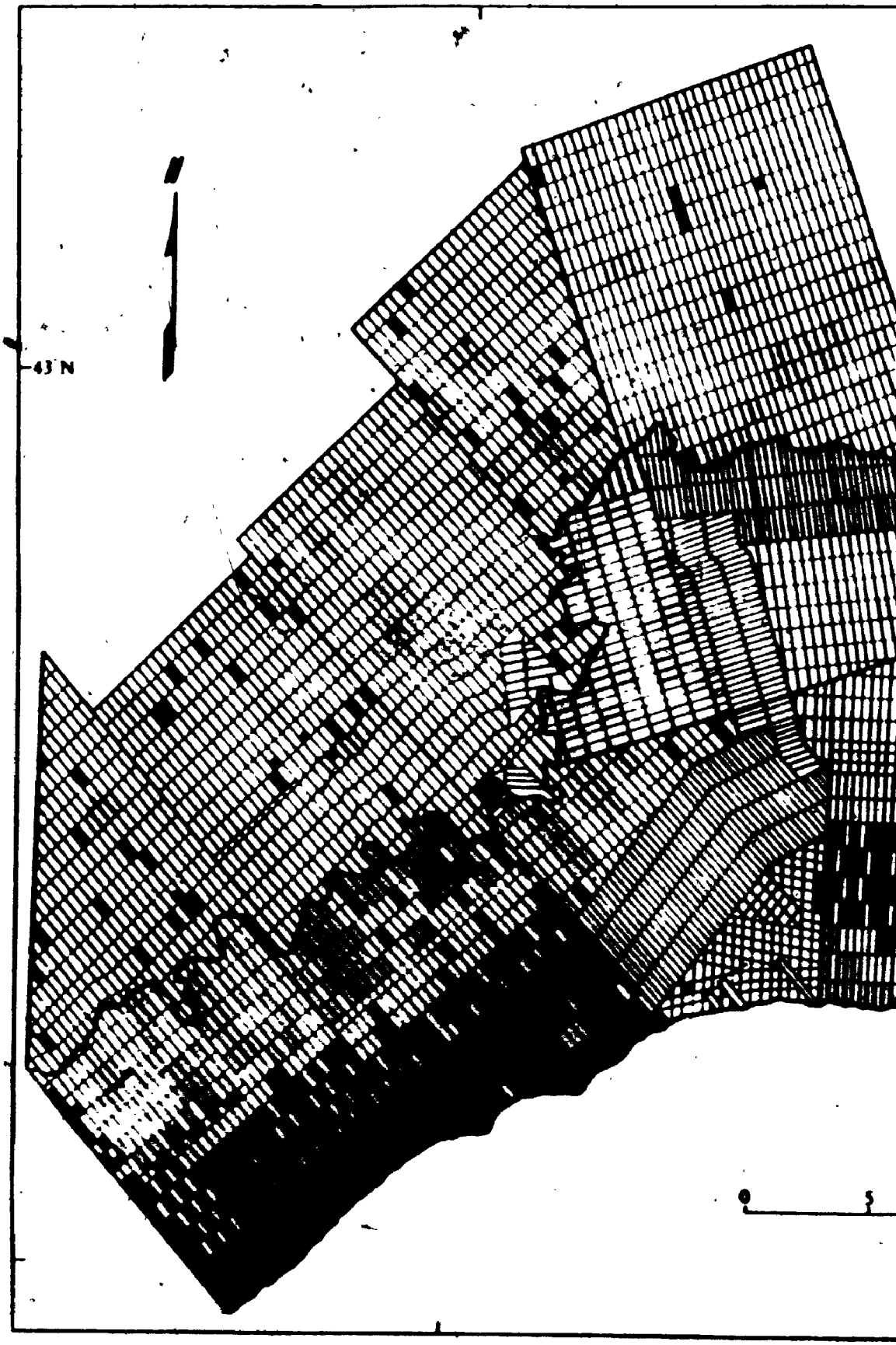
the information and criteria described, speculative holdings for the fifteen townships under consideration have been mapped, Figure 3.1. The pattern of speculative holdings appear irregular with the greatest concentration in Dunwich and Aldborough in the south-west. Other concentrations occur in Delaware, Southwold and Yarmouth. All five of these townships were surveyed relatively early by comparison with the rest of Upper Canada and consequently were open for land application by prospective owners. Many of the early patentees were retired military officers or United Empire Loyalists who were entitled to large grants of land. An example of this process of acquisition was the parcel of land, totalling over twenty-two thousand acres in Yarmouth and Delaware townships, gained by the Baby family.

The Abstract Index of Lands was used to determine the date of settlement of lands held by speculators. In the absence of supplementary information with regard to the identity of the purchaser, settlement was assumed to have occurred if the area purchased from the previously identified non-resident owner was less than three hundred acres, a parcel of land considered to be too small to have been a source of speculative wealth on its own and thus obtained for agricultural purposes.

Other settlement deduced from the Abstract Index includes that which occurred upon land that had been undocumented elsewhere. Included in this category is a variety of types, certain lots supervised by Talbot, Crown, Clergy and School reserves and Crown land administered from York. Shortcomings of the use of patent information have already been stated, although in view of the relatively successful employment of this data by Clarke and the relatively low proportion of cases where the information is resorted to in the present study its use is thought to be justified.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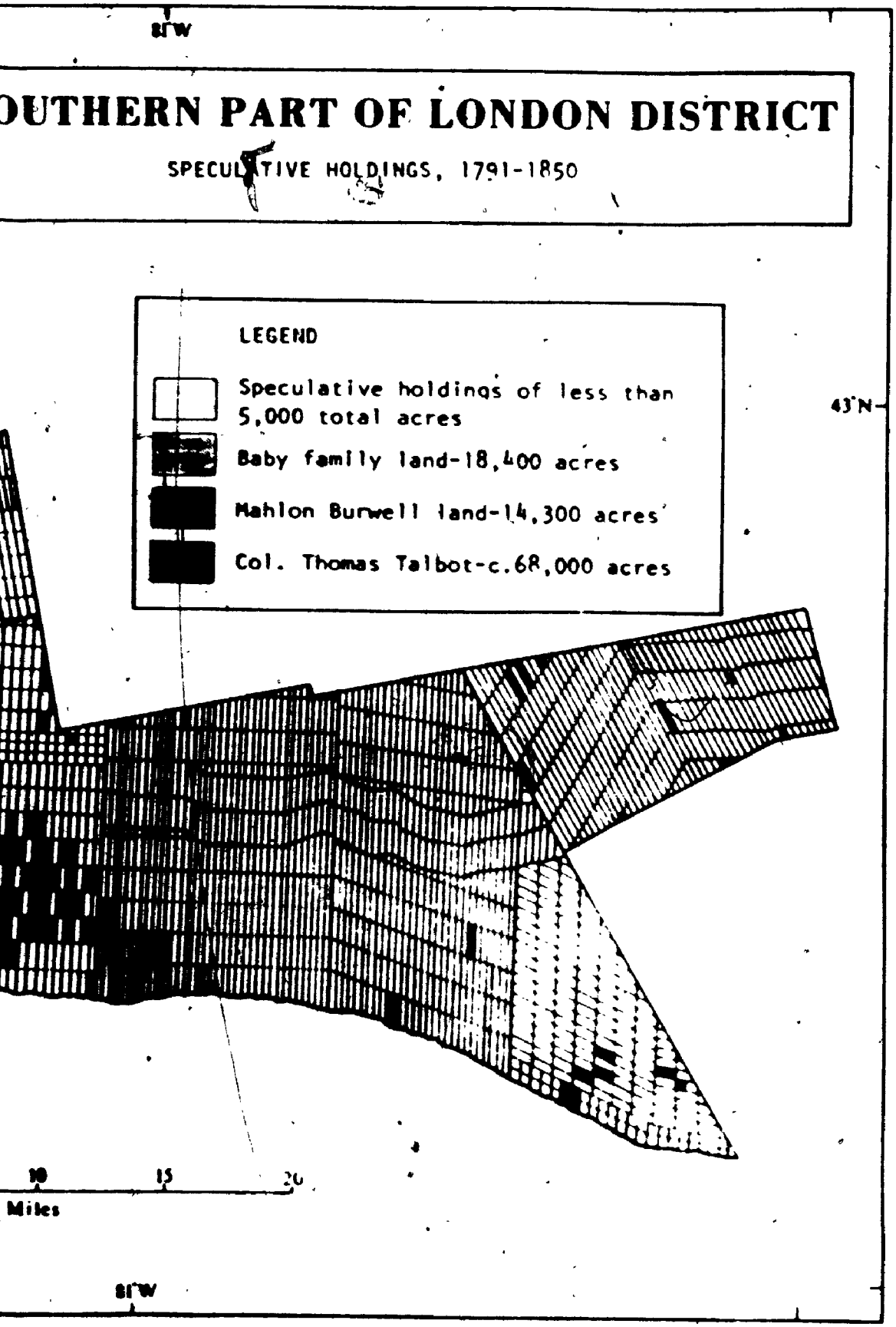
81°W
OUTHERN PART OF LONDON DISTRICT
SPECULATIVE HOLDINGS, 1791-1850
LEGEND
Speculative holdings of less than 5,000 total acres
Baby family land-18,400 acres
Mahlon Burwell land-14,300 acres
Col. Thomas Talbot-c.68,000 acres
43°N
10
15
20
Miles
81°W

ure 3.1

Interpretation of the records of land sale has been mentioned with reference to the School Reserves administered by Talbot. Crown and Clergy Reserves sales were interpreted in a similar way in that the date of sale is taken to be the date of location of settlers.[16] The exception to this rule is the reserved lot that may have been leased prior to sale, the infrequency of leasing is such that very few lots fall into this category.[17]

A final note should be made with reference to the Talbot maps. The settlement information marked on them is apparently in Talbot's own hand and is written in pencil. Owing to his practice of rubbing-out miscreant settlers' names prior to re-allocating the lot to others, the writing on several lots is unclear. The writing itself appears to change although this may be a result of Talbot's advancing years as later settled areas, such as the Longwoods townships, are particularly affected in this way. The interpretation of the details of name of settler and location date is most difficult as a result in certain cases and other sources have been sought including location tickets and the Abstract Index of Deeds. The specific source of data will be referred to in subsequent analysis.

Testing of the hypotheses incorporating Talbot's plan for continuous settlement and the accessibility to communications links depends in particular upon the availability of spatial and temporal settlement data. Other hypotheses related to accessibility and land-quality factors embrace

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[16] P.A.O., Crown Land Papers, C-III-3, Vols.1-3 and C-III-6, Vol.1, Clergy Reserve Sales Registers, 1824 onward, and J.L.A./U.C., Appendix, 1837-38, p.64-76 and 413-4; 1839, p.480, Crown Reserve sales by the Canada Company, Appendix.

[17] P.A.O., Crown Land Papers, A-iv, V.57, Crown Reserve Leases, 1818-1821 and C-II-3, V.4 and 5, Clergy Reserve Leases, 1802-1831. See also Wilson, op. cit., p.37.

such variables as place and time of settlement but involve other additional ones.

The source of information on personal communication between settlers is primarily the national origin and the family surname of Talbot settlers on Returns of 1815 and 1818. The nationality of the settlers described in the Return of 1818 has received brief mention already. A sufficient number of individuals is included in the Return to permit an analysis of the effect common national origin may have had upon the propensity to locate near other settlers. The two principal national origins, British and American, may reflect characteristics that are by no means identical which may have reinforced the desire of those settlers with a common origin to settle in close proximity to one another. The other principal characteristic of origin, United Empire Loyalist, identified within the British or "natural born" group, may be assumed to identify another distinct class of settler.

A common surname is taken to indicate in most cases kinship of some kind and is interpreted as a strong locational force. The data are weak owing to the possibility of occurrance of common surnames such as Brown and Cook. The surname is used in the absence of other information on this intangeble category of communication. The relative location in both space and time of settlers bearing the same surname will be a means of testing this hypothesis.

Accessibility to water-powered mills is incorporated in the fourth hypothesis. The frequency of mills in aggregate terms for both grist and saw- types is readily available[18] by township for most years. The

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[18] J.L.A./U.C., Appendices, 1824-1850, Aggregate Assessment Returns for Upper Canada (Canada West).

precise location of mills and the precise period of their operation is less easily discovered. General regional histories give details in a non-systematic fashion of the milling industry.[19] Isolated references exist to the presence of mills at particular locations and dates.[20] Systematic attempts to survey individual mills are rare. Kirk attempted to map the location of large mill-sites in south-western Ontario in 1851 although many small mills were omitted.[21] Inspection reports of vacant clergy reserves[22] include references to the "distance to nearest mill" in miles which give an indication of the situation of mills at particular dates. The type of mill is not specified although the grist mill may have been of more value to settlers engaged in agriculture. Owing to the lower frequency of occurrence, the grist mill may correspond more closely to the type of mill referred to in such Inspection Reports. A further weakness of the Reports is the difficulty of fixing the precise

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[19] Government of Ontario, Department of Energy and Resources Management, Conservation Authorities Branch Reports, those written within the study area are:- Ausable Valley (1949); Big Creek (1963); Catfish Creek (1951); Kettle Creek (1967); Otter Creek (1957); Sydenham Valley (1963); Lower Thames (1965); and Upper Thames (1952). Of these eight reports only three, the Ausable, Big and Otter Authorities, dealt with historical information, including that on grist mills.

[20] Carruthers, H.D., Americans in the London District of Upper Canada, Immigration and Settlement, 1793-1812, unpublished M.A. thesis, University of Western Ontario, 1968, p.83 and Brock, D.J., Richard Talbot, the Tipperary Irish and the formative years of London Township, 1818-1826, unpublished M.A. thesis, University of Western Ontario, 1969, p.59.

[21] Kirk, op. cit., Figure 8, p.35.

[22] P.A.O., Crown Land Papers, A-6, Vol.8, and A-6-1, Vol.15, Clergy Reserve Inspection Reports, 1844 and 1829.

location of a mill owing partly to the obscure distance measure which appears to be the travelled rather than the straight-line distance. The travelled route is however, unclear and not coincident with the surveyed road lines. The lateness of the reports with reference to the main period of the Talbot Settlement further reduces their overall value. The accessibility of mills will be dealt with in testing the fourth hypothesis within limits set by the relatively inaccurate data of mill location and duration.

Land-quality is a variable analysed in the fifth hypothesis. The land-quality in question was that perceived by the settlers although no first-hand records of such perception exist. Numerous guides were published after 1825 to advise prospective settlers and immigrants as to how to select lots of land for agricultural settlement. Advice proffered in these publications tended to vary and even contradict itself, but the opinion of several more reputable local writers now provides the basis for distinguishing indicators of the type of land sought by prospective settlers.

The land characteristics themselves may be derived in detail from the surveyor's notes[23] which give a systematic impression of the pre-settlement landscape. The notes refer to genera of forest vegetation, landscape types, such as swamp, plains, and bottom-land and isolated cultural features, such as Indian trails. They are relatively detailed and systematic but possess several weaknesses which will be briefly referred to here and enlarged on in later discussion.

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[23] Surveyor's Notes for each Township in the study area, Department of Lands & Forests, Government of Ontario.

2 OF/DE 3

these establishments. Improvement of the same conditions may have prompted their reopening and their possible positive effect on settlement. The fluctuation in number of mills may have complicated the factor of ease of access in the mind of the individual prospective settler, who may have been unable to obtain reliable information or assurances that particular mills were operating.

The settlers' assessment of particular features of the landscape such as the quality of the land may have varied over the period and within the various groups that settled in the area. Variations in the influence of factors and resulting decisions are undocumented and are identified by deduction from indirect sources. Wherever possible analysis will be performed in the light of such changes as may have occurred in the factor under consideration.

Strengths And Limitations Of The Study

The study adopts a systematic approach to the analysis of individual settlement in which hypotheses postulated on the basis of prior research are tested in an attempt to provide valid generalization. The study area possesses the unique attributes of having been substantially supervised by Colonel Talbot during its early settlement and of having developed rapidly in overall settlement terms. The importance of Talbot's influence at the scale of individual settlement is tested and the possible role of alternative factors of settlement recognized and subjected to analysis. The availability of detailed information on location is a fortunate aspect of Talbot's former superintendence and other information such as land quality is incorporated in the analysis at a similar level of detail.

At all stages of the analysis an attempt has been made to generalize on the basis of as representative a set of information as possible. In different stages the precise form of the information varied owing to the varying availability of particular data. Consequently at one stage all the measurements of a variable have been used and at another a sample has been taken for analysis. In the latter instance the size of the sample has been enlarged in order to improve the validity of generalizations that may emerge from the subsequent analysis.

The limitations of the analytical approach adopted in the study are several, some more immediately evident than others. The normative method tends to underestimate variations in decision-making ability that may have played a crucial part in settlement at the individual level. It may reduce initiative and elevate ignorance to a common decision-making plane. The more subtle personal relationships, cultural affinities and national biases are ignored owing to the lack of information at a scale comparable with other variables. Assumptions made with regard to the various types of data may limit their value in certain cases. For instance, the interpretation of the date of location rests heavily upon the assumption of actual settlement at or close to the date of either location, petition, patent or sale depending upon the source described.

Whereever possible in the data collection, variables have been measured at the interval level because of the generally greater precision possible particularly for comparison and quantitative analytical purposes. In some instances measures are nominal as with for example, forest trees, and are thus suitable for rather limited methods of analysis.

Irrespective of the level of measurement the need has existed to provide a rigorous test of the hypothesis proposed and data were select-

ed essentially with this in mind. In the case of kinship, for example, the total population was used and the hypothesis tested on the basis of certain parameters. In other cases, for example, the accessibility of main routes, a sample was selected in as objective a manner as possible to permit the use of a statistical test of the hypothesis in question. The use of both non-parametric and parametric statistical tests was deemed valid in this study both on the basis of the care surrounding the hypothesis formulation and data collection and in view of precedents that exist in other historical geographical writing.[24]

The results of analysis will offer at best, an improved basis for generalization with regard to settlement in Upper Canada as a whole. More limited statements of relevance to the Talbot Settlement only may be all that is possible and such generalizations as are produced may throw little light upon the decision-making of settlers. Stochastic models may be required to provide genuine progress in the explanation of this area of settlement. Construction of such models appears to be a task that is impossible at present owing to the need for detailed description and a general lack of information in this regard.

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[24] Clarke, op. cit., 1970, Gentilcore, op. cit., 1972, Wood, C.J.B., op. cit., 1966.

Chapter Four

THE ROLE OF COLONEL TALBOT IN SETTLEMENT

The analysis of Colonel Talbot's role in guiding individual settlement encompasses the period from 1803 to 1818 during which he enlarged the areal extent of his superintendence to include nine townships in the London District. Talbot's scheme for settlement was first proposed to the government in 1802 when he requested the grant of a township,

> "...something considerable, sufficient to induce me to prosecute my projects with spirit, and by affording me the facility of putting those plans in execution, authorized me to look forward with satisfaction to the ultimate establishment of a comfortable and respectable tenantry around me."[1]

Talbot intended to cultivate hemp, a product much in demand in wartime Great Britain and was granted land in Dunwich and Aldborough in which to pursue his plans and supervise settlement. The impression gained from his statement is that settlers would be located in a continuously settled area around Talbot's own location.

The initial plan did not come to fruition and Talbot appears to have modified his purpose within a relatively short time. Very few settlers arrived in the first few years with only twenty-two recorded by the spring of 1809.[2] These were settled in the southern parts of Dunwich

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[1] P.A.O., J.G. Simcoe Papers, a letter from Talbot to Simcoe, 11 November, 1802.

[2] P.A.C., Q, V.331, p.158A, Table entitled "Land Granted and Described to Colonel Talbot," June 29, 1822.

and Aldborough townships in a far from continuous fashion and not on the grant of 5,000 acres Talbot had received expressly for the purpose of their settlement.[3] He had located these early settlers at some distance from his own location on land that he was entitled to claim in exchange for releasing part of his initial grant for settlement. Apart from the location of settlers Talbot had further ignored the terms of his grant by failing to develop hemp cultivation.

The modifications of Talbot's plans may have resulted from his gaining more realistic impression of the local situation brought about by actual residence, the most important changes involving the development of roads. In 1804, barely sixteen months after his arrival, Talbot, together with three other prominent residents of London District proposed a major rerouting of the main road through the area. The provincial government had allocated £250 for improving the road following the Thames River valley but these residents suggested that a new route be surveyed closer to Lake Erie to link by an east-west road the fledgling settlements of Long Point and Port Talbot. The road was surveyed only partially in 1804 before the funds were exhausted. In spite of its incompletion the road proposal suggests that the lack of land communications had made an early impression on Talbot and may have convinced him of the need for road construction by actual settlers, rather than through funds allocated by the provincial government. Road construction by settlers had already taken place on Yonge Street leading north from Toronto to Holland Landing.

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[3] Coyne, op. cit., 1909-10, p.75-77 for a table entitled "Schedule of the Hon. Thomas Talbot's Settlements in the Townships of Dunwich and Aldborough", undated, but estimated 1820.

Continuous settlement on land either side of the road and the insistence upon the duty of road clearing by settlers ensured the development of a communications route.

In February 1809 Talbot revived the proposal for a road close to the shore of Lake Erie and suggested that the Yonge Street plan be adopted in this case.[4] The road would benefit the development of that area of Upper Canada, and increase the value of the adjacent School Reserves. The government was not involved in expense beyond that of survey, the road clearance being the duty of settlers. Furthermore, he argued that only if the road were developed would any benefit be derived from the expenditure of £250 in 1804.

Having won the initial approval for the Road in 1809, Talbot's plan appears to have expanded after this date to include the Talbot Road North, surveyed in 1811 from Southwold township through the western portion of Westminster to the River Thames. This road was to be developed under the same conditions as the previous one, which was known as the Talbot Road East. At the same time as obtaining permission for the Talbot Road North, he gained de facto permission to locate settlers on ungranted lots in the townships of Yarmouth, Malahide and Bayham. The concessions on either side of the Talbot Roads East and North had the Crown and Clergy Reserves removed from them and relocated in other parts of the townships through which they passed. The concessions in question were as a result totally available for alienation from the Crown and would permit continuous settlement along the roads. Concessions some distance from the Talbot Roads in Yarmouth, Malahide and Bayham were not altered in

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[4] Hamil, op. cit., 1955, p.63.

terms of the removal of the Crown and Clergy Reserves but were in fact encumbered with the reserves removed from the Talbot Road. Continuous settlement had even less of a chance of developing in these concessions than in those "normally" chequered with reserves.[5]

The Hypothesis Of Official Authority

During the seven year period from 1811 to 1818 numerous settlers came to Talbot for land, providing him with the opportunity of implementing his plan of continuous settlement. On the basis of settlement data on the Talbot Roads for this period, the hypothesis that the date of settlement was proportional to the distance of the settled lot from Port Talbot, or the western end of the Talbot Road, can be tested by inspection and simple correlation of sample data. A seventeen per cent sample of all lots in the fourteen study townships was taken using an unaligned systematic stratified sampling method.[6] The lots having been located in this way, the date of settlement to the nearest month was obtained from either the 1815 Return[7] made by Talbot or from the Talbot maps.[8] The rank of the individual settler in the overall settlement sequence was taken rather

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[5] Ibid.

[6] Berry, B.J.L., Sampling, Coding and Storing Flood Plain Data, United States Department of Agriculture, Agricultural Handbook No.237, 1972, and Berry, B.J.L., and Marble, D.F., (eds), Spatial Analysis, New Jersey, 1968, "Geographic Sampling", by B.J.L. Berry and A.M. Baker, p.91-100. A sample was taken of all lots in the study area amounting to approximately 850, or seventeen per cent. The sample was intended for use at several stages of analysis. In this case only the Talbot Road East lots are used.

[7] P.A.C., State Papers, Talbot Portfolio, op. cit.

[8] P.A.O., Talbot Maps, Book C, D and E. In other words using data of settler rank in the overall settlement sequence and also the distance of each settled lot from Port Talbot, it was hoped that correlation analysis would show whether or not later settlers did occupy lots progressively more distant from this point as time passed.

than the date itself for the period 1809 to 1815 owing to the completeness of the record of settlement in the Return of 1815.

The technique to be used to test the hypothesis is that of simple correlation and regression analysis of the dependant variable, the settlement location, and the independent variable, the time of settlement. This technique was chosen because it does not place too great a strain on the assumption that Talbot employed this single straightforward plan in his settlement. Polynominal or multiple correlation and regression could be used in this case but such a technique might introduce complexity into the analysis that is not justified and place too great a strain on the basic assumption of the model.

The two variables in the analysis, settlement date and location, are represented by the rank of the settler in the overall process of settlement and by the lot number for the settlement location respectively. Rank was selected because the sequence of settlers in the overall process is more important in this model than actual date of settlement. The frequency of settler immigration to the area varied considerably over time and the irregularity of the sequence based on actual date injects an unnecessary complexity into the analysis. The rank of the settler in the overall sequence is an adequate temporal measure of settlement and somewhat superior in this respect to the actual date.

The level of detail of settlement information is such that the precise day of settlement is not available, only the year and in some cases the month having been the information recorded. Some settlers were allocated the same month throughout the period under consideration and as a result, their rank is identical. The perfect correlation that is implicit in Talbot's scheme of settlement which has been incorporated into the model relationships of the rank of settler and the location

of settlement cannot be achieved with several identical ranks. In actual practice settlers may not have arrived simultaneously in the Talbot Settlement although the coarse measure of rank available does not adequately reflect differences in this respect.

The location of settlement is measured by the lot number of the location along the route of the principal road. The Talbot Road East has concessions alongside it containing 200-acre lots that are numbered from four at the western end at the Dunwich and Southwold township boundary through to 189 at the eastern extremity of Middleton township.

The Talbot Road North is numbered in a similar fashion, commencing at lot one on the western end of the roadside concessions and extending to lot seventy-nine near the River Thames in Westminster township. The Talbot Road North concessions are parallel to the Talbot Road East for the first forty lots before turning northwards at right-angles to the latter road. The numbering of lots on Talbot Road North ignores the change in direction for the purposes of analysis in this case.

The data to be analysed are samples in both the Talbot Road East and North, approximately seventeen and twenty per cent of all lots respectively. The proportion increased for the Talbot Road North in order to include a minimum of thirty lots,[9] in fact thirty-two lots are sampled on this road and sixty-four on the Talbot Road East.

In the model of Talbot's settlement scheme proposed here, the place of a particular settler in the rank sequence identifies a specific location for him in the row of lots along either the Talbot Road East or

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[9] In order to have at least thirty lots from the Talbot Road North (the minimum for a large sample) a separate systematic stratified sample was used.

North. The model may be expressed as:-

(1) $y = x$

where y was the lot number and x was the rank of settler. This model requires modification owing to the duplication of lots alongside both roads. For any particular lot number, two locations exist and as a result two settlers would have been located in identically numbered lots although they had differing ranks in the settlement sequence. The problems encountered might be disposed of by regarding each concession as distinct but alternatively the model can be reformulated by an approximation of the lot location in which:-

(2) $y = 0.5 + 0.5x$ when the settler had an odd numbered rank and

(3) $y = 0.5x$ when the settler had an even numbered rank.

