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An Analysis of Camper Travel Patterns to Selected Grand River Conservation Authority Areas for 1972 and 1974

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AN ANALYSIS OF CAMPER TRAVEL PATTERNS TO SELECTED GRAND RIVER CONSERVATION AUTHORITY AREAS FOR 1972 AND 1974

by
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C. Philip Mason

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INTRODUCTION

A. Statement of the Problem

In Ontario, each person has a hierarchy of recreational opportunities available to them based on geographical location, ability to travel, time to use recreational opportunities, and money to pay for services needed to satisfy recreational demands, to name but a few. Surrounding each individual seeking recreation is a zonal pattern which includes: a nearby area of daily involvement; an intermediate zone of day-trips and weekend recreational needs; and, a zone of vacation needs.[1] These individuals traversing road networks to meet their recreational needs have placed a strain on recreational resource facilities and highway arterial networks.

One form of recreation that has increased the flow of recreational travel is camping. With the increase in the number of camper trailers and mobile homes, greater numbers of people have been able to travel more cheaply and camp more comfortably than previous generations. Once the population began to camp for pleasure, campgrounds tended to become larger and more intensively developed.[2]

In response to the demands that new generations of campers have placed on existing recreational facilities, new areas have been developed to supplement the daily and weekend recreational needs of an urban population. A regional administrative body, the Regional Conservation Authority, has become one of the major suppliers of recreational areas in

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[1] E. G. Pleva, "The Parks in Ontario" in Canadian Parks in Perspective, edited by J. G. Nelson (Montreal: Harvest House Ltd., 1970), pp. 213, 214.

[2] R. Clarke, F. Campbell and J. Hendee, "Values, Behavior and Conflict in the Modern Camping Culture," Journal of Leisure Research, 3 (1971), pp. 143, 144. See also, R. I. Wolfe, "Recreational Travel: The New Migration," Canadian Geographer, 10:1 (1966), pp. 1-3.

Ontario.[3] Once considered a supplier of day use facilities for local urban populations, conservation areas are increasingly being used for weekend and long term camping. Campers travelling to the areas have originated from distances of five hundred miles and have stayed as long as fourteen days.[4] The increase in the propensity of the individuals to camp, will, in the future, place new importance on the regional conservation area to assist in meeting the demands of recreational campers in Southern Ontario.

Knowledge of the changes in the camper travel patterns to the conservation authority areas is of particular importance when the number of campers that originated from inside and outside of the conservation areas is examined. A previous study of camper travel to the Grand River Conservation Authority (G.R.C.A.) showed that the majority of the 1972 population originated from outside of the basin.[5] What is not evident from the data is the allocation of the costs of maintenance, supervision and management of the conservation areas should camper visitation from outside the basin increase.

While the majority of the campers have originated from outside of the Grand River Conservation Authority, there may still exist differences in the planned length of stay, date of arrival and number of camper party members between

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[3] "Review of Planning for the Grand River Watershed," Management Services Division, Treasury Board, Project number 229 (Toronto, 1971).

[4] C. P. Mason, An Analysis of Recreational Camper Travel to Four Conservation Areas in the Grand River Basin, unpublished B.A. thesis, Wilfrid Laurier University, Waterloo, Ontario, 1974.

[5] Ibid.

campers that originated from urban and rural locations. The analysis of the origin and destination information for 1974 may reveal that, in fact, these differences do exist as was shown by Hendee in a study of the rural-urban differences in recreational camping. Where rural campers preferred the less congested wilderness type of camping, the urban campers desired convenience and facility oriented camping. Also, campers of mixed social class have different perceptions of congested conditions, recreational activities and concepts of amenity use.[6]

Based on the findings of numerous studies of recreational travel it has become evident that there is a need to better assess the recreational campground users of regional conservation areas as a component of the system of recreational areas in Southern Ontario.[7] Campers that stay at provincial parks and commercial resorts differ in the length of planned stay, the entrance fees paid and the distance and time in travel than those that stay at regional conservation

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[6] J. C. Hendee, "Rural-Urban Differences in Outdoor Recreation Participation," Journal of Leisure Research, 4 (1969). See also: G. Morris, R. Pasework and J. Shultz, "Occupational Level and Participation in Public Recreation in a Rural Community," Journal of Leisure Research, 1 (1972).

[7] J. C. Hendee and R. C. Lucus, "Mandatory Wilderness Permits: A Necessary Management Tool," Journal of Forestry, 4:71 (1973), p. 1. See also: R. Burge and J. Hendee, "The Demand Survey Dilema: Assessing the Credibility of State Outdoor Recreation Plans," Forest Service, U.S.D.A. 216 (1972), p. 65; P. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study, Recreation Resource Planning Division, Michigan Department of Conservation, Report Number 6, June, 1966.

areas.[8] Changes in the system of camper use patterns have corresponding impacts on the conditions of the existing recreational facilities. To properly evaluate the flow of campers to the conservation areas an assessment of the origin areas, transportation links and flows, and the destination areas is required to achieve an understanding of user origins; type of user travel; and, use imposed on specific recreation areas. Thus an origin and destination analysis of recreational campers to the four conservation areas should provide a base for the future comparison of conservation areas to the rest of the system of recreational areas in Southern Ontario.

B. Study Objectives

Recreational camper travel is influenced by a variety of components that modify the individual's desire to camp in the Grand River Basin. A few of these factors are: population, travel distance, accessibility, entrance fees, facilities offered, campground capacity and alternative camping opportunities. Dependent upon the recreationist's knowledge, these variables can change in importance over time by acting as either an attractive force or an impedance force. To better understand the influences of these elements on camper travel, it is the objective of this study to describe, analyse and explain the changes in the user patterns of recreational campers that travelled to the four conservation areas of Brant, Byng, Elora and Pinehurst in the Grand River Conservation Authority for the two years of 1972 and 1974.

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[8] Ministry of Natural Resources, Department of Parks, Ontario Provincial Parks; Statistical Report 1973 (Toronto, Queen's Printer, 1974). See also: G. D. Boggs and L. McDaniel, Characteristics of Commercial Resorts and Recreational Travel Patterns in Southern Ontario, Ontario Department of Highways Report R.R. 133, May, 1968.

Of importance to the study of camper travel patterns were the changes in the camper market areas of each conservation area campground. It was expected that the number of campers would increase over the two years, as was the case for most of the recreational resource areas in Southern Ontario. But of more concern were the changes in the number of campers at one conservation park area as compared to the other conservation park areas. The capture of campers from a conservation area hinterland should give an indication of the changing conditions of the conservation areas or a reflection of the change in the type and characteristics of the campers themselves. With the changes in the number of campers from visitor origins should come a change in camper generation from large urban centres in comparison to rural based camper origins. As origin population increases, the potential to travel for outdoor recreation should increase. Then, similar to the hierarchy of central places in Ontario, camper generation to the conservation areas should demonstrate a resemblance to this hierarchy where the larger population centres generate proportionately more campers than the small rural origins. Inclusive to camper generation are the distance travelled to the conservation areas and the accessibility of the areas to recreational campers.

Unlike the journey to work, which encompasses short distances, the travel for recreational camping can vary from a few miles for urban oriented camping to several hundred miles for the wilderness experience at a Provincial or National Park. Yet conservation areas, developed to serve local urban populations in their river basis, have begun to record recreationists from several hundred miles in distance. Interest lies not only in the changes in camper attendance with distance, but with how the changes have accompanied the change in the length of stay and the number of camper party members that are coupled with the campers that have originated from inside and outside of the drainage basin over the

two sample years. The length of stay of campers was assumed to increase with the increase of distance from the conservation areas. Thus the campers who originated from outside of the Grand River Conservation Authority should stay longer than the campers who have originated from inside the G.R.C.A. The contention, then, is that campers travelling over long distances will stay, on the average, longer at the conservation area destinations than would campers from local areas.

In summary, the study objectives are:

(1) to describe, analyze and explain the changes in the user travel patterns of campers to the Grand River Conservation Authority over the years of 1972 and 1974;

(2) to identify and explain the changes in the four conservation area hinterlands of Brant, Byng, Elora and Pinehurst over the two years, as well as the differences between the campers that originated from inside and outside of the drainage basin; and,

(3) to analyse and explain the relationship between the distance travelled to a conservation area and the actual length of stay, fees paid and the number in the camper parties of campers that travelled to the four conservation areas over the two sample years.

C. The Study Area

The Grand River Basin, administered and controlled by the Grand River Conservation Authority, is the largest drainage basin in Ontario, encompassing 2,614 square miles (Figure 1). The basin stretches 125 miles from Port Maitland on Lake Erie north to the headwaters of the Grand River close to Georgian Bay. The Grand and its major tributary rivers, the Nith, Speed and Conestoga, flow through one of the most important socio-economic regions of Ontario.

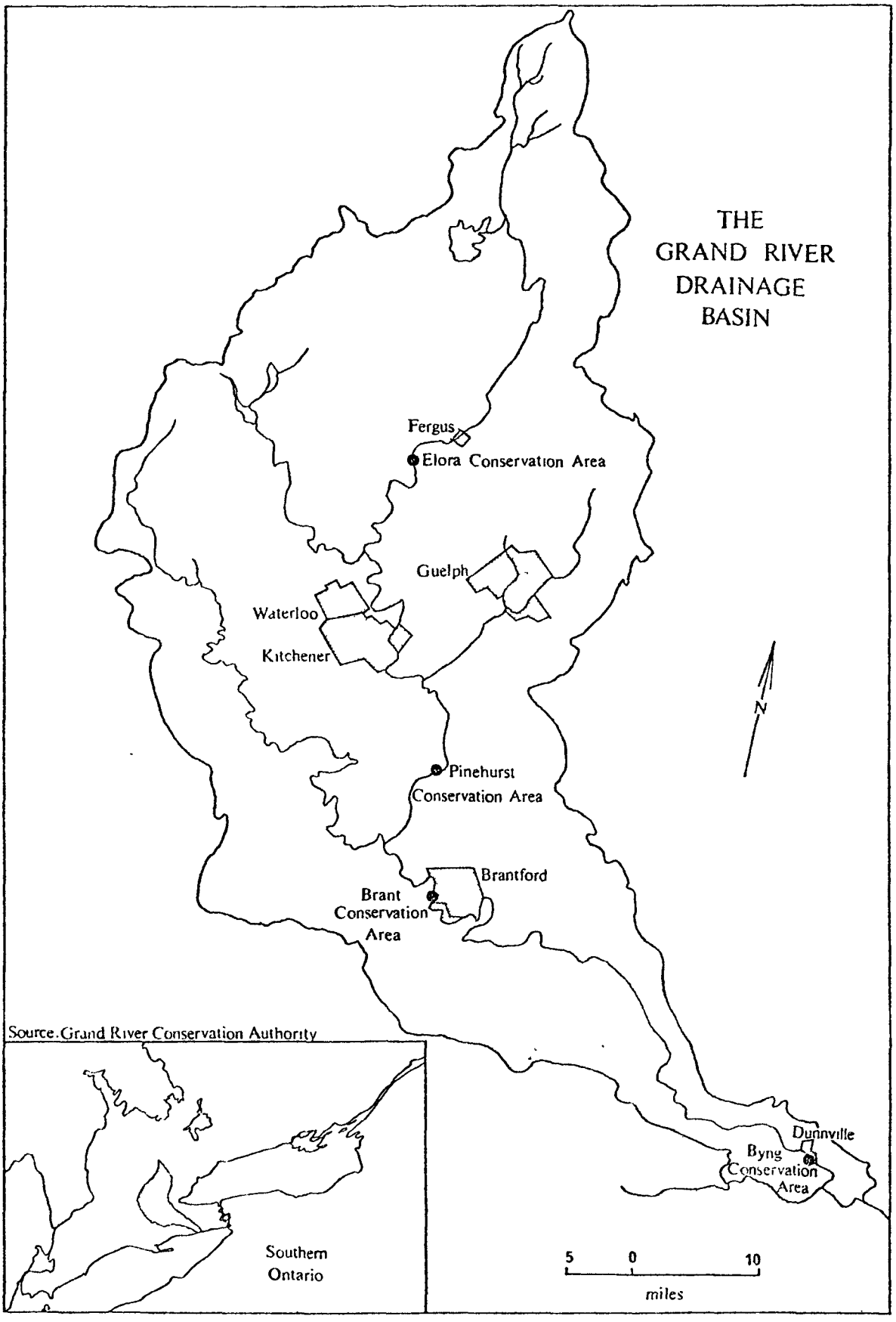
THE
GRAND RIVER
DRAINAGE
BASIN
Fergus
Elora Conservation Area
Guelph
Waterloo
Kitchener
N
Pinehurst
Conservation Area
Brantford
Brant
Conservation
Area
Source. Grand River Conservation Authority
Dunnville
Byng
Conservation
Area
Southern
Ontario
5
0
10
miles

Figure 1

This area contains the major population centres of Kitchener, Waterloo, Guelph, Cambridge and Brantford, bringing the total population of the watershed to over one half million people. The conservation authority, which owns 25,600 acres of land, has developed 2,000 acres (1972) or eight percent into recreational lands, principally on, or adjacent to river course.[9]

Four conservation areas in the Conservation Authority were selected on the basis of opportunities for camping. Byng Conservation Area, located on the Grand River adjacent to the town of Dunnville, contains 363 acres of recreational land. The area offers 600 campsites (300 marked), with access to fishing and boating activities. Brant Conservation Area, located on the Grand River near the City of Brantford, has a total acreage of 446 acres. The area offers 400 campsites, of which 200 are open upon demand. The area also has a developed shoreline with potential for swimming, boating and fishing activities. Elora Conservation Area, located on the Grand River south of the twin towns of Salem and Elora, contains 353 acres of recreational land. Elora, besides providing swimming, fishing and boating activities on a scenic natural resource, offers 400 to 600 marked campsites, and will offer an additional 300 campsites upon demand. Pinehurst Conservation Area, situated in the middle of the drainage basin between the cities of Galt and Paris, offers swimming and boating activities on 285 acres of recreational land, plus a larger area used for reforestation. The area provides 140 marked campsites.[10]

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[9]"Review of Planning for Grand River Watershed," p. 11.

[10]Grand River Conservation Authority, "Annual Reports, 1972, 1973 and 1974" (Cambridge).

D. Method of Study

There have been many origin and destination analysis studies completed in the United States, and to a lesser extent, in Canada. Few have considered the concept of change in visitor origin, distance travelled, and the planned length of stay. More importantly, there has been no research conducted on regional conservation area campers. To fill this void, travel patterns of campers for 1972 and 1974 will be compared and explained through an origin and destination analysis of the camper entrance receipts for the four conservation areas. The analysis will include an investigation of the changes in the number and percentage of camper entries by actual attendance, as well as the relation of the population changes of camper origins to attendance changes; changes in the visitor origins inside and outside the Conservation Authority by distance and by the camper trade areas; changes in the length of stay of campers in comparison to the distance travelled; changes in the frequency of camper arrivals by date to the areas; and, changes in the visitation of campers from origins located in other Canadian Provinces and the United States.

The method of study centres on the explanation of the expected changes in the camper travel patterns of each conservation area and its corresponding camper hinterland from inside and outside of the G.R.C.A. The components of population, distance and accessibility, and campground capacity will be used to further the explanation of camper travel patterns in the form of the social gravity concept. Simply stated, the gravity concept states that the larger the population of the originating centre and the shorter the travel distance to the conservation area, the greater the number of campers that will be generated to the conservation area. The predicted values of camper attendance from each population origin will be compared to the actual camper attendance to the four areas to ascertain the differences in the factors

of recreational camper travel over the two years.

E. Data Source

The study is based upon the collection of two samples taken from camper entrance receipts to the four conservation areas in the Grand River Conservation Authority for 1972 and 1974. Campers that entered a conservation area were required to complete a registration receipt listing:

(1) the home residence of the camper;
(2) the date of arrival at the conservation area;
(3) the planned length of stay;
(4) the number of persons in the camper party; and,
(5) the fees paid for the privilege of camping.

In 1972 the total number of camper receipts for the four conservation areas was estimated at over twenty thousand in number. A sample size of ten percent was arbitrarily chosen and collected in accordance to the systematic sampling procedure. The camper receipts were separated by conservation area and aligned by date (day and month). On the basis of random selection, the first camper receipt was recorded for the first of May, and every tenth receipt through the four months of May, June, July and August. The sample collection was continued until the last receipt was recorded for the fourth of September.

The total sample for 1972 was 2085 receipts. By conservation area the sample sizes were: Brant Conservation Area, 261 receipts; Byng Conservation Area, 561 receipts; Elora Conservation Area, 809 receipts; and Pinehurst Conservation Area, 454 receipts.

The collection of the 1974 camper sample followed the same procedure as the 1972 camper sample collection. The total number of camper receipts collected for 1974 was 2,430 receipts. By conservation area the sample sizes were: Brant Conservation Area, 648 receipts; Byng Conservation Area,

477 receipts; Elora Conservation Area, 835 receipts; and Pinehurst Conservation Area, 470 receipts. The total sample for the two years was 4515 receipts. The sample was then keypunched for use with the computer facilities at Wilfrid Laurier University.

F. Applications of the Study

The study of recreational camper travel to the Grand River Conservation Authority provided information on:

(1) the movement of conservation areas campers to the G.R.C.A. through an analysis of origin and destination information;

(2) the changing use of the conservation areas in the Grand River Conservation Authority by an analysis of the changing travel patterns of campers and the respective changes in the camper trade areas;

(3) the differences in the camper travel patterns from origins located inside the basin and outside of the drainage basin;

(4) the changing length of stay of campers, the number of camper party members, the entrance fees paid for camping, the frequency of camper arrival and the distance and time in travel to the conservation areas;

(5) the factors that explain the travel for camping purposes to the Grand River Conservation Authority as well as provide an explanation of the factors that influenced the changes in the user patterns of campers over the two sample years;

(6) the travel patterns of campers to conservation areas so comparisons can be made to other forms of recreational travel to discover how conservation area campers interact with the rest of the system of recreational travel in Southern Ontario.

G. Format of the Study

The analysis of recreational camper travel first required some insight into the altered characteristics and behaviour of campers to the changing conditions of campgrounds and in the general growth of the camper population throughout the past few years. Chapter One provides an overview of the camper changes in behaviour at campgrounds in North America. This is followed by a review of recreational camper origin and destination studies in Canada and the United States, as well as a view of the systems approach in recreational research.

Chapter Two presents a perspective of camper visitation and travel pattern changes with respect to camper entries, visitor origins, length of stay and distances travelled. Some explanations are offered and supported through a view of the social gravity concept and conservation camper trade area analysis.

Chapter Three is an origin and destination analysis of recreational camper travel to the Grand River Conservation Authority for 1972 and 1974. Following this analysis, Chapter Four compares and contrasts the changes in the camper travel patterns over the two years to identify the actual changes and the explanation of these changes. The trade area and gravity models are employed to further analyse the camper travel components.

The final chapter is comprised of a summary and conclusions of the origin and destination studies and the comparative analysis of the two camper travel years. Lines of future research are discussed as suggested by the study.

CHAPTER 1

CONCEPTS IN RECREATIONAL TRAVEL RESEARCH

For most outdoor recreation activities, travel has become a fundamental element of the total recreation experience. In fact, recreational travel is the fastest growing of all other trip purposes. In 1968, seventy-five percent of all traffic in Canada has been classed as recreational.[1] In Ontario, recreationists that travel to Provincial Parks, commercial resorts and summer homes account for fifty percent of the total population. Add to this the total number of recreationists that make sightseeing trips to Provincial Parks, regional conservation areas and day use facilities, the total becomes enormous.[2]

Recreational travel in Ontario is not necessarily a function of population nor of increased urbanism. Yet there are characteristics of recreational travel that make it distinctive from other forms of travel such as the journey to work and the migration to the city. Differences in travel magnitude and orientation exist when the travel patterns of recreational and non-recreational purposes are compared. Unlike the journey to work that occurs at fixed times during the day and between fixed origins and destinations, recreational travel begins from a fixed origin, becomes unidirectional in nature (travel is generated from one origin and attracted to a destination)[3] and, in large part, is

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[1] G. D. Boggs and R. McDaniel, Characteristics of Commercial Resorts and Recreational Travel Patterns in Southern Ontario, Ontario Department of Highways, Report R.R. 133 (Toronto, May, 1968), p. 1.

[2] R. I. Wolfe, "Recreational Travel: The New Migration," Canadian Geographer, 10 (1968), pp. 2, 3.

[3] R. I. Wolfe, "Discussion of Vacation Homes, Environmental References and Spatial Behavior," Journal of Leisure Research, 2 (1970), p. 85.

discretionary.[4] Recreational travel begins after working hours have terminated and peaks at the beginning and end of weekends, where there is a concentration of leisure hours, and in summer periods. Generally, the volume of traffic that occurs on weekdays is less than the peak volume of traffic on Sundays with the exception of specific events such as holidays and long weekends.[5] Nevertheless, the time available for recreation plays a dominant role in determining recreational travel patterns. Available leisure time places restrictions on the mode of transportation, the maximum distance travelled and the selection of recreational activities.

Travel patterns will also change with each type of recreation-activity chosen.[6] Day-users seeking active participation in user-oriented recreation areas may travel from one to fifteen miles for recreation. Recreationists travelling to resource based areas for recreational purposes, such as hiking, climbing, camping, hunting and major sightseeing, may travel from eighty to nine hundred miles in distance. Intermediate locations, which are a blend of the two other areas, are used for day outings and weekend recreational purposes since the areas are usually located on the best

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[4] B. O'Rouke, "Travel in the Recreational Experience—A Literature Review," Journal of Leisure Research, 6 (1974), p. 142.

[5] W. Houghton-Evans and J. C. Mills, "Weekend Recreational Motoring in the Countryside," Journal of the Town Planning Institute, 56 (1970), pp. 392, 393.

[6] R. I. Wolfe, Parameters of Recreational Travel in Ontario: A progress report, Ontario Department of Highways, Report RB111 (Toronto, 1966).

available resources not too distant from users.[7] The purpose of each area may differ with the use imposed by individuals based on the selection of activities, the distance they are willing to travel, the availability of recreational resources and the amount of leisure time available for recreational purposes. Each area has different levels of carrying capacity, rates of daily participation and experience distinct types of users depending upon the consumption, competition and congestion of the areas. What is not evident from this cursory view of recreational areas and travel is the effect that the factors of distance and the type of recreation area have on the recreational travel patterns, the use and the activities of the participants when the areas and the users change with the growth of recreational travel.

1.1 Camping Characteristics and Behavior

In the past, camping has been viewed as an opportunity to isolate oneself, experience the natural environment and escape the complexities of urban life. Camping had been thought of as "an unregulated form of recreation carried out in the isolation of the natural environment."[8] Recreational camping is now viewed as an activity to be participated in to provide a physical, intellectual, esthetic and emotional

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[7] M. Clawson, Economics of Outdoor Recreation (Baltimore: John Hopkins Press, 1966), pp. 36-38. See also, S. Chapin, Urban Land Use Planning (Urbana: University of Illinois Press, 1965), p. 377, and J. B. Ellis, A Systems Model for Recreational Travel in Ontario: A Progress Report, Ontario Department of Highways, Report RR126 (Toronto, 1967).

[8] R. N. Clarke, J. C. Hendee and F. L. Campbell, "Values, Behavior and Conflict in the Modern Camping Culture," Journal of Leisure Research, 4 (1972), p. 143.

outlet.[9]

Recreational opportunities usually do not result from careful planning, but come into being by local needs, group pressure and a coincidence of the conditions at the time of recreational resource development. Increased use of recreational lands is now being 'pushed' because of the increase in leisure time, mobility and population changes such as an increase in urban areas.[10]

Urbanites have often thought of recreational activities, particularly camping, in rural and wilderness terms. Many people in urban areas have become less interested in rural recreation and have become oriented to city recreational activities or facilities. In response to the urban recreationists' needs, and the increase in the number of recreational campers, campgrounds have generally become large and intensively developed, incorporating water and sewage systems, electricity, paved roads, increased supervision and facilities for large tents and trailers. Outdoor activities of the urban areas can now be carried out in campgrounds without any loss of recreational satisfaction.[11]

With the growth of population, increased leisure time and changes in campground facilities, camp areas have attracted a more diverse group of campers and have produced a larger and more varied camping population. The growth of the recreating population has led to an increase in the contact between recreationists, crowded conditions and competition for facilities.

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[9] C. F. Brockman, Recreational Use of Wild Lands (New York: McGraw-Hill, 1959), pp. 3, 4.

[10] J. G. Nelson, editor, Canadian Parks in Perspective (Montreal: Harvest House Ltd., 1970), p. 10.

[11] R. N. Clarke, J. C. Hendee and F. L. Campbell, "Values, Behavior and Conflict in the Modern Camping Culture," p. 144. See also, G. F. White, "Social Class Differences in the Use of Leisure," American Journal of Sociology (1955-1956).

If campers are motivated by a desire to receive the benefits from one specific resource, the new style of camping, which is compatible with developed areas and less dependent on environmental contact, will change the behaviour and expectations of the traditional camper.[12] A process of invasion and succession may be stimulated through the changes of campground users as the areas become more intensively developed and consumed. The changing membership of the campgrounds, having displaced the traditional camper to the more distant natural areas, has been replaced by the camper oriented to the highly developed dense campgrounds. The new campers have responded and adapted to the new social environment of the campgrounds and act and behave consistent with the norms of the crowded areas.[13] With the growth of the recreational camping population, the quality of the site and human satisfaction, which are the goals of many campers, are lost to the campers seeking comfort and convenience in urban settings. It will continue to be difficult to measure the value of parks and open space in aesthetic and economic terms when the norms of a recreating population continue to change with the growth of the recreational camper population.

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[12] G. L. Blutena and L. L. Klessig, "Satisfaction in Camping: A Conceptualization and Guide to Social Research," Journal of Leisure Research (1969). See also, W. Burch, "The Playworld of Camping: Research into the Social Meaning of Outdoor Recreation," American Journal of Sociology, 70(1) (1965).

[13] J. C. Hendee and F. L. Campbell, "Social Aspects of Outdoor Recreation—the Developed Campground," "Trends in Parks and Recreation (October, 1973), pp. 13-16. See also, L. Russman, "Class, Leisure and Social Participation," American Sociological Review, 1954; and L. J. Darrell, "Recreational Pursuits of Selected Occupational Groups," Research Quarterly, 4 (1967).

1.2 The Systems Approach in Recreational Travel Research

The systems approach in recreational geography has often been equated with the quantification of recreational processes to the application of mathematical models. The systems approach, or systems analysis, has become known as an analysis of the behaviour of a collection of interrelated components which function interdependently through the process of formulating and solving a set of hypothetical observations that represent that behaviour.[14] In geography, a spatial system has been defined as "a system in which one or more functionally important variables is spatial."[15] According to W. Pattison, the spatial variables may encompass location, distance, direction and magnitude.[16]

Recreational geography lends itself readily to the systems approach by bringing into perspective the recreational behaviour of an urban population, the potentials of the recreational supply sector and the demands and subsequent consumption of the recreationists. Perloff and Wingo suggested that the systems approach requires that we identify the elements of the system and see how they interact. The elements of a recreation system are the recreation population, the recreation activities and the recreational facilities.[17]

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[14] D. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study, Volume 1, pp. 2-6.

[15] R. Symanski and T. J. Wilbanks, "What is Systems Analysis?" The Professional Geographer, 10:2 (1968), p. 83.

[16] W. M. Pattison, The Four Traditions in Geography, Presidential Address to the Members of the American Association of Geographers, 1964.

[17] H. S. Perloff and L. Wingo, Jr., Urban Growth and the Planning of Outdoor Recreation, in Land and Leisure: Concepts and Methods in Outdoor Recreation, edited by D. W. Fisher, J. E. Lewis, and G. B. Priddle (Chicago: Maaroufa Press, 1974).

These three elements are joined in a system with the population or demand for recreation on one side, the facility or supply on the other, and the recreational activity as the fulcrum which moves between the demand and supply sides as they become dominant in the system. Any recreational research problem can be handled in this fashion by breaking down the many complex variables of even the most difficult problems.

The starting point of the systems approach in recreational travel research, particularly in the investigation of camper travel, is to assess the origin and destination areas of the activity. Inclusive to this information are the flows along highway links that interconnect the recreational origin to the desired destination. Milstein and Reid followed this format in their assessment of camping attendance to State Forest Parks in Michigan.[18] Through systems analysis they developed a model of camper travel (Recsys) to analyse the behaviour of campers and predict the actual flow of campers to the state parks. Further analysis of the recreational system of Michigan was evolved by Chubb in a practical evaluation of outdoor recreation in Michigan.[19] Chubb reviewed all the major types of recreational activities in Michigan and related them to the park facilities available and the transportation networks that link the origins and destination areas of the recreationist. Cesario, in a review and study of the estimation of the benefits of recreation and recreational travel flows, stated that it is first necessary

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[18] D. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study, Volume 1.

[19] M. Chubb, Outdoor Recreation Planning in Michigan By a Systems Analysis Approach: Part III, The Practical Application of Program Recsys and Symap, Recreation Resource Planning Division, Michigan Department of Conservation, Technical Report 12, December, 1967.

to identify the recreational system.[20] A recreation system has three basic components: a set of origins; a set of destinations; and, a set of travel links connecting the origin and destination. In the development of a systems model, Kates, Peat and Marwick explored an unrestricted model of the tourism and recreation systems in Ontario.[21] They were most interested in discovering the fundamental aspects of human behaviour in relation to outdoor recreation that underlie the elements of the recreation systems; the elements being attendance at parks, occupancy of accommodations and traffic volumes.

In general, the recreational studies have provided some very useful information on the characteristics and activities of the recreationists that travelled in North America. But what was lacking was an effort to assess the individual studies in terms of how each area or each type of recreationist would fit into a recreation system. More specifically, the origin and destination studies were not concerned with how the origins and the location of the destination areas affected the travel patterns of the recreational users, nor with how each of the areas could affect the patterns of use of other areas.

Traditionally, origin and destination studies have been concerned with the activities and characteristics of the recreationist, specifically in terms of their economic impact and influence on their destination regions. Recreational researchers have paid little attention to the travel links of the recreational system and their effect on the

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[20] F. J. Cesario, Jr., "Operations Research in Outdoor Recreation," Journal of Leisure Research, 1:1 (1969).

[21] Tourism and Recrdation in Ontario: Concepts of a Systems Model Framework, prepared by Kates, Peat and Marwick, Committee on Tourism and Outdoor Recreation (Toronto, March, 1970).

travel patterns of recreationists, specifically campers.

The first extensive report on tourism and recreational travel in the United States was the National Recreation Survey published in 1962 by the Outdoor Recreation Resources Review Commission (O.R.R.R.C.)[22].

The recreation survey revealed that driving for pleasure was the activity most participated in by Americans, followed by sightseeing, fishing, boating and camping, in decreasing order. The average distance travelled for all types of recreation trips was 644 miles, with vacation and holiday trips averaging 389 miles; personal trips, 95 miles; and day-outings, 160 miles. The major purpose of most trips (eleven percent) was camping. Recreationists from urban Standard Metropolitan Areas contributed the highest percentage of participants, with rural residents second in percent participation in the summer months.

In response to the national survey, numerous states began an assessment of their recreational demands and potentials. The Michigan Outdoor Recreation Demand Study (M.O.R.D.S.) of 1966 was based on a registration tag system that listed the origin by county of each recreationist, date of entry, length of stay, party members and water oriented activities.[23] Overall the tendency for campers was to camp in their origin region rather than camp elsewhere.

Campgrounds located within easy driving distance of major population centres received the heaviest use. The

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[22] National Recreation Survey, Outdoor Recreation Resources Review Commission, Study Report 19, (Washington, D.C., 1962).

[23] D. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study, Recreation Resources Planning Division, Michigan Department of Conservation, Report 6, June, 1966.

majority of the campers favoured camp areas that had numerous sites and campers preferred to contribute to overcrowded conditions at large parks rather than move to smaller less congested parks. The results of the survey showed that the tag system for campers and campgrounds was not as complete as was desired.

A similar survey was conducted for the State of Wisconsin in 1964 by I. V. Fine.[24] The study, based upon 6000 questionnaires (response rate not indicated), showed that approximately fifty percent of the residents of Wisconsin travelled over one hundred and fifty miles for a one day trip, while the majority of non-residents (58%) travelled over one hundred and fifty miles. For a vacation trip the majority of the party members comprised two persons, followed by a party member group of four persons. The majority of the vacation trips travelled by recreationists were over three hundred miles in length.

The implication of this study was that the majority of the recreationists were willing to travel considerable distances for recreational purposes. This was dissimilar to the findings of the Michigan Recreation Survey and the G.R.C.A. camper attendance record of 1972 where the majority of the campers travelled less than ninety miles and originated from outside of the Authority area. The differences may be due to the extended length of stay of Wisconsin campers (9.2 days) in contrast to the overwhelming weekend oriented camping of the G.R.C.A. and Michigan State Park campers.

The attendance of recreationists at recreational park areas outside of their home origin was again accented in a survey of the Main skiing industry. It was found that eighty-three percent of the participants were residents that

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[24] I. V. Fine, Wisconsin and the Vacationer, State of Wisconsin, Department of Resource Development, 1966.

travelled 165 miles and stayed for 3.1 days to participate at a ski area.[25] Based on a questionnaire of ski-area operators in Maine, it was revealed that non-residents (17%) travelled an average of 386 miles and stayed for 5.8 days. The majority of the non-residents originated from the nearby states of Massachusetts, New Hampshire and Connecticut. Canadian visitors comprised 4.6 percent of the visitation to the ski areas. Distance to the site was found to be the second most frequent reason stated for attending the thirty-one ski areas.

The major concern of the studies was an assessment of the recreationists' characteristics and their travel patterns, not a synthesis of their surveys with past or ongoing recreational research even though the Michigan Recreation Survey used a system approach in analyzing camper use in Michigan.

The assessment of the activities and characteristics of recreationists was not only limited to the United States. The Province of Ontario undertook numerous studies on the origin and destination of recreationists and their travel patterns. The surveys were generally conducted on an individual basis and tended not to include an attempt to coordinate or compare the recreational research over the study years.

A study of visitors to Atikokan, Ontario in 1964 revealed that the area, located in Quetico Provincial Park, was visited by at least 35,000 recreationists in the summer months.[26] The average vehicle originated from areas outside

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[25] A. R. Laiko and T. A. Palmberg, An Analysis of the Maine Skiing Industry, Maine Department of Economic Development, Research and Analysis Division (Augusta, Maine, 1972).

[26] Ontario Department of Tourism and Information, A Study of Visitors Who Travelled by Automobile to Atikokan, Ontario, Report 1, McDonald Research Ltd. (Toronto, 1964).

of a fifty mile radius of the area and carried between two and four persons. Seventy percent of the visitors originated in Ontario, nineteen percent from the Prairie Provinces, and ten percent from the United States. Day-trippers were found to comprise thirty-one percent of the total visitors to the area, followed by twelve percent that stayed overnight, thirty percent that stayed two to four nights, and twelve percent that stayed for more than ten nights.

In a survey of visitors to Manitoulin Island in 1969 to assess the tourist potential of the island, 834 passengers on the island ferries were interviewed with Ontario recreationists accounting for sixty-three percent of all visitation to the island.[27] American visitors provided thirty-four percent, while other province visitors supplied four percent of the visitation. The City of Toronto furnished the largest percentage of visitors to Manitoulin Island, followed by Hamilton and Sudbury. The majority of the visitors stayed two to four days (25%) in a motel (39%), or at a campsite (25%). The average party size for ferry passengers was 3.2 persons, and road passengers 3.6 persons per party. Parties of two to five people accounted for eighty-six percent of all party sizes. The main reason for travelling to the island was for vacation (53%), passing through (18%), and camping purposes (9%).

The purpose of the Algoma Area Visitors Survey was to provide insight into the travel patterns of summer visitors and to examine the origin and destination characteristics of

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[27]Ontario Department of Tourism and Information, Travel Research Branch, A Survey of Visitors To Manitoulin Island, 1968, Report 41 (Toronto, October 1969).

the visitors.[28] The survey revealed that Ontario residents stayed at campgrounds fifty-one percent of the time. The average party size of Ontario residents was 3.1 persons. The average length of stay was seven days, with out of Province travellers staying an average of 10.5 days.

For an assessment of the economic conditions of Sainte-Marie Among the Hurons in the Midland area of Ontario, a survey of visitors was conducted in 1971 to obtain origin and destination information.[29] The party size for an adult/family group was 4.1 members, and the youth/school group as 62.1 members. The majority of the adult/school groups originated from Ontario. Attendance figures from out of province visitors were of secondary consequences due to the remote location for other than Ontario residents. The average number of visitors per day was 1008 persons. The majority of the visitors originated from Toronto (31%), followed by the Hamilton-Burlington area. United States' visitors accounted for seven percent of all visitation.

In a sampling of twenty-three days of visitors, the St. Lawrence Parks Commission assessed the economic impact of their parks on the surrounding area for 1971.[30] The

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[28]Ontario Department of Tourism and Information, Algoma Area Visitors Study, Summer 1970, prepared by ORC International Ltd., Report 58 (Toronto, September 1970). See also: Ministry of Industry and Tourism, Algoma Area Visitor Survey, Spring 1972, prepared by the Institute of Opinion and Market Research Ltd., Report 76 (Toronto, 1972).

[29]Ontario Ministry of Industry and Tourism, Tourism Recreation Studies Branch, A Survey of Visitors to Sainte-Marie Among the Hurons, 1971, Report 80 (Toronto, July 1972). See also, Ontario Department of Tourism and Information, A Study of Awareness of and Attitudes Towards Ste. Marie Among the Hurons and Other Ontario Historic Sites; Toronto and Midland Area, November 1968, prepared by Canadian Facts Company Ltd. (Toronto, 1968).

[30]Ontario Ministry of Industry and Tourism, Tourism and Recreation Studies Branch, Economic Impact of the St. Lawrence Parks Commission Facilities on the Surrounding Area, Report 72 (Toronto, 1972).

origin and destination information was based on a survey of fifteen parks yielding 659 questionnaires. The majority of the campers that attended the fifteen parks originated from Montreal, Toronto and Ottawa, accounting for 19, 10 and 6 percent respectively. In total, the percentage of visitors that originated in Ontario accounted for fifty-four percent of all campers. Quebec supplied twenty-nine percent of the visitation, while the American visitors provided sixteen percent. Campers accounted for sixteen percent of all visits, whereas day-users provided sixty-eight percent of the attendance at the fifteen parks.