Although the model as expressed in equation (2) and (3) does not identify the side of the road, the side selected is immaterial as both lots were in theory of equal importance in the idealised settlement scheme. The model may be expressed in this form for the Talbot Road North but must undergo further modification for the Talbot Road East where the lots were numbered from four to 189 rather than from one at the western end. As a result equations (2) and (3) become respectively

(4) $y = 3.5 + 0.5x$

and (5) $y = 3.0 + 0.5x$

Results of Analysis

The date of settler rank and lot number are plotted on scattergrams together with the best-fit regression line, regression equation, correlation coefficient, model regression line and model regression equation for the analysis of each road, Figure 4.1 and 4.2. The scatter

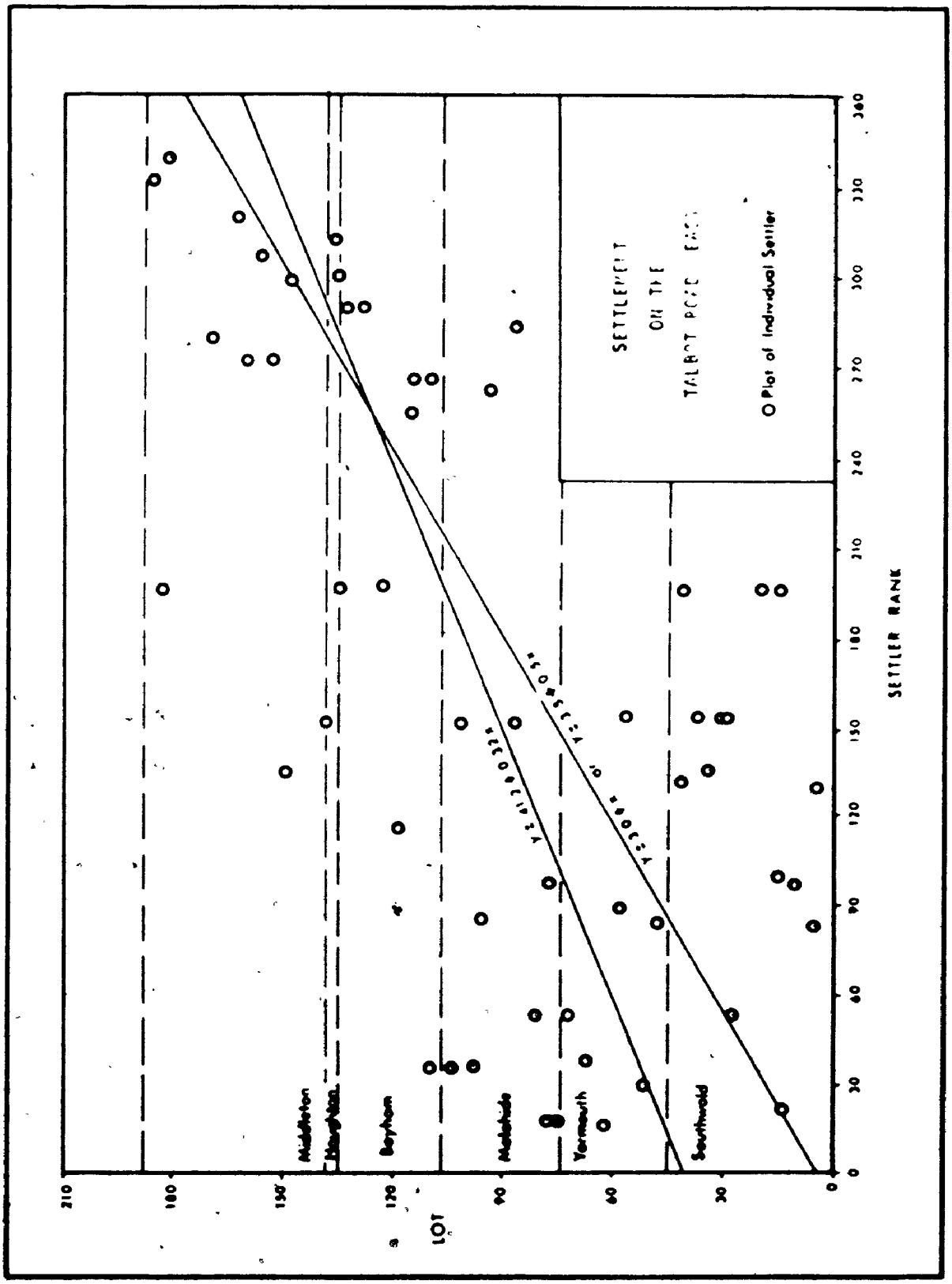
SETTLEMENT
ON THE
TALBOT ROAD
O Plot of Individual Settler
Middleton
Houghton
Bayham
Malahide
Yarmouth
Southwold
LOT
SETTLER RANK
0
30
60
90
120
150
180
210
240
270
300
330
360

Figure 41

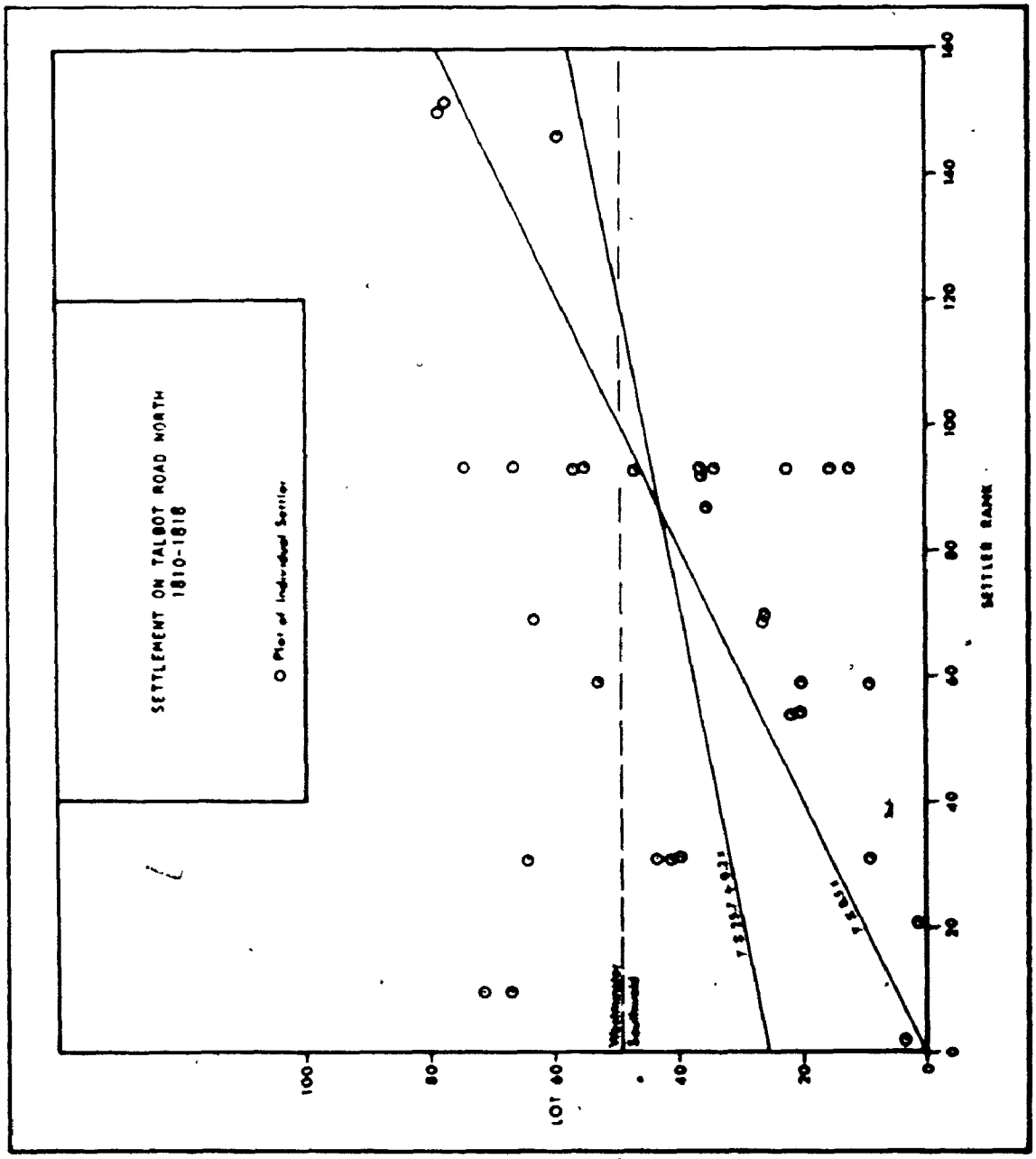
SETTLEMENT ON TALBOT ROAD NORTH
1810-1818
O Plot of Individual Settler
LOT NO
SETTLER RANK
0
20
40
60
80
100
120
140

Figure 4.2

of data points is in itself of importance in illustrating the extent of a relationship between the variables of time and place of settlement and the extent to which a model scheme was employed. The points are distributed in a seemingly haphazard fashion over the graphs and apparently display little linear relationship. The horizontal divisions on both graphs indicate the boundaries of townships on the roads. If each township along the road from the origin is considered in succession a degree of ordered progression of settlement may be more apparent.[10]

Earlier settlement on the Talbot Road East occurred in Malahaide, Yarmouth and to some extent Southwold than in the townships further away from the origin at Port Talbot. The number of data points plotted in the upper right hand part of the same graph indicates to some extent a progression of settlement along the road over time. A crude progression such as this may be detected on the scattergram of data for the Talbot Road North, Figure 4.2. Owing to the quality of the data, many settlers were ranked equally and consequently a large locational spread corresponded to particular ranks. Relatively early locations appeared to have been on relatively low-numbered lots close to Port Talbot and the lowest ranked, or latest, settlers occupied some of the more distant lots in Westminster. A slight degree of correlation may be detected on the basis of inspection of the plotted data.

Correlation and regression analysis produced a positive correlation in both cases, which proved highly significant on the Talbot Road East ($r = 0.65$, $p = 0.001$) and less significant on the Talbot Road North ($r = 0.35$, $p = 0.05$). The similarity of the observed regression with the

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[10] In other words later settlers did generally settle further along the road than earlier settlers although this generalization was by far from perfect and several examples occurred where early settlers located relatively far away from Port Talbot and later ones settled relatively close to that end of the road.

model was more apparent owing to the steeper slope of the plotted line for the Talbot Road East, Figure 4.1, than North, Figure 4.2. The correlation in the former was by no means very large (r = 0.65) and considerable variation in the dependent variable was evident. Nevertheless the apparent linear relationship observed from the scattergram evidence appeared confirmed by linear regression analysis.

The proposed hypothesis relating the distance from Port Talbot to the date of settlement may be partially although not totally accepted, owing to the relative weakness of the correlation and the observed variation in the dependent variable. The linear correlation of date and location appeared weaker on the Talbot Road North and not much stronger, although significant, on the other road.

Residual values of locational deviation from regression and individual characteristics of settlers provided a means of improving the explanation of settlement under Colonel Talbot's supervision. The residual value[11] for each settler on both roads was the basis for identifying a range of deviation from the regression in terms of the per cent of positive or negative deviation, measured by quintile classes. The value of each location was mapped, Figure 4.3, and the degree of deviation displayed spatially on at least a sample basis. The residuals may be interpreted by regarding the higher percentage values as extreme deviations from the observed model. Positive values represented settlers who lagged behind the idealised progression along the road and negative ones correspond to settlers who preceded the same trend.

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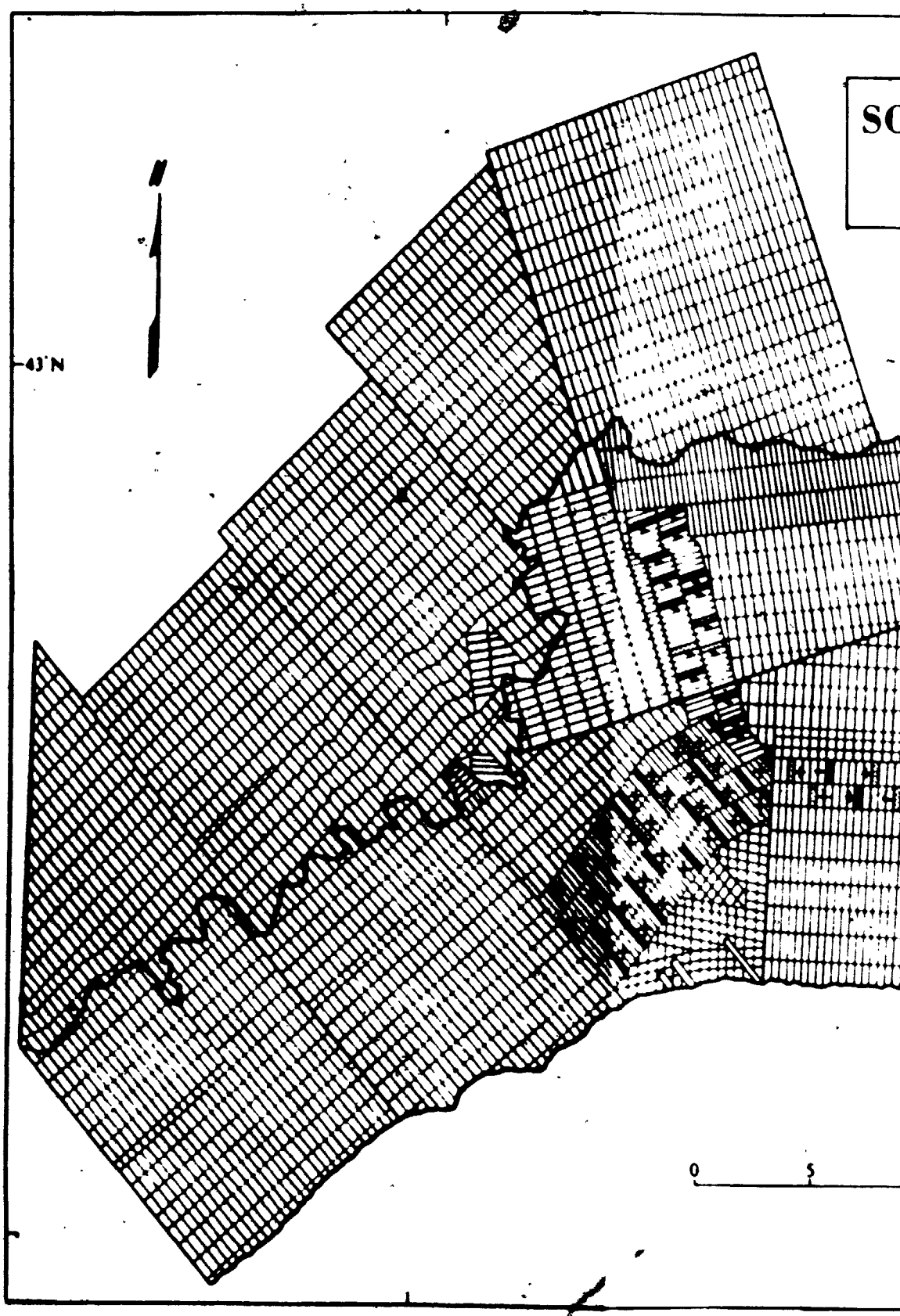
[11] Residual values are calculated by subtracting the actual value of the dependent variable for each location from the value calculated from the regression equation using the corresponding value of the independent variable.


SC
43°N
0
5

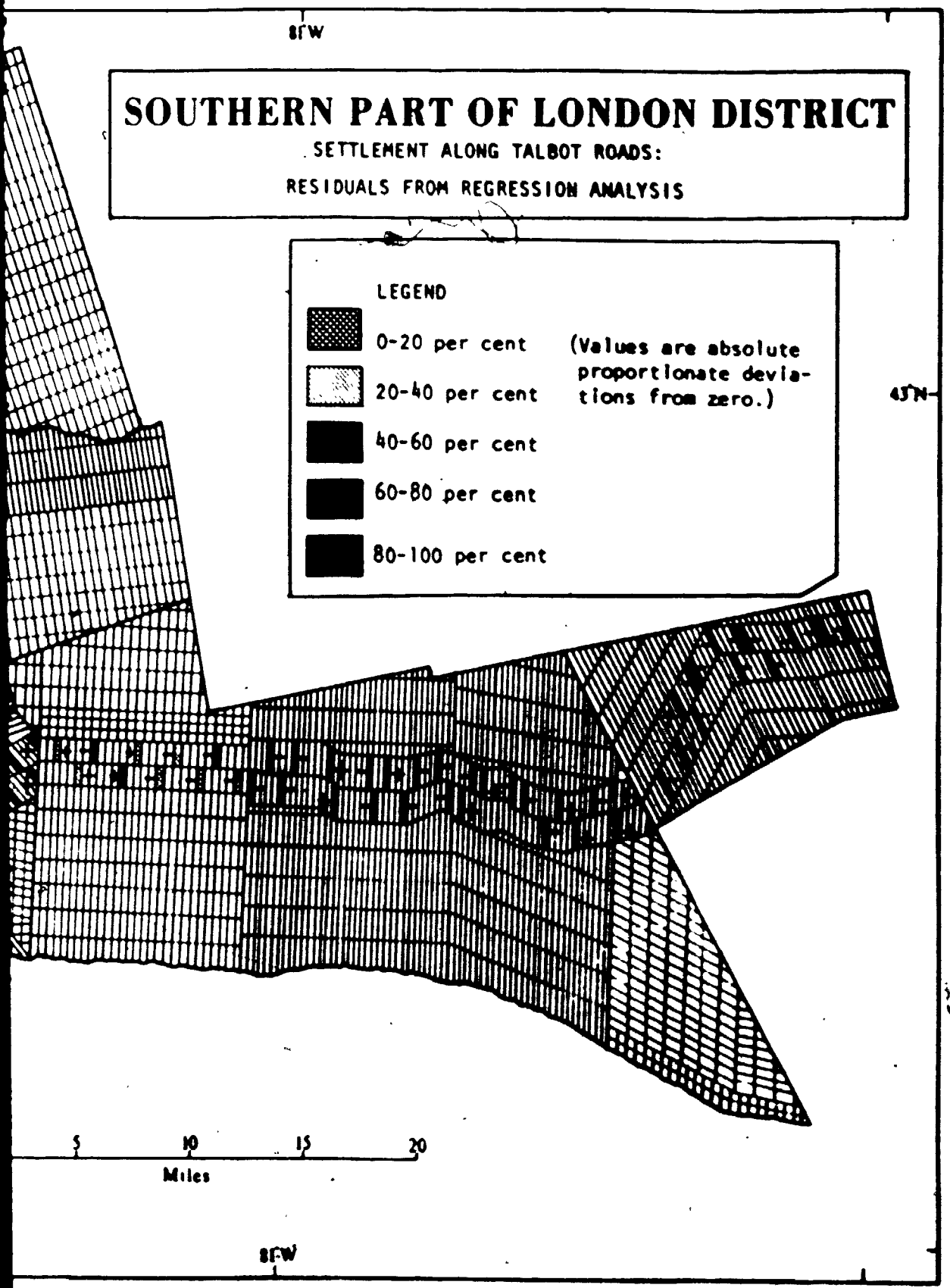

81°W
SOUTHERN PART OF LONDON DISTRICT
SETTLEMENT ALONG TALBOT ROADS:
RESIDUALS FROM REGRESSION ANALYSIS
LEGEND
0-20 per cent
20-40 per cent
40-60 per cent
60-80 per cent
80-100 per cent
(Values are absolute proportionate deviations from zero.)
43°N
5
10
15
20
Miles
81°W

Figure 4.3

The largest value residuals, over sixty per cent deviation, were in the case of both roads located towards the extremities in the east and west. The large positive values were all in Southwold township which appeared to have suffered throughout its area from laggardly settlement. The settlers in this township may be regarded as having occupied a gap in the Talbot Road settlement left by the discontinuous occupation of previous settlers.

Large negative residuals were found in greatest concentration on the Talbot Road East in eastern Middleton township although two settlers of this class occurred in the western part of the township and four more were located in relatively close proximity in the area of eastern Malahide and western Bayham townships. On the Talbot Road North the large negative value residuals were in the northern part of Westminster.

The existence of extreme residuals in relatively compact areal clusters may have reflected generally rapid settlement of a discontinuous nature along much of the Talbot Road East and to a less extent the Talbot Road North. In the rapid settlement process a gradual spread from the western end may have been almost indiscernable hence the variations from the regression. Relatively early settlements created in apparent defiance of any model scheme that may have been behind the development of the Talbot Roads occurred in locations which were indicated by the large negative residuals, in Middleton, Malahide and Bayham townships on the Talbot Road East and the northern part of Westminster township on the other road.

The factors that may have influenced settlement in these areas may include those of accessibility, land quality or others that were identified earlier. Settlers included in both samples are known by name in the vast majority of cases and by national origin to almost the same extent. Assum-

ing the possession of a common surname as indicative of kinship in the case of all but most common names, the degree to which proximity to relatives affected settlement location choice may be assessed. In addition the behaviour of settlers of differing national origin in selecting locations may have reflected the affinity of members of these groups for close contact with one another at the time of initial settlement.

In the case of the Talbot Road East sample, twenty-six settlers (forty per cent) had the same surname as another settler elsewhere in the Talbot Settlement, and twenty-one of these were found to have settled within a distance of one lot, of those lots available for settlement, from a related settler. Within the second group of twenty-one, five settlers were found to have extremely high residual values (greater than eighty per cent deviation). Only one residual had a positive value, the settler in this case being John Neville on lot seventeen South in Southwold township who located in 1815 and occupied position number 196 in the ranked sequence. If the ideal model had been implemented he would have occupied lot number 101, his location representing a spatial deviation of eighty-four lots from the ideal.[12]

The four extreme negative residuals were located towards the eastern end of the Talbot Road East although that in Malahide was some distance from the three in Middleton. The settler in Malahide, Alexander Cascadden, located within a distance one lot width of a relative in 1811 and in doing

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[12] In the case of the even numbered 197th ranked settler, equation (5) is employed, $y = 3.0 + 0.5x$ where $x = 196$, $y = 101$. The difference between the lot occupied by this settler, No.17, and to that occupied in theory is (101-17) or 84 lots.

so occupied an isolated location some distance from Port Talbot and the idealised centre of settlement spread. The three extreme residuals in Middleton appear to have been related to settlers who located in 1815 but were relatively early in terms of the overall process of settlement on the Talbot Road East.

The origin of settlers appears to have been distributed randomly among all residual values with no apparent association existing between locational deviation and origin. Only twenty-eight of the sixty-four settlers were identifiable on this basis and although both British and Americans were numerically well represented they exhibit no apparent locational "clannishness".

The Talbot Road North settlers exhibited somewhat similar characteristics to those on the other, longer road. Of the thirty-two settlers, fourteen shared surnames with other settlers and twelve of these appear to have settled within a distance of one lot from a related settler. Only two settlers are identifiable as having been related and having an extreme residual value from the linear regression. In both cases the values are negative and the settlers form two of a group of eleven who located in 1812 in the northern part of Westminster township which was at that time quite isolated from other settlements.

The general conclusion that may be drawn from the examination of the residuals from regression and from the hypothesis-testing itself is that a variety of factors modified the process, deliberately planned or otherwise, of gradual settlement spread along the Talbot Roads. Although a direct positive relationship is observed between the date of settlement and the distance from Port Talbot, the seat of Colonel Talbot's authority, local variations from this observed pattern are numerous and the possibility exists that areas in accordance with the hypothesised trend may result

from chance elements.

The rigid control attributed to Colonel Talbot's supervision of settlement by such writers as C.O. Ermatinger, Coyne and Hamil[13] does not appear to have existed as far as the settlement of the corner-stones of his whole scheme, the Talbot Roads, were concerned. The relationship observed in the analysis of settlement on the roads is more in keeping with the opinion of Richards and Dalgleish[14] who claimed that considerable choice of lots was permitted to the settler. The trend observed in the settlement of the roads as a result of correlation analysis is relatively weak and may have resulted as much from a general spread of settlement from accessible to inaccessible areas as from control of location by Colonel Talbot.

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[13] Ermatinger, C.O., op. cit., p.38, Coyne, op. cit., p.32, and Hamil, op. cit., p.58.

[14] Richards, op. cit., p.6, and Dalgleish, op. cit., p.64.

Chapter Five

EASE OF ACCESS TO PERSONAL COMMUNICATIONS

Personal communications included social and cultural ties related to common religious, national, provincial or family background. Data for identifying characteristics such as these are not universally availiable and techniques to measure the influence of personal communication on the settlement decision at the level of the individual are largely absent from the literature. The difficulty of establishing a basis of information from which to infer the existence of at least potential personal communication has been a major stumbling-block in this regard.

In various attempts made to analyse the settlement process at a lot-by-lot scale, only C.J.B. Wood has looked at the area of cultural or social affinity, employing maps of both the land owned and settled by Loyalist families in the Long Point, Norfolk County area.[1] Wood suggested that the Loyalists may have received too much emphasis as a unique class of settlers in historical studies, although they were a distinct social group. He confined analysis of individual Loyalist settlement to visual interpretation of the maps and concluded that "apart from a slight concentration in Charlotteville, they are generally distributed throughout the main zone of population concentration."[2] He did not comment further on the influence of the common social characteristics of Loyalism on the selection of individual locations.

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[1] Wood, C.J.B., op. cit., Fig.27, between p.62 and 63, entitled "Land Grants to Loyalists showing blocks of land held by Loyalists that actually settled," and Figure 28B, entitled "Location of United Empire Loyalists," between p.63 and 64.

[2] Ibid., p.64.

Kelly, in his study of the agricultural geography of Simcoe County, asserted that "neighbourhoods" developed in the pioneer period and claimed they were a consequence of compact settlement. He noted that:-

> "The neighbourhood was an essential unit for the early agricultural development of the county. Sometimes a relatively large group of ethnically homogeneous people settled at the same time in a given area. Alternatively, ethnic communities were built up slowly by continued immigration..."[3]

Unfortunately, Kelly neither investigated the mechanism by which such ethnically uniform "neighbourhoods" developed nor provided a technique for gauging the relative influence of common ethnic background on the location of individual settlers.

In a study of Irish settlement in Upper Canada in 1825, Ferguson made use of data of the parish of origin and emigration vessel from Cork to Quebec in order to provide a basis for inferring acquaintance between families.[4] Preliminary results of the study suggested that a large proportion of families with common parish origin or emigration vessel, reflected such ties of acquaintance in their general pattern of settlement. The technique of assessing the strength of the factor in this case was performed only at the scale of parish and township although more detailed assessment of locational patterns in Upper Canada may be possible. The data available on the settlement in this case permitted a relatively detailed distinction in terms of origin and acquaintance pattern using a technique which may be applied elsewhere.

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[3] Kelly, op. cit., p.24.

[4] Ferguson, op. cit., p.40-74.

The absence of generalizations and concepts of normative behaviour with reference to the influence of personal communications on individual settlement complicates the task of testing the significance of observed patterns. The link between a degree of social or cultural affinity and a desired proximity based on this characteristic is unknown and cannot be arbitrarily selected in a rigorous analysis of the factor in question. The analysis and the technique to be employed are consequently crude and attempt merely to observe the nominal distinction of cultural type and family background and the frequency, density and areal distribution of each.

Variables Of Analysis

The measures used in the analysis of the personal communication factor were three, the "national" or "provincial" background of settlers, the family of settlers and the straight-line distance between settlers. The first and second of these variables were chosen owing to the existance of information in these terms for a large number of individual settlers. The "national" or "provincial" background of settlers was indicated in the Return of 1818 by D.McDonell which described the population of the Talbot Settlement on an individual basis in the study area.[5] The tenth item of the fifteen recorded was termed "his character as a subject" and gave a five-fold nominal classification of the origin, as much as the "character", of the subject. The"character" was of particular

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[5]P.A.C., State Papers, Talbot Portfolio, op. cit.

interest to the provincial government at the time presumably because of the suspicion and resentment towards Americans following the 1812-15 War and the previous revolutionary conflict. Distinction was made between "natural-born", American, United Empire Loyalist, Quaker and "other" settlers. This classification happens to be mutually exclusive in this case although it described a number of people who in three categories at least, American, Loyalist and Quaker may have all had the same place of origin, the thirteen colonies. Loyalists were distinguished for the singular role they played in the American Revolution and in the creation of the new colony of Upper Canada. The 1818 classification of settlers permitted an analysis by inspection and frequency-count of the spatial manifestations of personal ties and communications between those of a common background.

Family ties were identified as the second variable from the record of the Return of Talbot's settlers made in December, 1815[6] as well as the above-mentioned Return of 1818. Names of individual settlers were inspected and the relatively high recurrence of some surnames, suggested that members of the same family had located on Talbot's lands. In the absence of documentation other than the lists of settlers, only paternal ties could be identified. Efforts were made to confirm the validity of kinship by inspecting the petitions for land made by these individuals,

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[6] P.A.C., op. cit. In both the 1815 and 1818 data the whole array of measures is used for analytical purposes, rather than a sample. In both these instances the data represents all Talbot Settlers at that date with the exception of the settlers in Aldborough and Dunwich.

remaining to interrupt the pattern. Because of the number and density of settled lots and the small number of different types of settler, many of common origin may have been located on juxtaposed lots whether or not they chose to be in such a position. The relatively small number of Loyalists and the correspondingly large number of "natural-born" and American settlers accentuated the problem of juxtaposition. The limited number of locations available later in the settlement process, the settlers' perception of distance and the lack of information concerning the origin of other settlers may have militated against a deliberate selection of locations on this basis.

As a result, conclusions based upon the analysis of origin and its influence upon location of individual settlement are tenuous. Observed differences based upon the selection of available lots tend to suggest considerable affinity among settlers of common origin. The large numbers of native Canadians and Americans, the relatively few Loyalists and the limited extent of the area vis à vis the total number of settlers, however, suggest anything but a free choice situation and cannot be ignored in interpretation.

The small number of Loyalists may have been the crucial factor in their apparent dispersal in the area. Furthermore the average date of Loyalist settlement, 1815, was later than that for the Americans who formed the majority of settlers and may have further hampered free choice of location by Loyalists. The apparent lack of concentrated settlement however raised the question as to the viability of the designation "Loyalist" as a distinct origin for individual settlers. Such a suspicion tends to be supported by the statement of C.J.B. Wood referred to earlier with regard to the traditional overemphasis on the Loyalists as a distinct group. The designation which applied in many cases to adult children of

The third variable to be employed, the spatial measure, was once again the straight-line distance between settlements. At the beginning of settlement and even prior to location when settlement decisions were being taken, tangible routes of communication or access between individual lots may have been non-existent. The settlers may, given a choice of lots, have used a cadastral map or merely the numbers of lots along the road-line to estimate the distance between their locations. The straight-line distance used here employs as a basic scale the number of intervening available lots of land between the settlers of similar origin or name. In most cases the distance measure was between lots along the same concession line or in adjacent concessions fronting upon the Talbot Road. Occasional complications arose with lots located in concessions removed from the road as a result of the need for a distance measure at an angle to the concession orientation.

Distance was measured by the number of intervening available lots between settlers of similar background at the time of the latest settlement involving any pair of settlers. Land may have been previously granted or already reserved, but later settlers may nevertheless have attempted to minimise their isolation and retain as much personal communication as possible with those of like origin or family.

Results Of Analysis Of Influence Of Personal Communication

i. Analysis of Origin and Settler Location

The origin of settlers in 1818 was divided on a six part basis. The absolute and proportionate frequency of the 538 families then on the land settled by Talbot in the study area, is shown in Table 5.1. Two of the categories, Quaker and "other", constituted a minute proportion of the total and the population consisted essentially of four groups, the "natural

Table 6.1

ORIGINS OF SETTLERS IN THE TALBOT SETTLEMENT, 1818

Origin Type	Townships Absolute (per cent by township)								Type Per cent of Total
	Southwold	Westminster	Yarmouth	Malahide	Bayham	Houghton	Middleton	Total	
1. Natural born	32 (37.7)	16 (27.5)	11 (31.4)	70 (43.0)	51 (43.9)	2 (22.0)	17 (23.6)	199	37.1
2. United Empire Loyalist or natural born son or daughter of U.E.L.	5 (5.9)	10 (17.2)	2 (5.7)	32 (19.6)	13 (11.2)	2 (22.0)	7 (9.7)	71	13.1
3. American Natural born	48 (56.4)	32 (55.3)	18 (51.4)	39 (23.9)	41 (35.4)	5 (56.0)	34 (47.3)	217	40.5
4. Natural born (Quaker)	0 (-)	0 (-)	0 (-)	1 (0.6)	1 (0.8)	0 (-)	0 (-)	2	0.4
5. Other (English, etc.)	0 (-)	0 (-)	0 (-)	0 (-)	3 (2.6)	0 (-)	0 (-)	3	0.6
6. Unknown origin	0 (-)	0 (-)	4 (11.5)	21 (12.9)	6 (5.2)	0 (-)	14 (19.4)	45	8.3
Total	85 (100.0)	58 (100.0)	35 (100.0)	163 (100.0)	116 (100.0)	9 (100.0)	72 (100.0)	537	100.0
Township total as per cent of whole	15.8	10.8	6.5	30.4	21.6	1.7	13.2	= 100.0	

born", Loyalists and their children, Americans and those whose origin was not specified. Each of these three groups was sufficiently large to constitute, in theory, the basis for a "neighbourhood" type of settlement in which the prospect of a certain uniformity of background and behaviour may have influenced the individual settlers in their settlement decision. Similarly, the relatively large numbers with the same origin may have meant that many people with similar background on this basis would have shared nothing in common beyond this characteristic. In such cases, other forms of personal communication such as chance acquaintance during travel, religious views, or occupational background may have acted as a substitute for the characteristic of "national" or "provincial" origin selected here.

The distribution of the six groups in the study area was mapped, Figure 5.1, the four principal types having been distributed throughout the study area with relatively slight variations in their proportionate representation in different townships. Americans appeared to form a majority of the settlers in the eastern and western-most areas in Middleton, Houghton, Westminster, Southwold and Yarmouth townships. The proportion of Americans in roadside concessions in the all townships including Malahide and Bayham was high. Conversely, the "natural-born" and Loyalist settlers formed the majority of settlers away from the road. The conclusion drawn from this preliminary observation is that Americans appeared to settle on the Talbot Road concessions and hence clustered together, while the other two main groups occupied concessions to the rear. The pattern of the map is however by no means as simple as this generalization suggests.