In essence, the studies of recreational travel in Ontario became one of presenting and recording statistics of the characteristics of the recreationists without an examination of the origin or destination areas. It would seem that the Ontario Government agencies were conducting an inventory of the recreation areas which, in reference to systems analysis, was the first step of an investigation of recreational travel patterns in Ontario. Unfortunately, the origin and destination studies became more specialized, in that certain areas and types of activities were assessed to their economic significance and impact on park areas (presented through statistical reports), and the coordination of the studies, that would have been realized through a systems framework, was ignored.

Ski resorts in Ontario were sampled to obtain a detailed survey of skiing activity through origin and destination information for the winter of 1971 and 1972.[31] The results of the survey showed that seventy-eight percent of the visitors originated in Ontario, the majority

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[31]Ontario Department of Tourism and Information, Travel Research Branch, Skiing at Ontario Resorts, Winter 1971-72, Report 78 (Toronto, 1973).

travelling from South Central Ontario. The rest of Canada supplied twelve percent of the skiers, followed by the United States' skiers with nine percent. The average party size for an overnight trip to several resorts was 2.7 persons, followed by an overnight trip of 2.6 members, and a day trip of 3.1 members.

Some skiers even camped while skiing, but the number of campers was insignificant, totalling 0.1 percent. The largest percentage of skiers visited the Ontario resorts on Sundays (43%), followed by entry on Saturdays (32%), and weekdays (25%).

A study by Boggs and McDaniel, to evaluate and examine procedures for predicting recreational travel between origins and destinations at commercial resorts, revealed that 92.8 percent of the resorts were located on a body of water.[32] The majority of the users were married with young children who visited the resorts for fishing purposes (25%). The visitors stayed for one week (74%) and travelled a distance of between 150 to 300 miles (54%) during July and August of 1968. Camping opportunities were offered at seventeen percent of the resorts. Most of the resorts in Ontario were located on gravel roads (44%), followed by those located on first class highways (35%), secondary roads and paved county roads (21%).

In a statistical report of Ontario's Provincial Parks for 1973, campground attendance had grown steadily since 1963, although it did not reach the level of camper visitation of 1961.[33] The number of campers that visited the 115 provincial parks in 1973 amounted to thirteen percent of

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[32]G. D. Boggs and L. McDaniel, Characteristics of Commercial Resorts and Recreational Travel Patterns in Southern Ontario.

[33]Ministry of Natural Resources, Department of Parks, Ontario Provincial Parks Statistical Report 1973 (Toronto, March, 1974).

the total visitation to the parks. The majority of the campers originated in Ontario (68%), with the United States providing twenty-six of all camper visitation. Since 1960, camping in the Provincial Parks has increased by two hundred and seventy percent to the 1973 level of 1.6 million campers.

The characteristics of visitors to the Metropolitan Toronto Conservation Areas were analysed for July and August of 1972.[34] The survey revealed that ninety-eight percent of the recreationists originated from municipalities in the Metropolitan Toronto Regional Conservation Authority Area. The twelve areas did not offer camping or overnight facilities, resulting in an average length of stay of two to three hours per conservation area.

Individually, the recreational origin and destination studies revealed that the recreational users, depending on the activities consumed, differed in their travel characteristics throughout Ontario. It was unfortunate that each survey was concerned only with the assessment or inventory of one individual activity or region and the coordination of the studies was not considered by the investigating agencies.

In this respect, a classification scheme or a systems approach would have been useful in determining where each of the recreational park areas, the facilities provided and the recreationists themselves function and behave to form a recreational system in Ontario. This could have been conducted by the implementation of the systems approaches specified by Milstein and Reid, Perloff and Wingo and, to a lesser extent, by Kates, Peat and Marwick. The initial step of a systems approach was to identify the components of the recreational system. In essence, this was completed by the

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[34]Metropolitan Toronto and Regional Conservation Authority, Characteristics of Visitors to M.T.R.C.A. Conservation Areas, July-August 1972 (Toronto, February, 1973).

Province of Ontario. But the pursuit of the next two steps, that of the assessment of the travel links that connect the origin and destination areas and the interaction of each component in the recreational system of Ontario has not been conducted to this point in time.

In Ontario, the recreation park areas can be conceived as forming a heirarchy of areas based on the factors of park size, location and the activities and facilities offered. These areas range from city park or user oriented areas to National Parks or resource based areas. In 1955 there were only fifty-eight commercial campgroundsand less than 3600 Provincial campsites. In 1966, it was estimated that there were approximately 2.3 million campers for 415 commercial campgrounds and 15,922 Provincial campsites. The supply of campgrounds has increased tremendously from the initial survey of camping development in Ontario for 1968.[35] The number of campgrounds in Ontario totalled 588, with 57,935 campsites in 1970. Also there were 1,129 mixed campgrounds producing an additional 29,859 campsites which provided an average 98.5 campsites per campground.[36]

As can be seen, the number of campground offerings have increased with the increase in the camping population. But more importantly, the supply of the recreational areas has been concentrated in the development of user-oriented areas near urban populations. How these areas affect the travel patterns of recreational users, specifically campers, to the other types of areas is of prime importance to this study. The inclusion of urban oriented recreational areas, such as the G.R.C.A. park areas, has broadened the base of

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[35]Ontario Department of Tourism and Information, Travel Research Branch, Camping Development in Ontario (Progress Report) (Toronto, July, 1968).

[36]Department of Industry, Trade and Commerce, Travel Industry Branch, Office of Tourism, The Canadian Tourism Facts Book, 1972 (Ottawa: Queen's Printer, 1971).

the hierarchical pryamid of recreational area provision in Ontario through the offering of day-use, weekend and vacation oriented camping areas. These areas should affect the travel patterns of campers and other users that travel considerable distances to areas such as Atikokan, Manitoulin Island, the Algonquin Area, Sainte-Marie-Among-The-Hurons and the St. Lawrence Parks Commission areas. With the offering of more camping opportunities in Ontario by the G.R.C.A., Ontario recreational travel patterns may change from that reported by the Department of Transportation,[37] the Travel Research Branch of Ontario[38] and R. I. Wolfe.[39] The changes in the user patterns of Ontario may influence the Provincial Parks to leave their areas as intermediate recreational areas and not increase their facility provision for urban oriented recreationists but leave this type of recreation area to the Regional Conservation Authorities of Ontario.

1.3 The Gravity Model

Any study of recreational travel needs a framework to give form and generality to the desired results. In simple terms, models are required for the prediction and evaluation of future situations in a recreational system in a generalized form. The most frequently used statistical model of recreational systems research is the regression equation which relates recreation demand change to change in certain

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[37] Department of Transportation, Transportation Policy Research Branch, Canadian Travel Patterns, March 1968 to February 1969 (Ottawa, 1969). See also, Ontario Department of Tourism and Information, Travel Research Branch, A Study of the Travel Habits of Ontario Households, June 15, 1966 to June 14, 1967, Report 24 (Toronto, June, 1969).

[38] Ontario Department of Tourism and Information, Recreation and Community Development on the Canadian Shield Portion of Southern Ontario, prepared by Project Planning Associates Ltd., Report 44 (Toronto, April 1970).

[39] R. I. Wolfe, Parameters of Recreational Travel in Ontario: A progress report (1966).

independent variables. The most frequently used mathematical model in recreational travel research is the gravity model, which relates recreation trips to some function of population, attractivness of the recreation area, and travel distance.[40] L. D. James used the gravity model as an approach in the development of a visitor prediction equation. James argued that a researcher can estimate the effect of storage on flood peaks but he has no way of estimating how many more visitors would be attracted to an area with an enlarged recreational facility.[41] He concluded that the gravity model provides the first step to deriving the net benefits of a recreational facility from an economic viewpoint. Wolfe, in a discussion of recreational travel simulation techniques, experimented with several mathematical models. The end result was an approximation of the gravity model.[42] The model was in the form of:

$$V_{ij} = K \frac{P_i^{p} C_j^{c}}{D_{ij}^{b}}$$

where: V_{ij} = the vacationists travelling from urban region i to resort area j;

P_i = population of urban region i;

C_j = capacity of resort j; and,

C_{ij} = distance (miles) between i and j.

The exponents were found by using a multiple regression technique. Wolfe found the gravity equation to be a fairly

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[40] N. Perry, Models in Recreation Planning, Recreation News Supplement, Countryside Commission (Cambridge, London (8), 1973), pp. 2,3.

[41] L. D. James, "Economic Optimization of Reservoir Recreation," Journal of Leisure Research, 2 (1970), pp. 16-20.

[42] R. I. Wolfe, Parameters of Recreational Travel in Ontario: A Progress Report.

good fit for campers, and commercial guests when tested, but it was found to give a poor fit to cottage travel.

Numerous recreational and migrational researchers have found the gravity model to be of enormous use in explaining recreational travel and predicting travel flows, attendance and trends.[43] Yet each researcher has warned of the model's limitations (both statistical and mathematical), particularly in the formulations of the attractive force of the masses, the friction of distance and the development of the parameters for the attraction and distance functions.[44] The models, to yield proper results, require that sufficient information can be attained, each model being constrained by the quality of the data since each concept requires values for camper attendance, origin population and the distance between the origin and destination.

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[43]C. B. Wennergren and D. B. Nielson, "Probability Estimates of Recreation Demands," Journal of Leisure Research, 2 (1970), pp. 112-122. See also, J. B. Ellis and C. S. Van Doren, "A Comparative Evaluation of Gravity and Systems Theory Models for Statewide Recreational Traffic Flows," Journal of Regional Science, 6 (1966); B. Thompson, Recreational Travel: A Review and Pilot Study," Traffic Quarterly (October, 1965); W. Isard, Methods of Regional Analysis: An Introduction to Regional Science (Cambridge, Mass.: The M.I.T. Press, 1960), pp. 539-541; D. O. Price, "Distance and Direction as Vectors of Internal Migration, 1935-1940," Social Forces, 27:1 (1948); G. A. P. Carrothers, "An Historical Review of Gravity and Potential Concepts of Human Interaction" in Analytical Human Geography, edited by P. J. Ambrose (London: Longmans, Green and Co. Ltd., 1969).

[44]P. Haggett, Locational Analysis in Human Geography (Toronto: Macmillan Company of Canada, 1965), pp. 37-39. See also, W. R. Catton, "Concept of Mass in Gravitation," Mathematical Explorations in Behavioral Science, Irwin and Dorsey Press, 1965; W. L. Garrison, "Estimates of the Parameters of Spatial Interaction," Regional Science Association, 2 (1956); G. Olsson, Distance and Human Interaction: A Review and Bibliography, Bibliography Series 2, Regional Science Resources Institute, Philadelphia, 1965; H. H. Stoevener and W. G. Brown, "Analytical Issues in Demand Analysis for Outdoor Recreation," Journal of Farm Economics, 49 (1947).

1.4 Summary and Conclusions

Travel for recreation, particularly camping, has increased considerably since 1960. Before the National Recreation Survey in the United States, the impact of recreational use and travel on park areas and highway networks was not realized as being as significant as presently reported. Overall the travel surveys have shown the rapid growth of recreation in the United States and Ontario, particularly in the activity of camping. Travel by American and Ontario vacationers and campers have been influenced by the travel distance to recreation areas, the origin of the recreationists and the activity desired.

The availability of opportunities for outdoor recreation has increased over the years, allowing more people the pleasure of recreational participation. Campground supply in Ontario in 1955 consisted of fifty-eight commercial campgrounds and 600 provincial campsites. In 1966, 2.3 million campers visited Ontario. The supply of campsites and campgrounds increased to 415 commercial sites and 15,922 provincial sites. As of 1972, there were 1717 commercial campgrounds providing 87,794 campsites, as well as 19,983 provincial campsites and 23,265 conservation area campsites with the percentage of the campsites offered in the Grand River Basin, Niagara Peninsula and Saugeen Valley Conservation areas.[45]

The travel studies of American tourists revealed that recreationists do not travel long distances for recreational purposes, the average one-day trip varying from forty-five miles to 165 miles. Vacation trips are much longer in travel distance, varying from 160 miles to 389 miles. American recreationists are predominantly urban oriented, who have originated from large populations, travel

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[45]Ontario Ministry of Natural Resources, Conservation Authorities Branch, Guide to Conservation Areas (Toronto: Queen's Printer, 1972).

short distances and stay in regions close to the origins. Of all the recreational trips, eight percent of the population camped, varying with the state of origin. Camping parties varied from an average of two members to 3.4 members. The length of stay of American tourists ranged from five days to 9.2 days in the United States, and 4.5 days camping in Ontario. Generally, American campers preferred large campgrounds and contributed to overcrowded conditions.

The Ontario surveys of recreational travel were far from being complete in offering recreational travel information with the investigating agencies being more interested in the economic potential of recreationists rather than their travel and behavioural characteristics. Much of the needed information had been reduced in scale by means of weighting and use of percentage values without giving actual survey totals and response rates to interviews, questionnaires and entrance receipts. (This also applied to the American studies.)

Ontario recreationists travelled between twenty-nine and three hundred miles for day use and weekend recreational purposes. Vacation travel in Ontario was greater in distance, varying in range from 250 miles to 464 miles on the average. The majority of the trips originated in Ontario and, depending on the activity sought, had their destination as Ontario. From the recreational surveys Metropolitan Toronto provided from ten to seventy percent of all recreational travel in Ontario with ninety-eight percent of the travel to the M.T.R.C.A. areas from the City of Toronto. The major destinations of the Ontario recreationists were the Muskokas and Lake Simcoe regions, followed by travel to the United States and other Canadian Provinces.

The length of stay of recreationists in Ontario varied between 2.2 and ten days, depending on the activity. The accommodations of camping and commercial resorts accounted for the longest stays. Day use recreationists had

the largest number of party members, followed by camping families. Party size varied from a single person to an average of 4.48 members for long term camping, the majority being between two to four persons per recreation group. Day-use activities at most recreation areas in Ontario accounted for an average of sixty-eight percent of the total visitation in Ontario. The activity of camping was participated in by twenty-five to forty percent of the Ontario residents, with visitors from the United States using campgrounds from sixteen to forty-one percent of the time.

Camping as an activity is increasingly being used by recreationists who desire to travel cheaply and comfortably in Ontario. With the increased in the cost of travel over the next few years, more people will use campgrounds for inexpensive long-term vacations, a change from the tradi- weekend camping venture. But with increasing campground use comes overuse in the form of crowding that can influence the recreational experience and degrade user satisfaction by site deterioration. Moeller, and others, found that few campers related overuse to impact on natural resources. Yet, fifty percent of the campers interviewed felt a policy of limited use be imposed on camp and reservoir areas.[46] In fact, campground managers in Ontario have recognized the impact of overuse on recreation areas and have limited use to family camping in seven campgrounds in the Grand River Basin to modify camper behaviour and improve user satisfaction.[47] In the following chapter, changes in the travel patterns of campers to the Grand River Basin will be

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[46] G. H. Moeller, R. G. Larsen and D. A. Morrison, Opinions of Campers and Boaters at the Allegheny Reservoir, United States Department of Agriculture, Research Paper NE-307, Penna., 1974.

[47] "Seven Campgrounds Now Allowing Only Families," Globe and Mail, Toronto, July 26, 1975, p. 1.

considered in relation to the changing characteristics of length of stay, camper party members, distance and time in travel and the origin and destination of campground users. Recreational campground users have seen recreation areas as an infinite resource in space and time. But recreationists have fixed time and space requirements for recreational activities which cumulate during certain times of the year, decreasing the carrying and social capacity of the recreation areas.

CHAPTER 2

CAMPER TRAVEL PATTERNS IN THE GRAND RIVER BASIN: A PERSPECTIVE

Patterns of recreational travel in Southern Ontario have shown distinct differences in the distance travelled, the length of stay, the members of the camper parties and the places of origin for travellers to commercial resorts and provincial parks.[1] Unfortunately, there is no related information available on the travel patterns and characteristics of Regional Conservation Area campers for comparison with the studies of Ontario resorts and provincial parks. The only publication of this nature was released by the Metropolitan Toronto and Regional Conservation Authority for 1972.[2] The survey was for day use visitors since the twelve conservation areas do not offer overnight or camping facilities. But the demand for camping has increased over the years with the increase in population. The growth in recreationists, particularly the growth of recreational camping, has placed a new strain on the existing campground facilities in Ontario. As a result, a new importance has been placed on Regional Conservation Areas to service the expansion of the urban camper population. Once perceived as day-use areas by planners and campers, conservation authority park areas are increasingly being used for weekend and long-term or vacation

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[1]Ontario Department of Tourism and Information, Travel Research Branch, A Study of the Travel Habits of Ontario Households, June 15, 1966 to June 14, 1967. See also, Ministry of Natural Resources, Department of Parks, Ontario Provincial Parks Statistical Report 1973, Metropolitan Toronto and Regional Conservation Authority, Characteristics of Visitors to M.T.R.C.A. Conservation Areas, July-August 1972; Ontario Recreation Survey: Survey Documents Progress Report number 2, May-October, 1973.

[2]Metropolitan Toronto and Regional Conservation Authority, Characteristics of Visitors to M.T.R.C.A. Conservation Areas, July-August, 1972.

camping. The changes in the user patterns of campers to conservation areas may have a corresponding change on the travel patterns of campers visiting commercial resorts and Provincial Parks in Ontario.

2.1 Factors Affecting Recreational Travel Patterns

From preliminary observations of the camper travel trends in Southern Ontario, it is hypothesized that camper attendance at the G.R.C.A. park areas should increase significantly over the 1972 camper entries. The majority of the camper entries and the greatest increases in visitation to the four conservation areas should originate from the large population centres of Ontario. This is not to exclude the increase of campers from towns, villages and rural areas, but the large population centres, such as Toronto, Hamilton and London, should provide more impetus to travel and attend urban oriented park areas than rural residents.

This was found to be true of camper attendance at Provincial Parks where Thompson observed that the Volume of camper flows to the Provincial Parks varied with the size of the origin population.[3]

Changes in the population of the camper origins should produce a corresponding change in the attendance of the campers to the four conservation areas in the Grand River Basin. Population as a factor of camper attendance can be observed from the population changes of the fifty-four Counties of Ontario from 1966 to 1971 (Appendix A, Table 1). The tables revealed that the Counties located within short distances of the four conservation areas had large increases in their populations over the five-year period. These

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[3] B. Thompson, "Recreational Travel: A Review and Pilot Study."

population changes should reflect a similar attendance increase (or decrease) at the four conservation areas from these County areas since it was discovered that the majority of the 1972 camper attendance originated from these same Counties. Urban population growth was just as dramatic over the five-year period of 1966 to 1971. (Appendix A, Table 2). Similar to the County population increases urban growth should produce a greater impetus for the recreationist to attend the urban oriented park areas of the G.R.C.A. which are found within relatively easy access of the large population centres of Southern Ontario. In fact, the 1972 camper attendance record revealed that the majority of the camper attendance was provided by the Cities of Toronto, Hamilton and Kitchener and Waterloo.