The existence of adjacent lots settled by those of common origin was not in itself evidence of the influence of this factor on the decision

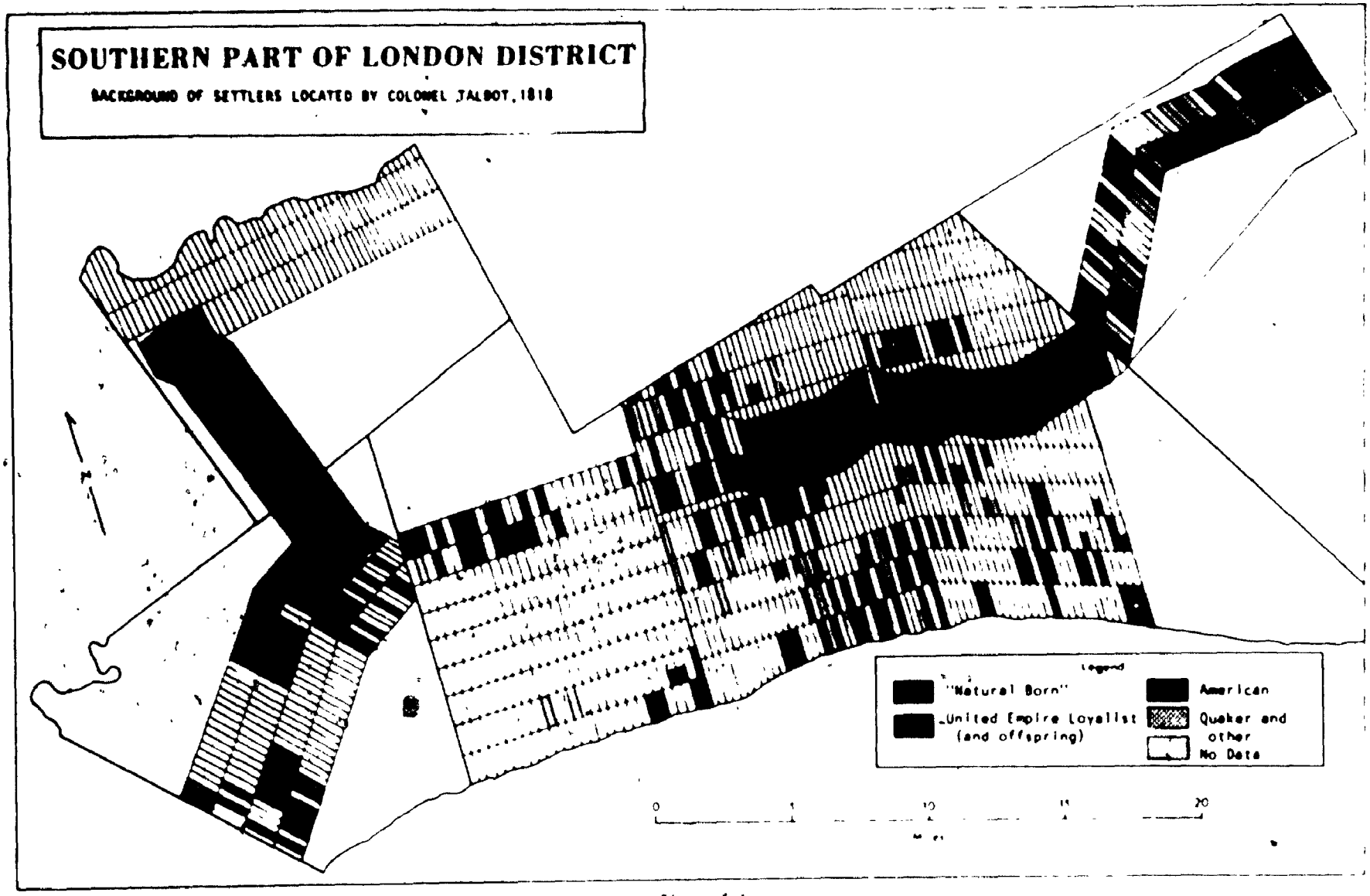
SOUTHERN PART OF LONDON DISTRICT
BACKGROUND OF SETTLERS LOCATED BY COLONEL TALBOT, 1818
Legend
"Natural Born"
United Empire Loyalist (and offspring)
American
Quaker and other
No Data
0
10
15
20

Figure 5.1

Table 5.3

FREQUENCY OF FAMILIES AND RELATED INDIVIDUALS BY TOWNSHIP

In 1815 and 1818

	Southwold	Westminster	Yarmouth	Malahide	Bayham	Houghton	Middleton
1815							
Families	13	2	7	19	13	-	3
Individuals	33	5	18	45	34	-	11
1818							
Families	16*	9	5	26	17	3	9
Individuals	31	24	7	63	34	6	31

*Plus 8 Families in 1815 for which no locational record exists in 1818.

The townships included in this frequency table display greatly varying frequency at both dates in terms of both families and related individuals. The figures are related to the overall availability of land in each township, the high frequency of occurrence in Malahide and Bayham, for example, being explained partly by the availability of virtually all of the township area for settlement by Talbot. At the other extreme, Houghton had very little land available for settlement, ten lots along the road, which accounted substantially for the low frequency of representation of related settlers.

The greatest concentration of settlers from particular families in the same township appears to have been in Middleton township, both in 1815 and 1818. The concentration in this case may be artificial owing to the occurrence of five settlers in 1815 and twelve in 1818, all with the surname, Brown. The possibility that more than one family was involved must be weighed against the absence of the name, Brown, elsewhere in the Return and the expansion in number of family members in the same

Table 5.2.

Table 5.2

ORIGIN OF SETTLERS

Settler type	Average number (and range) of intervening lots between the settler and the nearest settler of the same origin type who had either:- (1) settled at an earlier date.		OR (2) settled simultaneously.	
	Average	Range	Average	Range
1. "Natural Born"	0.15	0-3	2.8	0-35
2. United Empire Loyalists	9.5	0-32	9.0	0-50
3. American	5.7	0-50	0.0	0.0

The details of individual measurements are included in Appendix A and reveal that a considerable range occurred in the number of lots available to settlers between the location of their choice and the nearest settler of common origin. Each group included settlers who had located as near as possible to those of the same origin whether the latter settled simultaneously or at an earlier date. The large distances separating several individuals from their nearest neighbours of common background suggest that they were unaffected by any consideration of origin as a component of personal communication with other settlers.

The average distance value is in the case of each origin group affected by a few extremely large distances. The latter are found upon inspection to be linked in every case with early settlement. The average year of settlement by group is 1816 for the "natural born", 1815 for Loyalist

and 1814 for the Americans. Lawrence Dingman, a Loyalist, located in 1812 with two related settlers in an isolated location separated from the preceding Loyalist settler by thirty-two available lots. In this case the locational choice appears to have been unrelated to the factor of settler origin. Similarly John Single, an American settler, located in 1811 with a compatriot on an adjacent lot in an isolated location on the Lake Erie shore with a great distance and a large number of available lots between his location and the nearest American settler. A "natural born" settler, Gregory Warwick, located in 1811 on a lot as near as possible to a settler of similar origin and yet owing to the fact that he settled alone and at a relatively early date was separated by a considerable distance from the nearest settler locating during the same month.

The "natural born" settlers exhibit the strongest degree of influence of common origin while the United Empire Loyalists appear to have been least affected in this way. American settlers appear to have settled on lots as near as possible to those settling at the same time, rather than locating close to established American settlers. The Loyalists exhibit this tendency only to a slight degree whereas "natural born" settlers settled closer, on the average, to established settlers of the same background. Americans may have settled together to a greater degree than the Loyalists, or the native Canadians, for reasons of reassurance and mutual dependance. The attraction of an explanation such as this must be weighed against the relatively low number involved in settlement.

By 1818 the settlers had occupied much of the land available for settlement by Colonel Talbot in these seven townships. Settlement was extensive and virtually continuous along the roads and the back concessions of several townships with only reserves and occasional speculative holdings

remaining to interrupt the pattern. Because of the number and density of settled lots and the small number of different types of settler, many of common origin may have been located on juxtaposed lots whether or not they chose to be in such a position. The relatively small number of Loyalists and the correspondingly large number of "natural-born" and American settlers accentuated the problem of juxtaposition. The limited number of locations available later in the settlement process, the settlers' perception of distance and the lack of information concerning the origin of other settlers may have militated against a deliberate selection of locations on this basis.

As a result, conclusions based upon the analysis of origin and its influence upon location of individual settlement are tenuous. Observed differences based upon the selection of available lots tend to suggest considerable affinity among settlers of common origin. The large numbers of native Canadians and Americans, the relatively few Loyalists and the limited extent of the area vis à vis the total number of settlers, however, suggest anything but a free choice situation and cannot be ignored in interpretation.

The small number of Loyalists may have been the crucial factor in their apparent dispersal in the area. Furthermore the average date of Loyalist settlement, 1815, was later than that for the Americans who formed the majority of settlers and may have further hampered free choice of location by Loyalists. The apparent lack of concentrated settlement however raised the question as to the viability of the designation "Loyalist" as a distinct origin for individual settlers. Such a suspicion tends to be supported by the statement of C.J.B. Wood referred to earlier with regard to the traditional overemphasis on the Loyalists as a distinct group. The designation which applied in many cases to adult children of

Loyalists may have shrunk by the 1810 to 1820 period to a source of personal pride or benefit rather than an indicator of a viable social class. Loyalists may at this stage have felt as much affinity with native Canadians, which they were themselves in many cases, as with other Loyalists.

The analysis of the influence of personal communication has not produced sufficient evidence to support the hypothesis that accessibility to personal communication, reflected by common origin, had a direct influence upon the location of settlement. The factor of common origin will be introduced again following the subsequent analysis of kinship, to ascertain whether origin and kinship were of importance as a combined factor in personal communication during settlement.

ii. Analysis of Kinship and Settlement Location

The returns of 1815 and 1818 for the Talbot Settlement have yielded information as to the extent of kinship among settlers and the relative location of related settlers throughout the area. The influence of kinship appears to have played an important role in early settlement. The extent of kinship throughout the study area in the years 1815 and 1818 was high and individuals appear to have responded to its influence in their settlement. In 1815, 154 of 349 individual settlers or 44.0 per cent of all settler families, had at least one "relative" with the same surname in the study area. This proportionate figure decreased over the following three years to 1818 when 205, or 38.2 per cent, of 537 settlers, were apparently related. The fifty-one surnames duplicated in the 1815 Return increased to eighty-three in 1818, while the average number of settlers with the same name decreased from 3.0 to 2.5 suggesting that kinship may have declined in importance as a factor in settlement over this

period.

In the three years from 1815 to 1818, the number of settlers, in the Talbot Settlement increased by 188 of which at least, 121 appear to have been related. The apparent increase of fifty-one related settlers from 154 to 205 over the period does not, in fact, indicate the degree of change that actually took place. No comparable locational record exists in 1818 for twenty-one lots occupied in 1815, which reduces the number for comparative purposes to 133 in the latter year. Of these, forty-nine settler families apparently left the area in the three-year period which further reduced the figure to eighty-four families. Immigration to the area of new settlers and apparent expansion of the existing groups resulted in settlement of 121 settlers with kinship links in the area bringing the total to 205 in 1818.

The data of family name and occurrence in the two Returns and information regarding individual related settlers, their place and date of location, are included in Appendix B. The cartographic presentation of this information was attempted but abandoned owing to the difficulty of symbolising the large number of nominal data and the concomitant difficulty of displaying family relationship among individuals.

The locational properties of kinship in the study area at these two dates will be described instead in tabular and verbal form. The distribution of families indicated by common surname and of related individuals is indicated by township in Table 5.3.

Table 5.3

FREQUENCY OF FAMILIES AND RELATED INDIVIDUALS BY TOWNSHIP

In 1815 and 1818

	Southwold	Westminster	Yarmouth	Malahide	Bayham	Houghton	Middleton
1815							
Families	13	2	7	19	13	-	3
Individuals	33	5	18	45	34	-	11
1818							
Families	16*	9	5	26	17	3	9
Individuals	31	24	7	63	34	6	31

*Plus 8 Families in 1815 for which no locational record exists in 1818.

The townships included in this frequency table display greatly varying frequency at both dates in terms of both families and related individuals. The figures are related to the overall availability of land in each township, the high frequency of occurrence in Malahide and Bayham, for example, being explained partly by the availability of virtually all of the township area for settlement by Talbot. At the other extreme, Houghton had very little land available for settlement, ten lots along the road, which accounted substantially for the low frequency of representation of related settlers.

The greatest concentration of settlers from particular families in the same township appears to have been in Middleton township, both in 1815 and 1818. The concentration in this case may be artificial owing to the occurrence of five settlers in 1815 and twelve in 1818, all with the surname, Brown. The possibility that more than one family was involved must be weighed against the absence of the name, Brown, elsewhere in the Return and the expansion in number of family members in the same

area by 1818. If only one family is involved a very marked concentration existed particularly by the later date.

The figures for families give a general indication of the distribution by township throughout the area although not the distances separating related settlers. The information of surname, location and date of settlement included in Appendix B forms the basis for the analysis of the relationship between kinship and distance. In both Returns a chronology of settlement can be identified on the basis of the location date of the related settlers. Owing to the nature of the data which is at best, only to the same month, the chronological record does not discriminate below this unit of time. In the 1818 return detail such as this was often unavailable owing to only the year of settlement being known.

The sequence of settlement within an individual family permits the identification of an individual who located earlier than other members of the family. In these instances, the settler in question did not locate with reference to the location of relatives in the area, there being none. His location may have, however, been important in the subsequent decision-making of related settlers. Where early individual settlers can be identified they are not included in the same category as those settlers who may have located with reference to kinship considerations.

The record of settlement identifies many people as having settled in the same month or year, on the basis of which no distinction is possible as regards a sequence of settlement. Such settlers are assumed to have located simultaneously and the spatial distance between their locations is measured in both cases thus reflecting two decisions, rather than merely the later decision of the settlement sequence.

Analysis of the data on kinship and location indicates that the vast

majority of settlers settled either simultaneously or subsequently to the arrival of a single relative. Only thirty-three of 277 related settlers (8.6 per cent) are identifiable as individuals who had located in the area prior to other members of their families. This represents a minimal figure owing to the nature of the time scale of measurement. A number of settlers may have followed closely after their relatives, locating within the same calendar year or even the same month and remaining unrecognised as latecomers owing to the quality of the data.

The pattern of location of 190 settlers who apparently located simultaneously reveals that of the total, 141 (74.2 per cent) located on the next available lot to each other, and only nineteen (10.0 per cent) had located more than two lots, of those available at the time, away from each other. Among the fifty-three settlers who arrived as individuals after the prior settlement of a relative, fifteen (28.3 per cent) located on the next available lot to that previously-settled relative, and only sixteen (30.2 per cent) located further away than two lots of those available, as shown in Appendis B.

The analysis suggests that a strong direct relationship existed between the personal communication of settlers as measured by their family ties and the distance between selected locations in the study area. The stronger the tie of kinship the shorter may have been the distance between locations. Complete confirmation of this generalization is not possible owing to the nature of the kinship measure, which is nominal rather than interval in this case but those that appear to have been related show a high degree of locational preference for each other.

iii. Analysis of Kinship and Origin as a Combined Influence in Personal Communications

Settlers that were identified from the 1818 Return as being related

may be placed in broad categories with regard to their origin. Having established that an apparent preference may have existed among settlers for locations in close proximity to relatives, further analysis on the basis of origin may identify variations from within the population that may permit a more precise generalization with regard to locational behaviour of settlers.

A proportionate division of related settlers, Table 5.4, appears similar to that of the total population of the 1818 Return, Table 5.1. Of the three main groups, "natural born", Loyalist and American, the second has the highest proportion of related settlers. This figure perhaps reflects the conditions under which Loyalists migrated from

Table 5.4

ORIGINS OF RELATED SETTLERS IN THE TALBOT SETTLEMENT, 1818

Origin Type	Number of Settlers	Per Cent of Total Settlers of Same Origin Type, 1818	Per Cent of Total Related Settlers (215)
1. Natural Born	83	41.6	40.5
2. U.E.L. or natural born son or daughter of U.E.L.	34	47.9	16.6
3. American	78	35.9	38.0
4. Natural born (Quaker)	1	50.0	0.5
5. Other	0	--	--
6. Unknown Origin	9	20.0	4.4
	205	--	100.0

the United States in which whole families were uprooted and migrated to areas such as the province of Quebec, later to become Upper Canada. The

between settler location date and accessibility and permits measurement of relative deviation from the norm in the case of each sample site.

Bylund devised a model of "clone-colonization" to simulate individual settlement over time in Norrland. Implicit in his model was the assumption that the attraction of prospective settlement sites was inversely proportional to perpendicular distance from the nearest road.[5] Rather than deal separately with this or other factors considered as important in the Scandinavian settlement process, Bylund amalgamated them in a single simulation model. His conclusions were claimed to be satisfactory which may justify the choice of analytical technique. The use of simulation is rejected in this case however because of the complicating issues of immigration and social and cultural diversity. These prevent the use of relatively straightforward assumptions such as those used by Bylund with regard to generations of settlers with no immigration and the uniformity of social and cultural mores and aspiration. Under the present circumstances the use of simple regression represents a much less sophisticated technique than Bylund's simulation model but one which, on the other hand, does not depend upon numerous assumptions of human behaviour. The focus on access distance to main communication links alone may be somewhat unrealistic in the present analysis in that a combination of the influence of this factor and that of Talbot's authority or another influence on the settler may have affected a particular decision. The difficulty encountered in attempting to incorporate more than a single factor into a model situation is a major reason for adopting the approach of focussing individually upon factors considered to be important.

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[5] Bylund, 1960, op. cit., p.227.

The proportion of Americans in the group of related settlers is only 38.0 per cent, slightly less than their overall representation of 40.5 per cent among all settlers in 1818.

The fact that the majority of the settlers identified as Loyalists were, in fact, "natural born" children of "real" Loyalists in this group of settlers at least suggests that "natural born" British settlers, Loyalists or not, were inter-related to a greater extent than Americans.

The general conclusion to be drawn from the analysis of the influence on settlement of accessibility to personal communications is that kinship was far more important than common nationality and that groups of settlers of different origins were inter-related to varying extents, the Loyalists having almost fifty per cent of their number with at least one related family in the area. The conclusions are supported by previous statements of Guillet, Kelly and Ferguson[9] in general terms with regard to the importance of family ties and of acquaintance in attracting other, possibly later, settlers to certain locations. The findings of C.J.B. Wood[10] with regard to relatively dispersed Loyalist settlement tend to correspond with those in the study area although the pattern and proportion of kinship among Loyalists in the former area was not known. The Loyalist settlers in the part of the London District under study in this thesis may well have been second-generation members of that group in Upper Canada and may have responded more to the influence of kinship than to that so-called Loyalism in selecting locations.

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[9]Guillet, op. cit., 1963, V.1, p.263, Kelly, ibid., and Ferguson, ibid.

[10]Wood, C.J.B., ibid.

EASE OF ACCESS TO COMMUNICATION ROUTES AND TO WATER-POWERED MILLS

The settlers who were without close relatives in the settlement area and who were apparently not influenced by the proximity of compatriots may have placed great importance on the ease of access to main communication routes and to water-powered mills for the processing of agricultural products.

The main communication routeways in the study area were initially the Talbot Roads which were developed from 1809 on, although only slowly did inland transportation along them appear to supercede waterborne communication on the lake.[1] The water route across the north side of Lake Erie and the land route following the Talbot Road may have both simultaneously played an important role in the development of the area and ease of access to either route may have influenced the decision-making settlers. Creeks flowing into Lake Erie were not navigable except in the high-water period of the year and even then for only short distances above their mouths. Their influence as communication routes may have been minimal as a result.

In order to obtain an impression of the influence of access to route-

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[1] Guillet, E.C., op. cit., 1963, p.107-17, Mrs. Anna Jameson visited the Talbot Settlement in 1837 and Guillet noted that "During the first part of the journey...the roads were fairly good; but when it became necessary to leave Talbot Street and turn into a side road...then the trouble commenced." Despite the relatively high quality of the Talbot Road surface, the importance of water travel is reflected in a letter from Talbot to Wm. Allan, May 27, 1833 which mentions: "...now that the steamer Adelaide passes by me twice a week, it is probable that I shall not have any cause to complain of the want of Society during the summer." Wm. Allan Papers, Toronto Public Reference Library.

ways on settlement, use can be made of sample lots for testing the hypothesis that the date of settlement location was related to the accessibility of major communication links.[2] The sample consists of approximately one-sixth of the settled lots selected by the unaligned systematic stratified method from the population of all the lots in the fourteen townships under study.[3] The total of 850 lots was selected with reference to the maximum capacity of available computer programmes and the location of lots is shown cartographically, Figure 6.1.

The frequency of sample settlement dates is displayed in the histogram, Figure 6.2, and the dates and locations are included in Appendix C. The temporal distribution of the date of settlement on the sample lots is far from uniform and reveals a great variation over the period of seventy years from 1800 to 1870. The distribution has a tri-modal character with successive maxima in terms of settlement date frequency in the three year periods of 1815-1818, 1830-1833 and 1848-1851. Separating these dates were periods during which apparently few settlers located in the area, only five sample lots being settled in the three years 1824-1827 and a matter of only thirty lots in the years 1836-1839.

The marked abnormality of the temporal data distribution suggests that division of the sample may be appropriate for parametric statistical analysis. The nature of the distribution with the decline in settlement

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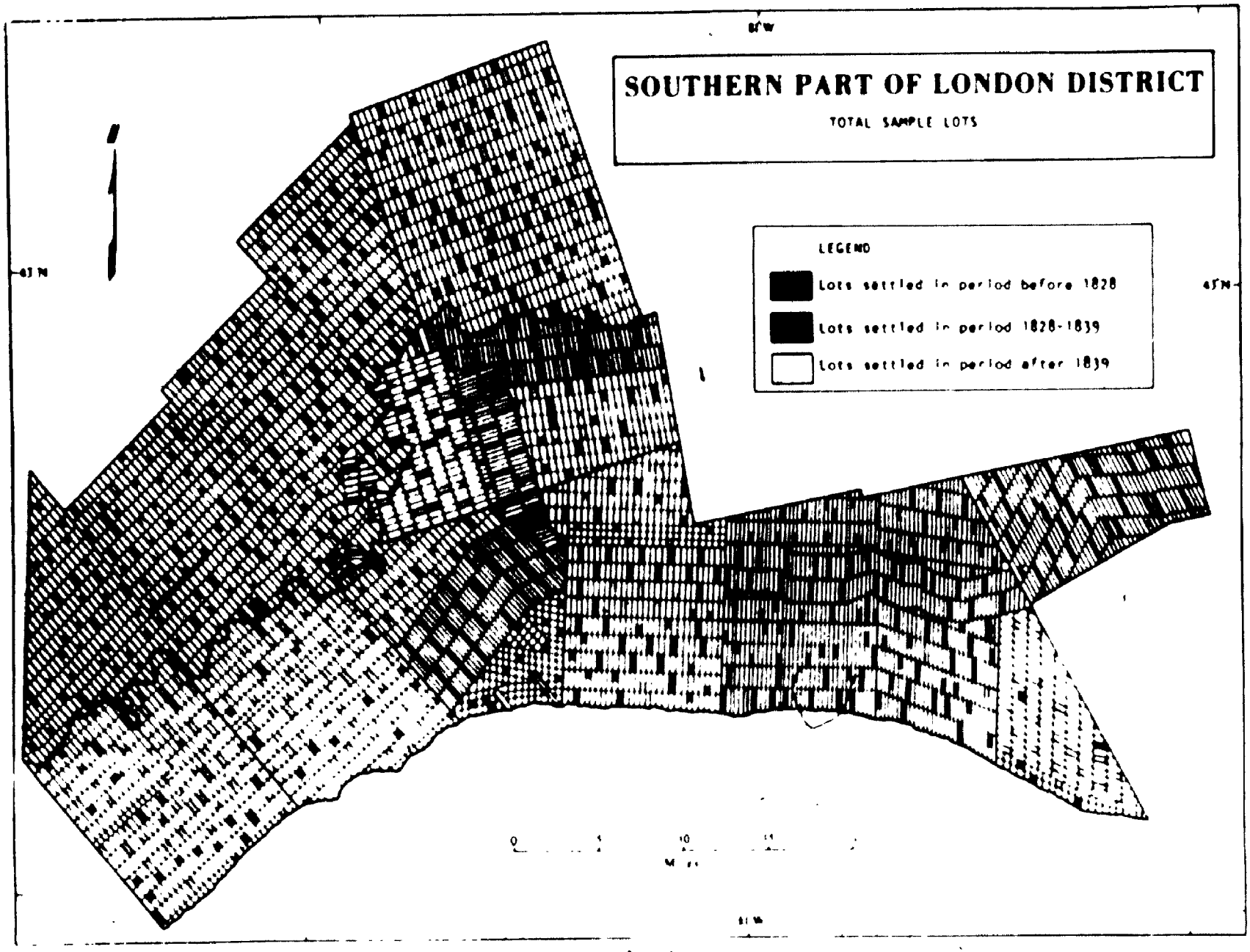
[2] In other words, using the month and year after 1800 in which a family settled and the straight-line distance of their location from the main routeway (i. Lake Erie shore and ii. Nearest main road) it was hoped that correlation would show whether or not earlier settlers did in fact occupy lots closer to routes than later settlers.

[3] All lots in the fourteen townships were sampled and approximately 850 (17%) selected to provide the basis for generalization with regard to the whole area not only the lots supervised by Talbot. Owing to the range of dates involved only pre-1827 settlement is used.

at two periods, particularly the earlier years of 1824-1827 suggests that division of the sample may be appropriate on causal grounds owing to changes of motivation and decision-making generally among the settlers. Analysis will focus on the earliest "wave" of settlers, those locating before 1827, which as has been indicated coincided with the period of most of Talbot's activity as superintendent of settlement.

Three hundred and twenty-nine settlers located before 1827 on the sample lots, almost two-fifths of the whole sample. The settlement that took place after 1826 in the two successive "waves" displayed in the histogram is of less interest to this study than the period of earliest settlements. The influence of Colonel Talbot's land settlement was less during these later years and most of the land he had supervised in the study area was settled by 1827. Later settlers occupied land that became vacant owing to legislative decisions of a sweeping nature during the 1820's. The sale of the reserves-Crown, Clergy and School-commenced during this period and they were purchased gradually for both speculative and settlement purposes over a long period. The sale of School reserves was left in Colonel Talbot's hands while the Canada Company sold the former Crown Lands and Clergy Reserves were sold by public auction.

The actual distribution of School reserves was uneven and militated against a free choice of lots for the prospective settler. In some townships, such as Westminster, Southwold, Middleton and Houghton, Crown and Clergy lots were distributed in a "chequered" plan among blocks of school reserves. In other townships, such as Malahide, Bayham, London and those of the Longwoods, the Crown and Clergy reserves were located among settlers' lots or ungranted Crown Land. The density of Crown and Clergy reserves was higher in the townships through which the roads supervised by Talbot passed, owing to their removal from the road-side


SOUTHERN PART OF LONDON DISTRICT
TOTAL SAMPLE LOTS
LEGEND
Lots settled in period before 1828
Lots settled in period 1828-1839
Lots settled in period after 1839

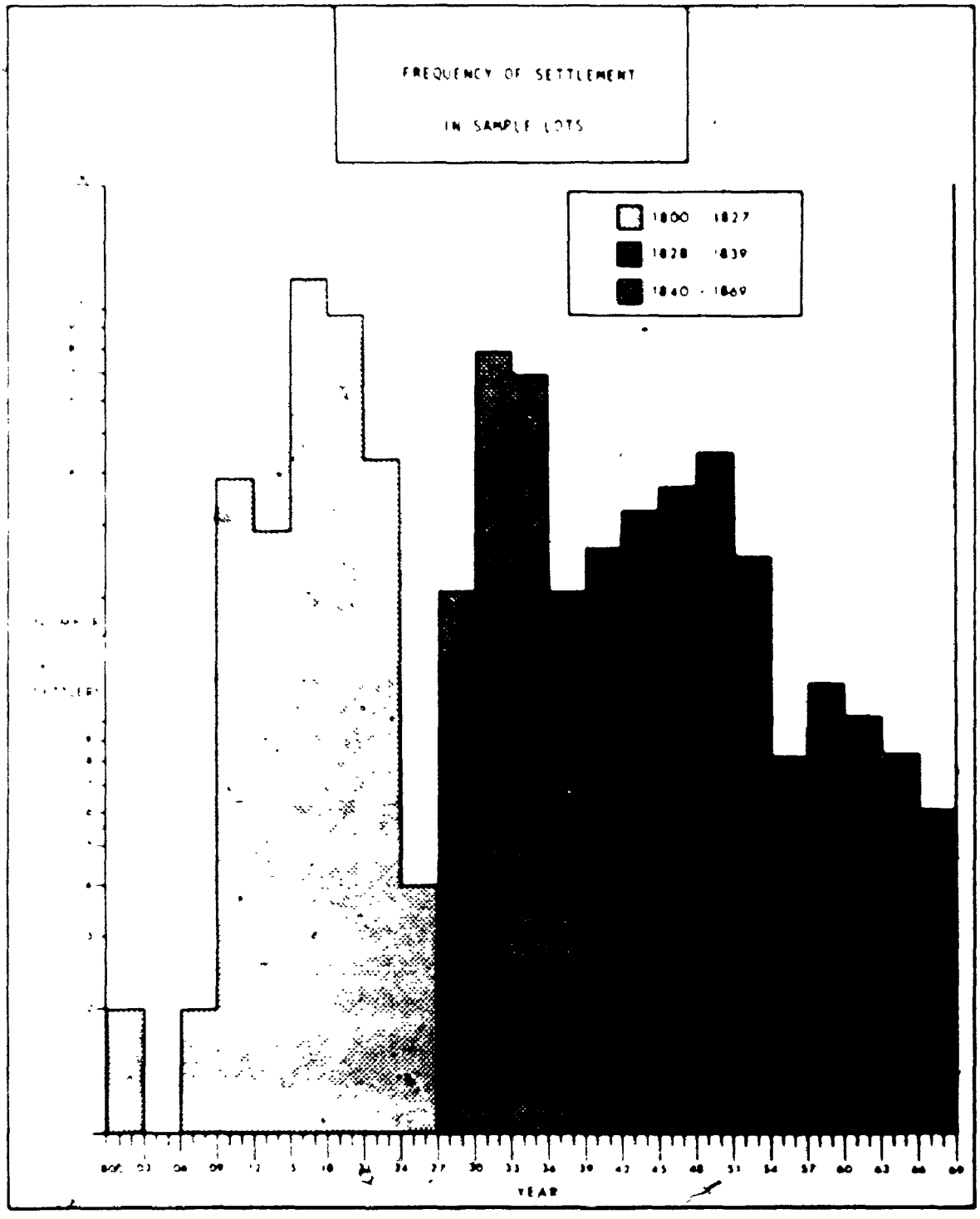

FREQUENCY OF SETTLEMENT
IN SAMPLE LOTS
1800 - 1827
1828 - 1839
1840 - 1869
YEAR

Figure 6.2

concessions to those in the rear. Settlement after 1827 may therefore be described in general as the occupation of the land outside Talbot's supervision, whether reserve, land granted earlier and sold for settlement at a later date or remaining Crown Land.

The Influence Of Access To Main Routes

Simple regression and correlation of variables of settlement date and distance from the main routes are used in the analysis of the influence of accessibility, in view of the absence of strong grounds for assuming a non-linear relationship in the process of settlement. The use of simple correlation provides a means of testing the hypothesis postulated in this instance and obtaining a measure of significance with regard to the influence of the accessibility factor.

Alternative techniques that have been employed to analyse the effect of distance from routes on settlement include graphical methods by C.J.B. Wood, deterministic simulation by Bylund and trend-surface analysis by Clarke mentioned previously in the review of work in this field. C.J.B. Wood noted the frequency of settler location at regular distances from both the Lake Erie shore and the principal trails in Norfolk County during the period 1795-1825. He plotted the frequencies for particular years on semi-logarithmic graphs in which individual curves reflect the influence of accessibility to the trend in settler locations.[4] The graphical method as used by C.J.B. Wood provides an immediate visual indication of the relationship between the number of settlers and their accessibility to the main route for successive years. The linear regression technique provides a more convenient measure however of the relationship

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[4] Wood, C.J.B., op. cit., p.74, and Figure 33 and 34.

between settler location date and accessibility and permits measurement of relative deviation from the norm in the case of each sample site.

Bylund devised a model of "clone-colonization" to simulate individual settlement over time in Norrland. Implicit in his model was the assumption that the attraction of prospective settlement sites was inversely proportional to perpendicular distance from the nearest road.[5] Rather than deal separately with this or other factors considered as important in the Scandinavian settlement process, Bylund amalgamated them in a single simulation model. His conclusions were claimed to be satisfactory which may justify the choice of analytical technique. The use of simulation is rejected in this case however because of the complicating issues of immigration and social and cultural diversity. These prevent the use of relatively straightforward assumptions such as those used by Bylund with regard to generations of settlers with no immigration and the uniformity of social and cultural mores and aspiration. Under the present circumstances the use of simple regression represents a much less sophisticated technique than Bylund's simulation model but one which, on the other hand, does not depend upon numerous assumptions of human behaviour. The focus on access distance to main communication links alone may be somewhat unrealistic in the present analysis in that a combination of the influence of this factor and that of Talbot's authority or another influence on the settler may have affected a particular decision. The difficulty encountered in attempting to incorporate more than a single factor into a model situation is a major reason for adopting the approach of focussing individually upon factors considered to be important.

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[5] Bylund, 1960, op. cit., p.227.

In his study of the Western District of Upper Canada, Clarke employed trend-surface analysis to test the influence of accessibility to main routes such as the coast and the roads. Although relatively low explanation was achieved for the whole District[6], in the more compact area of Essex County trend surface analysis provided a much higher explanation of settlement spread. In Clarke's words, "the pattern of residuals from the second analysis would appear to testify to the importance of access via the coast, and the Thames and the road network particularly the Talbot Road."[7] In attempting to establish the importance of access to coast, river or road, Clarke selected an arbitrary distance of two miles from the nearest of these routes "as the distance that a settler would want to go back into the bush in the early period of settlement."[8] On this basis a significant association was confirmed between early settlement locations and good access and between later settlement and more remote locations.

The technique of trend-surface analysis provides a more powerful tool than simple linear regression and correlation for analysis of the factor of accessibility distance. The technique is deemed unnecessary in this context because of the use of polynomials which introduce complexities into the analysis that place too great a strain on the assumptions of the model. The gratifyingly high levels of explanation that may be achieved by higher order trends may reflect random elements of the data distribution as much as significant correlation of the variables. The use of linear correlation and regression is upheld in this case as being an appropriate

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[6] Clarke, 1970, op. cit. p.167 and 169, a sample of 440 points produced of coefficient of determination of 0.07 and a modified sample, with extreme residuals on reserve lots removed, one of 0.26.

[7] Ibid., p.172.

[8] Loc. cit.

technique for testing the hypothesis linking the settlement date and distance from main routes while adhering to the assumptions underlying the original model.

Variables Of Analysis

The variables of analysis are the date of settlement location and the straight-line, perpendicular distance from the shore of Lake Erie, on the one hand, and the nearest main road, on the other. The date of settlement in this case is the date obtained for the lot in question that is interpreted as the commencement of settlement. For those lots supervised by Colonel Talbot, the location data is obtained directly from the maps or other documents relating to his lands. In the case of Crown Land the date of sale, of location ticket or in some cases of patent is used and with reserves the date of lease or of sale is taken to imply settlement. In the lands that were held by speculators initially following alienation from the Crown an attempt is made to identify the date of location by interpreting the information on subsequent sale and land fragmentation available in the Abstract Index Books. The discrepancy between actual location date and the date used in this analysis has been summarised in the description of data selection and interpretation.[9] For parametric estimate by least squares simple correlation and regression the location date was transformed from a negatively skewed frequency distribution to a normal one using a exponent of three.

Distance is measured as the straight line perpendicular from the communications route to the sample lot. This is unlikely to have coincided exactly with either the perceived distance of the settler or the

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[9]Appendix C gives the date of location and the source of information.

actual route taken to travel between points. The straight-line distance is used because it is objective and does not attempt to follow intuitively selected routes of which there is no documentation. Furthermore, perceived distance may be strongly non-linear in scaling. Olsson has suggested in this regard that "the extra work involved in computing other than straight-line distances is very often not justified."[10] Settlement studies in the area of Upper Canada including the work by C.J.B. Wood and Clarke have also used straight-line distance measures. Transformation of distances in an exponential or logarithmic fashion is a course that represents essentially a trial and error approach to analysis. Although a measure of perceived distance of settlers from major features such as road and lake-shore is a constant aim, arbitrary transformation of actual distance such as this will not be attempted in this study.

Results Of Regression Analysis

The linear correlation of date (the independent variable), and distance from the separate routeway of road and lake (the dependent variable) is relatively low. For the settlers locating before 1827, 329 in number, a linear correlation coefficient of 0.38 exists between date and distance from lakeshore and one of 0.36 between date and distance from nearest main road. Variance explained by the correlation in each case was 14.4 and 13.2 per cent respectively. Each correlation was significant at 0.001 level of probability. The low proportion of variance explained by the correlation measures suggests that the spread of initial settlement

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[10] Olsson, Gunnar, Distance and Human Interaction: A Review and Bibliography, Regional Science Research Institute, Bibliography Series, No.2, 1965, p. 58.

away from these major routes was far from a linear process, in direct response to mere distance away from them.[11]

The difference between the two correlation coefficients is so small that the interpretation of the figure with respect to essentially different directions of settlement spread is difficult. The slightly higher correlation between the date of settlement and distance from the lakeshore suggests that this may have been the trend of greater importance in the overall occupance of the area. Movement away from the main road was however directly opposite to that from the lakeshore for all settlers located south of the Talbot Road. In spite of the significance of the correlation, settlers do not appear to have paid particular heed to either route.

If the general land-ward spread of settlement observed previously in the province as a whole is considered to have occurred in the study area at the scale of the individual settler, the uniformity and strength of the process appears from the present analysis to have been considerably transformed. Factors important in such a transformation may have included the proximity to related settlers although on inspection, the proportion of settlers before 1827 with relatives in the area appears to have been relatively low. These are indicated in Appendix C in the seven townships for which kinship data are available and of the 189 settlers, forty (21.1 per cent) were found to be related to others who had either settled earlier or at the same time. In approximately one in five instances the

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[11] In other words early settlers did not generally settle close to the major routes and conversely later settlers did settle relatively close on occasion. The simple relationship envisaged between the settlers and access distance to main routes appears to have been non-existent and locational choice appears to have been far more complicated than first imagined.

locational decision of settlers appears to have been influenced by ease of access to personal communications rather than communication routes. The average absolute residual value of related settlers is only 3.1 however and only three have residual values greater than ten. The interpretation that is placed on the effect of settlers with relatives in the area is that they had relatively little effect on modifying the trend of movement away from the lake. The trend, weak as it is, would not apparently be greatly improved by the removal of related settlers from the sample. In spite of the relatively low linear correlation the significance of relationship suggests that the trend of movement bears closer inspection by means of the distribution of residuals from the regression, Figure 6.3.

Interpretation Of Residuals

Residuals[12] from regression of settlement date and distance from lakeshore were plotted isarithmically, Figure 6.3. Areas of relatively early settlement represented by negative residuals occupy concessions flanking the Talbot Road East and North, the River Thames Valley in Westminster and London Townships, and the remainder of the latter, Lobo and northern Caradoc.

The general movement of settlement appears to have focussed on areas indicated by the negative residuals, which are not continuous but of varying size and associated with roads and the more northerly part of the study area. The Talbot road concessions appear to have been unevenly settled in that parts of Yarmouth, Malahide, Westminster and Middleton were settled relatively early, while other areas lagged behind.

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[12]Residual values are calculated in the same manner as previously, see footnote 9, Chapter 4.

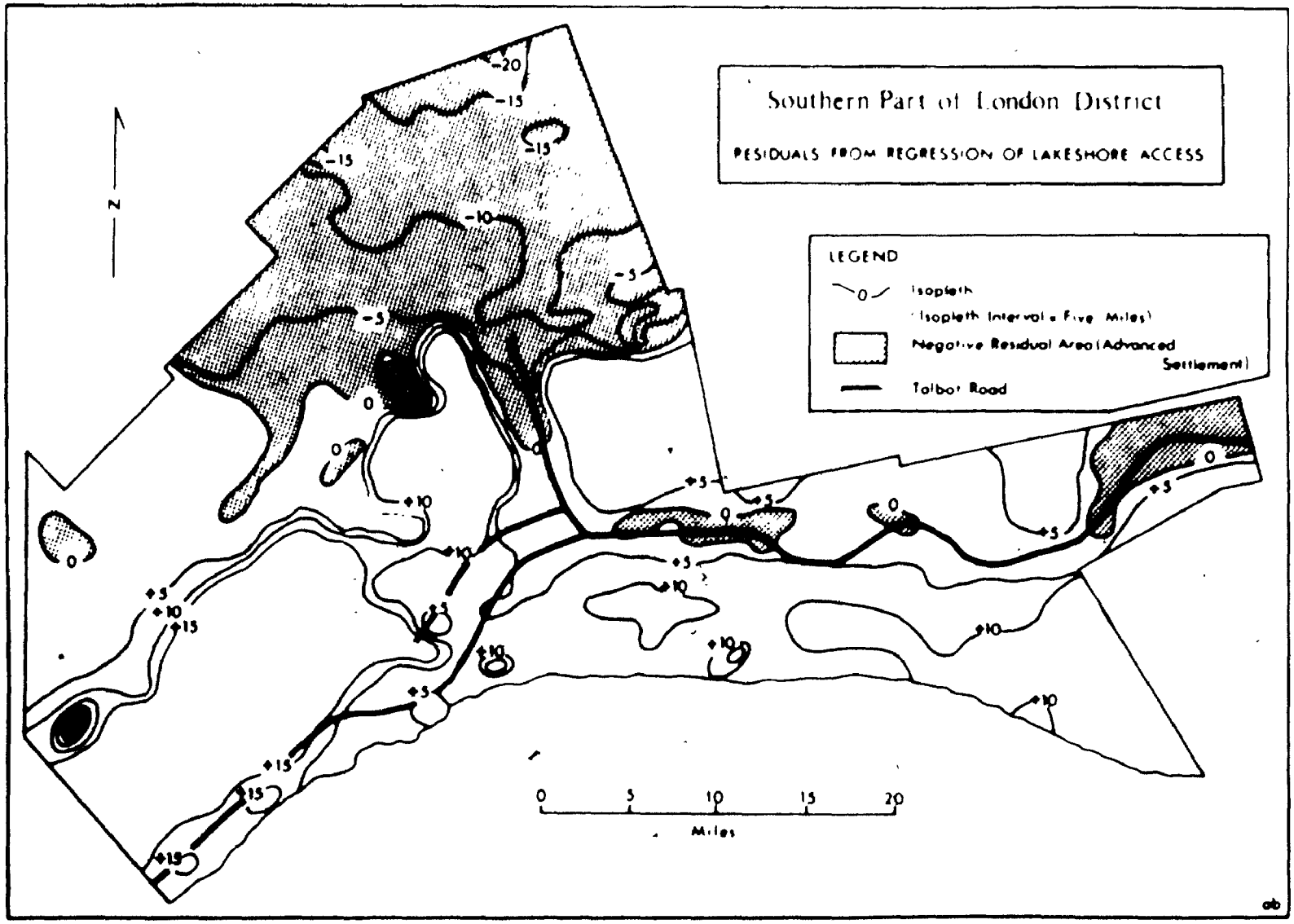
Southern Part of London District
RESIDUALS FROM REGRESSION OF LAKESHORE ACCESS
LEGEND
Isopleth
(Isopleth Interval = Five Miles)
Negative Residual Area (Advanced Settlement)
Talbot Road
N
-20
-15
-10
-5
0
+5
+10
+15
0 5 10 15 20
Miles
ab

Figure 6.3

Reasons for relatively early settlement in particular localities, including those mentioned, may be linked to aspects of particular sites including such factors as grist-mills, high quality agricultural land or even a sudden increase in the rate of settler immigration.[13] Similarly positive residual areas may be related to the presence of land of poor quality, land withheld from settlement by reserve or private speculation or few prospective settlers. Such positive residuals characterized the coastal, southern portion of the study area suggesting a regional lag in this area and a relatively weak uniform influence from the lake route.

The spatial pattern of negative and low-value (less than five) positive residuals from the regression of pre-1827 settlement and lake-front access resembles the distribution of the land supervised by Talbot. The larger positive residuals on the other hand, representing the areas of relatively late settlement correspond approximately to the areas of reserve and alienated land beyond Talbot's supervisory control. Exceptions to this rule are the coastal areas generally, in Dunwich and Aldborough townships, those under Talbot's control; coastal concessions, away from Talbot Road East in Malahide and Bayham townships and the Longwoods townships of Ekfrid and Mosa. The relatively late settlement in these cases may be related to the model of settlement implicit in the regression equation and to the characteristics of actual settlement.

In the case of the first two areas of exceptional positive residuals mentioned, the Talbot lands in the lakeshore area of Dunwich, Aldborough, Malahide and Bayham townships were settled later than other more interior

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[13] Hamil, 1955, op. cit., p.9[illegible]6; Talbot Maps, P.A.C., location dates and Talbot's correspondence indicate large numbers of settlers located in London very rapidly after first settlement began in 1818.

roadside locations and consequently appear as such on the residual map. The actual delay in settlement of these areas were not prolonged and in the case of the last two townships was virtually simultaneous with that on the roadside lots. The closer proximity of the rear concessions to the lake dictates under the assumption of the hypothesis that they should have been settled earlier and consequently they appear as positive residuals.

The Longwoods Townships were more remote with reference to the lakeshore and underwent generally later settlement in actual terms. Consequently, relatively late settlement in the westernmost townships of Mosa and Ekfrid reflects their peripheral position in the area of settlement and also inferior regional conditions of natural drainage and land suitable for agricultural settlement.

Negative value residual areas represent relatively early settlement and occur generally inland, away from the Lakefront, along the Talbot Road East and in London and adjacent townships. The values associated with the Talbot Road are low and are explained by settlement that occurred first along this route. The northern area of relatively early settlement has much larger negative values which may be explained by the relatively rapid occupance of the area of London and Lobo townships after 1818 when they were made generally available for settlement.

Results of analysis of accessibility to principal communication routes suggest that the spread of settlement in the southern London District was influenced partly by the availability of land, the Talbot Road concessions and London Township for example being relatively rapidly occupied when available. In addition the location of individuals appears to have borne little relationship to the existence of principal communication

routes by water or land. This conclusion is comparable for the earliest settlers to that of McIlwraith who found that in York County initial locations were selected in response to factors such as land availability, other settlement and land quality rather than road access.[14] The same may have been largely true in London District during the period before 1827 when communication with the remainder of the province was minimal and major routes were of little consequence to the majority of the population.

Analysis Of The Influence Of The Factor Of Distance From Water-Powered Mills

No systematic analysis of the relationship between the location of mills and individual settlement has been carried out in the area of Upper Canada. Reference has been made to the importance of mills, particularly grist mills, in the settlement process but detailed work on the subject has not appeared. The role of water-mills in central place growth however, has received some consideration in the province both from contemporary writers and more recent researchers. One of the former group, Mrs. Anna Jameson observed in 1836 that:-

> "The usual progress of a Canadian village is this: first on some running stream, the erection of a saw-mill and grist-mill for the convenience of the neighbouring scattered settlers, then a few shanties or log-houses for the work people..."[15]

In a study of central places in Upper Canada, Kirk described the distribution of places that were linked in their nucleated growth to the

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[14] McIlwraith, op. cit.

[15] Jameson, op. cit., p.78.

presence of water-powered mills. He identified centres which were developed partly, as least, on the basis of water-powered mills and he distinguished between those centres that used "a great deal of..." and those with "a small amount of water power."[16]

In the study area twenty such centres are identified as having existed prior to 1850 although only one of them employed "a great deal" of water-power, that at St. Thomas on Kettle Creek. Kirk made no mention of the date of inception of milling at the various centres although he identified particular places, including St. Thomas, Vienna and London that owed some of their prominence to water-powered mills during the period of early settlement. He did not attempt to relate the sequence of individual settlement with the establishment of mills.

The technique to be employed in the testing of the hypothesis that date of settlement is directly related to distance from a water-powered mill is the somewhat elementary one of inspection and areal association.[17] The absence of precise analysis in previous studies of individual settlement in Upper Canada may be mute testimony to the difficulties of any systematic approach to the analysis of the influence of mills. The technique of associating clusters of individual settlers with the suspected location of a mill at a particular date appears to be the most rigorous that is available in view of the quality of the data and the weak nature of assumptions underlying the analysis.

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[16] Kirk, op. cit., p.35, Figure 8 consists of a map displaying urban centres in south-western Ontario which either used or did not use water power.

[17] In other words, early settlement is expected to have been close to mill sites and later settlers would have been obliged to settle further away owing to lack of sites. Owing to lack of detailed information on mill operations, the approximate date and location of existing mills was compared to earliest settlement in order to "test" this hypothesis.

Variables Of Analysis

Owing to the quality of the data on water-powered mills a precise record of mill operations for the study area cannot be produced. In attempting to test the hypothesis that accessibility to water-powered mills had a direct influence upon date of settlement, an association has been sought between the estimated location of mills and parts of the study area that experienced relatively early settlement.

Variables for this analysis are simply derived. The existence of mills requires a spatial and temporal location measure which should ideally describe the exact position of the mill in the area and the date of its opening and possibly its closing. The available sources of data on mills rarely provide complete information of this type for all mills and as a result less precision characterises locational information particularly temporal, for few records exist to state when mills at particular locations came into operation.

Settlement date has been used as a variable in previous stages of this study and is available at several levels of detail. Individual location dates on a lot by lot basis represent a degree of precision that may be inappropriate in seeking association with imprecise data on mills. Spatial patterns of settlement provide the principal means of testing the hypothesis with regard to the influence of mills upon settlement. The map of settlement spread before 1818, Figure 2.2, is the basis for assessing the localised influence upon the sequence of settlement. The parts of the area characterized by relatively early settlement might be expected to coincide with mill locations in order to support the proposed hypothesis.

Both saw- and grist mills, were found in the area during the settlement period. Water-powered saw mills appear to have been more common a feature of the economy than grist mills and experienced a more rapid increase in numbers during the 1825-1850 period. Data are available on a township basis for 1825 onwards[18] and indicate that in the fifteen townships of the study area, including Delaware, saw mills increased from eighteen in 1825 to ninety-eight in 1848. Grist mills were almost as numerous as saw mills in 1825 numbering fifteen in all although their increase was less dramatic and by 1848 a total of only thirty-four existed.

The saw mill may appear from its greater frequency to have been more important than the other types. That this was not necessarily the case may be seen from the evidence for the fundamental importance of wheat-growing in the early agricultural economy of Upper Canada as presented by several writers. In a study of agricultural history in the province, Jones noted the pre-eminence of this cereal grain among pioneer crops and explained its important position in terms of its natural suitability for the region and a greater demand for wheat in the world market.[19] In another study, Kelly noted the existence of two types of pioneer farming in early Ontario, the wheat-fallow-wheat rotation and the mixed farming operation. The former was of importance because it satisfied the common purpose which motivated new settlers who immigrated "with the intention of establishing a commercial farm."[20]

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[18] J.L.A./U.C., Appendices, 1825-50, op. cit.

[19] Jones, R.L., op. cit., p.85.

[20] Kelly, op. cit., 1968, p.3.

The need to produce wheat and in particular, flour, for export and cash return may have been a factor of great importance in the agricultural circumstances of the pioneer settler. Its importance may have been sufficiently great to be influential in the initial location of the settler on the land. In this way the individual farmer may have located close to existing grist mills where wheat grain could be ground into flour for marketing. The grist mill may, as a result, be regarded as an important influence upon agricultural settlement. One which although in numbers fewer than the saw mill may because of differing capacity, energy, or cost constraints have been more critical in locational decision-making than the saw-mill.

The assumption that grist mills were the more important of the two types of mills underlies the subsequent analysis. The very number of saw mills in the later years of settlement at least may have made them an extremely common feature of the landscape. Bayham township for example in 1848 had thirty-three saw mills as compared to three grist mills. The ubiquitous character of saw milling may have diminished its role as a locational factor in settlement. Furthermore the locational problem in analysis with regard to mills is increased by the greater frequency, and equally poor quality data, of saw, as of grist mills.

Results Of Analysis

In the twenty-four years from 1825 to 1848 water-powered grist mills in the study area increased in overall numbers from fifteen to thirty-four. Their absolute fluctuation is displayed numerically, Table 6.1, and graphically, Figure 6.4, for the 1825-48 period. In each successive year change may be observed in the number of mills and in their spatial distribution. Grist mills appear to have been constantly commencing and terminating oper-

TABLE 6.1

ANNUAL FREQUENCY OF GRIST MILLS[a] BY TOWNSHIP, 1825-1848

Year	Aldborough	Dunwich	South-wold	Yarmouth	Malahide	Bay-ham	Mosa	Ekfrid	Caradoc	Lobo	London	Delaware	West-minster	Middleton	Houghton	Annual Total
1825	1	1	1	2	2	3	0	0	0	0	2	3	3	0	0	15
1826	1	1	1	3	4	5	0	0	0	1	2	3	3	0	0	21
1827	1	1	2	3	3	4	0	0	0	1	2	3	3	0	0	20
1828	1	1	2	3	2	5	0	0	0	1	2	3	3	0	0	20
1829	0	2	1	3	2	4	0	0	0	1	2	2	2	1	1	18
1830	1	2	2	3	3	1	0	0	1	1	2	3	3	1	1	20
1831	1	2	2	6	3	3	1	0	1	1	1	3	3	1	1	25
1832	1	2	2	1	3	4	1	0	1	1	0	0	4	1	1	21
1833	1	2	2	3	4	4	1	1	1	1	2	0	3	1	0	26
1834	1	2	2	3	4	4	1	1	1	2	4	0	4	1	0	30
1835	0	2	2	3	4	3	1	1	1	2	6	0	3	1	0	29
1836	1	2	3	2	3	6	1	1	1	2	5	0	3	1	0	31
1837	NO	DATA														
1838	1	1	3	4	2	3	2	1	1	2	2	0	3			25
1839	1	1	2	5	3	4	2	1	1	2	6	0	3	0	0	31
1840	1	1	2	5	4	4	2	1	1	2	4	0	4	0	0	31
1841	0	1	2	5	4	3	2	1	1	3	3	0	4	0	0	29
1842	0	1	2	5	4	3	3	1	1	3	4	1	3	0	0	31
1843	0	2	2	5	3	3	3	1	1	3	2	2	3	0	0	30
1844	0	2	2	5	3	3	2	0	1	3	4	2	4			31
1845	1	2	4	6	3	3	2	1	1	3	3	2	4	1	0	36
1846	1	2	4	7	5	3	2	1	1	3	3	2	4	1	0	39
1847	1	2	3	7	6	3	1	1	1	3	3	1	3			34
1848	1	2	4	6	5	3	1	1	1	3	3	1	3	1	0	34
Increase in 28-Year period	No Change	1	3	4	3	No change	1	1	1	3	1	1	1	1	No change	19

[a]Source:-J.L.A./U.C., Appendices, 1828-1850.

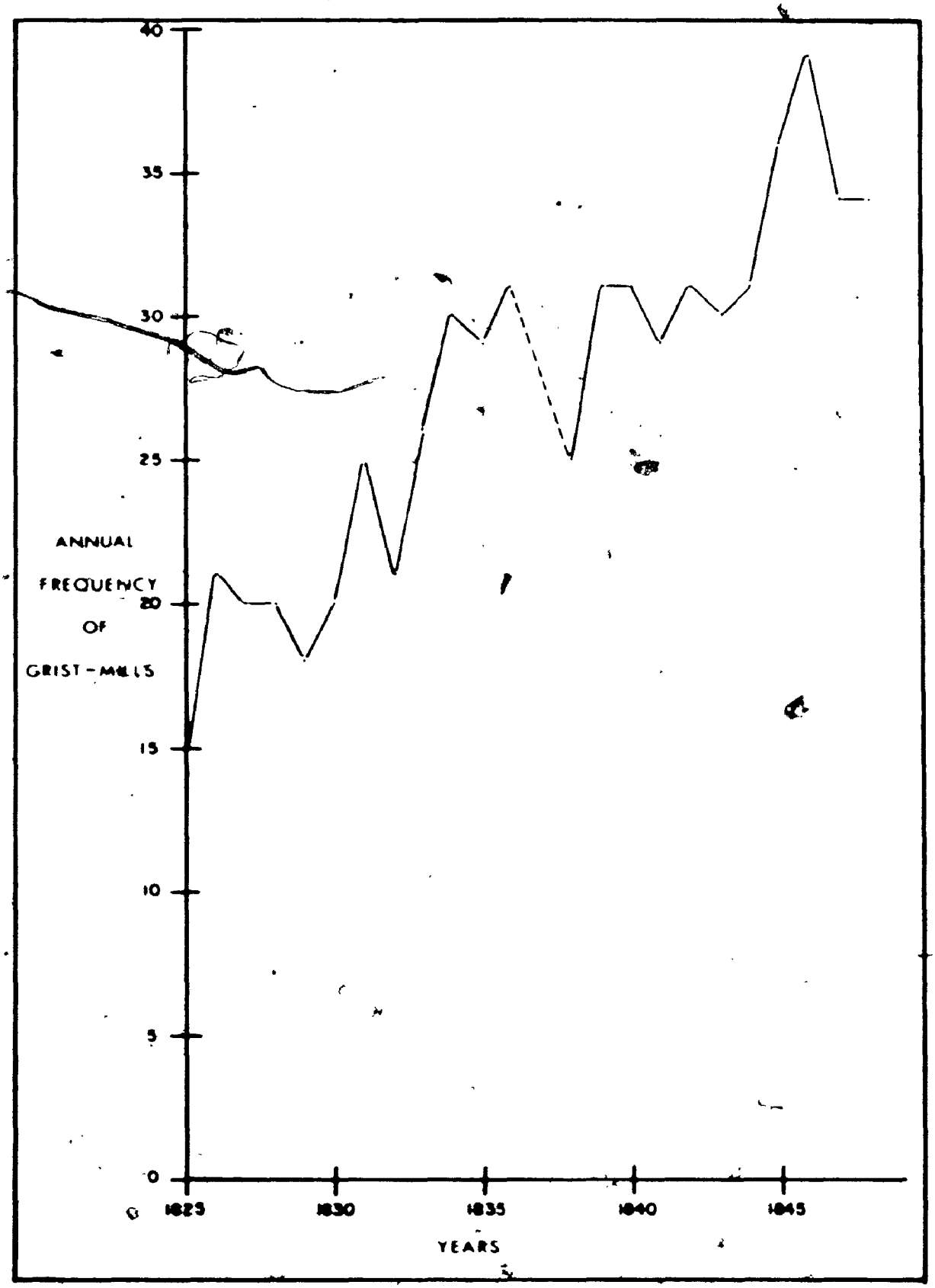

40
35
30
25
20
15
10
5
0
ANNUAL
FREQUENCY
OF
GRIST-MILLS
1825
1830
1835
1840
1845
YEARS

Figure 6.4

ations within a brief period.

The period of twenty-four years from 1825 to 1848 largely succeeds the focus of interest in the present study but the pattern of fluctuating mill frequency from year to year may have characterised preceding years. Data of mills are not as readily available for years before 1825 and the location of grist mills is derived from sources other than aggregate assessment returns. The distribution of grist mills in 1825, Figure 6.5, provides a general basis for attempting to test the association between access to this type of mill and settlement.

Mills appear to have been most numerous in the Upper Thames Valley in Delaware and Westminster townships and in the Otter Creek valley of Bayham. These streams formed the energy source for grist mills and an association with early settlement within these townships may reflect the attraction of ready access to grist mills.

The precise location of everyone of the fifteen mills is unknown and the estimated distribution of this year is displayed cartographically in Figure 6.6. The locations are recorded, Table 6.2, from a variety of sources and provide a more detailed impression than the aggregate return. In cases in which only one grist mill occurred in a township, 1825 relatively little difficulty was experienced in determining its location. Where two or three mills occurred in a township less reliability can be attached to estimated locations. Later records are less helpful in these cases owing to the general increase in mills along the larger streams and the change from place to place in mill location over time. The experience of other workers in the field of early milling includes that of Lewis who claimed that "it is impossible to identify mills whose gross

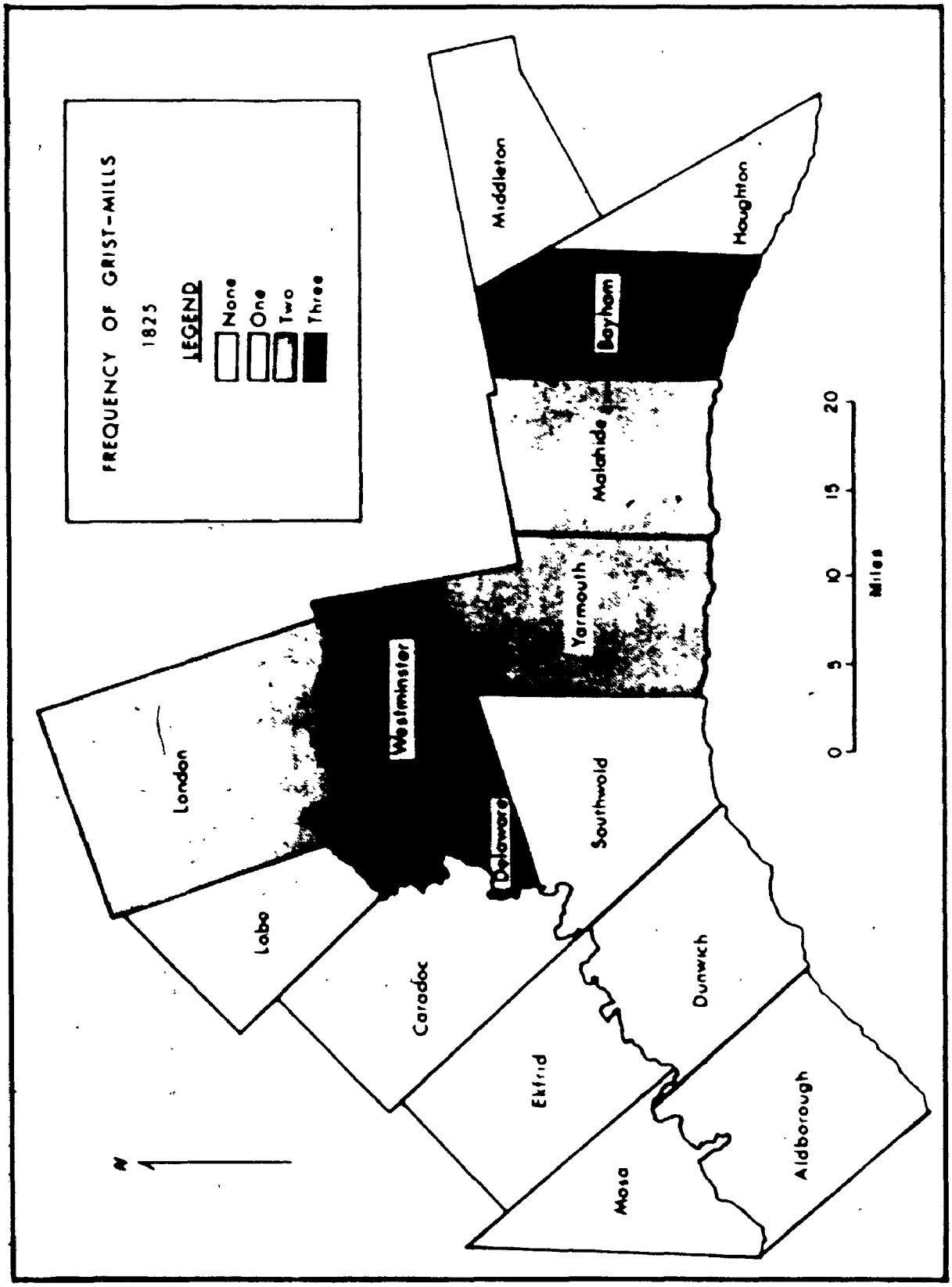

FREQUENCY OF GRIST-MILLS
1825
LEGEND
None
One
Two
Three
N
0
5
10
15
20
Miles
London
Westminster
Delaware
Southwold
Yarmouth
Malahide
Bayham
Middleton
Houghton
Lobo
Caradoc
Ekfrid
Mosa
Dunwich
Aldborough

Figure 6.5

Table 6.2

LOCATION AND COMMENCEMENT OF GRIST MILLS BY 1825

Township	Mill Location Concession	Lot	River or Creek	Commencement of Operation	Miller
Aldborough	12	5	16-mile	1820	P. McKellar[22]
Bayham	Talbot Road East	121	Little Otter	1816	N. Cook[23]
	2	15	Big Otter	1817	J. Smith
Caradoc	No Mills				
Delaware	(Three mills) D	4	Thames	1793 on	E. Allen, N. Grigham and G. Tiffany[24]
Dunwich	12	24	Talbot	1807	T. Talbot[25]
Ekfrid	No mills				
Houghton	No mills				
Lobo	No mills				
London	A	1	Thames	Oct.,1821	-. Doty[26]
	3	16	Medway	(after Oct.) 1821	-. Harrison
Malahide	Talbot Road East	74N	Catfish	1819 (?)	-. Wallington
	5	4	Catfish	1818	H. Medcalf[28]
Middleton	Talbot Road East	186	Big	1818	E. Guslin[28]
Mosa	No mills				
Southwold	No mills				
Westminster	Broken Front	40 or 42	Thames	1821(?)	Gardner and Reynolds[29]
Yarmouth	Talbot Road East	46	Kettle	1818	D. Rapelje[27]
	4	19	Catfish	1819	J. Dean[30]

[22] McKellar, Archibald, The Old "Bragh" or Hand-mill, Papers and Proceedings, Ontario Historical Society, V.III, 1901, p.178.