The use of gross population figures to obtain changes in the recreational travel patterns of campers tend to hide other relevant factors that could produce an equal stimulant for travel to the G.R.C.A. park areas. In most forms of recreation, urbanites are represented disproportionately to rural resident participants.[4] But the recreational areas that are available to city residents and surrounding areas will be over-represented in urban participation.[5] Census information revealed that 80.4 percent of the population of Ontario in 1966 was urban, and 19.6 percent were of rural origin. In 1971, the urban resident population increased to 82.3 percent and the rural composition decreased to seventeen point seven percent of the population.[6] Since the four

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[4]D. C. Bogue, Metropolitan Growth and the Conversion of Land to Non-Agricultural Uses (Chicago: University of Chicago Press, 1956).

[5]J. C. Hendee, "Rural-Urban Differences in Outdoor Recreational Participation."

[6]Census of Canada, 1971. Urban and Rural Distributions in Canada, Catalogue 92-709, Volume 1, Part 1, Bulletin 1.1 (Ottawa: Queen's Printer, 1975).

conservation park areas are located close to urban populations and the 1972 camper sample revealed that the majority of the campers originated from urban areas, the difference between urban and rural area campers should not affect the changes in camper attendance significantly from an all urban resident attendance. Thus, the urban resident growth in Ontario, coupled with the population increases in counties surrounding the large urban centres and the desire for urbanites to achieve the goal of outdoor recreation in a natural setting,[7] should increase the visitation to Regional Conservation areas in 1974 appreciably over the 1972 camper attendance.

One constraint to the travel for recreational camping is the amount of disposable income for recreational purposes.[8] As income rises, participation in leisure activities, particularly camping, also rises. This is true of Ontario where the average family incomes have risen significantly since 1965.[9] (Appendix A, Table 3). Ontario income levels also increased at a faster rate than the Canadian average family incomes, accounting for 8.9 percent more in dollars on the average than the Canadian average in 1973. Although this study does not look directly at income levels, nor the relation of occupational status to the use of leisure time and activities, the increases in family incomes should increase the willingness of the recreationist to participate in the activity of recreational camping to a greater extent in 1974 than in 1972 since the number of recreational

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[7] R. Burdge and J. C. Hendee, "The Demand Survey Dilemma," Forest Service, U.S.D.A., 2:6 (1972).

[8] B. Rodgers, "Leisure and Recreation" Urban Studies, 6 (1969).

[9] Information Canada, Income Distribution By Size in Canada, 1973, Catalogue 13-207 Annual (Ottawa, July 1975).

activities participated in varies with the individual's income[10] and activity preferences.[11]

Directly related to the income and occupational levels of the recreationists is the amount of leisure time available for recreational pursuits. Although the amount of disposable leisure time devoted to recreation varies upon individual preferences and desires, a national time budget was estimated by Holman in 1961 (Appendix A, Table 4). The time budget demonstrates the growth of leisure time, particularly for daily, weekend and vacation periods. Although the budget is an estimate, it shows that one-third of the total time is available for leisure pursuits. In a similar study by Clawson, travel to municipal and County parks accounted for the largest amounts of leisure time spent for recreational purposes.[12] (Appendix A, Table 5). As can be seen, the available leisure time spent for recreational purposes should directly affect the G.R.C.A. park areas since the park areas could be considered as county or regional park areas. Very little information is available on time budgets and their relation to recreational pursuits and activities.[13] Although new surveys will have to be conducted, this study helps to answer some of the questions

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[10]D. Sessoms, "An Analysis of Selected Variables Affecting Outdoor Recreation Patterns," Social Forces, 42:1 (1963).

[11]A. C. Clarke, "The Use of Leisure and its Relation to Levels of Occupational Prestige," American Sociological Review, 21 (1956). See also, Lentnek, Van Doren and Trails, "Spatial Behavior in Recreational Boating," Journal of Leisure Research, 1:2 (1969); L. Russman, "Class, Leisure and Social Participation," American Sociological Review, 1954.

[12]M. Clawson, "How Much Leisure Now and in the Future," in Land and Leisure, edited by D. Fisher, J. Lewis and G. Priddle (Chicago: Maaroufe Press, 1974).

[13]Kates, Peat, Marwick and Company, Tourism and Recreation in Ontario: Concepts of a Systems Model Framework.

about the use of leisure time by an examination of the time spent by recreationists at the conservation areas in relation to the distance travelled by campers to the regional conservation park areas.

One of the major factors that influence the travel for recreation is distance to the site. Distance is usually conceived as having a negative effect on the desire to travel for recreational purposes. Boggs and McDaniel found that a distance of four hundred miles became the critical distance, where cost appeared to equal distance travelled.[14] Lentnik, and others, found a direct relationship between the length of trip taken and the amount of time which boaters spend at the site.[15] Beaman[16] and Wolfe[17] were concerned with the inertia of recreational travel after a certain limiting distance was reached. They found that beyond some critical distance (a planned destination) travel further becomes less desirable, and in a sense, the extra mile offers more resistance than the last mile travelled. In essence, this should be true for recreationists who consume urban oriented activities at recreational areas located near large urban populations. Although in 1972, regional conservation area campers travelled further than four hundred miles for recreational camping, the majority of the campers were observed to travel a distance less than forty-five miles.

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[14] G. D. Boggs and L. McDaniel, Characteristics of Commercial Resorts and Recreational Travel Patterns in Southern Ontario, p. 49.

[15] B. Lentnik, C. S. Van Doren and J. R. Trails, "Spatial Behavior in Recreational Boating."

[16] J. Beaman, "Distance and the Reaction to Distance as a Function of Distance," Journal of Leisure Research, 6, 1974.

[17] R. I. Wolfe, "The Inertia Model," Journal of Leisure Research, 4:1 (1972).

Travel further may have been stimulated by different recreational travel motivations other than camping such as visiting friends or relatives or multiple destination trips in Ontario.

The factor of distance cannot be separated from the travel time, the cost of travel, the character of the recreation experience, the activity sought nor the amount of leisure time since all play an important role in the travel decision. O'Rourke compiled a list of distances related to selected activities from numerous studies of recreational travel (Appendix A, Table 6). The table shows that distances vary with the activity and within the activity grouping. This demonstrates that distance can place limitations on travel, forcing recreationists to select and arrange his activities and site preferences according to the total leisure time available, of which distance may account for the majority of the time in the total recreation experience. The inference that can be drawn from the numerous studies of recreational travel is that travel distance and cost is accepted by recreationists who desire to participate in local recreation activities but that the additional time and cost to travel further distances is considered as the major resistance to recreational travel. This has certain ramifications on the recreational travel patterns of campers. Time and cost adds friction to the travel distance. But since this friction is absorbed in small trips, the number of recreational campers should increase because of the short distances required to travel to regional conservation areas for camping purposes.

Before the examination of camper travel patterns in the Grand River Basin some conjectures can be drawn from the discussion of the factors of recreational travel on the nature of the changing number of recreational campers. First, as the population of Ontario increases, the propensity to travel for recreational purposes increases. More

specifically, the increase or decrease in the population of an urban centre will produce a proportional change in the number of camper visitations to the Grand River Basin. Since the majority of the travel to regional conservation areas is by automobile (sixty-one to ninety-five percent of Ontario recreationists use this mode of travel)[18] the accessibility of the Grand River Conservation areas to the growing urban populations will increase. Second, the change in the growth of the urban populations in Ontario and the subsequent decrease of the percentage of rural residents, visitation to recreational areas will increase, being dominated by urban oriented campers. Inclusive to urban growth is the increase in the amount of family incomes. As family incomes become larger there is more money for leisure pursuits of which recreational purposes is a major part. Also, as leisure time increases with a decrease in the length of the workweek more people can enjoy leisure time and participate in outdoor recreation activities. Thus, the larger the population origin, the greater will be the generation of recreational campers to the Grand River Basin. Third, and just as important, is the travel distance to a recreational area. Simply, as the travel distance decreases the number of visitations to the recreation areas will increase. Distance and time in travel play a major role in recreational camper travel by limiting the amount of travel from all sizes of population centres. Although travel distance varies with the activity, recreational campers travelling to local regional conservation areas will not originate, to any great degree, from long distances since the attraction of conservation-areas is not as high as Provincial or National Parks.[19]

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[18] B. O'Rourke, "Travel in the Recreational Experience —A literature Review," p. 141.

[19] Department of Industry and Tourism, Travel Research Branch, The Canadian Tourism Facts Book, 1972.

An indication of the change in camper visitation to the four conservation areas can be observed from the increase in the number of camp units (Table 1). Although there have been fluctuations in attendance since 1960, there has been a significant increase in the number of camp units from 1972 to 1974. Brant Conservation area experienced the largest increase over the two years, followed by Elora, Pinehurst and Byng Conservation areas. Overall there has been a forty-five percent increase in camper units to the Grand River Basin from 1972 to 1974. This was found to be an enormous increase when compared to Provincial Park camper increases that totalled only seven percent between 1972 and 1973 (doubled for 1974, it would amount to fourteen percent change) (Appendix A, Table 7).

Although the tables show increases in the number of camper units, the figures do not list the number of camper entries or the camper origins. Thus, accurate projections of trends cannot be fully realized without observance of the camper population characteristics.

In summary, the number of campers travelling for recreational camping purposes to the Grand River Basin will vary with the size of the originating population, the number of campsites offered and some function of the distance required to reach the conservation area destination. In essence, the statement has alluded to the social gravity concept where the interaction is directly proportional to the product of the two populations and inversely related to a function of the distance between them. A further discussion of the gravity concept will follow this section, but it is sufficient to state that the usefulness of this concept in recreational travel research is evidenced by the large numbers of recreational and migrational studies that have used it to explain population migrational patterns.

Table 1

GRAND RIVER CONSERVATION AREA ATTENDANCE, 1960 TO 1974

Year	Brant		Byng		Elora		Pinehurst	
	Day Use	Campers Units	Day Use	Campers Units	Day Use	Campers Units	Day Use	Campers Units
1960			9500	--	75000	2300	105000	3000
1961			14500	300	85000	3000	110000	3300
1962			20000	600	104000	4500	101000	3200
1963			17500	1300	98000	5900	85000	2700
1964			16000	1500	97000	7100	95000	2200
1965			20000	2200	103000	7900	6100	2400
1966			28000	3800	95000	7450	72000	3200
1967			45000	5250	85000	7750	74000	3500
1968			61000	6400	97000	9350	85000	5500
1969			56000	6200	105000	11800	100000	7800
1970			65500	8000	114000	14800	103000	9500
1971	15000	11000	73000	9950	103000	16300	83000	9600
1972	53500	5800	72000	11600	84500	16150	56500	9800
1973	81714	12273	71603	11515	97001	12050	66455	9575
1974	93670	14816	66361	11936	103677	18193	60573	10791
Percent Change 1972-1974								
	75.0%	155.4%	-8.4%	2.8%	22.6%	12.6%	7.2%	10.1%

Source: Grand River Conservation Authority, "1974 Annual Report."

2.2 Changes in the Travel Patterns of Campers to the Grand River Basin

The change in the camper attendance at the four conservation areas should produce a change in the travel patterns of campers that visited the conservation areas between 1972 and 1974. One of the major changes in the user patterns will be the Grand River Conservation Authority camper trade area or hinterland. As camper travel increases, along with the accessibility of the conservation areas to campers, campers should increase their travel distance from distant city origins. This will bring an increase in the number of camper visitations originating from outside of the drainage basin in greater percentage attendance than from inside the basin.

One method of defining a trade area is to conduct a survey on the frequency of visitation to recreational park areas. From the information maps can be prepared and inferences drawn concerning the nature and scope of the market area. From studies using this technique the results, reported by Huff,[20] have shown that the patronage of consumers varies with the distance from a destination area; varies with the variety of merchandise or facilities offered at the area; and, the attractivity of a destination area is influenced by the pull of competing intervening areas. These findings have been generalized into testable forms to monitor consumer shopping movements between centres. W. J. Reilly, in 1929, developed a method to observe consumer behaviour. Reilly hypothesized the Law of Retail Gravitation which formulated that a city would attract trade from the hinterland in direct proportion to the population and inversely to the

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[20] D. L. Huff, "Defining and Estimating a Trading Area," Journal of Marketing, 28 (1964), pp. 34-38.

square of the distance from the city.[21] The hypothesis was formulated:

$$\frac{Ba}{Bb} = \left(\frac{Pa}{Pb}\right)\left(\frac{Db}{Da}\right)^2$$

where: Ba = the proportion of the retail business from an intermediate town attracted by City A;
Bb = the proportion of the retail business from an intermediate town attracted by City B;
Pa = population of City A;
Pb = population of City B;
Da = the distance from the intermediate town to City A; and
Db = the distance from the intermediate town to City B.

A modification to the law of retail gravitation formula was made by Converse in 1949.[22] The modification made it possible to calculate the approximate point between two cities where the trading influence was equal. Thus the retail trade area of a city could be calculated by connecting the breaking points of the trade areas between it and the other cities. The formula modification by Converse took the form of:

$$Db = 1 + \frac{Dab}{\sqrt{\frac{Pa}{Pb}}}$$

where: Db = the breaking point between City A and City B in miles from B;
Dab = the distance separating City A from City B;
Pa = the population of City A; and
Pb = the population of City B.

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[21] W. J. Reilly, The Law of Retail Gravitation (New York, W. J. Reilly, 1931).

[22] P. D. Converse, "New Laws of Retail Gravitation," Journal of Marketing, 14 (1949), pp. 379-384.

In using the formula, the boundaries of the city's trade area are determined. With a slight modification of the population masses, Converse's breaking point formula can be used for determining the trade areas of recreational parks and conservation areas. Assuming that recreational camper travel is unidirectional,[23] that is, one body generates the users and the other attracts, the concept of delineating conservation area trade boundaries can be utilized by converting the B centre population to camper unit capacity for each of the four conservation areas. Referring to Table 1, the total number of 1972 camper units for Brant Conservation Area was 5800 units; Byng Conservation Area, 11,600 units; Elora Conservation, 16,150 units; and Pinehurst Conservation Area, 9,800 camper units. These values were used in the formula with the 1971 populations of the 138 places of origin that generated campers to the four conservation areas in 1972. The formula produced breaking points in actual distance miles from each conservation area. These values were than mapped to discern the approximate differences in hinterland areas of the four conservation areas (Figure 2).

The three market areas for Brant, Byng and Elora Conservation areas did not appreciably overlap with the three areas serving relativly distinct camper hinterlands. When the Pinehurst Conservation camper hinterland was mapped, it was found to service the same market area as Brant Conservation Area, with the exception of a radial area of approximately five miles from the Brant Conservation Area. The figure also reveals the relative isolation of Byng Conservation Area, serving the southernmost camper market of Southern Ontario. Similarly, Elora Conservation Area

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[23] R. I. Wolfe, "Discussion of Vacation Homes, Environmental Preferences and Spatial Behavior," Journal of Leisure Research, 2 (1970), pp. 85-86.

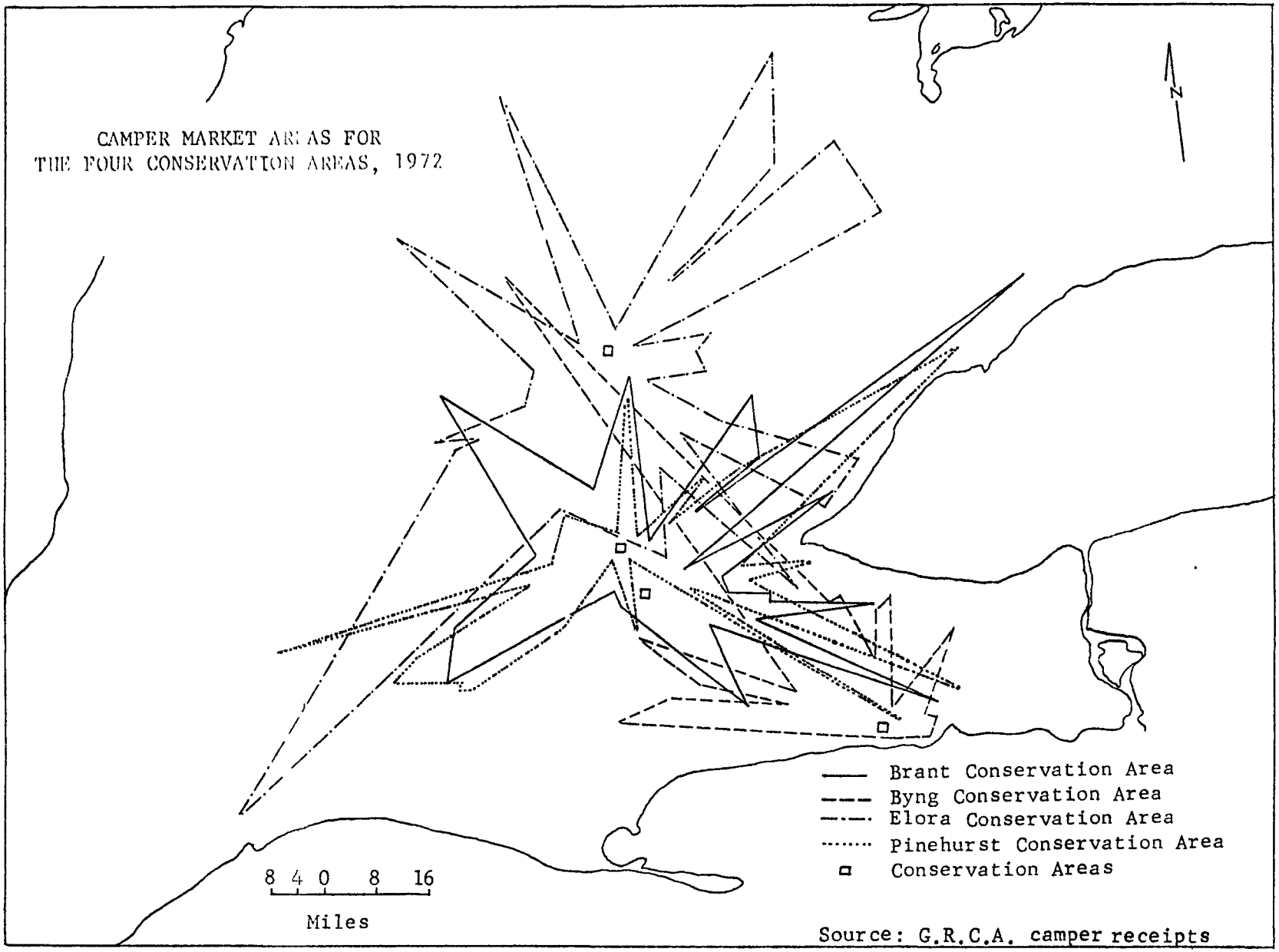
CAMPER MARKET AREAS FOR
THE FOUR CONSERVATION AREAS, 1972
N
Brant Conservation Area
Byng Conservation Area
Elora Conservation Area
Pinehurst Conservation Area
Conservation Areas
8 4 0 8 16
Miles
Source: G.R.C.A. camper receipts

Figure 2

services the northern portion of the Grand River Basin. The market areas also show the influence of the small camper origins over the larger population centres of Ontario, particularly the Cities of Toronto and Hamilton. This displays the diversity of the metropolitan campers, having access to numerous competing recreational areas. The camper hinterlands show a directional bias, particularly in the case of Brant and Pinehurst Conservation areas being oriented to the MacDonald-Cartier Freeway (Highway 401). The Elora Conservation Area was observed to service a camper population that did not maintain a directional bias.