[23] Govt. of Ontario, Otter Creek Conservation Report, op. cit., p.78, and map between p.85 and 86, "Known Mill Sites."

[24] Carruthers, op. cit., p.80 and 87. E. Allen settled in 1793 and built a grist and saw mill. Several more were soon constructed at the same location.

[25] Guillet, op. cit., 1933, p.221.

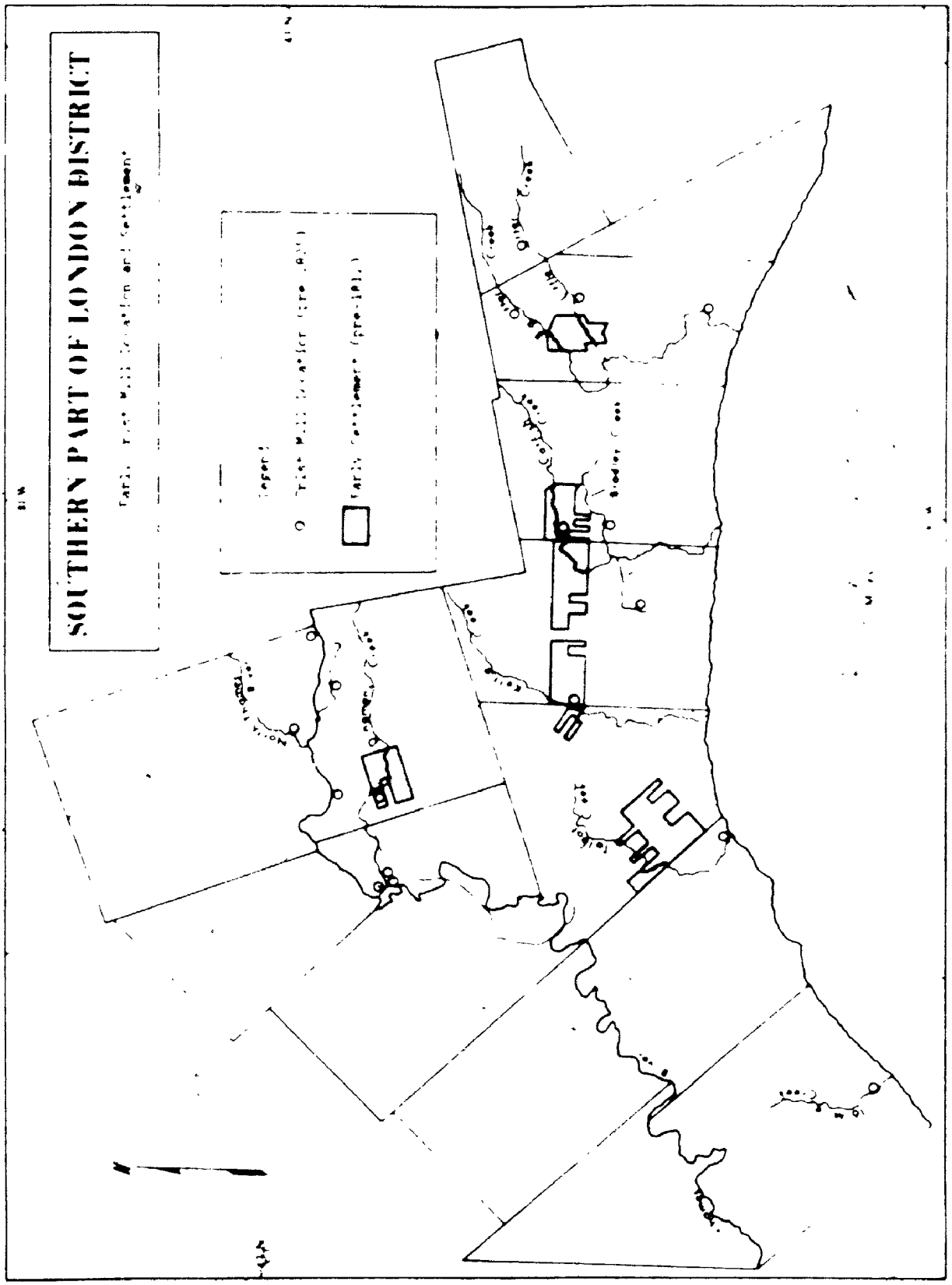
[26] Brock, op. cit., p.67, Map II, Doty's mill was the first in London township and Harrison's was seconds later in 1821.

[27] P.A.O., Talbot Maps, Book C.

[28] P.A.C., Talbot Portfolio, op. cit., The 1818 Return, p.125, states that E. Guslin was "building a grist mill", however none was recorded seven years later. On page 138, H. Medcalf was recorded as "preparing to build a saw and grist mill", which may have been still operating in 1825.

[29] P.A.O., Talbot Maps, No.12. A Grist mill is plotted on Lot 40, Broken Front concession, Westminster, and in Brock, op. cit., p.87, the map shows a grist mill in the same concession but on lot 42 which existed in 1825 and may have been one and the same mill.

[30] London Free Press, March 22, 1947, article by Charles Buck and Tweedsmuir Book, Sparta Women's Institute and personal communication Mrs. A. Olile, Sparta.


SOUTHERN PART OF LONDON DISTRICT

numbers only are reported in assessment returns."[21]

Of the fifteen grist mills mapped, several remain as questionable estimates including the following; in Westminster township, two mills are not recorded in any detail and in Southwold, Bayham, and Dunwich, one mill in each. Bearing these constraints in mind, the locational pattern of grist mills prior to 1825 may be compared with the map of location dates of settlers, Figure 2.2, in order to judge the possible influence of mill access on location.

The settlement dates may be divided immediately, for ease of interpretation in two groups; those preceding the 1812 war and those following. The areas where earlier locations are found appear to be scattered along the Talbot Roads and in the rear concessions. Concentrations may be identified in several areas both with, and without, an associated mill.

Only two grist mills are known to have operated before the 1812 war in this area, that at Port Talbot in Dunwich township and the one at Delaware. The concentration of early settlers at the western end of the Talbot Roads East and North may reflect the influence of easy access to Colonel Talbot's mill. In the case of the Delaware mill few settlers located in this township and no simple association in locational terms is possible. The location of thirteen pre-war settlers in lots along the Talbot Road North approximately five miles east of the Delaware mill is of considerable interest. The lots in question lie in the valley of the west-flowing Dingman Creek which powered the mill in Delaware at the junction of the Creek and the River Thames. Not only were the lots the

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[21]Government of Ontario, op. cit., Otter Creek Conservation Report, p.80.

closest of all of Talbot's lands to the existing mill in Delaware, their location near the Creek was close to a potential mill-site, or sites, for use by the settlers themselves.[31] The remoteness of the location at that date was such that the presence of neighbouring grist mills is necessary to explain the choice of these lots for settlement. No record of development of mills by the settlers themselves is available. The possibility exists that they did not develop a grist mill which may lend support to the argument that settlement location was selected in response to relatively easy access to existing mills.

Other pre-war settlement cannot be directly linked to grist mills as none are known to have existed. The location of settlement, in most cases quite close to main streams, suggests that the promise of a grist-mill development may have influenced the decision to locate. In Yarmouth, the earliest locations were on stream sites on the Kettle and Catfish Creeks. Daniel Rapelje, the settler in 1810 on the former stream, built a mill there that was the catalyst for the growth of the village of St. Thomas.[32] Settlement occurred close to the valley of Kettle Creek in 1809 and 1810 and then spread away more to the east than to the west. In the eastern area of Yarmouth, the Talbot Road traversed the valley of Catfish Creek where early locations occurred extending east over two miles along the road into Malahide township.

The earliest mill development in the Catfish Creek valley apparently occurred in Malahide township rather than at the site of first settlement,

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[31] P.A.O., Talbot Maps, No.11.D, a saw-mill was marked on Dingman Creek on lot 74 and 75, west of Talbot Road North. These lots were not settled in the pre-war period.

[32] Coyne, J.H., Colonel Talbot's Relation to the Early History of London, Papers and Records, Ont. Hist. Soc., Vol. XXIV, 1927, p.14.

as was the case on Kettle Creek. Nevertheless the potential development of mills which followed settlement by approximately six or seven years may have influenced the initial choice of location.

Further east in Malahide and Bayham settlement occupied land throughout the townships over the period from 1809 and 1818. Pre-war locations appear to have been concentrated close to the coast of Lake Erie and along the Talbot Road East. Later settlement occupied the intervening concessions between the coast and the road and vacant lots along the road.

Early grist mills in the eastern part of the Talbot Settlement were located on the main and tributary channels of Big Otter Creek which flows through Bayham township for much of its course. Although three grist mills are recorded in 1825, firm records exist for only two, one near the Talbot Road and the other close to the lake in Concession two of Bayham.

Early settlement in 1811 and 1812 occupied lots in the area of the junction of the Little Otter Creek and the Talbot Road East where a grist mill apparently commenced operation in 1816 (see Table 6.2). The early settlers may have been attracted to the area because of the potential mill development and in this case the attraction of lumbering as a alternative or additional activity to agriculture may have influenced settlers. As in Norfolk County to the east, pine was a major component of the forest vegetation in Bayham and Malahide township. Both Otter and Catfish Creeks were used to power saw mills which greatly increased in use after 1826, when ordinary settlers were legally permitted to take pine timber previously reserved for licensees and contractors of the British Royal Navy.[33] Settlers may have however been attracted before 1826 by

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[33]Govt. of Ontario, Catfish Creek Conservation Report, 1931, "Forestry", by V. B. Blake, p.6.

opportunities for illegal exploitation of timber apart from the agricultural potential of the area.

The early settlement in the southern part of Bayham and Malahide was not closely associated with the channel of Otter Creek and the first mill appeared in a peripheral location to settlement.

The early settlement in Westminster township apart from the Talbot Road North, was concentrated along the south bank of the River Thames. Only one grist mill location has been confirmed with certainty of the three in 1825, one or two miles west of the earliest concentration of settlement. The latter may be assumed to have located irrespective of the potential development of a grist mill and under the influence of other factors than that of access to existing or future mills.

The degree of association between early settlement and grist-mills varies and appears to be greatest on the Talbot Road where five separate nodes of early settlement may be linked with grist mill location. In the case of Port Talbot and Delaware, the mills preceded settlement and may have influenced the location of settlers, in that the latter seem to have located as close as possible to the mill sites.[34]

The three other instances of settlement and grist mill association appear to have been the results of attraction of accessibility to a potential mill-site on Kettle, Catfish and Otter Creek. The "nodes" referred to are not symmetrically developed by any means around the potential mill-site. For example, early pre-1813 settlement spread along the Talbot Road East through Yarmouth township almost the whole distance

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[34] The examination of mill-sites and early settlement suggests the hypothesis that early settlement was attracted to the vicinity of mill-sites may be cautiously accepted.

between Kettle and Catfish Creek yet only four lots were occupied in Southwold to the west of the Creek. The settlement may well have been only partly influenced by the anticipated development of mill sites and individual settlers may have weighed other factors than this in reaching a location decision.

The influence of the existing mills at Port Talbot and Delaware appears to have had spatial extent limited to about five and a half miles in a straight-line. This is the approximate distance between the mill site in both cases, and the location furthest away in the concentrated "node" that is associated with each mill. The distance of five and a half miles may represent the perceived limit of accessibility for individual settlers to grist mills in the 1809-1812 period. Such a distance appears to be small however if the evidence of other mills is considered.

The mill at sixteen-mile Creek in Aldborough Township built in 1820 served settlers in an area "for upwards of ten miles in all directions."[35] A greater contrast is offered by Pickering's description of the area in the Western District around the Talbot Road West, where, "there are mills enough, but they are frequently stopped for want of water and grist must be carried thirty miles to be ground..."[36] These isolated references to the question of satisfactory access to grist mills cannot represent the area as a whole and they post-date the observations made in the study area by over ten years. The acceptable distance of location from a grist mill may have increased as road communications improved and the figure of five and one half miles may represent a meaningful maximum distance for individual settlement from a grist-mill prior to 1813.

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[35] McKellar, op. cit., p.178.

[36] Pickering, op. cit., p.89.

Chapter Seven

THE INFLUENCE OF LAND QUALITY ON INDIVIDUAL SETTLEMENT

The quality of land for agricultural purposes is assumed for the purpose of this analysis to have influenced the locational decision-making of individuals such that those who settled relatively early selected the best land. As a result, later settlers had to be satisfied with relatively inferior land.

Students of early colonial settlement have inferred a great deal with regard to the perception and decision-making ability of the individual settler. Such inference was based in fact upon what would appear to be relatively limited sources of evidence. Not only have they argued on the basis of general assumptions but invariably no further effort was made to prove the assertions made.

In the field of migration and settlement, work by Bylund[1] and Hägerstrand[2] involved testing of *a priori* hypotheses with regard to behaviour of settlers. In a discussion of such attempts at analysis of spatial aspects of innovation diffusion, Olsson suggested that the aforementioned writers used;

> "intuitive knowledge about the specific processes rather than...a strictly objective comparison between the real and the generated patterns. Even if they both possess great knowledge about the respective processes, such a technique must generally be considered a very weak one."[3]

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[1] Bylund, *op. cit.*

[2] Hägerstrand, Torsten; *The Propogation of Innovation Waves*, Lund Studies in Geography, Series B, No.4, Lund, 1952.

[3] Olsson, *op. cit.*, p.39.

Consideration of work in the European sphere in a discussion of the deductive methods that have been used in the analysis of individual settlement in North America is justified on the grounds that a common conceptual focus existed in both cases. Analysis performed by Bylund and Hägerstrand was based on intuitive assumptions and employed relatively systematic methods. These studies were more rigorously scientific, by and large, than those made to date in the field of North American settlement analysis. Much of the latter on the other hand has yet to be published and presently exists in the form of graduate theses.[4] In general terms, the larger the detail or scale of analysis, the closer it has been to the level of operation of the individual settler and the more qualitative and less rigorous the conclusions have become.

Many workers have based deductions in regard to the perception of land-quality in the colonial period upon contemporary records and descriptions of Upper Canada. Diaries, letters, travel accounts and settler's guides were published by visitors and residents of the province throughout the second and third decades of the 19th century. Owing to individual differences between authors and partly to the differing experiences throughout the province, contemporary writings form a source of information of varying accuracy.

Craig has noted that many travel accounts of Upper Canada display a biased outlook and an attention to superficialities that sprung from the European background of the authors.[5] Several workers have neverthe-

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[4] See for example, Wood, L.J., Wood, C.J.B., Clarke, op. cit.

[5] Craig, G.M., Early Travellers in the Canadas, 1791-1867, Toronto, 1955, p. xiv.

less endorsed the settler's guides and similar contemporary accounts.[6] One writer states, for example:-

> "Care must be taken in the evaluation of these guides for many of them are promotional in character and their comments inaccurate. The more objective ones are extremely valuable. The guides provide an evaluation of the physical setting by using vegetation as an indicator of soil quality. They describe the best lands for settlers with various financial resources and make it clear that an extremely wide range of site types were considered suitable by different people."[7]

This writer thus equivocates to a certain extent over the guides, recommending care in evaluating them and at the same time stressing the great value of the "more objective" guides should such be recognised. He goes on to suggest that, "the settler's guides, rather than maps of actual settlement, should be used as a basis for the study of site evaluation because many settlers bought their land unseen."[8] In this connection Guillet cautioned against the assumption of elaborate search procedures on the part of the immigrant.[9] The decision to go to a particular district or region of Upper Canada may have been based upon a minimum of objective knowledge and a series of relatively haphazard events.

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[6] Guillet, op. cit., VI, p.270; Wood, L.J., op. cit.; Wood, C.J.B. op. cit.; Anonymous, Bibliographic Essay on Documentary Sources for the Agricultural Geography of Simcoe County, (Mimeo), University of Toronto, 1968, p.1.

[7] Anon., ibid., 1968, p.2.

[8] Ibid.

[9] Guillet, op. cit., 1963, V.1, p.270.

Deductive attempts at explanation of settler's location have been based on information in publications such as the settler's guides. In most cases rather than attempt a systematic detailed analysis of the available evidence of the pre-settlement landscape as it exists in scattered sources, the location of settlers has been explained in terms of general rules that exist in the literature. One problem with regard to using published descriptions of vegetation and land quality relationships as a model for explaining land settlement, hinges on the two assumptions that the settler was aware of these relationships and had an opportunity to employ his knowledge in even a modest search procedure. The first assumption relates to the background of the settler in question. Experience in the North American forest and agricultural realm may have been a great advantage in the selection of good land. European settlers may have failed through inexperience to discriminate accurately between varied types of land. The second assumption presumes that the settlers were in a position to select their lot of land having themselves observed the local conditions. The actual task of attempting to identify various "types" of settler on the basis of particular attributes of knowledge and selection ability appears to have been largely overlooked to date possibly owing to insufficient information.

Most writers on settlement in early Ontario have recognised the importance of land quality. Some studies have adopted a somewhat deterministic mode of explanation in this regard. L.J. Wood, for example, described the physical landscape as having "an effect on the early settlers."[10] Kirk considered landform types to be important in deciding the behaviour

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[10] Wood, L.J., op. cit., p.8.

of settlers[11] and C.J.B. Wood concluded that physical site characteristics with access were the paramount factors affecting settler's locational decisions.[12] Such approaches to the problem of settlement, whether deliberately deterministic or not, appear to have avoided consideration of the decision-making ability and behaviour of the settlers.

In most cases explanation has been partly deductive with sources such as settler's guides being employed as "proof" of settlement pattern. Few writers have attempted to test hypotheses with regard to locational factors, by using empirical data on settlement and site quality of the original landscape. C.J.B. Wood[13] used the chi-squared test of association upon a hypothesis relating to the distribution of settlement locations and soil and vegetation types in the original landscape. Clarke[14] used the same test of association in the analysis of residual patent dates in the pattern of land-granting in the Western District and the county of Essex. He concluded that a significant association existed between extreme residuals and indicators of good and bad land in which the latter were locally important in modifying the trend of settlement. J.D. Wood claimed that settlers considered local siting factors after such regional ones as the accessibility of settlement nuclei and main roads.[15] He also suggested that squatters who carefully selected their location, favoured the edges of plains of

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[11] Kirk, op. cit., Chapter Two.

[12] Wood, C.J.B., op. cit., p.74.

[13] Ibid., p.65.

[14] Clarke, op. cit., p.173.

[15] Wood, J.D., op. cit., 1958, p.56 and 1961 p.47.

meadows.

> "It appears likely that the transition zone between the woodland and the open land was one of the most influential determinants of the lines followed by the initial settlement in western Upper Canada and a determinant which heretofore has remained unheralded."[16]

Deductions such as this based on relatively fragmentary evidence await confirmation as a result of systematic and scientific analysis of vegetation and settlement characteristics.

Land Quality Indicators And Surveyor's Notes

Landscape factors that served as best indicators of the attractiveness of particular locations for the purpose of pioneer agriculture may have been those that reflected the overall suitability of the site. One possible indicator may have been the presence of cleared land, which was advantageous for farming in the largely forested area of Upper Canada. Vegetation was another indicator and Guillet noted that "the best means of judging forest land as to its potential value for farming was probably the trees which grew upon it, though it was by no means a certain criterion."[17] Trees, of course, formed only a part although an important one, of the total vegetation association of the forest. The assumption that vegetation was a primary indicator of land-quality for agriculture appears to be a sound one. Although direct assessment of the soil might have been a more reliable measurement, it was too inconvenient, time-consuming and possibly beyond the means and abilities of most settlers.

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[16] Ibid., 1958, p.59.

[17] Guillet, op. cit., 1963, p.270.

The surveyor's notes were compiled by government officers as they performed their task of laying out townships which formed the basis for the land-granting system in Upper Canada. The notes have been referred to and used in several studies on colonial settlement. J. D. Wood, Gibson, L. J. Wood, C.J.B. Wood, and Clarke[18] have all used the notes to recreate the pre-settlement landscape. The surveyor's notes were produced as a secondary duty of the officer, in addition to his survey task, in order to report on the vegetation and the state of the land, noting in particular the locations of both white pine timber and precious metal deposits. The notes cover the entire surveyed route and are usually of the form of a series of observations made at regular intervals along concession lines. As each rectangular lot had a width of between 400 to 600 yards and an area of 200 acres, the density of the observations was approximately three or four per square mile.

Several workers have already used this data. One writer asserted that "these reports...are prime sources for pre-settlement vegetation and drainage conditions,"[19] and went on to claim that "very precise maps can be drawn up", owing to the relative density of the observations. Such enthusiasm for the surveyor's notes was not entirely shared by L.J. Wood, who found that the notes could only be the basis for a "rough map of the area."[20] C.J.B. Wood discussed the surveyor's notes at some length and recognised both advantages and disadvantages in their use for landscape

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[18]Wood, J.D., Gibson, Wood, L.J., Wood, C.J.B., and Clarke, op. cit.
[19]Anon., op. cit., 1968, p.1.
[20]Wood, L.J., op. cit., p.21.

reconstruction. Advantages are that the nature of the notes permits quantitative analysis as the notes were made on a lot by lot basis and thus provide a full record of what C.J.B. Wood believed was "one of the variables, important in early settlement."[21] Disadvantages, however, include the fact that references may be selective emphasizing trees of economic importance. The notes, in addition, refer in most cases to tree genera and ignore proportion and frequency of occurrence.

The information on soils is inadequate for any detailed reconstruction and the sampling procedure of the surveyor is not known. J.D. Wood appeared to accept the notes as a detailed and reliable source of evidence inasmuch as he assumed that the surveyor's observations were restricted to distances of 400 yards either side of the concession line.[22]. Little evidence exists to support wuch an assumption. In fact the distance of 400 yards appears to be excessive in the light of contemporary descriptions of the dark and impenetrable nature of the hardwood forests.[23] The surveyor's sampling area may have been considerably more limited or may have varied considerably.

J.D. Wood and Gentilcore have suggested that the order of noting tree genera may have indicated the relative importance of the tree in the stand.[24] Evidence for such an assumption seems non-existent although, the surveyor, in a particular instance may have adopted this practice. Clarke used the surveyor's notes as a source of data of particular

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[21] Wood, C.J.B., op. cit., p.17.

[22] Wood, J.D., op. cit., 1958, Map five footnote between p.16 and 17.

[23] Jameson, op. cit., p.81.

[24] Wood, J.D., op. cit., 1958, p.46 and Gentilcore, op. cit., 1972, p.41.

associations of vegetation.[25] Indicators of good and bad agricultural land were used to test the sequence of settlement on the assumption that such indicators were meaningful agencies in directing immigrants to settle and farm.

In the instances referred to above surveyor's notes have been utilised as the basis for constructing maps of vegetation based on either the unit of tree genera or the association of particular trees and landscape types. A drawback to the use of essentially point sample observations for areal map construction has been raised by C.J.B. Wood.[26] The relative importance of a particular vegetation type is often largely unknown in the overall association. Observations may represent the vegetational evidence of an area or at a single point in space. The perception of the individual settler may be quite different to those of the surveyor owing to varying education, knowledge and precise point of observation.

Bearing in mind the aforementioned assumptions a settler may have had to follow a similar route as the surveyor in order to locate the separate lots and therefore may have observed more or less the same vegetation cover. The areal extent of the indicators used as evidence of land-quality by the prospective settler may have been quite different to the area implicitly described in the surveyor's notes. The settler may have been incapable of observing all the area of the average 200 acre lot in dense forest. His observations may have included only the vegetation on the concession line along which he travelled. The settler's knowledge of the lot selected would undoubtedly have improved subsequently

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[25] Clarke, op. cit., 1970, p.78.

[26] Wood, C.J.B., op. cit., p.18.

but the actual process of selection may have been little more than cursory. The principal value of the surveyor's field notes appears to be as a record of the actual phenomena in the landscape that may have influenced individual decision makers in the settlement process.

Variables of Analysis

The data on vegetational and landscape elements contained in the surveyor's notes was recorded as completely as possible for all lots settled in the study area before 1827, 314 in all, and for all those included in the Return of the Talbot Settlement in 1818, a further 521 locations.[27] The total sample of approximately 850 lots in the study area was not included because a decline in the importance of physical land indicators in settlement may have occurred during the overall period of settlement particularly as the area developed and the wide choice of land disappeared. Furthermore, use of the total sample required an inordinate amount of computing time.

On each of the lots included in the analysis, all vegetation and landscape elements were recorded and for the whole area a total or thirty-nine elements, or variable states, were used.[28] This relatively

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[27] The 314 lots settled before 1827 were the part of the large sample of the whole area already used in chapter six. The 1818 Return was employed in chapters two and five and is used again in its entirety. P.A.C., State Papers, Talbot Portfolio, op. cit.

[28] The thirty-nine vegetation and landscape elements were as follows:- tree genera (31): alder, basswood, beech, birch, black ash, black walnut, butternut, cedar, cherry, chestnut, cranberry, elm, hemlock, hickory, ironwood, maple, pine, plane, plum, poplar, quaking ash, white ash, red oak, sassafras, sugar maple, sycamore, tamarack, tulip tree, white oak, whitethorn and willow; landscape elements (8): bushes, "bottom woods", good land, marsh, meadows, plains, swamp and thick undergrowth.

large number was deemed necessary to reflect the complexity of the total pre-settlement landscape, which appears to have been a botanical assemblage relatively unaffected by aboriginal settlement and cultivation. Impact of this kind was important elsewhere and affected subsequent European colonisation in that certain aboriginal sites were selected by settlers in preference to pristine sites in the forest. The forest itself has been identified by several writers[29] as a transitional one between the more northerly, principally coniferous tree cover and the largely deciduous forest that characterizes the eastern United States.

The mixture of deciduous and coniferous species is seen by Eyre as being the "type of environment (which) offered the means for a relatively safe and stable rural economy.[30] He compared the mixed forest environment that was settled by the early New England Colonists with the areas of contemporary Russian colonisation and later Upper Canadian settlement. The brown forest soils once cleared contained a rich mixture of organic material necessary for plant growth. Their proximity to stands of tall, straight softwoods facilitated the provision of log buildings and other necessities in the early settlement phase.

The presence of more southerly types of trees characteristic of the Carolinian or Subaustral forest region[31] was known from the earliest

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[29] Eyre, S.R., Vegetation and Soils: A World Picture, Chicago, 1963, and Fox, W. and J.H. Soper, "The Districution of Some Trees and Shrubs of the Carolinian Zone of Southern Ontario", Transactions Royal Canadian Institute, Part I, V.XXIX, 1951-52, p.65-84, and Part II and III, V.XXX, 1953-54, p.1-130.

[30] Eyre, op. cit., p.69.

[31] Fox and Soper, op. cit., p.124-125.

period of settlement and an association was assumed to exist between these trees and the soils on which they grew. Reaman in commenting on Mennonite migration to Upper Canada suggested that this group of settlers selected land on such a basis seeking out in particular sites with black walnut trees.[32]

Settler's guides published during the early nineteenth century drew attention to vegetation and soil associations in the province although contradiction between different guides reduced their general value as indicators of settler impression of the forest environment.[33] A comparison of excerpts from four published guides[34] which dealt more or less with the south-west part of Upper Canada, Table 7.1, includes seventeen tree genera and three broad types of land under the headings of good, intermediate and poor. The modern view of vegetation and soil association as described by E.J. Zavitz is also included in the comparison.[35]

Certain trees are associated unequivocally with a single soil type; hickory, butternut, black walunt and white ash being solely on good land, and birch, tamarack, hemlock, ironwood and red oak on poor land. In the case of the seven remaining tree types considerable disagreement in land

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[32] Reaman, op. cit., p.143.

[33] Numerous settler's guides appeared from 1820 on. Better-known guide-books include Talbot, E.A., op. cit., Dunlop, op. cit., Pickering, op. cit., Picken, op. cit., "Canada in the Years 1832, 1833 and 1834. By 'An Ex-Settler' Who Resided Chiefly in the Bush for the Last Two Years," Dublin, 1835; Evans, Williams, Supplementary volume to a treatise on the theory and practice of agriculture adapted to the cultivation and economy of the animal and vegetable productions of agriculture in Canada, Montreal, 1836.

[34] Talbot, E.A., op. cit.; Pickering, op. cit., p.161; "Ex-Settler," op. cit.; Guillet, op. cit., p.270 and 272; and Dunlop, op. cit., p.112.

[35] Zavitz, E.J., Reforestation in Ontario, Canadian Geographical Journal, 1947, No.4, p.136.