The comparison of camper market areas demonstrates the overlapping and loss of camper participation between Brant and Pinehurst Conservation areas. Since Brant has a larger trade area than Pinehurst, but does not have Pinehurst's camper unit capacity, one of the areas will experience a loss of campers to the other. Thompson suggested that if two vacational park areas were situated close to each other, one will dominate in attracting recreational visitation.[24] This can be seen in Figure Two where the Brant market area considerably overlaps the Pinehurst camper hinterland and has less of a directional bias in pattern. Thus Brant should attract more campers than Pinehurst due to the accessibility of Brant to the general camper population in the larger trade area.

The market area analysis, based on Converse's method has certain limitations that decrease its usefulness in portraying camper hinterlands. The breaking point formula does not provide for the calculation of graduated estimates between the points of camper origin and destination. Thus it is a subjective method of determining total demand for the conservation areas. In using the trade area formula the

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[24] B. Thompson, "Recreational Travel: A Review and Pilot Study."

overlapping of boundaries weakens the formula since it is supposed to show areas of equal competitive influence. The mapping of the market areas showed the influences that each conservation area had over the others, yet the formula was not able to facilitate the use of competing areas. Also the use of the breaking point concept should not be interpreted for all types of market trips since the purpose of the trip will motivate the recreationist to travel different distances to achieve that purpose.[25] With these constraints in mind, the camper trade area analysis gives a relatively accurate description of camper travel patterns to the Grand River Basin. The concern here is not to assess the total demand of each area but to give an indication of the differences that exist between the camper travel patterns for each conservation area and between the two sample years.

With the increases in the Ontario population, family income, urban versus rural population composition and the increased leisure time, the number of recreational campers should increase over the two sample years. Referring to Table 1, camper unit attendance to the four conservation areas has increased from 1972 to 1974. The increase in the number of campers should also increase the hinterlands of each conservation area. In the case of conservation area dominance between Brant and Pinehurst Conservation areas, Brant Conservation Area should increase its market area to capture even more of Pinehurst's camper visitation since Brant increased its camper units by 155 percent over the two year period. This should also reflect a similar trend of camper increase to Brant Conservation Area. Overall camper participation in the Grand River Basin should increase from the large population centres relative to the small rural centres. This will significantly extend the hinterland areas

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[25]D. L. Huff, "Defining and Estimating a Trade Area," p. 164.

of the conservation areas to reflect the adjustment of the campers over the two years and the changes in the urban areas of Southern Ontario.

As recreational areas in Ontario become more available to a camping population, campers may plan to stay longer at recreation areas. This should be true of recreational campers travelling long distances to attend the conservation areas in the Grand River Basin. Clawson and Kretsch provided some typical one-way distances for different types of outdoor recreation activities.

DISTANCES TRAVELLED FOR OUTDOOR RECREATION
BY SELECTED ACTIVITIES

Activity	Distance Travelled
After school and during the day	Less than 1 mile
After work for special opportunities	up to 5 miles
One-day outing	20 to 50 miles
Weekend outing	100 to 150 miles
Short vacation	400 to 600 miles
Long vacation	1000 miles or more

Source: M. Clawson and J. Knetsch, Economics of Outdoor Recreation, pp. 98, 99.

These distances, coupled with O'Rourke's findings, show that day users generally prefer to travel short distances to local recreation areas unless specific activities are desired. Weekend visitors and campers generally travel longer distances for recreational activities, while vacationers travel the farthest.

In the case of recreational travel to the four conservation areas, day users and overnight campers will also originate from local populations, but there will be an increase in the number of campers from distant origins, while

the majority of long-term and vacation campers will travel from origins located distant from the conservation areas. In other words, campers travelling to Brant Conservation Area from Brantford will participate in day use activities with few campers staying longer than two nights in the form of weekend camping. The campers travelling from Toronto to Brant Conservation Area, approximately sixty-five miles distance, will stay, on the majority, longer than Brantford campers, while Ottawa campers will camp longer than Toronto campers. Simply, the length of stay at the conservation area varies directly with the distance travelled. This will change with the advent of campers staying at multiple destinations in the form of alternative campground areas but the general rule should apply to the Grand River Basin campers. Also the number of campers that stay for long visits to the four areas should increase over the two sample years as the areas become more accessible to Ontario campers.

The increases in camper travel to the Grand River Basin is a function of the increase in population, the availability of camping facilities at the recreational sites and the distance separating the camper population origin and the desired destination. This statement was reflected in the conservation market area analysis revealing the trade off between the population origin and the conservation area destination. The key factors in the trade area study were population, camper units or capacity, and the distance between the origin and destination. Although the breaking point formula was a modification of Reilly's work, it was essentially a gravity model depicting the potential of camper attendance to the four areas. The social gravity concept is useful in estimating the number of campers that would attend the conservation areas from a variety of population centres in Ontario. While the concern so far has been with the factors that can increase recreational camper travel, the gravity model employs these factors to help explain

recreational travel. Thus, the variables that have increased the number of campers that visit the conservation areas over the two years can be validated by the use of the gravity model. The gravity model will produce indices of potential camper interaction which when compared to the actual camper attendance to the four areas, will provide a measure of how much the factors of population, distance and campground capacity explain recreational camper travel. This method was used by Thompson to estimate attendance to ten Provincial Parks in Southern Ontario. The results showed that there was an inverse relationship between city size and camping propensity, although in all areas camper attendance was underestimated.[26] In the use of the gravity model, the increase in the camper units over the two years will be reflected in an increase in the gravity model interaction indices. Thus one can infer that the camper increases will correspond to the actual camper unit increase for the four areas such that Brant campers will increase by 155 percent, Byng campers will increase by 2.8 percent, Elora campers by 12.6 percent, and Pinehurst campers by ten percent in number over the two year sample.

According to the gravity model, the major increases will come from the large population centres in comparison to small rural areas. If the large centres are located close to the conservation areas, the attendance will be proportionately greater than an equal size centre located at a farther distance. Thus, the number of campers travelling to the four conservation areas in the Grand River Basin is directly proportional to the product of the origin population and destination area capacity and inversely related to the square of the distance separating the origin and destination.

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[26] B. Thompson, "Recreational Travel: A Review and Pilot Study," pp. 537-538.

2.3 Summary and Conclusions

In the travel for recreational camping in Southern Ontario, increases in camper visitation are related to the factors of population size, the changing population characteristics of urban and rural residents, the amount of leisure time and disposable family income, and the distance in travel. The most persistent change in society and its impact on recreational camper travel has been the steady growth of population. From 1966 to 1971, it was not uncommon to observe increases of at least ten percent in the urban populations. The population composition is also changing with the majority of the Ontario population being urban residents. Urban resident growth has almost equalled the number of rural residents in Ontario in 1971. Along with the increase in urban populations is an increase in recreational participation at Regional Conservation areas which has increased by an average of forty-five percent from 1972 to 1974. With growth, the time allotted to leisure pursuits has increased. Vacation periods have expanded in all occupations, with specific increases in the length of vacation time. The amount of disposable family income has also increased over the years. With the increase in income and population, mobility has increased, allowing recreationists the use of areas that were formerly out of reach.

Increases in recreational travel will have a great effect on recreational participation in the Grand River Basin. With the increase in travel, the conservation area hinterlands will experience a growth to accommodate campers from large population centres located outside of the Grand River Basin. In conjunction with the above is the length of stay of campers with the longest stays being accounted for by campers from long distances. Those campers will originate from areas outside of the Grand River Basin, with campers of shorter stays coming from local populations.

How the changes in the factors of recreational travel will influence camper visitation to the four conservation areas is evident from the previous discussion. The major constraints to recreational travel are distance to the site, campground capacity and alternative camping areas. Increasing distance to the conservation areas should decrease campground visitation. Along with distance, campground capacity can limit the number of visitations with the overflow of campers travelling to alternative camping areas. Also a factor in limiting camper travel to the Grand River Basin and shortening the length of stay of visitors at the areas are alternative camping areas located between the origin and destination. Although the analysis of intervening recreational opportunities is not in the scope of the study, the deterrent effect that the areas have on the conservation area attendance increases as distance increases to the destination areas. Thus, the actual changes in camper attendance and the influence that the factors of recreational travel have on camper visitation to the four conservation areas in the Grand River Basin for the two years of 1972 and 1974 will be examined in the following chapter.

CHAPTER 3

AN ORIGIN - DESTINATION ANALYSIS OF CAMPER TRAVEL TO SELECTED GRAND RIVER BASIN AREAS FOR 1972 AND 1974

Since the formation of the Grand River Drainage Basin in 1954, recreational camping has experienced a rapid growth, along with the formation of seven conservation areas offering camping facilities in the Grand River Basin. Besides the four conservation areas of Brant, Byng, Elora and Pinehurst, three areas were recently developed to meet the expansion of the camper population. The areas of Laurel Creek, Rockwood and Grand Valley totalled only seven percent of all available campsites in the Grand River Basin, and hence, the analysis of camper travel has been concentrated on the four major conservation areas.

3.1 An Analysis of Camper Travel Patterns for 1972

The analysis of camper travel for 1972 revealed that 138 population centres in Ontario provided campers that travelled to the four conservation areas (Figure 3) (Appendix B, Table 1). Excluded from the listings of camper origins were campers that travelled from the United States and other Canadian Provinces. Many of the entrance receipts for out of province campers listed a place of origin as a state or province. These categories were totalled under the headings of 'Outside Canada' and 'Out of Province' for United States campers and Canadian campers respectively.

3.1.1 An Overview of the Four Conservation Areas, 1972

The analysis of the four conservation areas has been divided into sections as listed on Table 3. The table is divided into three sections listing: the places of origin that generated over one percent each in camper attendance; a total category for the places of origin that provided less than one percent of all the camper entries; and, two divisions

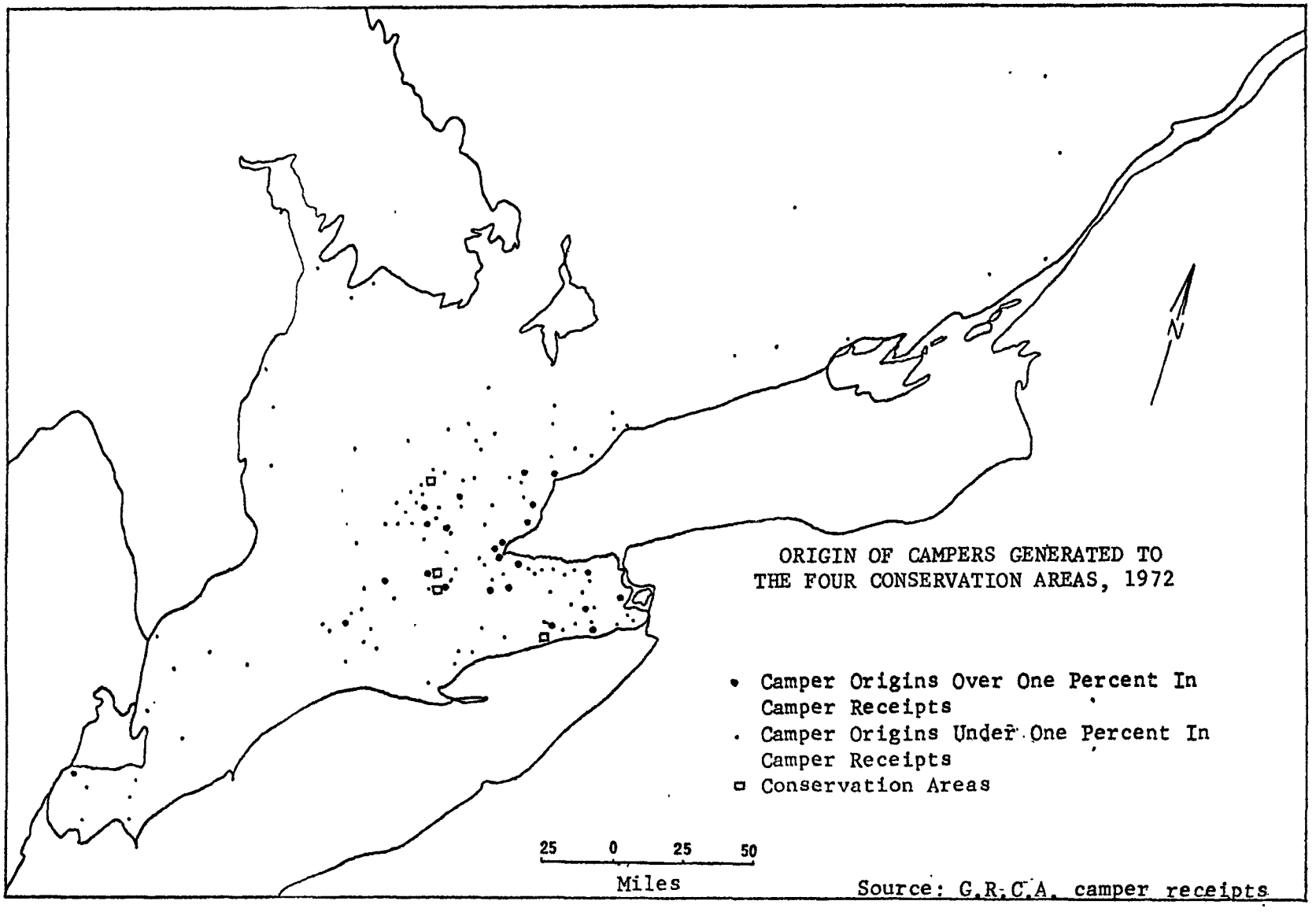

ORIGIN OF CAMPERS GENERATED TO
THE FOUR CONSERVATION AREAS, 1972
• Camper Origins Over One Percent In Camper Receipts
. Camper Origins Under One Percent In Camper Receipts
▫ Conservation Areas
N
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 3

for United States and other Canadian Province campers. The three divisions were chosen for simplicity since the origins that provided over one percent in camper entries generally supplied over seventy percent of the total visitation to the four conservation areas for 1972 and 1974. The total camper information collected from the camper receipts, which included the centres that furnished less than one percent of the camper visitation, were listed in Appendix C on Tables 1 to 6.

The total sample of 140 origins provided a total of 2085 camper receipts. The campers stayed for 4157 days, brought 8791 members in their camper parties, and spent $10,650.00 for camping privileges. The twenty-one cities that generated over one percent each of the camper visitation accounted for seventy-three percent of all camper entrances to the four areas. The City of Hamilton, with seventeen percent of all visitation, provided 358 camper receipts. Hamilton campers stayed a total of 769 days, paid $1865.00 in entrance fees, and brought 1504 camper party members. Hamilton was followed in visitation by Kitchener-Waterloo, Toronto and Brantford, with twelve, seven and six percent of all camper visitation to the four areas respectively. These four centres accounted for forty-three percent of all camper receipts, forty-three percent of the total days stayed, thirty-nine percent of the total number of camper party members, and forty-one percent of the fees paid for the privilege of camping.

In contrast to the twenty-one cities that furnished over one percent in camper entries were the 117 origins in Ontario that supplied less than one percent each in camper entries. The centres accounted for twenty percent of the visitation to the four areas, which provided a total of 430 camper entries, 963 total days stayed and 2203 party members. When compared to the numbers of Hamilton campers, the 117 centres only provided three percent more in visitation and

Table 3

PLACES OF ORIGIN FOR TOTAL CONSERVATION AREAS, 1972

Cities	Number of Entries	Total Days Stayed	Fees Paid ($)	Number in Party	% of Total Campers
Toronto	147	257	691.50	133	7.05
Hamilton	358	769	1865.50	1504	17.07
Kitchener-Waterloo	257	480	1194.50	893	12.33
Galt	60	107	228.00	244	2.88
Welland	76	159	363.00	342	3.65
Oakville	23	47	127.00	76	1.10
Dunnville	55	118	233.00	249	2.64
Burlington	75	132	327.00	367	3.60
Stoney Creek	32	55	147.00	131	1.53
Dundas	22	42	118.00	95	1.06
St. Catherines	46	84	221.50	209	2.21
Paris	23	69	146.50	92	1.10
Brantford	140	284	661.49	529	6.71
Caledonia	23	51	119.00	97	1.10
London	50	86	225.00	165	2.40
Mississauga	30	56	139.45	102	1.44
Port Colbourne	29	68	184.50	136	1.36
Niagara Falls	30	55	165.00	112	1.44
Windsor	21	30	86.00	88	1.01
Woodstock	35	71	204.00	152	1.68
Guelph	51	96	234.00	165	2.45
Total (21)	1532	3020	7447.60	6116	73.46
Cities less than 1.0% (117)	430	963	2681.15	2203	20.64
Outside Canada	101	143	430.00	342	4.94
Out of Province	22	31	91.50	80	1.06
Total Sample (140)	2085	4157	10650.25	8791	100.00

Source: Grand River Conservation Authority camper entrance receipts.

For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier Univeristy, Department of Geography, 1974.

only eight percent more camper entries than Kitchener-Waterloo campers.

The campers that originated from the United States were found to be significant in number when compared to the 117 centres that provided less than one percent in camper entries. The United States produced five percent of all visitations to the four areas. Out of Province campers only provided one percent of the total camper receipts. United States campers were found to rank fifth out of the 140 places of origin, while Out of Province visitors ranked twenty-second. The low number of campers from the other Provinces may be accounted for by the greater distance that they had to travel in comparison to the higher accessibility of the American campers.

For comparison purposes, the camper information was reduced to average values (Table 4). The table lists the average days stayed, the fees paid and camper party members for the total sample. The average days stayed for the 140 origins was 1.91 days, while the average camper party was found to consist of 3.99 persons that spent an average of $4.86 for the privilege of camping. The twenty-one cities that supplied over one percent each in camper entries stayed an almost equivalent number of days. The average camper party size was equal to the total sample, while the average fees paid for camping was less, at $4.72 per camper entry.

Of the twenty-one cities, Paris campers stayed the greatest average days, followed by Port Colbourne and Caledonia campers. Paris and Port Colbourne had the highest average fees paid, followed by campers from Woodstock and Oakville. Of all the cities, Burlington had campers that brought the largest number of camper party members on the average, followed by Port Colbourne, St. Catherines and Dunnville campers.

The American campers stayed for a shorter period of time, brought 5.8 camper party members and paid $4.26 for

TABLE 4

AVERAGE VALUES FOR THE

PLACES OF ORIGIN FOR TOTAL CONSERVATION AREAS, 1972

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Number
Toronto	1.75	4.70	3.63
Hamilton	2.15	5.21	4.20
Kitchener-Waterloo	1.87	4.65	3.47
Galt	1.78	3.80	4.07
Welland	2.09	4.78	4.50
Oakville	2.04	5.54	3.30
Dunnville	2.15	4.24	4.53
Burlington	1.76	4.36	4.89
Stoney Creek	1.72	4.59	4.09
Dundas	1.91	5.36	4.32
St. Catherines	1.83	4.82	4.54
Paris	3.00	6.37	4.00
Brantford	2.03	4.72	3.78
Caledonia	2.22	5.17	4.22
London	1.72	4.50	3.30
Mississauga	1.87	4.65	3.40
Port Colbourne	2.34	6.36	4.69
Niagara Falls	1.83	5.50	3.73
Windsor	1.43	4.10	4.19
Woodstock	2.03	5.85	4.34
Guelph	1.88	4.59	3.06
Total (21)	1.88	4.72	4.01
Cities	2.2	6.07	5.1
Out of Canada	1.42	4.26	3.88
Out of Province	1.41	4.16	3.64
Total Sample (140)	1.91	4.86	3.99

Source: Grand River Conservation Authority camper entrance receipts.

For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

camping purposes on the average. The Out of Province campers supplied an equivalent average days of stayed as the United States' visitors but brought less persons in their camper parties and paid less entrance fees on the average.

Since weekend and vacation or long-term camping is growing in frequency over the years, the length of stay by days for the four areas becomes of interest. The Grand River Conservation Authority allows campers to stay a total of fourteen days in length in contrast to twenty-eight days stayed in Ontario Provincial Parks. The analysis of the length of stay revealed that only a small number of campers stayed the full fourteen days. Overnight or one-day camping accounted for forty-seven percent of all the days stayed, or a total of 981 days. The campers that stayed for two days provided thirty-three percent of the stays, or 704 days in total. Campers that stayed for three days had a percentage of twelve for a total of 250 days stayed, while the campers that stayed from four to fourteen days only totalled six point five percent, or 141 days. The figures show that the conservation areas are still day use and overnight camping oriented in 1972, with a tendency for longer stays of up to three days in length.

The frequency of camper arrival by date to the four conservation areas reinforces the short length of stay (Figure 4). The phenomena of weekend peaking is evident from the figure of visitation, with camper entries beginning on Fridays, reaching a summit on Saturdays and decreasing in attendance on Sundays as the weekend draws to an end and the four areas become full. On Mondays, camper entries decrease significantly. The three Statutory holiday weekends of May twenty-fourth, July first and Labour Day (September first) produced the highest camping frequencies. The Labour Day weekend accounted for the greatest weekend peak, with sixty-seven campers entering on Saturday. By Sunday the frequency of camper entries decreased to fifty-four and by

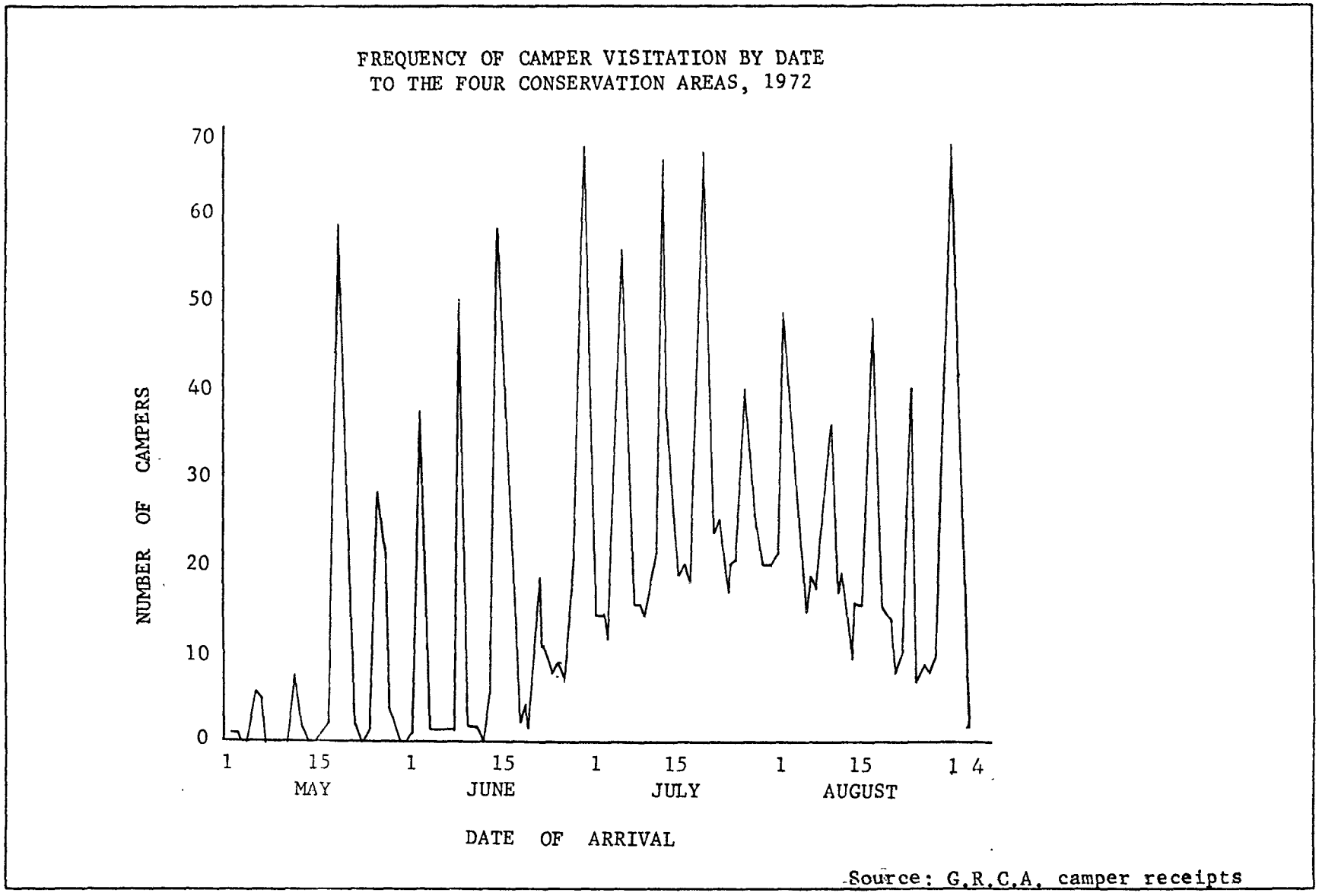

FREQUENCY OF CAMPER VISITATION BY DATE
TO THE FOUR CONSERVATION AREAS, 1972
NUMBER OF CAMPERS
70
60
50
40
30
20
10
0
1
15
1
15
1
15
1
15
1 4
MAY
JUNE
JULY
AUGUST
DATE OF ARRIVAL
Source: G.R.C.A. camper receipts

Figure 4

Monday the total entries decreased further to twenty-one camper visits. The other holiday weekends experienced a similar peaking occurrence. The period between July fifteenth and August twenty-first showed the incidence of weekday participation in camping since this was usually the period for vacation travel by Southern Ontario residents.

The analysis of camper entrance receipts revealed that sixty-one percent of the entries to the four areas originated from centres outside of the Grand River Basin (Table 5). The campers that originated from inside the basin only accounted for thirty-three percent of the total visitation. The figure demonstrated that the campers from outside the basin accounted for twice the number of camper receipts, fees paid, days stayed and number in the camper party. The figure not only shows the difference between basin and other Ontario residents, but that the campers from outside the basin travelled further in distance to camp than basin residents.

In essence, the camper information showed the predominance of urban oriented campers that originated from the larger population centres of Ontario. Although the length of stay of the conservation area campers was similar to the length of stay for Provincial Park campers and the St. Lawrence Park Commission Area campers, the party size of the conservation area campers was much larger on the average than the preceding two park area campers. The implication is that the conservation park areas being located close to the large population centres of Ontario have allowed campers to include more members in their camper parties than other recreation area campers. It can also be inferred that the conservation areas were still overnight and weekend camping oriented since the majority of the camper entries were recorded on weekends with campers staying generally from one to two nights. If there were a change in the composition of the camper population or a change in, say,

TABLE 5

TOTAL CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR THE FOUR CONSERVATION AREAS, 1972

	Inside the Basin				Outside the Basin			
	Straight Line Mileage				Straight Line Mileage			
	45<	46-90	90>	Total	45<	46-90	90>	Total
Length of Stay	1346	38	0	1374	1863	433	120	2416
Entrance Fees ($)	3127.50	77.00	0.00	3204.50	4892.10	1083.00	311.00	6286.10
Number in the Camper Party	2532	66	0	2598	3973	919	323	5165
Percentage of Camper Entries (%)	32.69	0.78	0.00	33.47	43.18	14.75	3.58	61.51

Source: Grand River Conservation Authority camper entrance receipts.

For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

the amount of leisure time available for recreational camping, the impact of the increased number of campers on the four conservation areas would push the weekend camping consumption to capacity.

Although the camper information for the four areas provides valuable information, the figures can be misleading in the percentage of camper entries. For example, the Cities of Brantford, Elora and Dunnville, located adjacent to Brant, Elora and Byng Conservation areas respectively, should have higher entrance receipts than shown in Table 3. The analysis of the four individual areas should show the significance of these differences in the percentage of camper visitations.

3.1.2 Brant Conservation Area, 1972

The analysis of Brant Conservation Area showed that campers originated from forty-eight centres in Southern Ontario (Figure 5, Appendix B, Table 2). Of the forty-eight centres, thirteen cities provided camper entries of over one percent each in number (Table 6). The thirteen centres accounted for seventy-two percent of all camper visitation to the area. Overall the campers stayed a total of 345 days, brought 692 party members and paid entrance fees of $869.00 for camping purposes. The City of Brantford, located adjacent to the conservation area, furnished thirty-one percent of all camper entries. The campers stayed a total of 163 days, spent $371.00 for camping and brought 291 persons in the camper parties. The City of Brantford was followed in visitation by the Cities of Hamilton, Burlington and Toronto with twelve, four and four percent, respectively.

The thirty-five camper origins that provided less than one percent of the campers supplied eighteen percent of the total visitation. This was found to be an insignificant percentage when compared to the total percentage for Brantford campers. The thirty-five centres accounted for

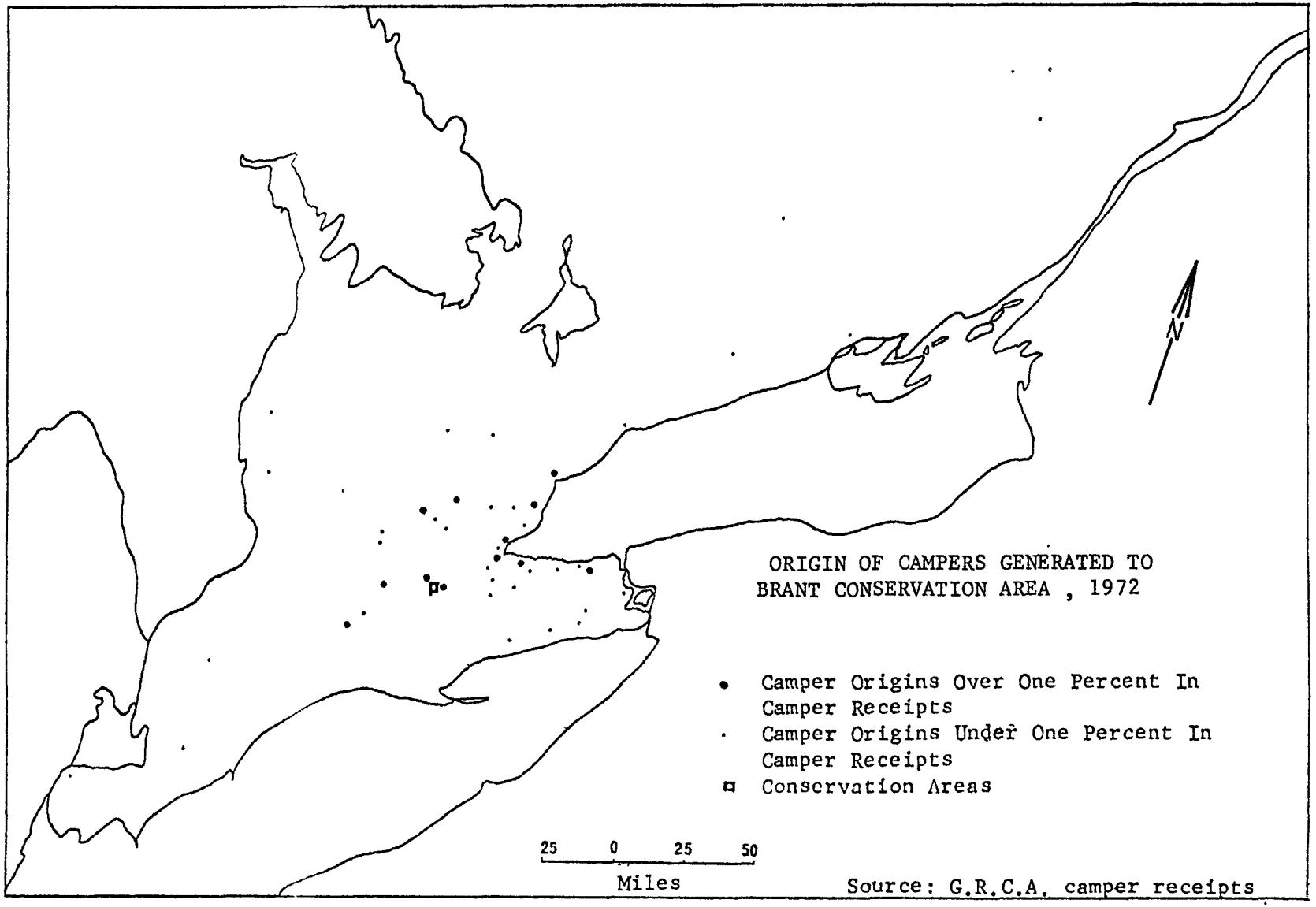

ORIGIN OF CAMPERS GENERATED TO
BRANT CONSERVATION AREA , 1972
Camper Origins Over One Percent In Camper Receipts
Camper Origins Under One Percent In Camper Receipts
Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 5

TABLE 6

CAMPER STATISTICS BY ORIGIN FOR BRANT CONSERVATION AREA, 1972

Cities	Number of Entries	Total Days Stayed	Fees Paid ($)	Number in Party	% of Campers
1 Toronto	11	18	54.00	46	4.21
2 Hamilton	31	49	150.00	117	11.88
3 Kitchener-Waterloo	7	13	36.00	25	2.68
4 Burlington	12	16	48.00	51	4.60
5 Stoney Creek	6	7	21.00	24	2.30
6 Dundas	3	6	18.00	11	1.15
7 St. Catherines	5	8	22.50	19	1.92
8 Paris	8	25	46.50	26	3.07
9 Brantford	82	163	371.49	291	31.42
10 London	8	10	21.00	21	3.07
11 Mississauga	3	6	15.00	14	1.15
12 Guelph	3	6	15.00	11	1.15
13 Woodstock	10	18	50.16	36	3.85
Total (13)	189	345	869.16	692	72.43
Cities less than 1.0% (35)	49	88	242.14	185	18.75
Out of Canada	18	18	57.00	63	6.90
Out of Province	5	6	18.00	16	1.92
Total sample (50)	261	457	1186.30	956	100%

Source: Grand River Conservation Authority camper entrance receipts.
For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

nineteen percent of the total days stayed, twenty percent of the camper entrance fees and nineteen percent of the total number of party members, considerably less than supplied by Brantford campers.

Brant Conservation Area had the largest percentage of American visitors that supplied seven percent of all visitation. Campers from the other Canadian Provinces accounted for only two percent of the total visitation to Brant, but this was also the highest percentage figure for the four conservation areas.

The average camper values for Brant Conservation Area were listed on Appendix B, Table 3. The campers to Brant stayed an average of 1.75 days, paid $4.55 for camping and brought an average of 3.66 members in their camper parties. All the averages are less than those for the calculations of the four areas but were found to be greater in value than the averages for Elora Conservation Area. The City of Paris had campers that stayed the longest on the average with 3.13 days. Paris was followed by Dundas, Mississauga and Guelph campers, all with an average of two days length of stay. Paris was also found to pay the second highest entrance fees, being surpassed by the campers from Dundas who paid $6.00 on the average. The Town of Mississauga had the largest average number of camper party members, followed by the Cities of Burlington and Toronto. American campers were found to stay only one day on the average, whereas Canadian Provincial campers stayed longer, averaging 1.2 days stayed.

The majority of the campers that travelled to Brant Conservation Area originated from outside of the Grand River Basin (Appendix B, Table 4). Following the percentage difference were the number of entrance fees paid and camper party members both represented more by out of basin residents. The exception was the total length of stay where the basin resident campers originating from less than forty-five miles away accounted for a greater percentage than the campers

from outside the basin. The figures showed a rapid decay of camper participation with increased distance from the conservation area yet it reveals that out of basin campers were willing to travel further for camping purposes.

Brant campers tended to stay one day in length, less than the length of stay for the total of the four areas. A total of 141 days or fifty-four percent of the days stayed were accounted for by campers that stayed one night. Campers that stayed for two days in length accounted for thirty-two percent, while the number of days stayed of three days length was twenty-one or eight percent. The number of campers that stayed from four to fourteen days accounted for five percent of the total days stayed.

The frequency of camper arrival by date to Brant Conservation Area showed a similar peaking to the total frequency of the four areas. Unlike the arrival of campers to the four areas, Brant campers did not frequent the area on May twenty-fourth weekend. For the other two holiday weekends of July first and September fourth, peaking was similar, with the Labour Day weekend accounting for the greatest visitation. The majority of the campers entered on weekends with slight visitation during the mid-camper season. But there were many weekends where no campers entered Brant until the fourth day of the week.

Brant Conservation area in comparison to the three other conservation areas was pre dominantly overnight camping oriented as evidenced by the length of stay. The reason for this orientation was the location of the conservation area adjacent to the City of Brantford. The short travel distance to the conservation area allowed the majority of the campers easy access to the recreational area, thus decreasing their total length of stay. Since Brant Conservation area is also located in the centre of the Grand River Drainage Basin, it was also easily accessible to a large portion of the Southern Ontario campers who desired urban

oriented camping close to their homes. The growth of the City of Brantford, as well as the changes in the populations of Hamilton and Toronto, should produce a corresponding change in the number of campers that attend Brant Conservation Area similar to the increases in the number of campers that attended the Provincial Parks.

3.1.3 Byng Conservation Area, 1972

The analysis of Byng Conservation Area yielded fifty-nine places of origin in Southern Ontario for 1972 (Figure 7, Appendix B, Table 5). The majority of the camper entries originated from fourteen centres in Southern Ontario which accounted for seventy-six percent of all visitation to Byng (Table 7). The fourteen centres provided campers that stayed 961 days, included 1930 persons in the camper parties and paid $2272.00 for camping privileges.

Campers from the City of Hamilton contributed thirty percent of all visitation to the area. Hamilton campers stayed a total of 405 days, brought 747 members in their camper parties and spent $921.00 in entrance fees. The campers were followed in visitation by Welland and Dunnville campers, with twelve and eight percent of the camper entries respectively. The City of Toronto, with the largest population of Ontario, only accounted for two percent of all entries in comparison to Dunnville, which is located only a few miles from Byng Conservation Area.

Campers that originated from the United States supplied six percent of the visitation to Byng Conservation Area, while out of province campers only provided one and a half percent of all camper entries.