Table 7.1

INDICATORS OF LAND QUALITY

LAND TYPE	Authority	Vegetation Indicator: Beech	Maple	Bass	Elm	Hickory	Butter-nut	Chest-nut	Cherry	Black Walnut	Birch	White Ash	Tamarack	Pine	Cedar	Hemlock	Ironwood	Red Oak
GOOD	1. E.A. Talbot		♠	♠		♠		♠		♠								
	2. J. Pickering					♠	♠	♠	♠	♠		♠		♠	♠			
	3. "An Ex-settler"		♠	♠	♠									♠				
	4. W. Dunlop	♠	♠	♠	♠				♠	♠								
	5. E.J. Zavitz	♠	♠									♠						
	TOTAL	2	4	3	2	2	1	2	2	3		2		2	1			
INTER-MEDIATE	1. E.A. Talbot	♠	♠						♠									
	2. Pickering																	
	3. "An Ex-settler"																	
	4. W. Dunlop	♠																
	5. E.J. Zavitz													♠	♠			
		2	1						1					1	1			
POOR	1. E.A. Talbot			♠										♠	♠	♠		
	2. J. Pickering																	
	3. "An Ex-settler"	♠									♠			♠		♠	♠	♠
	4. W. Dunlop							♠					♠	♠	♠	♠		
	5. E.J. Zavitz			♠	♠													
		1		2	1			1			1		1	3	2	3	1	1

association occurred. For the purpose of identifying indicators of particular land quality, the arbitrary rule was adopted that all trees would be classified by the majority of the five writers. In this way, ten tree types were identified as indicators of good land and seven as indicators of poor land to which were added the vegetation associations of swamp and marsh, both of which appear in the surveyor's notes. No indicators were selected for intermediate soils as a result of the comparison and the nineteen indicators for good and poor land are displayed in tabular form, Table 7.2, in order to give an impression of proportionate occurrence in the study area.

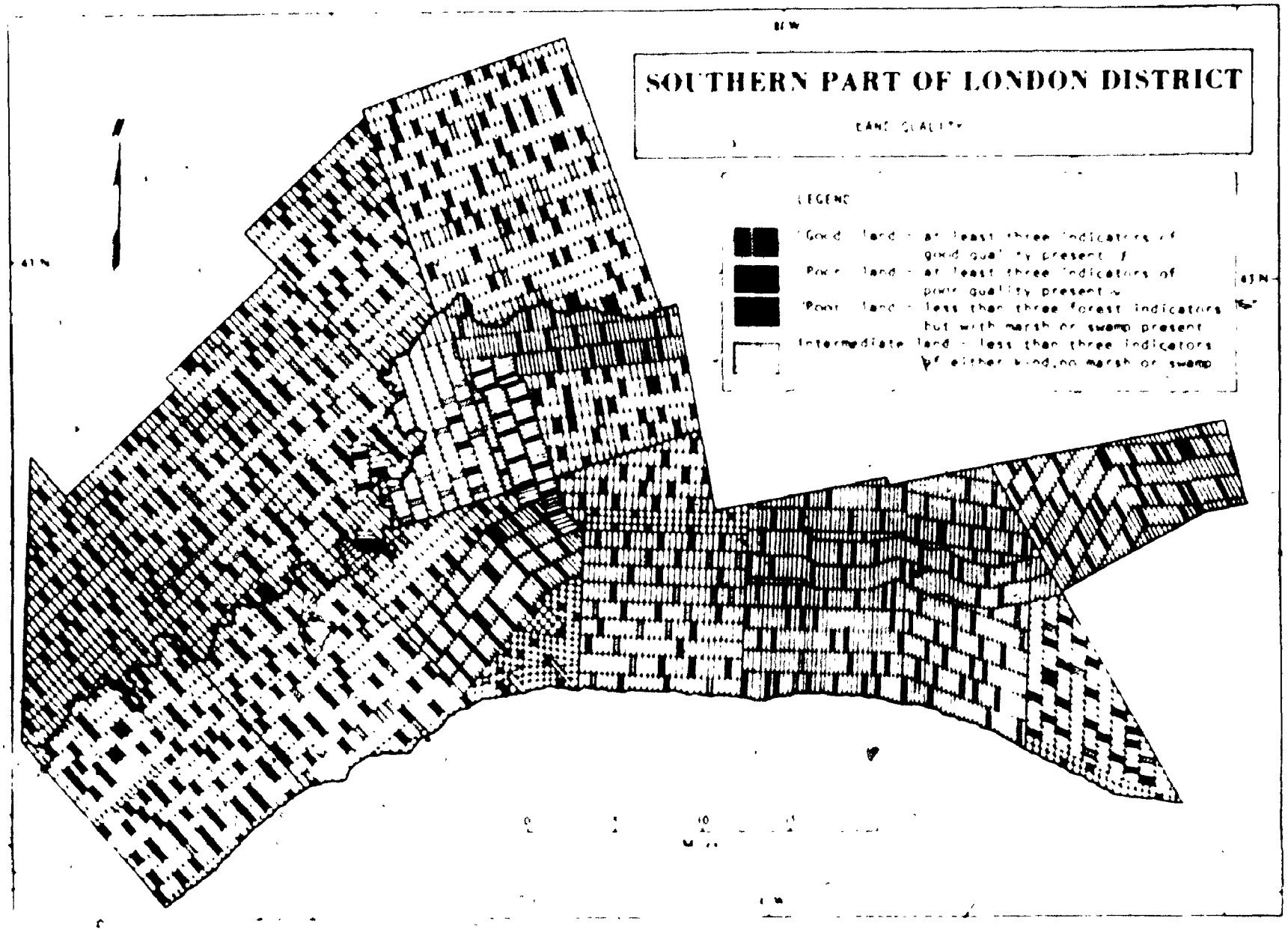
Only nine tree and landscape types of the nineteen indicators of land quality identified occurred on more than ten per cent of sample lots. Beech, maple, elm and basswood were most common although pine was found on over one third of the lots included in the 1818 sample and white ash, chestnut, swamp and ironwood were fairly common. The scarcity of vegetation types emphasises the dominance of the few, particularly beech, maple, elm and basswood, which so frequently appear together in the surveyor's notes.

The relative infrequency of indicators of poor land in the study area may have reflected the general suitability of the area for agricultural settlement. An impression of the spatial extent of the few dominant indicators may be gained from the map of grouped indicator types, Figure 7.1. The types were identified by the occurrence of a minimum of three observed "good" or "poor" indicators on each lot of the pre-1827 sample data, with the addition of lots possessing swamp or marsh land types. The relatively poor land is seen to be confined to certain relatively isolated areas in the north-west and east of the study area.

Table 7.2

PROPORTIONATE FREQUENCY OF OCCURRENCE OF LAND QUALITY INDICATORS

Indicator Type (by lot)	Pre-1827 sample lots (Total = 314) Actual Frequency (by lot)	Proportionate Frequency (of total lots) (per cent)	1818 Return lots (Total = 571) Actual Frequency (by lot)	Proportionate Frequency (of total lots) (per cent)
I. Good Land				
1. Basswood	147	46.8	[illegible]	[illegible]
2. Beech	209	66.5	[illegible]	[illegible]
3. Black Walnut	11	3.5	[illegible]	[illegible]
4. Butternut	17	5.4	[illegible]	[illegible]
5. Cherry	22	7.0	[illegible]	[illegible]
6. Chestnut	24	7.6	[illegible]	[illegible]
7. Elm	153	48.7	[illegible]	[illegible]
8. Hickory	14	4.4	[illegible]	[illegible]
9. White Ash	54	17.1	[illegible]	[illegible]
10. Maple	192	61.1	[illegible]	[illegible]
II. Poor Land				
1. Birch	14	4.4	[illegible]	[illegible]
2. Cedar	1	0.3	[illegible]	[illegible]
3. Hemlock	9	2.8	[illegible]	[illegible]
4. Ironwood	18	5.7	[illegible]	[illegible]
5. Marsh	14	4.4	[illegible]	[illegible]
6. Pine	46	14.6	[illegible]	[illegible]
7. Red Oak	9	2.8	[illegible]	[illegible]
8. Swamp	56	17.8	[illegible]	[illegible]
9. Tamarack	10	3.1	[illegible]	[illegible]


SOUTHERN PART OF LONDON DISTRICT
LAND QUALITY
LEGEND
Good land - at least three indicators of good quality present
Poor land - at least three indicators of poor quality present
Poor land - less than three forest indicators but with marsh or swamp present
Intermediate land - less than three indicators of either kind, no marsh or swamp

The hypothesis is postulated that the vegetational indicators of land quality were associated with soils. If this was the case the settlers may well have employed such indicators as were recommended by the settler's guides and if not may have used entirely different indicators of land quality. Soils are measured on the basis of good, poor or intermediate drainage characteristics derived from modern county maps.[36] The chi-square statistic is used to test the association of land quality indicator and soil characteristic in this case.

Results Of Analysis Of Association

The association between the seventeen land quality indicators and soils is only partially substantiated as a result of the chi-square test. Results of the test, Table 7.3, on both the pre-1827 and the 1818 sample of settled lots show that no significant association existed at the five per cent level in the pre-1827 sample but a highly significant association characterized the 1818 sample. In both sets of data indicators of good land are associated with all soil drainage types. In the pre-1827 sample, good land indicators occurred on 87.2 per cent of well-drained and 86.5 per cent of poorly drained soils and in the 1818 data, on 92.[illegible] per cent of well-drained and 8[illegible] per cent of poorly drained soils. The poor land indicators were similarly associated with all types of soil; in the pre-1827 data, with 12.8 per cent of well-drained and 8.6 per cent of poorly drained and in 1818, with 8.2 per cent of both types of soils. Without a clear association of indicators and soil drainage, firm conclusions regarding the validity of the selected land indicators from

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[36] Government of Ontario, Department of Agriculture, County Soil Map, No.1, Norfolk, No.2, Elgin and No.8, Middlesex. The drainage condition of the soil at the front of each lot, the surveyor's route, was taken as the measure of the soil.

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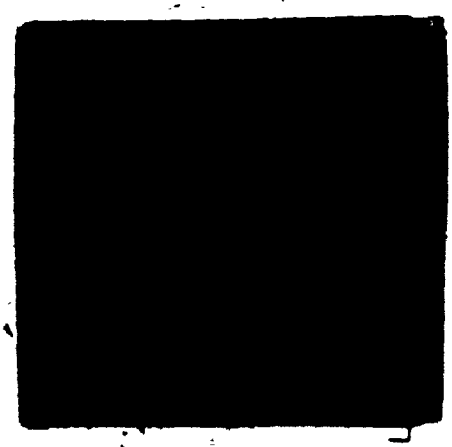

Table 7.3

SOIL DRAINAGE AND LAND QUALITY INDICATORS

1. Pre-1827 Settled lots[37]

Land Quality Indicators	Observed Frequency: Soil Drainage			Expected Frequency: Soil Drainage			
	Well-drained	Imperfectly Drained	Poorly Drained	Well-Drained	Imperfectly Drained	Poorly Drained	Total
Good	68	56	38	69	54	39	162
Poor	10	5	6	9	9	5	21
Total	78	61	44	78	61	44	183

Value of chi-square statistic - 1.0; 2 degrees of freedom; not significant at 0.05 level of probability.

2. 1818 Return Lots

Land Quality Indicators	Observed Frequency: Soil Drainage			Expected Frequency: Soil Drainage			
	Well-Drained	Imperfectly Drained	Poorly Drained	Well-Drained	Imperfectly Drained	Poorly Drained	Total
Good	156	94	87	153	89	95	337
Poor	14	5	19	17	10	11	38
Total	170	99	106	170	99	106	375

Value of chi-square statistic - 10.5, 2 degrees of freedom, significant at 0.01 level of probability.

[37] The lots included in the chi-square test for both sets of data are those that have been judged, on the arbitrary basis of having three or more indicators, to be good or poor quality land. The exception to this rule is the lot with swamp or marsh recorded upon it which is automatically classified as poor land. The number of lots in the analysis for both sets of data is considerably reduced from the total data set as a result of this selection process.

the point of view of settler perception are difficult. The contradictory nature of the results of the chi-squared test suggest that association between a particular set of indicators and a particular soil drainage-type was low. The non-significance of the pre-1827 data implies that the observed association may have occurred by chance. No obvious grounds exist for assuming that the sample was biased with respect to either variable and no association may be assumed to exist between the land-quality indicators and soil drainage in the study area.[38]

Cluster Analysis Of Land Quality And Settlement

Settlers may have selected land on the basis of an assemblage of landscape characteristics including individual tree-types and associations of vegetation in the form of plains or swamp. The total vegetation characteristics of sample lots have been incorporated in cluster analysis in order to identify the aggregate identity of similar locations. The attraction of cluster analysis, a technique employed in botany and geography,[39] is the facility for the inclusion of nominal scale variables in a calculation of a single measure of vegetational character. The technique

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[38] In other words the "good" and "poor" vegetational indicators of land quality occurred on all types of soil and could not be reliably associated with any particular ope. This suggests that the vegetational indicators were only a poor guide to actual soil drainage and quality. Vegetational indicators may nevertheless have been used by settlers for selecting lots and in order to learn whether particular assemblages of forest trees induced settlers to select certain lots earlier than others, the technique of cluster analysis was used to group lots with similar vegetation. Resulting groups would hopefully be identified with earlier or later settlers and correspond to land more or less attractive for agriculture.

[39] Greig-Smith, P., Quantitative Plant Ecology, London, 1957, Chapter Seven, Sokal, R.R. and Sneath, P.H.A., Principles of Numerical Taxonomy, San Francisco, 1963, Estabrook, G.F. and Rogers, D.J., A General Method of Taxonomic Description for a Computed Similarity Measure, Bioscience, 1966, p.789-793, Campbell, Noel., The Central Business District of London, Ontario, unpublished M.A. thesis, University of Western Ontario, 1969.

antecedes rather than replaces such techniques as the chi-squared test, which required grouped values to be already established, whereas by clustering, groups of similar sample points are in fact identified.

The complexity of vegetative site characteristics on sample lots suggested the need for an analytical technique that would accommodate a large number of nominal variables. Lots with similar combinations of vegetative characteristics may have induced a similar response in the decision-making of prospective settlers, such that better land would have been settled earlier than land of poor quality.

The similarity measure of sample lots by means of which clusters of locations may be recognised was calculated by averaging the similarity of two locations for every vegetative characteristic or variable state.[40] The latter may be either present or absent in any particular lot and rendered the lot either totally similar or dissimilar to another site for the particular variable state in question.

All locations were compared individually with each other for all of the recorded variable states of vegetation or landscape. A measure of similarity between individual locations for each single variable state was either unity (1.0) where two lots both either possessed or lacked the same characteristic, or zero where they were dissimilar in this respect. An overall similarity measure was calculated for each sample location with reference to every other, taking into consideration all variable states. The overall similarity measure varied in theory at

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[40] The single linkage similarity-clustering programme was prepared by Dr. D.J. Rogers, Taximetrics Laboratory, University of Colorado, 1967.

least from unity in which case the two lots were identical in all respects to zero when they were totally dissimilar.[41]

By a subsequent grouping process, the locations having equal similarity values are clustered together for further analysis those with highest values first. As the value of similarity is decreased in the clustering process more of the sample are grouped and eventually all locations are included in the principal cluster. The results of cluster analysis of settled lots of both the pre-1827 and 1818 Return are summarised in tabular form, Table 7.4.

The range of similarity values resulting from cluster analysis is relatively small, from 1.000 to 0.589 in the pre-1827 data and 1.000 to 0.615 in the 1818 data.[42] The principal cluster size is described in Table 7.4 at each of the first six levels of similarity for the pre-1827 sample and the first four levels in the 1818 data within which ninety-four and ninety-six per cent respectively of all locations had been included.

The proportion of locations included in the principal cluster at the first level of similarity 0.974, or 97.4 per cent, is much greater for the

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[41] In this single-link cluster analysis, the individual variable state (vegetation or landscape type) similarity, $C(V_A, V_B)$ for two locations, A and B, is either 1.0 or zero depending on whether the sites (i) both either possess or lack the variable state in question (1.0) or (ii) one only possesses it (zero). The overall similarity measure for the two locations $C(A, B) = \sum_{v=1}^{N} C(V_A, V_B)/N$ where

N is the number of variable states in question.

[42] In other words the lots in the area have relatively similar vegetation although the measure of similarity used here is somewhat unsatisfactory in that differences in vegetation tend to be lessened when the number of identified trees and vegetational characteristics is quite high, as in this case (thirty-nine). Cluster analysis consequently, has not provided groups of quite distinctly vegetated lots as a basis for dividing and comparing settler behaviour.

Table 7.4

RESULTS OF CLUSTERING ANALYSIS (39 VARIABLES)

1. LOTS SETTLED BEFORE 1827

Level	Similarity (c) value	Number of locations in main cluster	Per cent of locations clustered
1	0.974	218	65.9
2	0.948	274	82.9
3	0.923	300	90.8
4	0.897	308	93.5
5	0.871	311	94.0
6	0.846	312	94.0

2. LOTS IN TALBOT SETTLEMENT, 1818

Level	Similarity (c) value	Number of locations in main cluster	Per cent of locations clustered
1	0.974	443	82.6
2	0.948	492	91.7
3	0.923	509	94.8
4	0.897	514	96.0

1818 than the pre-1827 settlement data; 82.6 as opposed to 65.9 per cent. The 1818 data describe a more limited area, that of the Talbot Settlement lots at that date whereas the pre-1827 sample includes locations drawn from the whole study area. A greater degree of similarity may be expected as a result from the 1818 data. The proportion of the locations included at the second level of similarity in the 1818 date is 91.7 per cent approximately equal to that included at the third level, 90.8 per cent, in the other analysis, indicating more persistent dissimilarity in the vegetation and landscape characteristics of the pre-1827 sample locations.

The cartographic representation of clustering has not been included owing to the difficulty of mapping clusters in a reasonably clear manner. The spatial distribution of lots included in the pre-1827 sample is such that interpolation would be required to produce cartographic regions. This has been eliminated as a possibility owing to the difficulty of clearly identifying clusters in terms of land quality and because of the interspersal of dissimilar lots over the whole area. Only in a few areas such as Middleton and the Longwoods townships is it possible to identify a number of juxtaposed late-clustering lots which justify a regional distinction. In these cases it appears to be linked to the presence of swampy land with associated pine forest in the former area. In the case of the 1818 date, cartographic representation is omitted although the lots in this case are largely continuous because the marked similarity of the majority prevents a clear description of varying land quality.

The histograms of the proportionate representation of individual variables in successive levels of clustering, Figure 7.2, provide a basis for distinguishing the general character of the main cluster at the highest similarity level and the lots excluded from it. The indicators

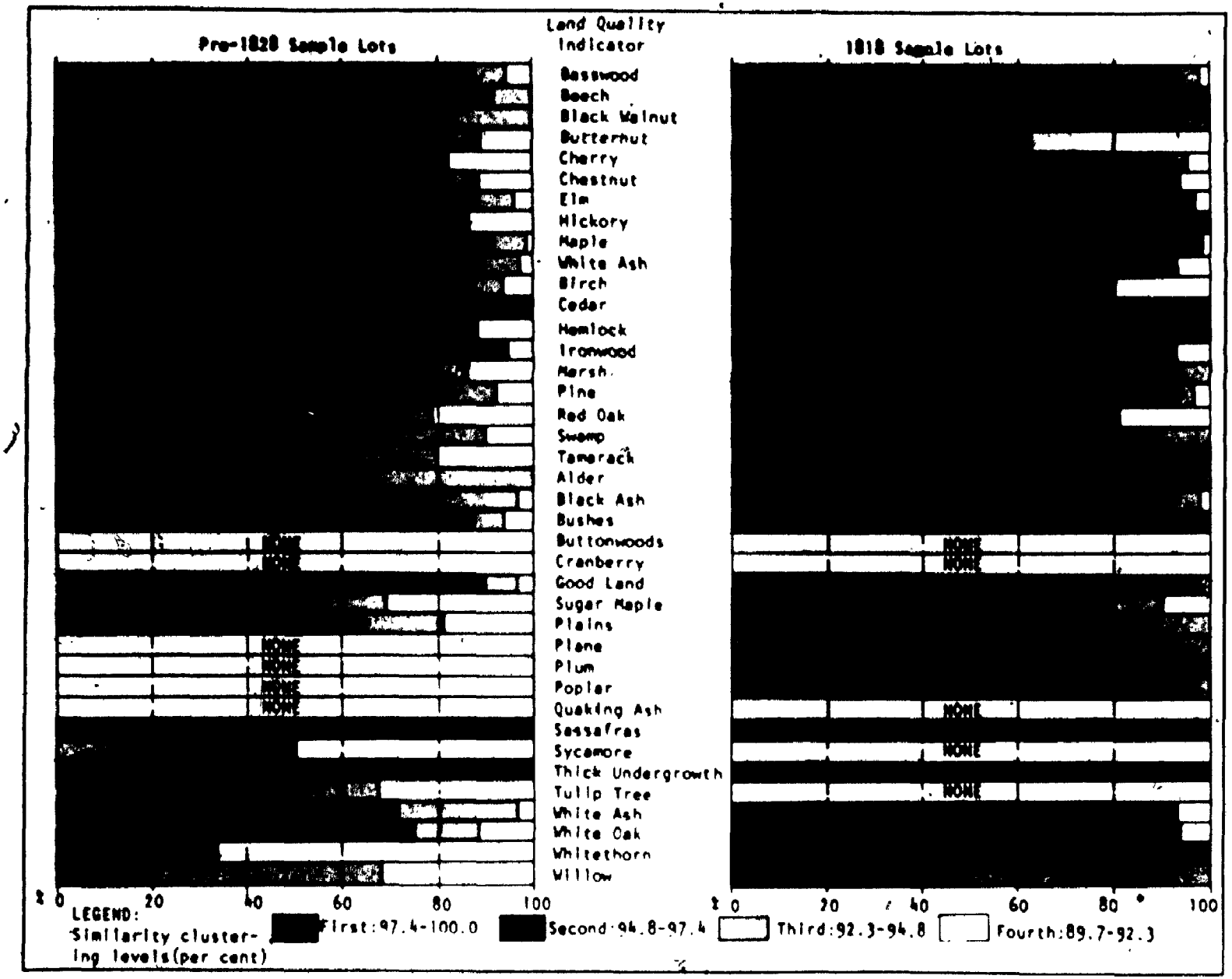
Pre-1828 Sample Lots
Land Quality Indicator
1818 Sample Lots
Basswood
Beech
Black Walnut
Butternut
Cherry
Chestnut
Elm
Hickory
Maple
White Ash
Birch
Cedar
Hemlock
Ironwood
Marsh
Pine
Red Oak
Swamp
Tamarack
Alder
Black Ash
Bushes
Buttonwoods
Cranberry
Good Land
Sugar Maple
Plains
Plane
Plum
Poplar
Quaking Ash
Sassafras
Sycamore
Thick Undergrowth
Tulip Tree
White Ash
White Oak
Whitethorn
Willow
NONE
% 0 20 40 60 80 100
LEGEND:
Similarity clustering levels(per cent)
First:97.4-100.0
Second:94.8-97.4
Third:92.3-94.8
Fourth:89.7-92.3

Figure 7.2

of good land quality are represented strongly in the first main cluster, most variables having 75.0 per cent of their total observations included. The indicators of poor land are not strongly represented in the first cluster by comparison and appear to join later than the indicators of good land.

Testing The Hypothesis Of Settlement Date and Land Quality

The pre-1827 sample data has a better basis for representation of the study area owing to the sampling procedure used. Analysis of variance on the pre-1827 sample location dates provides a basis for determining the extent to which settler's behaviour was related to the land quality of selected lots.

The main cluster of locations at the 97.4 per cent level contained 54.9 per cent of the total good and 36.4 per cent of the total poor land indicators. The second level of clustering produced a principal cluster containing 77.0 per cent of the good, and 73.0 per cent of the poor land indicators, these variables having increased by 22.1 and 36.6 per cent respectively.[43]

The relatively large proportionate increase in the poor land indicators at the second level of clustering suggests those additional member locations may have possessed a somewhat different character in terms of vegetation indicators. The increase in the poor indicators suggests that these later clustering locations may have been relatively inferior for agriculture and may have been perceived as such by the prospective settler.

Assuming such a distinction existed, the poorer land may have been settled later, in which case locations entering the main cluster at the

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[43] Adams and Helleiner, op. cit., p.401-2.

second level of similarity may have been settled after the apparently better quality locations in the first main cluster.

In order to test the hypothesis that a significant difference existed between the location dates on the good and poor land, the 218 lots in the cluster at the first level, 97.4 per cent, and the fifty-six joining it at the second level were tested using analysis of variance.[44]

Results Of Analysis

No significant difference existed between the two groups of locations in terms of location date, at the five per cent level of probability.[45] This result suggests that settlers were either unable to discriminate between the quality of land upon lots to be settled in the study area. The physical environmental indicators of vegetation and landscape type appear to bear no association with date of settlement. This conclusion has not been reached by a majority of workers in the field of settlement although Gentilcore has proposed the early settlement in the province was "indiscriminate of physical conditions."[46]

Further analysis of variance on the pre-1827 sample data produces a somewhat different conclusion. Locations were selected for analysis on the basis that three or more indicators of land quality were present on

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[44] In other words, the date of settlement was believed to have been significantly earlier on "good" land than on "poor" land. The analysis of variance test would provide a basis for confirming if this was the case by comparing the lots in the highest level of similarity in cluster analysis which were recognized as "good" land and those that were at the next level of similarity, which appeared to have more "poor" indicators.

[45] The test did not indicate a difference in date of settlement on "good" or "poor" land and for this reason the settlement appears to have not been related to land quality.

[46] Adams and Helleiner, (eds), op. cit., p.419.

each lot, the only exception to this rule being in the case of swamp or marsh occurring on a lot in which case it was automatically classified as poor land.[47] The sample size was reduced to 258 lots for this purpose only sixty-two of them being identified as poor land. The analysis of variance indicates a significant difference at the 0.01 level of probability existed between the location dates of settlement on the good land as compared to those on the poor. The actual difference in mean location date of settlers on the good and poor land was twenty-two months, January, 1819 compared to November, 1820.[48]

The results of clustering indicate the general similarity of much of the area in terms of its component vegetation. The relatively rapid rate of cluster formation and the low number of iterations required, supports this conclusion. A relatively wide variety of vegetation and land types was considered although a large proportion of the range was absent from most lots analysed. Owing to this basic similarity, relatively rapid clustering might be accepted.

Furthermore, the single-linkage form of cluster analysis permits membership in the cluster of widely differing individuals. For example concession four, lot ten, in Ekfrid township in the pre-1827 sample has two of the total possible thirty-nine variables represented in the survey notes. These were black ash and swamp suggesting the lot is very poor land

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[47] In order to see whether settlement dates were significantly different on land classified as "good" and "poor" in an alternative more obvious manner, land was divided into these classes on the basis of merely having had a minimum of three "good" or three "poor" vegetational indicators and then subjected to analysis of variance.

[48] In other words, when good and poor land was identified by merely counting three "good" or "poor" indicators, analysis of variance suggests that settlement was significantly earlier on the "good" land than on the "poor". The mean location date differs by only twenty-two months however for both land types.

for agriculture. The lot in Ekfrid joined the main cluster at the first level of 97.0 per cent similarity in spite of the fact many of the other members of the cluster were quite different. This occurred owing to the similarity linkage at the 97.4 per cent level of the lot in Ekfrid with the following other lots; Westminster township, concession five, lot seven, with black ash, swamp and good land; London township, concession two, lot fourteen, with beech, black ash, and swamp; and Bayham township, concession ten, lot fifteen, with elm, black ash, and swamp. The same cluster includes lots such as Caradoc township, concession twelve, lot six and Yarmouth township, concession four, lot sixteen, which were characterised by a distinctly different type of vegetation and land-type, beech, maple, bass, elm and good land.

The single-linkage method of clustering clearly accommodates relatively unlike individuals within its clusters. Adjacent sites of relatively differing nature may be included in the same cluster owing to the link with a relatively distant site.

On the other hand, the clustering has demonstrated, on the basis of the appraisal of relatively complex site characteristics, the remarkable uniformity of the vegetation cover of the area. The relative distinctiveness of the later-clustering lots is demonstrated by the identification of lots containing good and poor land.

Cluster analysis was introduced into the study of the influence of land quality on individual settlement in order to attempt to embrace the complexity of the perceived environment of the pre-settlement landscape. The failure of this technique to produce easily interpreted groups of locations that are continuous in space or clearly linked to unique environmental or social characteristics is disappointing. The failure may be related to two factors affecting the analysis.

In the first place the complexity of the environment may have been exaggerated in view of the extreme scarcity of many of the forest trees. The second factor concerns the type of cluster analysis used in which a single-link between two data points is the basis for calculation of similarity. In this way a wide variety of land quality as reflected in the indicators may be included within the same cluster. The apparent similarity between the locations in the main cluster at the first level and the additional locations at the second level of similarity may have observed the considerable variation in land type within both clusters.

The validity of the indicators was supported by the second analysis of variance made on lots selected irrespective of cluster membership from the whole pre-1827 data. The fact that indicators were not clearly associated with soil type in terms of drainage did not necessarily negate their actual use by settlers in locational decision-making. The degree to which such use was employed is not however clear and the actual importance of the ability to distinguish land quality on the basis of forest and landscape indicators appears to have had a relatively small impact in settlement in the study area. The general uniformity of much of the forest vegetation and the small difference between the mean location date on good and poor land suggests that relatively little attention was paid to land quality indicators of the physical environment. This conclusion corresponds with that of other writers in the area of Upper Canadian settlement including Gentilcore and Johnson who detected little correspondence at the level of individual settlement. In fact the attempt to interpret individual decision-making by means of as indirect phenomenon as vegetational characteristics may be wishful thinking

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[49] Adams and Helleiner, (eds), op. cit., p.416 and Johnson, op. cit., p.44.

and J.D. Wood may be correct in stating that "using types of trees as gauges of the condition of the land was a technique too localized to be of much interest among settlers moving on to 100- or 200-acre plots, which embraced all kinds of land."[50] Perhaps the only way in which such a statement can be answered is by attempts such as the present one employing quite systematic, quantitative assessments of land quality and settler behaviour.

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[50]Wood, J.D., op. cit., 1961, p.45.

Chapter Eight

Conclusion

Analysis of the influences that affected decision-making in early settlement has focussed on a part of the Talbot Settlement during the first three decades of the nineteenth century. Exceptional and unique characteristics of this area of Upper Canada may well have influenced the settlers' locational decisions in the same way that such factors in another part of the province would influence settlement. The renowned authority of Colonel Talbot was recognised as a particular factor that lent uniqueness to this area and which may have had a profound effect upon individual settlement.

The factor of authority has been identified in the literature on provincial historical geography as a primary influence upon the location and progress of settlement. Authority was wielded by bodies and individuals throughout a complex hierarchy of delegated responsibility. In many areas of the province, control of land alienation and settlement originated and remained with the Executive Council and Commissioner of Crown Lands located at York. In the Talbot Settlement however this authority was adopted by Colonel Talbot and was exercised exclusively for over thirty years following his first arrival.

The extent to which his control was deliberately enforced in terms of the physical directing and supervision of settlement has been one question addressed in the present study. The state of the Talbot Settlement some years after its inception provides a basis of doubt in regard to the firmness of Talbot's control. The confirmation of the existence and extent of that control was regarded as an essential preliminary step

in the analysis of the influences that affected the locational decision of individual settlers. If the degree of control exercised by Talbot was relatively slight other factors would have played an important role in settlement and the area may have been similar in this respect to others in the province.