The average days stayed, the average entrance fees and the average party size were much larger in value than the average figures for the total areas (Appendix B, Table 6). The City of Brantford had the highest average days stayed,

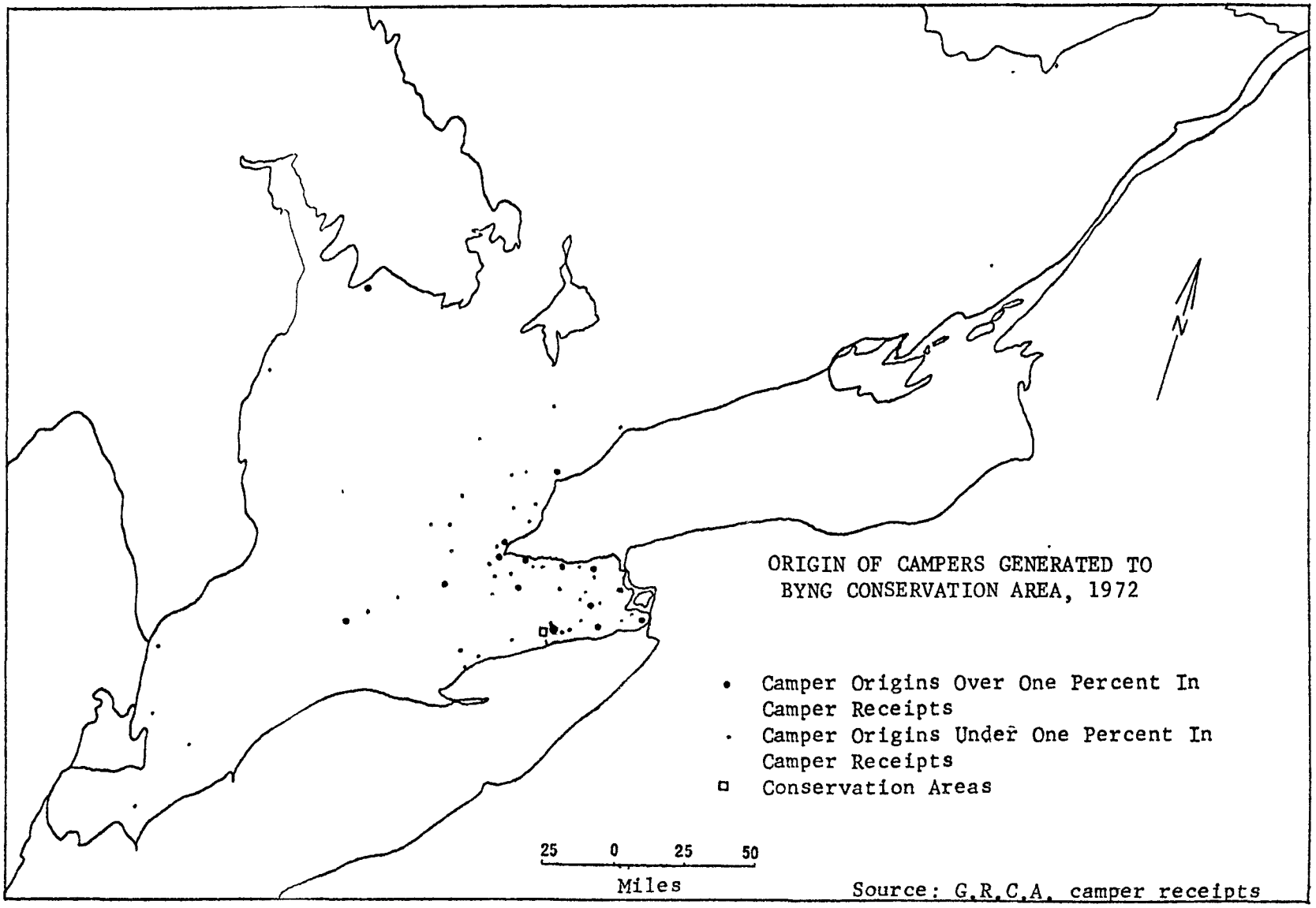

ORIGIN OF CAMPERS GENERATED TO
BYNG CONSERVATION AREA, 1972
• Camper Origins Over One Percent In Camper Receipts
· Camper Origins Under One Percent In Camper Receipts
▫ Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 6

TABLE 7

CAMPER STATISTICS BY ORIGIN FOR BYNG CONSERVATION AREA, 1972

	Cities	Number of Entries	Total Days Stayed	Fees Paid ($)	Number in Party	% of Campers
1	Toronto	12	24	72.00	46	2.14
2	Hamilton	167	405	921.00	747	29.77
3	Welland	67	145	332.50	315	11.94
4	Dunnville	47	101	184.00	221	8.38
5	Burlington	16	38	82.50	68	2.85
6	Stoney Creek	11	17	39.00	43	1.96
7	St. Catherines	25	47	118.50	125	4.46
8	Brantford	8	22	63.00	28	1.43
9	London	7	18	51.00	29	1.25
10	Port Colbourne	28	67	181.50	133	4.99
11	Niagara Falls	19	40	121.50	70	3.39
12	Binbrook	6	11	25.50	25	1.07
13	Hannon	6	9	24.00	38	1.07
14	Grimsby	7	17	51.00	42	1.25
	Total (14)	426	961	2272.00	1930	75.95
	Cities less than 1.0%	93	192	531.00	438	16.56
	Out of Canada	34	58	174.00	138	6.06
	Out of Province	8	12	36.00	22	1.43
	Total Sample (59)	561	1223	3013.00	2528	100%

Source: Grand River Conservation Authority camper entrance receipts.
For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

followed by London, Hamilton and Grimsby campers. Brantford campers also paid the highest average fees for camping, followed by London and Grimsby campers. Annon, a town located several hundred miles from Byng near the City of Owen Sound, accounted for the largest average number of camper party members, followed closely by Grimsby campers.

The location of Byng in the southernmost extremity of the Grand River Basin, determined to a large extent the number of camper entries from outside the basin (Appendix B, Table 7). Camper visitation from outside the basin produced eighty percent of all entries to Byng in contrast to only twelve percent attendance by basin residents. A similar division was experienced for the number of days stayed, fees paid and camper party members when origin location was examined. There was also a greater decay of camper participation with increasing distance for both categories with the majority travelling less than forty-five miles to camp at Byng Conservation Area.

Byng Conservation Area campers had a tendency to stay longer than campers attending the three other areas. Campers that stayed for one day accounted for thirty-nine percent of the total days stayed, while campers that stayed for two days furnished thirty-six percent of the total days stayed. For three days length of stay the percentage totalled thirteen percent, whereas campers that stayed from four to fourteen days only accounted for eleven percent of the total days stayed.

The frequency of camper entrance to Byng displayed the peaking attendance of the statutory holidays, but there were a number of weekends higher in attendance than the first two holiday weekends in the summer months. The second weekend of July had a higher visitation rate than the first of July holiday weekend, while the third weekend had the highest attendance of all summer weekends. This peaking phenomena may be due to the longer length of stay of campers since Byng

had the largest percentage of campers that stayed from four to fourteen days.

Overall, the location of Byng Conservation Area in the Grand River Basin played a dominant role in the attendance of campers to the area. Byng, located in the extremity of the Drainage Basin adjacent to Lake Erie, was found to be inaccessible to a large portion of the Southern Ontario camper population. As a result, the campers who attended Byng Conservation Area tended to stay longer than at the three other areas since their travel costs would generally have been higher than the costs to travel and camp at the other areas. Due to the inaccessibility of Byng to the urban centres of Ontario, the area should not experience changes in camper composition or characteristics that the three other areas would tend to experience, unless there were some overall change in the accessibility of Byng to the campers. This accessibility change could occur as an improvement in the highway network of the surrounding region or an increase in the desirability of the conservation area due to crowded conditions at other recreation areas.

3.1.4 Elora Conservation Area, 1972

The analysis of Elora Conservation Area for 1972 revealed ninety-three camper origins (Figure 9, Appendix B, Table 8). Of the ninety-three origins, seventeen centres provided more than one percent each in camper generation, which supplied seventy-six percent of all camper visitation to the conservation area (Table 8). The places of origin provided 809 camper entries that furnished 1427 total days stayed, 2841 camper party members and paid $3718.00 in entrance fees. The campers that originated from the seventeen major centres contributed 1099 total days stayed, $2801.00 in entrance fees and 2120 members in the camper party.

ORIGIN OF CAMPERS GENERATED TO
ELORA CONSERVATION AREA , 1974
• Camper Origins Over One Percent In Camper Receipts
· Camper Origins Under One Percent In Camper Receipts
▫ Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 7

TABLE 8

CAMPER STATISTICS BY ORIGIN FOR ELORA CONSERVATION AREA, 1972

	Cities	Number of Entries	Total Days Stayed	Fees Paid ($)	Number in Party	% of Campers
1	Toronto	101	171	465.00	352	12.48
2	Hamilton	85	152	386.00	302	10.51
3	Galt	15	24	67.50	51	1.85
4	Kitchener-Waterloo	221	394	984.00	761	27.32
5	Oakville	10	15	45.00	33	1.24
6	Burlington	30	51	120.00	93	3.71
7	St. Catherines	12	25	70.00	46	1.48
8	Brantford	11	31	66.00	89	1.36
9	Caledonia	9	16	42.00	37	1.11
10	London	21	32	82.50	60	2.60
11	Mississauga	22	43	106.45	72	2.72
12	Windsor	9	13	36.00	40	1.11
13	Guelph	32	59	142.50	94	3.96
14	Preston	10	19	55.00	33	1.24
15	Fergus	11	23	43.50	41	1.36
16	Brampton	9	18	57.00	34	1.11
17	Elmira	9	13	33.00	40	1.11
	Total (17)	617	1099	2801.45	2128	76.27
	Cities less than 1.0%	162	282	789.00	601	20.02
	Out of Canada	24	38	106.00	91	2.97
	Out of Province	6	8	22.50	21	0.74
	Total Sample (96)	809	1427	3718.95	2841	100%

Source: Grand River Conservation Authority camper entrance receipts.
For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

The twin cities of Kitchener-Waterloo accounted for twenty-seven percent of all visitation, followed by the larger population centres of Toronto and Hamilton with twelve and ten percent of the camper entries respectively. Again, the centres that provided less than one percent each in camper entries did not equal the visitation from the single major camper origin of Kitchener-Waterloo. The seventy-seven places of origin accounted for twenty percent of the visitation to Elora Conservation Area.

American visitors to Elora Conservation Area supplied the lowest number of visitations of the four areas. United States' campers provided three percent of the visitation to Elora, yet this was three times as great as visitors from the other Canadian Provinces which furnished an insignificant amount of campers.

The average figures for Elora Conservation Area were listed on Appendix B, Table 8. The City of Brantford had campers that stayed the longest on the average at Elora followed by the campers from Fergus and St. Catherines. Brampton campers provided the largest average entrance fee of over six dollars, followed by Brantford and St. Catherines' campers. Both the Town of Elmira and the City of Windsor had an average of 4.44 members in their camper parties, followed by the campers from Caledonia.

The length of stay characteristics of the campers at Elora were similar to Brant Conservation Area campers. Campers that stayed for one day accounted for fifty-one percent of the total days stayed. Campers that stayed for two days totalled 263 days or thirty-two percent of the total days stayed. Three-day campers provided twelve percent of the total days, while the long-term campers that stayed from four to fourteen days only accounted for four percent of all visitation. The lack of longer stays by campers at Elora, in comparision to the three other areas, is not easily understood since the area is situated on a scenic natural resource that should induce the campers to stay longer.

Camper visitation to Elora from out of the Basin differed from campers that originated from inside the basin by eleven percent (Appendix B, Table 10). The categories of length of stay, fees paid and party members all exhibited the same percentage differences in camper entries. A rapid decay of visitation was shown by basin campers, while out of basin campers decreased in participation at a slower rate with distance.

The frequency of camper visitation to Elora showed the occurrence of peaking on weekends, particularly for the July first weekend. The other statutory holiday weekends of May twenty-fourth and Labour Day were also evident from the figure. Although the holiday weekends had higher visitation rates, all weekends had an almost equal attendance rate. This can be explained by the high frequency of campers that stayed for only one day, specifically from the Saturday to the Sunday of every weekend. Camper attendance at Elora Conservation Area was dominantly overnight oriented by campers who originated from large population centres of Southern Ontario. Although the park area was located at a considerable distance from these centres, the attraction of the scenic natural resource seemingly was the stimulant that tended to attract the campers to the conservation area. Unlike Byng Conservation area, which was similarly inaccessible to the campers of Southern Ontario, Elora campers did not stay as long as Byng campers nor as long as Provincial Park campers who are usually attracted by a similar resource as is present at Elora Conservation Area.

3.1.5 Pinehurst Conservation Area, 1972

Located not too distant from Brant Conservation Area, Pinehurst Conservation Area had sixty-three centres listed as camper origins in 1972 (Figure 8, Appendix B, Table 11). The campers that provided 454 camper entries stayed a total of 826 days, had 1994 persons in their total camper party

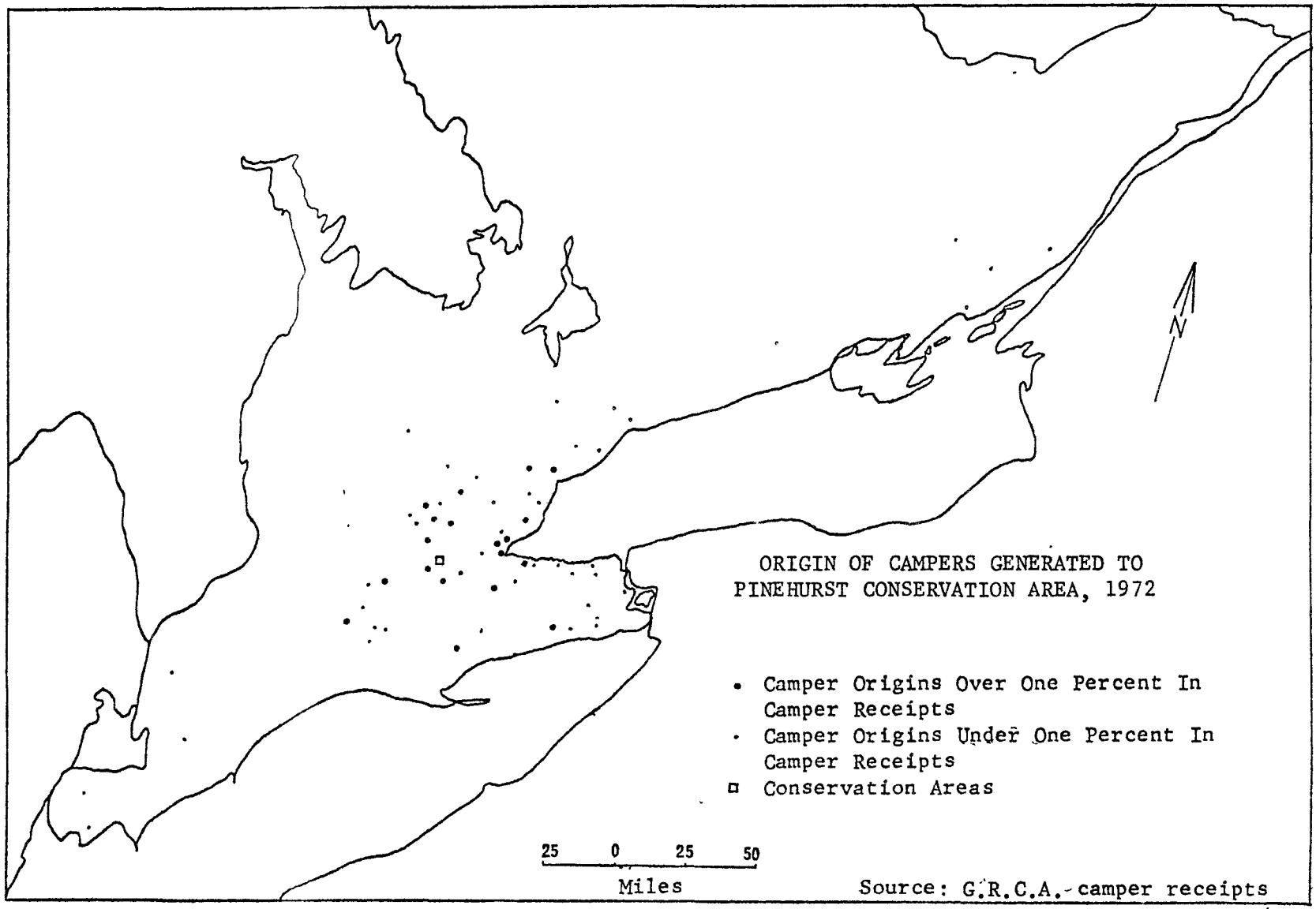

ORIGIN OF CAMPERS GENERATED TO
PINEHURST CONSERVATION AREA, 1972
• Camper Origins Over One Percent In Camper Receipts
· Camper Origins Under One Percent In Camper Receipts
▫ Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A.-camper receipts

Figure 8

and paid $2210.00 in entrance fees (Table 9). Of the sixty-three origins, twenty cities provided over one percent each in camper visitation. The twenty centres accounted for seventy-eight percent of the total camper visitation and comprised a total of 725 days stayed, 1598 persons in their camper party and spent $1760.00 for camping purposes.

The City of Hamilton supplied sixteen percent of the camper attendance, followed by the Cities of Galt, Brantford and Kitchener-Waterloo with camper entries of nine, eight and six percent respectively. The forty-three centres that provided less than one percent each in camper entries accounted for only sixteen percent of all visitation, or an equivalent percentage compared to Hamilton camper attendance. United States visitation amounted to five percent of all entries to Pinehurst, which was second to American attendance at Brant Conservation Area. Pinehurst had the lowest attendance of other province campers, with only three entries, or 0.6 percent of all attendance.

When the camper statistics were reduced to average values it was found that Pinehurst campers stayed longer, paid higher fees and brought more camper members on the average than the three other conservation areas (Appendix B, Table 12). The Town of Paris had the greatest average days stayed, followed by Oakville campers. Oakville campers had the highest average entrance fees paid for camping, followed by campers from Dunnville, while Burlington provided the largest average camper party size of all four conservation areas with nine persons per party, approximately four persons more than Dundas campers with the second highest average.