Several hypotheses were proposed involving the principal factors that have been identified at the global, North American and Ontario scale as having been of significance in settlement. The factors embraced the primary importance of Talbot's authority, the accessibility of communications, both transportation routes and personal relationships; accessibility to mills, and land quality for agriculture. Owing to differences in the scale of measurement of the variables included by each factor, and the varying amount of information in each case, multi-variate analysis was possible to only a limited extent. Testing of hypotheses was performed essentially on a univariate basis with the integration of separate factors forming an essentially deductive concluding step.

Tests of the separate hypotheses have suggested the limited extent of operation of individual influences in locational decision-making. No single factor was seen as a explanatory cause in all or even a large proportion of settlement in the study area.

The control exercised by Talbot was shown to be relatively weak with regard to settlement expansion along principal roads. The observed patterns although exhibiting a positive correlation between time and space may well have resulted from a random or chance occurrence.

The accessibility factor was divided in terms of function and scale between access to the principal transportation routes and access to more personal forms of communication reflected in kinship and common national-

ity. The conclusion of the analysis of these influences was that settlement reflected to a large degree the effect of kinship and that apparently related individuals made great efforts to settle in close proximity to one another. National background appeared to have no dramatic influence on location preference possibly because the principal national groups British and American were not dramatically different in the period under consideration, owing to the long period of residence in Upper Canada of many of the Americans.

Accessibility to both the main road and water transportation routes was not a very important influence on individual settlement in the study area. The pattern of settlement over time reflected the variation in rate of immigration to the area and the effect of very local or seemingly random influences.

An accessibility factor was identified in regard to the economic function of grist-milling and the influence of such mills on settlement location was tested. The scarcity of mills in the area curtailed the influence of this factor and the absence of detailed information on location and period of operation of individual mills limited analysis. The general association of known grist-mills and potential mill-sites with early concentrations of settlers appears to support the hypothesis in the study area.

The final factor to be analysed was the influence that agricultural land quality exerted on locational choice. All the recorded variables of the pre-settlement forest vegetation and landscape were employed in an attempt to estimate the perception of settlers. The results of similarity and cluster analysis of this information failed to reveal distinct locational or land type groups within which to categorise settlers. The complexity of the pre-settlement landscape may have been

poorly perceived by settlers who may not have readily identified separate elements.

The determination of a set of land quality indicators agreed upon by a number of writers permitted the classification of the results of cluster analysis in terms of good or poor land. No behavioral response in terms of differing date of settlement was detected in regard to member lots of cluster groups. Individual lots that appeared to be good or poor land solely on the basis of land quality indicators were settled at different times. Settlement appeared to be significantly earlier on good land than on poor, the actual mean date of settlement differing however by only twenty months.

The difference in date of observed settlement on lots of varying quality is small and consequently may not be indicative of a real perceptual difference on the part of settlers. The cluster analysis results suggest the existence of a uniform landscape which may have bewildered settlers rather than provided them with the basis for discrimination of land quality. The conclusion is that the observed variation in settlement date and land quality is not directly related in the study area.

The analysis has attempted to isolate the factors that are believed to influence early settlement and test their importance in the study area. The results of analysis have confirmed the influence of several factors notably kinship and the economic importance of grist-mills. The role of land-quality, accessibility to major routes and that of Colonel Talbot's authority have been reduced in importance in regard to individual settlement location.

The conclusions of the study reflect particular aspects of the area under consideration which may bias and limit their general value.

Apart from the unique presence of Colonel Talbot and his system of land alienation, the area appears to have possessed a very high proportion of related settlers at least in the years before 1818.

The degree to which this was normal in Upper Canada generally in the early nineteenth century is not clear. If normal then the role of kinship may be expected to have played as significant a part in settlement everywhere as it had in this case. The effect of kinship in settlement location appears to outweigh all other factors. In the study area it may have been the reason for the relatively inconsequential influence of both accessibility to main routes and land quality on location. The influence of accessibility to a relative appears to have been the prime consideration for settlers with members of their family in the same area. Other factors appear to have been of a secondary importance, if considered at all.

Settlers who were unrelated to others in the area represent a separate class and might well form the focus of further analysis both in this and other areas in order to identify the factors that influenced location when kinship considerations played no part. Those of particular significance in influencing settlement patterns may have been the first settlers who were later joined by other family members. Their initial location would have been selected without reference to kinship accessibility and yet it dictated to a great extent the location of later arrivals.

Another relatively unique aspect of the study area may have been the uniformity of the forest vegetation and landscape. The predominance of five or six tree genera and the relative scarcity of swampy, poorly drained or infertile land may have influenced settlers to the extent that all land was assumed of good quality unless extremely bad. The relatively

subtle components of forest vegetation represented by indicator trees may have been so rare that discrimination on that basis was virtually impossible. The relative uniformity of the pre-settlement forest landscape of Upper Canada in general may not have compared to the character of the study area. Many more perceptual cues such as the land-quality indicators used here may have provided a basis for locational decision-making generally.

The primary conclusion that may be stated as a result of this study is that individual settlement location may be explained most readily in regard to related settlers in terms of their proximity to relatives and in terms of those without relatives nearby in terms of access to grist-mills and the availability of land in Colonel Talbot's townships. The invisible and tangible character of kinship links makes them virtually unmappable and most difficult to employ in traditional geographical explanation. The simple geometric patterns of access to major routes and the more complex pattern of agricultural land quality in the area are of little apparent importance in explaining individual settlement or to collective spread over the land.

The conclusion may appear merely to re-state with more empirical basis the assertions made by other writers with regard to the influence of kinship and acquaintance in settlement. The apparent lack of evidence of these characteristics has prevented much work being performed and the present study may have had relatively plentiful information by comparison to other areas. The simple evidence of surname and national background used here has been the basis for revealing conclusions on settlement location that may be possible to a far greater extent. The population of settlers in Upper Canada may in fact be divisible in terms of two main

classes those who settled with relatives or close friends nearby and those who did not. The locational factors of importance to settlement may be forced to differ significantly between the two groups. In the former, proximity to social contacts may have been virtually all exclusive influence. In the latter group of unrelated, relatively solitary, settlers the factors of accessibility to mills or available land for settlement may have been paramount in their consideration.

Appendix A

ORIGIN OF SAMPLE SETTLERS, 1818

Source: Return of Talbot Settlement by Duncan McDonell, 1818. A ten per cent sample of the three principal origin types, Natural born (N.B.), Loyalist (U.E.L.) and American (U.S.) is presented. Abbreviations:-Location; T.Rd.E.-Talbot Road East; T.Rd.N-Talbot Road North; Lot on Talbot Roads are designated North (N), South (S), East (E), or West (W) depending upon their position with relation to the road.

Number	Settler Name	Origin	Township	Concession	Lot	Location Date	Number of available intervening lots to the nearest settler of the same origin who had located:- (1) At an earlier date	(2) At the same date
1	N. LaGrasse	N.B.	Middleton	T.Rd.E.	151S	June, 1817	0	2
2	J. Culp	N.B.	Bayham	T.Rd.E.	136S	1817	0	0
3	R. Cook	N.B.	Bayham	T.Rd.E.	121N	June, 1815	0	0
4	P. Johnson	N.B.	Bayham	5	13N1/2	1817	0	0
5	T. Edison, Jr.	N.B.	Bayham	4	26S1/2	1816	0	3
6	J. Freeman	N.B.	Bayham	3	23S1/2	1817	0	0
7	J. Wood	N.B.	Bayham	1	28S1/2	Sept., 1816	3	10
8	R. Kennedy	N.B.	Malahide	T.Rd.E.	99S	April, 1815	0	0
9	P. Buck	N.B.	Malahide	T.Rd.E.	83S	1816	0	0
10	J. Jennings	N.B.	Malahide	8	10	1817	0	0
11	Sam Westover	N.B.	Malahide	5	18N1/2	1816	0	1
12	T. Backhouse	N.B.	Malahide	4	5	May, 1812	0	0
13	Silas Westover	N.B.	Malahide	3	14N1/2	1816	0	1
14	G. Warwick	N.B.	Malahide	1	35	June, 1811	0	35
15	J. Sager	N.B.	Yarmouth	✓	23	1817	0	0
16	A. Neville	N.B.	Westminster	T.Rd.N.	55W	1817	0	0
17	J. Smith	N.B.	Southwold	T.Rd.N.	A	1816	0	0
18	D. Carel	N.B.	Southwold	T.Rd.N.	37W	June, 1816	0	1
19	G. Hunter	N.B.	Southwold	T.Rd.N.	22W	1817	0	0
20	J. Mills	U.E.L.	Bayham	T.Rd.E.	129S	May, 1817	0	0
21	C. Maren	U.E.L.	Bayham	2	22	1817	10	3
22	N. Millard	U.E.L.	Malahide	5	6N1/2	1816	0	0
23	T. Hodgkinsson	U.E.L.	Malahide	T.Rd.E.	94N	March, 1817	0	20
24	L. Andrews	U.E.L.	Malahide	1	18	1817	7	0
25	L. Dingman	U.E.L.	Westminster	T.Rd.N.	69W	May, 1812	32	0
26	N. Ellis	U.E.L.	Southwold	T.Rd.N.	94W	June, 1816	8	50
27	S. Hopkins	U.S.	Middleton	T.Rd.E.	179S	Nov., 1816	0	0
28	B. Gillet	U.S.	Middleton	T.Rd.E.	171S	1816	29	0
29	J. Carenhaven	U.S.	Middleton	T.Rd.E.	152N	Sept., 1817	3	0
30	N. Pace	U.S.	Bayham	T.Rd.E.	136N	May, 1815	0	0
31	H. Wisner	U.S.	Bayham	T.Rd.E.	125S	July, 1816	0	0
32	J. Lodor	U.S.	Bayham	T.Rd.E.	116S	June, 1811	0	0
33	N. Ribble	U.S.	Bayham	5	6S1/2	1817	0	0
34	J. Single	U.S.	Bayham	1	28 Gore N 1/2	Aug., 1811	50	0
66	Wm. Summers	U.S.	Malahide	T.Rd.E.	93S	June, 1812	0	0

141.	J. Robshinson[4]	Bayham			1	16		June, 1811	--	
142.	J. Jennings	Malahide	N.B.		1	10	North	1817		0
143.	T. Jennings	Malahide	N.B.		1	11	North	1817		0
144.	E. Jennings	Malahide	N.B.		1	13	North	1817		0
145.	R. Johnston[1]	Southwold		T.Rd.E.		15	North	March, 1812		0
146.	Wm. Johnston[1]	Southwold		T.Rd.E.		16	North	May, 1812		0
147.	J. Kennedy	Malahide	N.B.	T.Rd.E.		100	North	April, 1815		0
148.	R. Kennedy	Malahide	N.B.	T.Rd.E.		99	South	April, 1815		0
149.	H. Kilmer	Malahide	U.E.	T.Rd.E.		95	North	June, 1815		1
150.	P. Kilmer	Malahide	U.E.	T.Rd.E.		102	North	May, 1815		1
151.	J. Lamb[4]	Malahide	N.B.	T.Rd.E.		96	North	May, 1815		0
152.	G. Lamb	Malahide	N.B.	T.Rd.E.		99	North	May, 1815		0
153.	R.H. Lee[4]	Southwold	N.B.	T.Rd.E.		37	North	April, 1815		0
154.	J. Lee	Southwold	N.B.	T.Rd.E.		38	North	April, 1815		0
155.	R. Lee	Yarmouth	U.E.	T.Rd.E.		62	North	March, 1811		0
156.	Wm. Lee	Yarmouth	U.E.	T.Rd.E.		62	South	March, 1811		0
157.	J. Leon	Southwold	N.B.	T.Rd.W.		40	North	June, 1816	--	
158.	J. Leon	Southwold	U.E.	T.Rd.W.		30	North	Nov., 1816	6	
159.	J. Lodor	Bayham	U.E.	T.Rd.E.		118	South	June, 1811	--	
160.	J. Lodor	Bayham	U.E.	T.Rd.E.		120	South	June, 1815	0	
161.	S. Long	Southwold	U.E.	T.Rd.E.		33	North	June, 1815	--	
162.	A. Long	Southwold	U.E.	T.Rd.E.		35	North	July, 1815	1	
163.	C. McGraw[4]	Southwold	U.E.	T.Rd.E.		34	South	July, 1815		0
164.	Wm. McGraw[4]	Southwold	U.E.	T.Rd.E.		35	South	July, 1815		0
165.	S. McIntyre[1]	Southwold	U.E.	T.Rd.W.		1	North	May, 1812	0	
166.	D. McIntyre[1]	Southwold	U.E.	T.Rd.W.		2	North	Sept., 1811	--	
167.	J. McIntyre[1]	Southwold	U.E.	T.Rd.W.		5	South	Oct., 1815	1	
168.	D. McPherson	Westminster	U.E.	T.Rd.W.		57	North	Nov., 1816		0
169.	J. McPherson	Westminster	N.B.	T.Rd.W.		57	South	Nov., 1816		0
170.	P. Mabee	Middleton	?	T.Rd.E.		185	South	Sept., 1817	39	
171.	J. Mabee	Middleton	N.B.	T.Rd.E.		146	North	June, 1817	--	
172.	N. Mandeville	Southwold	U.E.	T.Rd.E.		41	North	April, 1815	1	
173.	S. Mandeville	Southwold	U.E.	T.Rd.E.		44 & 45	South	March, 1810	--	
174.	J. Marlatt	Yarmouth	U.E.	T.Rd.E.		54	South	May, 1815	2	
175.	J. Marlatt[4]	Yarmouth	U.E.	T.Rd.E.		61	South	July, 1811	--	
176.	J. Mitchell	Southwold	N.B.	T.Rd.W.			C	Sept., 1817		0
177.	L. Mitchell	Southwold	N.B.	T.Rd.W.			D	Sept., 1817		0
178.	J.W. Moore[4]	Malahide	N.B.	T.Rd.E.		89	North	June, 1815		5
179.	J. Moore, Sr.	Bayham	son of U.E.L.	T.Rd.E.		110	North	June, 1815		5
180.	S. Moore	Bayham	N.B.	T.Rd.E.		109	South	Oct., 1815		0

Appendix B

SETTLERS IN THE TALBOT SETTLEMENT WITH COMMON SURNAMES 1815 AND 1818

Sources Returns of 1815 and 1818 of the township of Middleton, Houghton, Bayham, Malahide, Yarmouth, Westminster and Southwold.

(Surnames of settlers have been re-arranged alphabetically in this appendix):

N.B. Settler code *Indicates those mentioned only in the 1815 Return

1. Indicates locations excluded from the 1818 Return.

Abbreviations for Origin:- N.B.-Natural born; U.E.L.-United Empire Loyalist; U.S.-American; ? - not specified on 1818 Return; blank where no record exists at all.

Abbreviations for Concession:- T.Rd.E. - Talbot Road East, T.Rd.N. - Talbot Road North; Lots along these roads are designated as North, South, West or East, depending upon the side of the road on which they lie.

Number	Individual Settler Name	Township	Origin	Concession of location	Lot Number	Location Date	Number of Available Intervening Lots at the date of settlement between settler and the location of the nearest previous settled relative (if any)	and simultaneously settled relative
1.	J. Adair	Middleton	N.B.	T.Rd.E.	145 North	June, 1817		5
2.	D. Adair	Houghton	U.S.	T.Rd.E.	139 North	June, 1817		5
3.	A. Anderson	Bayham	N.B.	2	19	1817		0
4.	J. Anderson	Bayham	N.B.	2	21	1817		0
5.	J.S. Anderson	Bayham	N.B.	2	24	1817		0
6.	W. Anderson	Malahide	son of U.E.L.	2	34	1817		0
7.	J. Anderson	Malahide	son of U.E.L.	2	32	1817		0
8.	J. Anderson	Malahide	N.B.	1	20	1817		0
9.	J. Backhouse	Bayham	N.B.	1	18	June, 1811		50
10.	M. Backhouse	Malahide	N.B.	4	4	May, 1812		0
11.	T. Backhouse	Malahide	N.B.	4	5	May, 1812		0
12.	Wm. Backhouse	Malahide	N.B.	4	7	June, 1811		50
13.	J. Baker	Malahide	N.B.	T.Rd.E.	101 North	May, 1815		1
14.	S. Baker	Malahide	N.B.	T.Rd.E.	103 North	May, 1815		1
15.	M. Baker[4]	Yarmouth	N.B.	T.Rd.E.	64 South	May, 1811	--	
16.	D. Berdan	Yarmouth	son of U.E.L.	T.Rd.E.	50 North	Nov., 1811	--	
17.	S. Berdan	Southwold	son of U.E.L.	T.Rd.N.	36 North	1817		0
18.	J. Berdan	Southwold	son of U.E.L.	T.Rd.N.	36 South	1817 (?)		0
19.	P. Berger	Middleton	U.S.	T.Rd.E.	168 South	Nov., 1816	1	
20.	J. Berger	Middleton	N.B.	T.Rd.E.	166 South	June, 1816	--	
21.	S. Biddle Sr.[4]	Malahide		T.Rd.E.	85 South	June, 1815		1
22.	S. Biddle Jr.[4]	Malahide		T.Rd.E.	83 South	June, 1815		1
23.	J. Bowlby	Southwold	U.S.	T.Rd.N.	46 East	1816	--	
24.	D. Bowlby	Southwold	U.S.	T.Rd.N.	42 East	1817	2	
25.	J. Boughner	Southwold	U.S.	T.Rd.N.	46 West	1817		0
26.	M. Boughner	Southwold	son of U.E.L.	T.Rd.N.	47 East	1817		0
27.	A. Boughner	Malahide	son of U.E.L.	T.Rd.E.	97 South	1815	--	
28.	J. Boughner	Malahide	son of U.E.L.	T.Rd.E.	96 South	1817(?)	0	
29.	T. Bradley	Malahide	U.S.	T.Rd.E.	80 South	April, 1815		0
30.	A.B. Bradley[4]	Malahide	U.S.		81 South	April, 1815		0

31. J. Brown	Middleton	U.S.	T.Rd.E.	180 North	June, 1815			1
32. V. Brown	Middleton	U.S.	T.Rd.E.	178 North	June, 1815			1
33. J. Brown	Middleton	U.S.	T.Rd.E.	182 South	June, 1815			1
34. S. Brown, Sr.	Middleton	U.S.	T.Rd.E.	176 South	June, 1815			0
35. S. Brown, Jr.	Middleton	U.S.	T.Rd.E.	175 South	June, 1815			0
36. G. Brown	Middleton	U.S.	T.Rd.E.	176 North	July, 1816	1		
37. B. Brown	Middleton	U.S.	T.Rd.E.	180 North	Nov., 1816			0
38. J. Brown	Middleton	U.S.	T.Rd.E.	157 North	Nov., 1816			0
39. W. Brown	Middleton	U.S.	T.Rd.E.	161 South	Dec., 1816	1		
40. A. Brown	Middleton	U.S.	T.Rd.E.	163 North	Jan., 1817	1		
41. S. Brown	Middleton	U.S.	T.Rd.E.	164 South	Feb., 1817	0		
42. N. Brown	Middleton	U.S.	T.Rd.E.	163 South	June, 1817	1		
43. N. Burwell[1]	Southwold	U.S.	T.Rd.E.	4 North	March, 1810			0
44. J. Burwell[1]	Southwold	U.E.L.	T.Rd.E.	13 North	March, 1810			0
45. J. Burwell[1]	Southwold	U.E.L.	T.Rd.E.	14 North	March, 1810			0
46. R. Burwell[1]	Southwold	U.E.L.	T.Rd.E.	19 North	July, 1811			0
47. A. Burwell[1]	Southwold	U.E.L.	T.Rd.E.	4 South	March, 1810			0
48. S. Burwell[1]	Southwold	U.E.L.	T.Rd.E.	19 South	July, 1811			0
49. S. Carter	Malahide	U.S.	T.Rd.E.	103 South	June, 1815			0
50. N. Carter	Malahide	N.B.	T.Rd.E.	104 South	June, 1815			0
51. Wm. Cascadden	Malahide	N.B.	T.Rd.E.	104 North	June, 1811	1		
52. A. Cascadden	Malahide	N.B.	T.Rd.E.	106 North	May, 1811	--		
53. S. Chappel	Westminster	U.S.	T.Rd.N.	58 North	Sept., 1817	--		
54. G. Chappel	Westminster	U.S.	T.Rd.N.	58 South	Nov., 1817	0		
55. E. Collace	Middleton	N.B.	T.Rd. E.	167 South	July, 1817			1
56. R.P. Collace	Middleton	?	T.Rd.E.	165 South	July, 1817			1
57. J. Coltman	Middleton	son of U.E.L.	T.Rd.E.	142 South	July, 1817			0
58. J. Coltman, Sr.	(1) Middleton	U.E.L.	T.Rd.E.	(1) 151 South	(1) April 1815			0
	(2) Middleton		T.Rd.E.	(2) 142 North	(2) April 1817			0
59. J. Coltman Jr.	Middleton	son of U.E.L.	T.Rd.E.	150 South	April, 1815			0
60. S. Coltman[2]	Middleton	son of U.E.L.	T.Rd.E.	152 South	April, 1815			0
61. S. Coltman	Dayham	son of U.E.L.	S	6 South	1817			25
62. C. Coltman	Houghton	daughter of U.E.L.	S	139 South	1817			2
63. E. Cook	Dayham	U.S.	T.Rd.E.	121 North	June, 1815			0
64. E. Cook	Dayham	N.B.	"	122 North	June, 1815			0
65. E. Cook	Dayham	U.S.	"	123 North	June, 1815			0
66. G. Cook	Dayham	N.B.	"	125 North	June, 1815			1
67. G. Cook	Dayham	N.B.	"	111 South	June, 1815			4
68. J. Cook	Southwold	N.B.	"	42 North	June, 1815			10

69. J. Cornwall	Southwold		N.B.	T.Rd.E.	36	South	May, 1815		0
70. R. Cornwall	Southwold		N.B.	T.Rd.E.	37	South	May, 1815		0
71. S. Cornwall	Southwold		N.B.	T.Rd.E.	38	South	May, 1815		0
72. N. Cosswill	Bayham		?	T.Rd.E.	1	South 1/2	No data (?)		0 (?)
73. D. Cosswell	Bayham		U.S.	T.Rd.E.	2	South 1/2	No data (?)		0 (?)
74. P. Couse	Yarmouth		U.S.	T.Rd.E.	57	South	May, 1815	1	
75. H. Couse	Yarmouth		U.S.	T.Rd.E.	59	South	April, 1815	--	
76. J. Crum	Malahide		N.B.	T.Rd.E.	89	North	-- (?)	2	
77. D. Crum	Malahide		N.B.	T.Rd.E.	88	North	1816(?)	1	
78. R. Crum	Malahide		N.B.	T.Rd.E.	87	South	July, 1816	--	
79. J. Culp	Bayham		N.B.	T.Rd.E.	136	South	1817		0
80. M. Culp	Bayham		N.B.	T.Rd.E.	135	South	1817		0
81. T. Culp	Bayham		N.B.	T.Rd.E.	134	South	1817		0
82. J. Culp	Bayham		N.B.	T.Rd.E.	133	South	1817		0
83. J. Davis	Yarmouth			T.Rd.E.	51	South	June, 1811		15
84. D. Davis	Yarmouth		U.S.	T.Rd.E.	53	South	April, 1811	21	
85. R. Davis	Yarmouth		?	T.Rd.E.	72	South	June, 1811		0
86. A. Davis[4]	Yarmouth			T.Rd.E.	73	South	June, 1811		0
87. W. Davis[1]	Southwold			T.Rd.E.	29	North	Feb., 1811	--	
88. J. Davis[4]	Malahide			T.Rd.E.	74	North	March, 1811		0
89. Wm. Davis[4]	Malahide			T.Rd.E.	75	North	March, 1811		0
90. S. Davis[4]	Malahide			T.Rd.E.	80	North	June, 1811		1
91. D. Davis[4]	Malahide			T.Rd.E.	82	North	June, 1811		1
92. W. Davis	Malahide		U.S.	T.Rd.E.	84	North	June, 1811		1
93. E. Defields	Bayham		N.B.	T.Rd.E.	113	North	May, 1811		0
94. J. Defields	Bayham		N.B.	T.Rd.E.	112	North	May, 1811		0
95. E. Defields	Bayham		U.S.	T.Rd.E.	110	South	1816	2	
96. J. Defields	Southwold		U.S.	T.Rd.N.	26	South	Nov., 1816	20	
97. W. Dingman	Westminster	son of	U.E.L.	T.Rd.N.	67	West	May, 1812		0
98. L. Dingman	Westminster	son of	U.E.L.	T.Rd.N.	68	West	May, 1812		0
99. J. Dingman	Westminster		U.E.L.	T.Rd.N.	69	West	May, 1812		0
100. D. Dingman	Westminster		U.E.L.	T.Rd.N.	65	West	March, 1816	1	
101. I Dingman	Westminster		N.B.	T.Rd.N.	65	East	1817	0	
102. J. Edison, Sr.[4]	(1) Bayham		N.B.	(1) 1	(1) 7		(1) June, 1811		0
	(2) Malahide[4]			(2) 3	(2) 75		(2) 1817		0

103.	N. Edison	Bayham		N.B.		1	(1) 8	(1) June, 1811		0
							(2) 7	(2) June, 1811 (?)	0	
104.	T. Edison*	(1) Bayham		N.B.	(1) 2		(1) 1	(1) June, 1811		7
		(2) Malahide			(2) 2		(2)35	(2) (?)		
105.	S. Edison*	Bayham			3		15	June, 1811		16
106.	N. Edison	Bayham		N.B.	3		18	May, 1812		1
107.	J. Edison Jr.*	Bayham			3		21	May, 1812		1
108.	Wm. Furry	Malahide		U.S.	4		34 North 1/2	1817		6
109.	N. Furry	Malahide		U.S.	4		10 North 1/2	1817		16
110.	J. Furry	Malahide		N.B.	3		16 North 1/2	1817		6
111.	D. Gillet	Middleton		U.S.	T.Rd.E.	171	South	May, 1815		0
112.	D. Gillet	Middleton		U.S.	T.Rd.E.	172	South	May, 1815		0
113.	S. Gillet	Middleton		U.S.	T.Rd.E.	173	South	May, 1815		0
114.	S. Gillet	Malahide		U.S.	T.Rd.E.	98	North	April, 1818	12	
115.	T. Grafton	Malahide		?	8	22	North 1/2	1818		0
116.	S. Grafton	Malahide		?	8	22	South 1/2	1818		0
117.	T. Handman	Bayham		N.B.	8	4		1818		0
118.	N. Handman	Bayham		N.B.	8	Gore	front and 6	1818		0
119.	S. Harris	Malahide		U.S.	9		10	1817		1
120.	G. Harris	Malahide		N.B.	9	6	6 7	1817		1
121.	R. Henderson*	Bayham			1		27	Aug., 1811		0
122.	Wm. Henderson	Bayham	son of U.E.L.		1		28	Aug., 1811		0
123.	B. Hopkins	Middleton		N.B.	T.Rd.E.	177	North	Nov., 1816		1
124.	S. Hopkins	Middleton		U.S.	T.Rd.E.	179	North	Nov., 1816		1
125.	S. Horton	Southwold		U.S.	T.Rd.W.	24	North	Nov., 1816	2	
126.	P. Horton	Southwold		U.S.	T.Rd.W.	21	South	July, 1816	--	
127.	A. House*	Yarmouth		U.S.	T.Rd.E.	66	North	Aug., 1811	--	
128.	H. House	Malahide		N.B.	T.Rd.E.	85	North	June, 1812		0
129.	M. House*	Malahide		N.B.	T.Rd.E.	77	South	June, 1812		0
130.	C. House*	Southwold		N.B.	T.Rd.E.	30	South	June, 1815		0
131.	P. House*	Southwold		N.B.	T.Rd.E.	31	South	June, 1815		0
132.	A. Hunsbury	Bayham		U.S.	T.Rd.E.	122	South	Oct., 11		0
133.	C. Hunsbury	Bayham		U.S.	T.Rd.E.	123	South	Oct., 11		0
134.	C. Hunsbury	Houghton		U.S.	T.Rd.E.	137	South	Oct., 1817	1	
135.	S. Hunt	Westminster		U.S.	T.Rd.W.	63	West	Nov., 1816		0
136.	T. Hunt	Westminster		U.S.	T.Rd.W.	64	West	Nov., 1816		0
137.	E. Hunt	Westminster		U.S.	T.Rd.W.	64	East	1816		0
138.	J. Hunter	Southwold		N.B.	T.Rd.W.	22	West	1817		0
139.	S. Hunter	Southwold		N.B.	T.Rd.W.	22	East	1817		0
140.	D. Hutchison	Malahide		N.B.	T.Rd.E.	105	South	May, 1815	20	

141.	J. Hutchinson[4]	Bayham			1	16		June, 1811	--	
142.	J. Jennings	Malahide	N.B.		1	10	North	1817		0
143.	T. Jennings	Malahide	N.B.		1	11	North	1817		0
144.	E. Jennings	Malahide	N.B.		1	13	North	1817		0
145.	B. Johnston[1]	Southwold		T.Rd.E.		15	North	March, 1812		0
146.	Wm. Johnston[1]	Southwold		T.Rd.E.		16	North	May, 1812		0
147.	J. Kennedy	Malahide	N.B.	T.Rd.E.		100	North	April, 1815		0
148.	R. Kennedy	Malahide	N.B.	T.Rd.E.		99	South	April, 1815		0
149.	W. Kilmer	Malahide	U.S.	T.Rd.E.		95	North	June, 1815		1
150.	P. Kilmer	Malahide	U.S.	T.Rd.E.		102	North	May, 1815		1
151.	J. Lamr[4]	Malahide	N.B.	T.Rd.E.		98	North	May, 1815		0
152.	G. Lamr	Malahide	N.B.	T.Rd.E.		99	North	May, 1815		0
153.	R.M. Lee[4]	Southwold	N.B.	T.Rd.E.		37	North	April, 1815		0
154.	J. Lee	Southwold	N.B.	T.Rd.E.		38	North	April, 1815		0
155.	H. Lee	Yarmouth	U.S.	T.Rd.E.		62	North	March, 1811		0
156.	Wm. Lee	Yarmouth	U.S.	T.Rd.E.		62	South	March, 1811		0
157.	J. Leon	Southwold	N.B.	T.Rd.N.		40	North	June, 1816	--	
158.	J. Leon	Southwold	U.S.	T.Rd.N.		30	North	Nov., 1816	6	
159.	J. Lodor	Bayham	U.S.	T.Rd.E.		118	South	June, 1811	--	
160.	J. Lodor	Bayham	U.S.	T.Rd.E.		120	South.	June, 1815	0	
161.	S. Long	Southwold	U.S.	T.Rd.E.		33	North	June, 1815	--	
162.	A. Long	Southwold	U.S.	T.Rd.E.		35	North	July, 1815	1	
163.	C. McGraw[4]	Southwold	U.S.	T.Rd.E.		34	South	July, 1815		0
164.	Wm. McGraw[4]	Southwold	U.S.	T.Rd.E.		35	South	July, 1815		0
165.	S. McIntyre[1]	Southwold	U.S.	T.Rd.N.		1	North	May, 1812	0	
166.	D. McIntyre[1]	Southwold	U.S.	T.Rd.N.		2	North	Sept., 1811	--	
167.	J. McIntyre[1]	Southwold	U.S.	T.Rd.N.		5	South	Oct., 1815	1	
168.	D. McPherson	Westminster	U.S.	T.Rd.N.		57	North	Nov., 1816		0
169.	J. McPherson	Westminster	N.B.	T.Rd.N.		57	South	Nov., 1816		0
170.	P. Mabee	Middleton	?	T.Rd.E.		185	South	Sept., 1817	39	
171.	J. Mabee	Middleton	N.B.	T.Rd.E.		146	North	June, 1817	--	
172.	H. Mandeville	Southwold	U.S.	T.Rd.E.		41	North	April, 1815	1	
173.	D. Mandeville	Southwold	U.S.	T.Rd.E.		44 & 45	South	March, 1810	--	
174.	J. Marlatt	Yarmouth	U.S.	T.Rd.E.		54	South	May, 1815	2	
175.	J. Marlatt[4]	Yarmouth	U.S.	T.Rd.E.		61	South	July, 1811	--	
176.	J. Mitchell	Southwold	N.B.	T.Rd.N.			C	Sept., 1817		0
177.	L. Mitchell	Southwold	N.B.	T.Rd.N.			D	Sept., 1817		0
178.	J.N. Moore[4]	Malahide	N.B.	T.Rd.E.		89	North	June, 1815		5
179.	J. Moore, Sr.	Bayham	son of U.E.L.	T.Rd.E.		110	North	June, 1815		5
180.	S. Moore	Bayham	N.B.	T.Rd.E.		109	South	Oct., 1815		0

181. J. Moore, Jr.	Bayham			T.Rd.E.	110	South	Oct., 1815			0
182. J. Neville[1]	Southwold			T.Rd.E.	17	South	May, 1815	0		
183. N. Neville[1]	Southwold			T.Rd.E.	18	South	May, 1812	--		
184. T. Neville	Bayham	N.B.	(Quaker)	T.Rd.E.	110	North	June, 1812	50		
185. A. Neville	Westminster	N.B.		T.Rd.W.	55	West	1817			0
186. J. Neville	Westminster	N.B.		T.Rd.W.	56	West	1817			0
187. R. Neville	Westminster	N.B.		T.Rd.W.	55	East	1817			0
188. W. Orr	Westminster	N.B.		T.Rd.W.	50	West	July, 1817	0		
189. J. Orr	Westminster	N.B.		T.Rd.W.	51	East	June, 1817			0
190. W. Ostrander	Yarmouth	N.B.		T.Rd.E.	56	North	May, 1815	0		
191. T. Ostrander[4]	Yarmouth			T.Rd.E.	63	South	June, 1815	6		
192. L. Ostrander[4]	Malahide	U.E.L.		T.Rd.E.	78	North	Oct., 1811	--		
193. I. Ostrander[4]	Malahide			T.Rd.E.	79	North	May, 1812	15		
194. C. Overhalt	Houghton	U.S.		T.Rd.E.	138	North	1816			1
195. J. Overhalt	Houghton	N.B.		T.Rd.E.	140	South	1816			1
196. J. Patterson	Bayham	U.S.		T.Rd.E.	128	North	July, 1816			0
197. J. Patterson	Bayham	U.S.		T.Rd.E.	128	South	July, 1816			0
198. O. Pettit[1]	Southwold			T.Rd.E.	17	North	April, 1812			
199. Wm. Pettit[1]	Southwold			T.Rd.E.	20	North	May, 1815	2		
200. E. Pound	Malahide	son of U.E.L.		T.Rd.E.	105	North	May, 1811	--		
201. J. Pound	Malahide	son of U.E.L.		T.Rd.E.	107	North	May, 1815	1		
202. D. Pound	Bayham	son of U.E.L.		T.Rd.E.	109	North	Aug., 1815	1		
203. O. Purdy	Bayham	N.B.		3	16	South 1/2	Aug., 1817			0
204. D. Purdy	Bayham	N.B.		3	16	North 1/2	Aug., 1817			0
205. L. Ramey	Westminster	N.B.		T.Rd.E.	52	North	Oct., 1816			0
206. S. Ramey	Westminster	N.B.		T.Rd.E.	52	South	Oct., 1816			0
207. E. Ramsey	Southwold	U.S.		T.Rd.W.	32	North	1817	1		
208. J. Ramsey	Southwold	N.B.		T.Rd.W.	31	South	Oct., 1816	--		
209. G. Rapelje	Southwold	U.S.		T.Rd.E.	36	North	April, 1815	6		
210. B. Rapelje[4]	Yarmouth	U.S.		T.Rd.E.	46	South	May, 1810	--		
211. J. Robbins[1]	Southwold			T.Rd.E.	6	South	June, 1812	98		
212. J. Robbins[4]	Malahide			T.Rd.E.	102	South	April, 1815			3
213. J. Robbins[4]	Malahide			T.Rd.E.	106	South	May, 1815			3
214. D.P. Robertson	Malahide	U.S.		3	26	South 1/2	1818			0
215. A. Robertson	Malahide	?		2	29	North 1/2	1818			0
216. F. Savereene	Middleton	U.S.		T.Rd.E.	189	North	Oct., 1817			0
217. H. Savereene	Middleton	U.S.		T.Rd.E.	188	North	Oct., 1817			0
218. J. Sexton[4]	Bayham			1	9		June, 1811			4
				2	10					
219. Wm. Sexton[4]	Bayham			1	1		June, 1811			4
220. Wm. Schram	Westminster	U.E.L.		T.Rd.W.	68	East	May, 1812	0		

221. J. Schram	Westminster	son of U.E.L.	T.Rd.W.		69 East	Sept., 1811	--	
222. B. Schram	Westminster	son of U.E.L.	T.Rd.W.		70 West		0	
223. B. Secord	(1) Yarmouth	N.B.	(1) T.Rd.E.	(1) 70	North	(1) May, 1810		0
	(2) Malahide	N.B.	(2) 5	(2) 13	North 1/2	(1) 1817		0
224. P. Secord[A]	Yarmouth		T.Rd.E.	70	South	May, 1810		0
225. S. Secord[A]	Bayham	U.E.L.	T.Rd.E.	119	South	June, 1811	50	
226. Wm. P. Secord	Malahide	N.B.	4	2		May, 1812	3	
227. S. Secord	Malahide	N.B.	5	14	North 1/2	1817		0
228. J. Smith	Southwold	N.B.	T.Rd.W.		A	1818		0
229. H. Smith	Southwold	N.B.	T.Rd.W.		B	1818		0
230. S. Smith	Southwold	U.S.	T.Rd.W.	39	South	1817	--	
231. L. Soper[A]	Bayham		3	8		June, 1811		0
232. G. Soper[A]	Bayham		3	9		June, 1811		0
233. J. Soper[A]	Bayham		3	11		June, 1811		1
234. N. Stone	Malahide	son of U.E.L.	3	33		June, 1817		0
235. J. Stone	Malahide	son of U.E.L.	3	32		1817		0
236. J. Summers	Malahide	U.S.	T.Rd.E.	92	South	June, 1812		0
237. Wm. Summers	Malahide	U.S.	T.Rd.E.	93	South	June, 1812		0
238. J. Summers	Malahide	U.S.	T.Rd.E.	94	South	June, 1812		0
239. W. Swarts	Westminster	U.S.	T.Rd.W.	75	East	1817		0
240. P. Swarts	Westminster	U.S.	T.Rd.W.	76	East	1817		0
241. Wm. Teeple	Malahide	U.S.	T.Rd.E.	76	North	March, 1811		0
242. Wm. Teeple	Malahide	N.B.	T.Rd.E.	76	South	Oct., 1811		0
243. L. Teeple	Malahide	N.B.	8	1		1817	1	
244. J. Toles	Yarmouth	U.S.	T.Rd.E.	53	North	April, 1811		1
245. S. Toles	Yarmouth	U.S.	T.Rd.E.	54	North	June, 1812	0	
246. Wm. Toles[A]	Yarmouth	U.S.	T.Rd.E.	52	South	April, 1811		1
247. A. Vanloon	Bayham	U.S.	T.Rd.E.	130	South	Oct., 1816		0
248. J. Vanloon	Bayham	U.S.	T.Rd.E.	131	South	Oct., 1816		0
249. H. Walker	Malahide	son of U.E.L.	8	18	South	1818	0	
250. J. Walker	Malahide	son of U.E.L.	8	18	South	1817	--	
251. J. Watson[1]	Southwold		T.Rd.E.	8	South	July, 1810		0
252. D. Watson[1]	Southwold		T.Rd.E.	9	South	July, 1810		0
253. A. Watson[1]	Southwold		T.Rd.E.	27	North	May, 1812	10	
254. S. Westover	Malahide	N.B.	3	14	North 1/2	1818		0
255. E. Westover	Malahide	N.B.	3	13	North 1/2	1818		0
256. T. Williams	Malahide	N.B.	1	29	North	May, 1812	--	
257. E. Williams	Malahide	?	1	32	South 1/2	1817	0	
258. B. Wilson[1]	Southwold		T.Rd.E.	25	North	April, 1815	25	
259. B. Wilson[A]	Yarmouth	U.E.L.	T.Rd.E.	50	South	Sept., 1811	--	

260.	J. Wilson	Bayham	N.B.	3	4				0
261.	Wm. Wilson	Bayham	N.B.	3	6	North 1/2	June, 1817		0
262.	L. Winans	Malahide	U.S.	T.Rd.E.	95	South	Sept., 1811		0
263.	J. Winans*	Malahide		T.Rd.E.	96	South	Sept., 1811		0
264.	S. Wismer	Bayham	U.S.	T.Rd.E.	131	North	Sept., 1815	--	
265.	H. Wismer	Bayham	U.S.	T.Rd.E.	125	South	July, 1816	5	
266.	P. Woolley	Malahide	N.B.	1	12		May, 1812		0
267.	D. Woolley	Malahide	N.B.	1	13		May, 1812		0
268.	J. Woolley	Malahide	U.S.	1	14		May, 1812		0
269.	J. Wrong	Malahide	?	1	19		1817		2
270.	G. Wrong	Malahide	N.B.	1	23		1817		2
271.	S. York*	Yarmouth		T.Rd.E.	58	North	Oct., 1811		0
272.	Wm. York*	Yarmouth		T.Rd.E.	59	North	Oct., 1811		0
273.	N. Young	Middleton	son of U.E.L.	T.Rd.E.	183	North	March, 1817		0
274.	P. Young	Middleton	son of U.E.L.	T.Rd.E.	182	North	1817		0
275.	J. Young	Middleton	son of U.E.L.	T.Rd.E.	181	South	June, 1815	--	

ADDENDA

276.	G. Cottman	Middleton		T.Rd.E.	156	South	1818	0	
277.	S. Norton Sr.	Southwold		T.Rd.N.	26	North	Nov.,1816		0
278.	L. Patterson	Southwold		T.Rd.N.	1	South	Sept., 1812	-	
279.	E. Williams	Southwold		T.Rd.E.	43	South	March ,1815	c.60	

Appendix C

LOCATION AND DATE OF SETTLEMENT OF SAMPLE SETTLERS

IN PERIOD BEFORE 1828

Explanation of abbreviations and numbering code:- 1. Concession:- T.Rd.E. and T.Rd.N. - Concessions flanking the Talbot Road East and North, respectively; 2. Ra.#S.L.W.Rd. and Ra.#N.L.W.Rd. - Concessions (ranges) parallel to the Long Woods Road in Mosa, Ekfrid and Caradoc townships, to the south and north of the road respectively; 3. Ra.#E.R. Rd. - Range east of and parallel to River Road, Southwold township; 4. Ra.#N.L.Rd. - Range north of and parallel to the Lake Road, Southwold Township.

Roadside concession code:- N, S, E, or W after a number indicates the side of the Talbot Road on which the lot was located, north, south, east or west respectively.

Part of lot code:- 1-whole lot, 2-north half of lot, 3-south half, 4-west half, 5-east half, 6, 7, 8, and 9-north-west, north-east, south-west and south-east quarters respectively.

Month of location date code:- the number of months after January, 1800 in which settlement occurred.

Source of location date code:- 1.P.A.O., Crown Land Papers, Record Group 1, C-III-6, v.1; 2.P.A.O., Talbot Maps; 3.P.A.O., Crown Land Papers, Record Group 1, A-I-7; 4.U.W.O., Reg. Hist. Room, R. Talbot Papers and Brock, op. cit.; 5.F.C. Hamil, 1955, op. cit.; 6.P.A.O., Abstract Index of Land Patents; 7.P.A.O., Township Papers; 8.Historical Atlas of Elgin County.

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
1	Aldborough	13	18	2	1821	258	3	1821		
2	"	"	15	3	"	"	3	"		
3	"	12	11	3	"	"	3	"		
4	"	13	1	6	1824	294	6	1816		
5	"	11	A	7	1821	258	3	1821		
6	"	12	18	3	"	"	3	"		
7	"	"	15	2	"	"	3	"		
8	"	"	8	2	"	"	3	"		
9	"	11	5	3	"	"	3	"		
10	"	12	B	6	"	"	3	"		
11	Bayham	1	27	2	1811	140	2	1838		*
12	"	2	22	2	"	210	2	1835		
13	"	1	20	1	"	"	2	1837		
14	"	5	27	3	1818	223	2	1834		
15	"	4	18	1	1816	203	2	1837		
16	"	2	17	1	1819	234	2	1812		
17	"	3	16	3	1817	210	2	1840		*
18	"	2	14	1	1815	191	2	1812		
19	"	1	7	1	1811	138	2	1824		*
20	"	6	26	1	1819	231	2	1836		
21	"	6	20	1	1819	234	2	1837		
22	"	5	16	1	1819	235	2	1840		
23	"	2	8	1	1817	210	2	1818		
24	"	I	1	2	1827	1	2	1816		*
25	"	T.Rd.E	25N	1	1815	186	2	1837		
26	"	T.Rd.E.	22S	1	1816	201	2	1848		*
27	"	"	17S	1	"	186	2	1823	*	
28	"	4	8	2	1817	209	2	1840		
29	"	3	6	2	"	210	2	1831		*
30	"	T.Rd.E.	19N	1	1815	201	2	1835		
31	"	"	13N	1	"	186	2	1840		*
32	"	5	4	1	1812	150	2	1836		

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Month	Source of Location Date	Patent Date	Related Settler: Previous	Simultaneous
33	Raytham	4	2	3	1816	198	2	1846		
34	"	9	22	2	1824	296	1	1844		
35	"	7	16	1	1817	210	2	1840		
36	"	T.Rd.E.	11E	1	1812	150	2	1834		
37	"	"	8E	1	1811	187	2	1823		*
38	"	"	26	1	1815	190	2	1835	*	*
39	"	8	18	2	1819	233	2	1847		
40	"	T.Rd.E.	4E	1	1811	187	2	1820		*
41	"	10	14	1	1819	233	2	1823		
42	"	9	11	1	1819	234	2	1833		
43	"	8	8	2	1819	210	2	1840		
44	"	8	3	3	1817	210	2	1824		
45	"	10	8	1	1819	234	2	1834		
46	Caradoc	Range 7S.L.W.Rd.	Ra.4	1	1819	234	2			
47	"	Ra.5S.L.W.Rd.	4	9	1825	306	5			
48	"	"	1	8			5			
49	"	Ra.4S.L.W.Rd.	7	9	1825	306	5			
50	"	Ra.2S.L.W.Rd.	5	8	1825	"	5			
51	"	Ra.1S.L.W.Rd.	15	3	1824	294	5	1835		
52	"	"	12	2	1824	294	5	1841		
53	"		8	2	1824	294	5	1848		
54	"		5	2	"	"	5	1830		
55	"		1	2	"	"	5	1847		
56	"	Ra.1N.L.W.Rd.	20	3	"	"	5	1847		
57	"	1	19	3	"	"	6	1824		
58	"	1	10	3	1823	280	6	1833		
59	"	1	6	3	1822	271	6	1835		
60	"	1	3	1	1817	209	2	1825		
61	"	2	24	1	1824	291	6	1824		
62	"	2	14	1	1824	294	6	1824		
63	"	2	7	1	1822	271	2	1823		
64	"	3	19	1	1824	294	6	1824		

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Month	Source of Location Date	Patent Date	Related Settler: Previous	Simultaneous
65	Caradoc	4	12	S	1819	238	2	1826		
66	"	4	9	1	1820	249	2	1823		
67	"	5	12	1	1822	273	6	1833		
68	"	6	9	S	1824	291	6	1840		
69	"	6	19	S	1824	290	6	1848		
70	"	7	15	S	1825	306	6	1825		
71	"	7	12	S	1823	282	6	1823		
72	"	7	5	2	1823	282	6	1824		
73	"	8	24	1	1824	270	7	1825		
74	"	7	20	1	1822	270	7	1840		
75	"	8	13	2	1822	270	7	1823		
76	"	9	19	S	1823	270	7	1824		
77	"	10	12	1	1822	270	7	1835		
78	"	10	4	1	1824	294	7	1826		
79	Delaware	1	10	9	1808	99	6	1806		
80	"	D	4	7	1793	1	7	1798		
81	Dumwich	11	19	9	1805	66	6	1804		
82	"	9	1102	7	1825	306	6	1806		
83	"	7	1102	8	1827	330	6	1806		
84	"	8	11	2	1819	162	6	1821		
85	"	7	8	8	1821	258	6	1821		
86	"	8	4	8	1821	258	6	1821		
87	"	7	19	8	1821	258	6	1821		
88	Ekfrid	Rm.1.S.L.W.Rd.	3	2	1824	294	5	1833		
89	"	"	7	1	1824	294	5	1833		
90	"	"	14	1	1824	294	5	1833		
91	"	"	17	2	1824	294	5	1833		
92	"	Rm.1.N.L.W.Rd.	21	9	1820	246	2	1837		
93	"	"	24	9	1820	248	2	1832		
94	"	Rm.2.N.L.W.Rd.	5	8	1821	258	2	1842		
95	"	"	8	2	1821	256	2	1847		
96	"	"	12	9	1817	206	2	1847		

No.	Township	Concession	Lot	Part of Lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
97	Elfrid	Rn.2.N.L.W.Rd.	19	2	1821	258	2	1838		
98	Houghton	T.Rd.E.	140W	1	1817	210	2	1840		
99	"	T.Rd.E.	187E	1	1817	210	2	1832	*	
100	Lobo	1	10	3	1820	246	7	1822		
101	"	1	7	1	1820	246	7	1822		
102	"	1	3	3	1823	282	7	1831		
103	"	2	8	2	1820	248	7	1823		
104	"	4	12	1	1824	294	6	1824		
105	"	4	6	1	1820	248	7	1824		
106	"	6	16	2	1820	249	7	1823		
107	"	6	2	1	1821	260	6	1820		
108	"	7	10	2	1820	249	6	1823		
109	"	7	6	7	1822	270	6	1822		
110	"	7	3	1	1819	233	2	1825		
111	"	8	12	1	1820	249	2	1823		
112	"	8	5	8	1822	270	6	1822		
113	"	10	12	3	1822	270	6	1822		
114	"	10	9	1	1823	282	6	1823		
115	"	10	6	2	1820	249	2	1824		
116	"	13	14	1	1820	247	2	1825		
117	London	C	5	1	1819	233	2	1826		
118	"	B	7	8	1825	306	6	1825		
119	"	3	7	2	1819	234	2	1830		
120	"	2	10	9	1819	234	2	1847		
121	"	1	17	1	1810	126	4			
122	"	4	9	7	1816	198	8	1816		
123	"	2	18	1	1813	164	4	1815		
124	"	1	20	1	1813	164	4	1815		
125	"	6	2	1	1818	226	2	1823		
126	"	6	5	2	1819	239	2	1833		
127	"	5	19	3	1819	270	2	1837		
128	"	8	6	3	1824	289	8	1824		

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Month	Source of Location	Patent Date	Related Settler: Previous	Simultaneous
129	London	7	10	2	1819	240	2	1849		
130	"	6	19	3	1819	234	2	1837		
131	"	4	22	2	1819	238	2	1833		
132	"	3	23	2	1819	234	2	1828		
133	"	4	29	3	1819	234	2	1826		
134	"	6	18	1	1819	234	2	1838		
135	"	7	22	1	1819	229	2	1832		
136	"	5	24	1	1819	234	2	1832		
137	"	10	7	2	1819	240	2	1847		
138	"	10	11	2	1819	240	2	1837		
139	"	10	14	3	1819	237	2	1848		
140	"	9	16	1	1819	232	2	1829		
141	"	7	19	2	1819	232	2	1848		
142	"	8	23	1	1822	270	2	1832		
143	"	7	27	3	1819	231	2	1848		
144	"	12	5	3	1824	300	2	1847		
145	"	10	27	7	1819	234	2	1829		
146	"	8	26	2	1820	245	2	1835		
147	"	7	30	2	1824	298	2	1838		
148	"	14	2	1	1825	306	2	1839		
149	"	13	9	1	1826	318	2	1848		
150	"	13	12	2	1821	258	2	1836		
151	"	13	16	3	1819	240	2	1833		
152	"	12	18	2	1824	297	2	1845		
153	"	10	21	2	1824	294	2	1847		
154	"	10	28	1	1819	234	2	1823		
155	"	9	30	3	1820	245	2	1836		
156	"	12	28	8	1822	270	2	1830		
157	"	12	27	1	1822	270	2	1831		
158	"	16	13	1	1819	237	2	1842		
159	"	15	19	3	1819	238	2	1837		
160	"	15	22	2	1819	239	2	1848		

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
181	London	13	24	2	1825	306	2	1842		
182	"	14	29	3	1821	261	2	1831		
183	"	13	30	3	1822	270	2	1837		
184	"	14	26	2	1824	294	2	1848		
185	"	15	29	3	1821	261	2	1829		
186	"	14	32	3	1823	282	2	1837		
187	"	16	28	1	1821	258	2	1828		
188	Malahide	2	32	1	1818	210	2	1828		*
189	"	1	30	1	1812	150	2	1818		
190	"	8	35	1	1817	210	2	1846		
191	"	2	29	2	1818	211	2	1845		*
192	"	1	27	1	1812	149	2	1847		
193	"	5	35	3	1818	210	2	1847		
194	"	3	26	2	1819	234	2	1847		
195	"	T.Rd.E.	35S	1	1815	186	2	1820		
196	"	5	33	1	1818	234	2	1826		
197	"	3	20	3	1819	233	2	1839		
198	"	2	13	1	1819	233	2	1812		
199	"	1	12	1	1812	149	2	1822		*
200	"	T.Rd.E.	33N	1	1811	137	2	1821		
201	"	"	29N	1	1815	185	2	1821		*
202	"	"	27S	1	1811	137	2	1824		
203	"	5	18	3	1818	222	2	1824		
204	"	4	16	1	1818	223	2	1828		
205	"	3	13	3	1819	222	2	1828		
206	"	9	35	3	1819	234	2	1848		
207	"	7	26	1	1819	240	2	1858		
208	"	T.Rd.E.	24N	1	1815	189	2	1824		
209	"	"	22S	1	1811	141	2	1826		*
210	"	"	15S	1	1815	199	2	1836		
211	"	4	13	2	1819	240	2	1827		
212	"	4	10	2	1817	210	2	1827		*

No.	Township	Concession	Lot	Part of lot	Location Date: Year	Month	Source of Location Date	Patent Date	Related Settler: Previous	Simultaneous
193	Malahide	T.Rd.E.	21S	1	1815	185	2	1848		*
194	"	"	14W	1	1815	185	2	1836		
195	"	5	12	2	1817	210	2	1829		
196	"	5	9	3	1817	210	2	1830		
197	"	5	3	1	1818	222	2	1824		
198	"	4	1	3	1817	210	2	1838		
199	"	9	23	2	1819	222	2	1838		
200	"	9	18	3	1819	234	2	1847		
201	"	T.Rd.E.	8W	1	1811	138	2	1816		
202	"	"	6S	1	1812	147	2	1841		
203	"	9	13	1	1819	234	2	1820		
204	"	T.Rd.E.	4W	1	1811	135	2	1816		
205	"	"	1S	1	1811	135	2	1816		
206	Middleton	"	47S	1	1817	211	2	1828		
207	"	"	44W	1	1817	213	2	1833		
208	"	"	39W	1	1815	186	2	1837		*
209	"	"	40W	1	1815	186	2	1848		
210	"	"	35W	1	1816	199	2	1823	*	
211	"	"	30S	1	1815	185	2	1848		*
212	"	"	25S	1	1816	198	2	1832		
213	"	"	15S	1	1818	222	2	1848	*	
214	"	"	10S	1	1815	184	2	1851		*
215	"	"	5S	1	1815	185	2	1830		
216	"	"	28W	1	1816	203	2	1858		
217	"	"	23W	1	1818	228	2	1848		
218	"	"	18S	1	1817	210	2	1848		
219	"	"	13W	1	1819	234	2	1852		
220	"	"	17W	1	1816	198	2	1847		
221	Mosa	Ra.1.S.L.W.Rd.	7	3	1824	294	5	1831		
222	"	Ra.1.N.L.W.Rd.	3	3	1820	248	2	1830		
223	"	"	7	3	1820	247	2	1830		
224	"	"	10	3	1820	249	2	1824		

No.	Township	Concession	Lot	Part of Lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
225	Moss	Rn.1.S.L.W.Rd.	14	2	1824	290	5	1833		
226	"	Rn.1.N.L.W.Rd.	24	3	1820	249	2	1832		
227	"	"	28	3	1820	249	7	1823		
228	"	1	6	3	1821	256	7	1823		
229	"	5	8	1	1821		7	1823		
230	"	7	10	3	1822	258	7	1824		
231	"	8	6	1	1823	282	6	1823		
232	"	Rn.3.S.L.W.Rd.	14	1	1820	246	8	1833		
233	Southwold	Rn.2.N.L.Rd.	3	1	1824	295	6	1820		
234	"	T.Rd.E.	17S	1	1815	186	2	1823		*
235	"	"	12S	1	1811	133	2	1824		
236	"	"	7S	1	1811	140	2	1828		
237	"	"	22N	1	1815	186	2	1820		
238	"	"	17N	1	1812	148	2	1820		
239	"	"	12N	1	1812	146	2	1823		
240	"	"	7N	1	1812	151	2	1829		
241	"	T.Rd.W.	10S	1	1816	198	2	1826		
242	"	"	19S	1	1816	198	2	1829		
243	"	"	8S	1	1817	210	2	1853		
244	"	"	3S	1	1811	141	2	1839		
245	"	"	19N	1	1816	198	2	1830		
246	"	"	14N	1	1816	198	2	1832		
247	"	"	9N	1	1816	198	2	1834		
248	"	"	3N	1	1811	141	2	1817		
249	"	3	10	7	1821	258	6	1796		
250	"	3	17	6	1818	222	6	1805		
251	"	Rn.2.E.R.Rd.	4	1	1820	246	6	1820		
252	"	T.Rd.E.	43S	1	1815	183	2	1825		
253	"	"	38S	1	1815	185	2	1824		*
254	"	"	33S	1	1815	185	2	1819		
255	"	"	27S	1	1811	138	2	1819		
256	"	"	42N	1	1815	186	2	1825		*

No.	Township	Concession	Lot	Part of Lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
257	Southwold	T.Rd.E.	B	1	1816	201	6	1816		
258	"	"	37W	1	1817	184	2	1822		*
259	"	"	32W	1	1815	185	2	1827		
260	"	T.Rd.W.	24S	1	1816	199	2	1827		
261	"	"	41S	1	1816	198	2	1838		
262	"	"	40S	1	1817	210	2	1834		
263	"	"	34S	1	1818	222	2	1823		
264	"	"	29S	1	1816	202	2	1847		
265	"	"	46S	1	1816	111	2	1831	*	
266	"	"	40W	1	1816	198	2	1833		
267	"	"	35W	1	1817	206	2	1848		
268	"	"	30W	1	1816	203	2	1844	*	
269	"	"	23S	1	1817	210	2	1838		
270	"	"	29W	1	1817	210	2	1840		
271	Westminster	1	3	3	1818	220	2	1824		
272	"	T.Rd.W.	52E	1	1816	207	2	1824		*
273	"	"	49W	1	1817	210	2	1832		
274	"	Broken Front	3	1	1817	210	2	1822		
275	"	1	6	1	1811	142	2	1818		
276	"	2	9	1	1822	270	6	1822		
277	"	2	16	5	1817	210	2	1827		
278	"	T.Rd.E.	58E	1	1816	203	2	1834	*	
279	"	"	55W	1	1817	210	2	1825		*
280	"	2	15	1	1817	214	2	1823		
281	"	2	22	1	1817	214	2	1832		
282	"	T.Rd.E.	62E	1	1817	210	2	1834		
283	"	"	61W	1	1817	210	2	1833		
284	"	1	18	1	1816	193	2	1832		
285	"	1	24	2	1811	134	2	1818		
286	"	2	29	5	1818	222	2	1836		
287	"	T.Rd.E.	71E	1	1811	141	2	1825		
288	"	"	67E	1	1812	149	2	1824		

No.	Township	Concession	Lot	Part of Lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous	Related Settler: Simultaneous
290	Westminster	T.Rd.E.	65W	1	1816	195	2	1832	*	
291	"	Broken Front	28	1	1815	188	6	1836		
292	"	1	30	2	1811	135	2	1821		
293	"	1	36	1	1815	183	2	1817		
294	"	T.Rd.E.	73E	1	1812	150	2	1835		
295	"	"	72W	1	1817	210	2	1827		
296	"	Broken Front	33	1	1811	135	2	1833		
296	"	1	42	1	1816	198	2	1829		
297	"	T.Rd.E.	76W	1	1817	210	2	1821		
298	"	Broken Front	45	1	1810	126	2	1819		
299	"	1	48	1	1818	223	2	1828		
300	Yarmouth	T.Rd.E.	27E	1	1810	188	2	1819		*
301	"	"	22E	1	1811	137	2	1816		
302	"	4	11	1	1816	198	2	1799		
313	"	3	7	1	1813	162	2	1813		
304	"	Ra.2.N.E.Rd.	22	1	1827	330	6	1830		
305	"	T.Rd.E.	24W	1	1811	139	2	1820		
306	"	"	19W	1	1811	136	2	1817		
307	"	"	17E	1	1811	135	2	1816		*
308	"	5	8	1	1820	246	6	1799		
309	"	4	4	2	1820	246	6	1799		
310	"	3	2	7	1816	201	2	1804		
311	"	10	18	3	1819	234	8	1820		
312	"	T.Rd.E.	14W	1	1811	142	2	1819		*
313	"	"	12E	1	1815	185	2	1841	*	
314	"	6	6	1	1818	224	2	1828		
315	"	5	3	1	1818	223	2	1828		
316	"	12	18	1	1823	282	9	1820		
317	"	T.Rd.E.	8W	1	1811	136	2	1818		*
318	"	"	6E	1	1810	138	2	1817	*	*
319	"	7	3	1	1823	280	2	1828		
320	"	T.Rd.E.	8W	1	1811	140	2	1818		

No.	Township	Concession	Lot	Part of Lot	Location Date: Year	Location Date: Month	Source of Location Date	Patent Date	Related Settler: Previous & Simultaneous
321	Yarmouth	7	24	1	1818	226	6	1828	
322	"	5	19	2	1818	227	2	1845	
323	"	4	16	1	1817	211	2	1848	
324	"	3	13	1	1816	198	8	1799	
325	"	2	10	6	1816	202	2	1816	
326	"	5	24	1	1818	227	2	1828	
327	"	4	20	1	1821	256	2	1828	
328	"	2	26	9	1821	258	7	1825	
329	"	1	23	7	1817	210	2	1848	

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