The attendance of campers from inside and outside of the Grand River Basin did not show the same tendencies as Brand Conservation Area (Appendix B, Table 13). Campers that originated from outside the basin provided seventeen percent

TABLE 9

CAMPER STATISTICS BY ORIGIN FOR PINEHURST CONSERVATION AREA, 1972

	Cities	Number of Entries	Total Days Stayed	Fees Paid ($)	Number in Party	% of Campers
1	Toronto	23	44	100.50	89	5.07
2	Hamilton	75	162	407.50	338	16.52
3	Kitchener-Waterloo	29	73	174.50	107	6.39
4	Galt	42	79	151.50	178	9.25
5	Oakville	7	22	52.50	27	1.54
6	Dunnville	5	14	35.00	17	1.10
7	Burlington	17	27	70.50	155	3.74
8	Stoney Creek	10	20	54.00	45	2.20
9	Dundas	8	18	49.00	43	1.76
10	Bramalea	5	7	24.00	21	1.10
11	Paris	11	35	73.00	52	2.42
12	Brantford	39	68	161.00	171	8.59
13	Caledonia	7	16	35.00	33	1.54
14	London	14	26	70.50	55	3.08
15	Windsor	10	13	38.00	41	2.20
16	Guelph	14	88	67.50	41	3.08
17	Preston	7	12	35.50	36	1.54
18	Ayr	5	7	19.50	24	1.10
19	Woodstock	20	43	129.00	100	4.41
20	Simcoe	6	11	33.00	25	1.32
	Total (20)	354	725	1760.00	1598	77.95
	Cities less than 1.0%	72	117	342.50	281	15.88
	Out of Canada	25	29	93.00	100	5.51
	Out of Province	3	5	15.00	15	0.66
	Total Sample (64)	454	876	2210.50	1994	100%

Source: Grand River Conservation Authority camper entrance receipts.
For more information see: C.P. Mason, An Analysis of Recreational Camper Travel To Four Conservation Areas in The Grand River Basin. Unpublished B.A. Thesis, Wilfrid Laurier University, Department of Geography, 1974.

more camper entries than the camper attendance from inside the basin. The rapid decay of camper attendance with distance was not as noticeable for campers from outside the basin as the decrease in participation of campers from inside the basin.

The length of stay characteristics for Pinehurst displayed a similarity to the total of the four areas. One day campers were found to account for forty-six percent of the total days stayed, followed by a decrease to thirty-five percent of the total days stayed by campers that visited for two days. Campers that stayed for three days accounted for twelve percent of the days, while the campers that stayed from four to fourteen days provided eight percent of the total days stayed.

The frequency of camper entries to Pinehurst for the summer months showed less abruptness in weekend peaking than the three other areas. The three statutory holidays were not as evident as the holiday peaks for Elora and Byng Conservation Areas. Relatively regular attendance was reflected during the mid-camper season, which was found to be very similar to Byng Conservation Area.

Pinehurst Conservation Area campers tended to originate from centres to the north of the conservation area. This directional bias was observed as a result of the influence of Brant Conservation Area on the travel patterns of Pinehurst campers. The differences in the camper characteristics of the two areas' campers, that is, the contrasts in the length of stay, fees paid, camper party members and the distance travelled, revealed that the areas tend to offer differing camper environments and opportunities. Brant Conservation Area was found to be strongly urban oriented, while Pinehurst Conservation Area could be inferred as having a tendency towards an intermediate area that offers a resource base other than just an area to camp as at Brant Conservation Area.

But with the increase in the population of Brantford, and the corresponding increasing attendance of Brant Conservation Area, Pinehurst should experience the impact of the increased attendance along with a change in the characteristics of the campers and the conservation area itself.

3.1.6 Summary

Camper travel to the four conservation areas in the Grand River Basin in 1972 originated from 138 centres in Southern Ontario. The centres provided ninety-four percent of all camper entries to the four areas. The places of origin that supplied over one percent each in camper attendances accounted for seventy-three percent of all camper visits.

The largest number of campers that travelled to the four areas was provided by the City of Hamilton. Hamilton was followed in camper visits by the Cities of Kitchener-Waterloo and Toronto. The visitors from the United States contributed a significant number of campers when compared to the 117 camper origins that generated less than one percent each in camper entries.

Campers that originated from outside of the Grand River Drainage Basin provided sixty-two percent of the visitation, compared to the thirty-three percent provided by basin resident campers. When distance was considered, the camper participation at the four areas was found to decrease rapidly with increasing distance, particularly for in-basin resident campers.

Camper attendance frequency displayed the over-representation of campers on weekends, specifically the statutory holiday weekends. Overall, the September fourth weekend had the largest number of campers that visited the four areas, which accounted for seven percent of all the camper entries,

The analysis of the 1972 origin and destination

information revealed that the majority of the campers came from large centres of population located outside of the Grand River Basin, with the exceptions of Brantford and Kitchener-Waterloo. The camper majority travelled less than forty-five miles, and thus the campers could have returned quickly to their origins, shortening their length of stay. Distance played an obvious role in camper participation at the conservation areas, with population providing the impetus to travel for recreational camping in the Grand River Basin.

Since the majority of the campers that attended the four conservation areas originated from the large population centres of Southern Ontario, any changes in the composition of the urban centres should have a corresponding change in the camper attendance at the four areas. With increased urbanization, income, education and mobility, to name but a few of the factors that influence camper travel trends, visitation to recreational park areas should increase. Since the four conservation areas are generally accessible to the Ontario camper population, these areas should be first to experience the impact of the increase in the number of campers.

Brant and Pinehurst Conservation Areas will tend to have the greatest camper impacts since these areas are the most accessible to the urban population while Byng Conservation Area may remain with a stable attendance record due to its general inaccessibility to the majority of the Southern Ontario population. Brant in 1972 already had a high ratio of campers to the number of campsites and with an increase in the visitation of campers the overflow from the area will tend to influence the attendance at Pinehurst Conservation Area since Pinehurst is located only a short distance from Brant and the large population centres of Southern Ontario. The travel patterns of the campers will then change and an adjustment in highway recreational traffic flows should then

be observed with weekend camper travel crowding the routes that service the four conservation areas.

3.2 An Analysis of Camper Travel Patterns for 1974

The analysis of camper entrance receipts for 1974 revealed that 182 places of origin in Ontario provided campers to the four conservation areas (Figure 9) (Appendix B, Table 14). The listings excluded the campers that travelled from the United States and other Canadian Provinces, similar to the analysis of the 1972 camper information. Many of the receipts did not list an origin but a state or province, and thus were listed under the categories of 'Outside Canada' and 'Out of Province' for American and Canadian Province campers respectively.

3.2.1 An Overview of the Four Conservation Areas for 1974

The analysis of the 1974 camper information for the four conservation areas was listed on Table 10. The total sample of 182 origins furnished 2430 camper entrance receipts. Overall, the campers stayed for 4917 days, paid $15,628.00 in entrance fees and brought 9568 persons in the camper party. Of the 182 origins, seventeen centres supplied seventy percent of all the camper visitation. These centres provided 1725 camper entrances that stayed 3693 days in total, included 6893 people in their camper parties and spent $11,440.00 for camping privileges. The City of Hamilton provided eighteen percent of all camper visitation to the four areas. Hamilton campers accounted for 435 entrance receipts, 981 total days stayed, 1753 camper party members and paid $3041.00 in entrance fees. Hamilton was followed by the City of Brantford campers with twelve percent of the camper entries, the Cities of Kitchener-Waterloo with ten percent, and the City of Toronto with six percent of the total camper visits to the four conservation areas. The

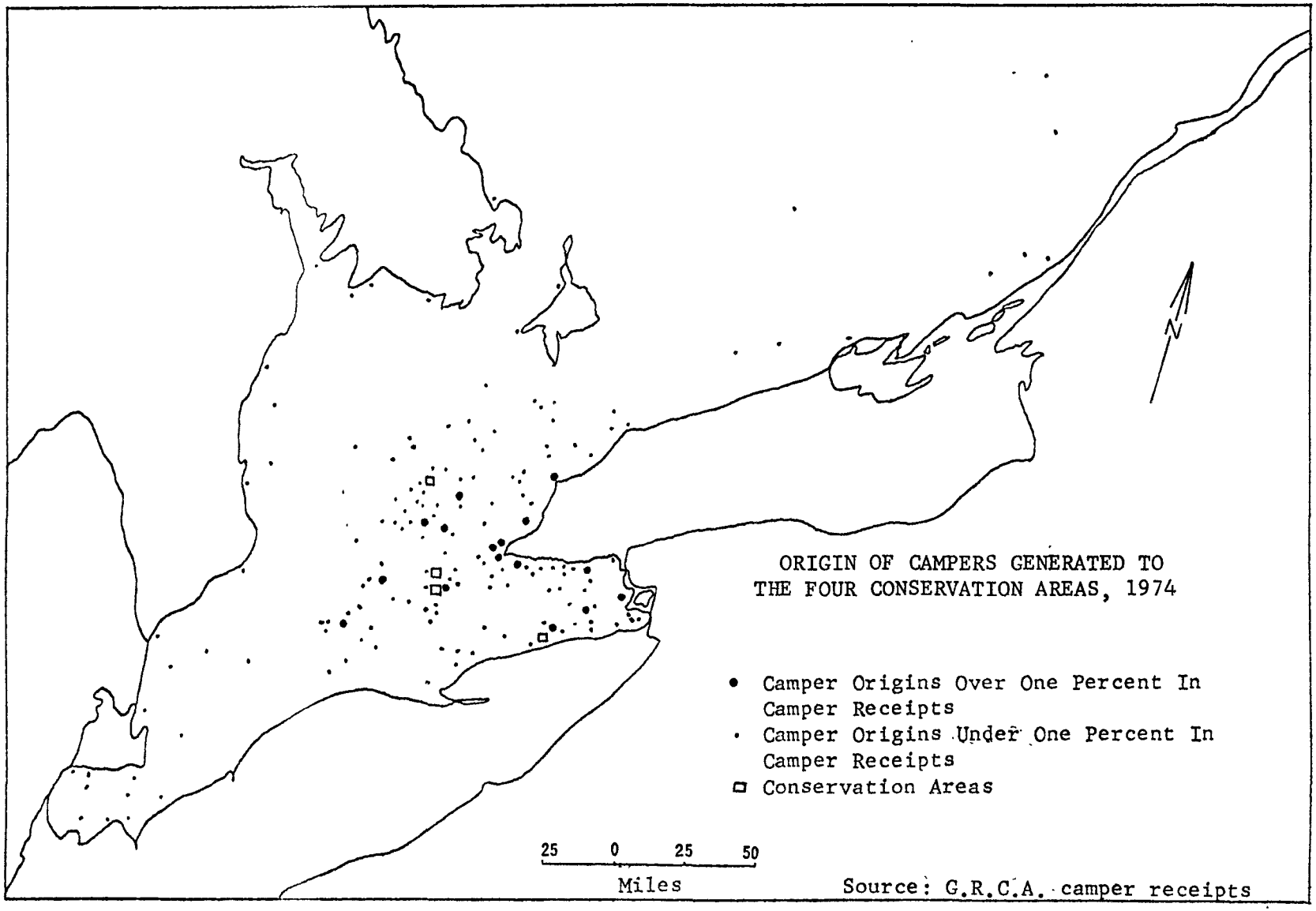

ORIGIN OF CAMPERS GENERATED TO
THE FOUR CONSERVATION AREAS, 1974
• Camper Origins Over One Percent In Camper Receipts
· Camper Origins Under One Percent In Camper Receipts
□ Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 9

Table 10

PLACES OF ORIGIN FOR THE TOTAL CONSERVATION AREAS, 1974

Cities	Number of Entries	Days Stayed	Fees Paid ($)	No. in Party	% of Campers
Woodstock	29	40	135.00	100	1.19
Hamilton	435	981	3041.00	1753	17.90
Mississauga	30	54	190.00	95	1.23
Burlington	84	184	611.00	330	3.46
Brantford	290	639	1792.00	1157	11.93
St. Catherines	57	106	359.00	257	2.35
Toronto	162	307	1010.00	585	6.66
Waterloo	53	88	265.00	202	2.18
Niagara Falls	41	69	234.00	184	1.69
London	31	62	225.50	110	1.28
Kitchener	188	384	1241.50	702	7.74
Dundas	40	92	307.50	184	1.65
Welland	87	210	589.50	366	3.58
Cambridge	92	206	585.00	338	3.79
Stoney Creek	37	74	243.50	140	1.52
Guelph	72	133	430.50	267	2.96
Dunnville	28	64	180.00	123	1.15
Total (17)	1723	3693	11440.00	6893	70.90
Cities Less Than 1.0% (165)	584	1016	3469.50	2180	24.03
Out of Canada	94	153	511.50	382	3.87
Out of Province	29	55	207.50	113	1.19
Total Sample (182)	2430	4917	15628.50	9568	100.00

Source: Grand River Conservation Authority camper receipts.

remaining 165 origins that supplied less than one percent each in camper entries accounted for twenty-four percent of the total visitation which was only six percent greater than Hamilton camper entries.

Campers from the United States contributed approximately four percent of the visitation to the four areas in 1974. Compared to the total visitation, United States camper attendance ranked fifth in camper receipts. Out of Province campers were found to comprise only one percent of the total attendance, and unlike the American camper entries, provincial campers ranked sixteenth in visitation.

The average values for the four conservation areas were calculated for comparison purposes (Table 11). The conservation area campers were found to stay an average of 2.02 days, pay $6.43 for entrance fees and bring an average of four members in their camper parties. The seventeen centres that contributed more than one percent each in camper attendance stayed an average of 2.14 days, had an average party size of four persons and paid an average fee of $6.63 for camping purposes. The City of Welland had campers that stayed the longest average number of days, followed by the campers from Dunnville and Hamilton. The City of Dundas provided the largest average fees paid to the Conservation Authority, followed closely by campers from the Cities of London and Burlington. Dundas campers were also found to bring the largest average number of party members. Following Dundas, campers in average party size were the Cities of St. Catherines and Niagara Falls. The average figures for the 165 centres of less than one percent camper generation were found to provide lower average values than many of the larger cities as well as other Canadian province campers. American campers stayed approximately one and a half days, while out of province campers paid average fees that were comparable to the campers from Dundas and Burlington.

Table 11

AVERAGE VALUES FOR THE PLACES OF ORIGIN THAT GENERATED CAMPERS TO THE FOUR CONSERVATION AREAS, 1974

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Size
Woodstock	1.38	4.65	3.45
Hamilton	2.76	6.99	4.03
Mississauga	1.80	6.33	3.17
Burlington	2.19	7.27	3.43
Brantford	2.20	6.17	3.99
St. Catherines	1.86	6.29	4.51
Toronto	1.93	6.35	3.68
Waterloo	1.66	5.00	3.81
Niagara Falls	1.68	5.70	4.49
Kitchener	2.04	6.60	3.73
Welland	2.41	6.77	4.21
Cambridge	2.24	6.35	3.67
Stoney Creek	2.00	6.58	3.78
Guelph	1.85	5.97	3.71
Dunnville	2.29	4.39	1.15
London	2.00	7.27	3.55
Dundas	2.30	7.68	4.60
Total (17)	2.14	6.63	4.00
Cities less than 1% (165)	1.73	5.94	3.73
Out of Canada	1.63	5.44	4.06
Out of Province	1.90	7.15	3.90
Total Sample (182)	2.02	6.43	3.94

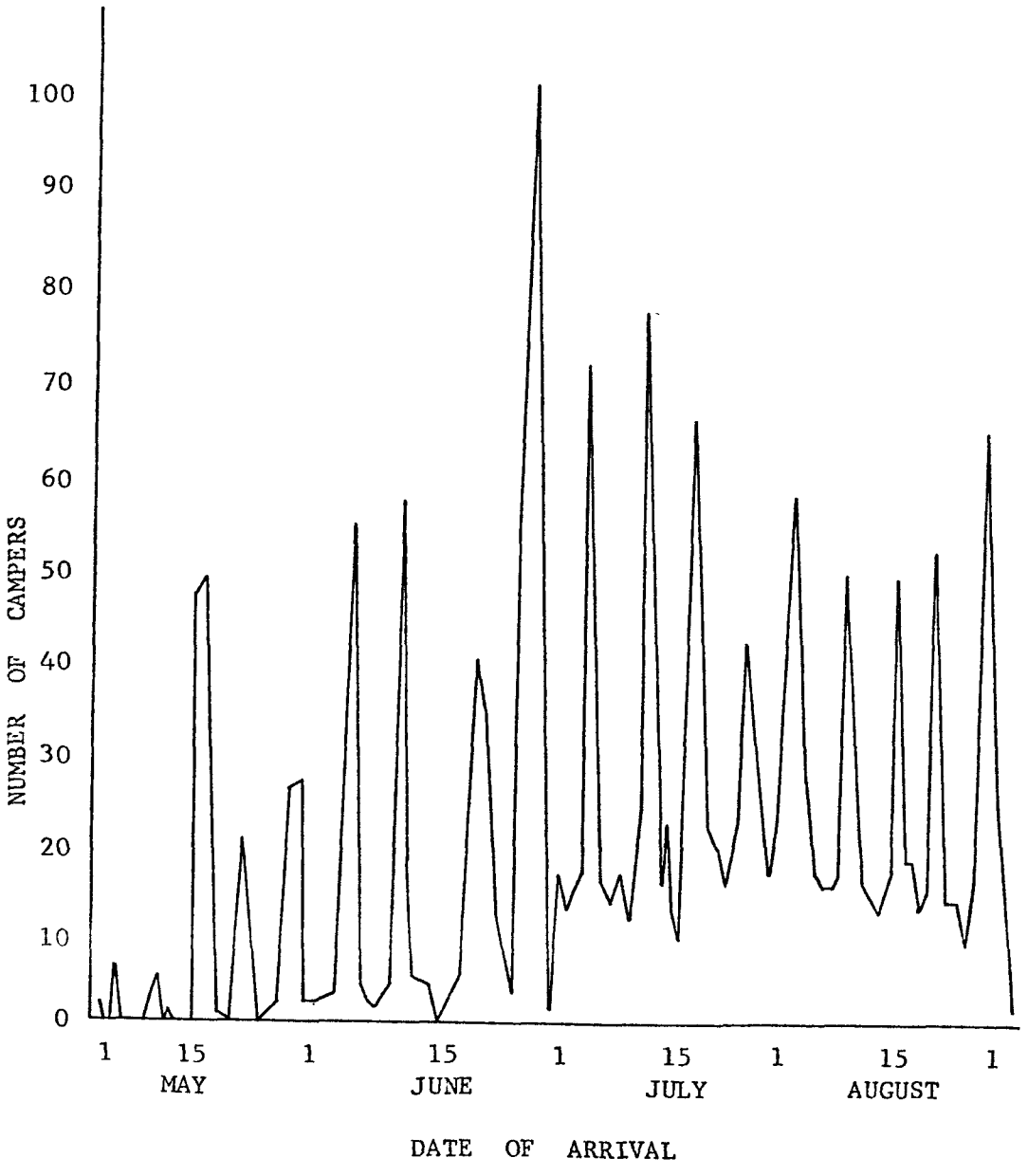
Source: Grand River Conservation Authority camper receipts.

Of interest to the 1974 camper analysis were the origins of campers inside and outside of the Grand River Basin. Referring to Table 12, the percentage of camper entries for the four conservation areas revealed that the majority of the campers originated from centres outside of the Grand River Basin, while only one-third of the campers were basin residents. The length of stay, entrance fees paid and the number in the camper party also reflected the percentage distribution of campers. The majority of the campers from inside the basin were found to travel from origins located up to forty-five miles distance from the four areas. Campers from outside the basin also followed the decay of camper entries with increasing distance.

Important to the analysis of the four conservation areas is the length of stay. The majority of the campers that travelled to the Grand River Basin stayed for one day (48%). The campers that stayed for two days provided thirty-four percent of the total days stayed, while campers that stayed for three days accounted for twelve percent of the days. Only 9.5 percent of the total days stayed were accounted for by campers that stayed from four to fourteen days. It would seem that the conservation areas are still day use and overnight camping areas, with a tendency toward longer stays of up to three days in length.

Camper attendance frequency was calculated by date and produced on Figure 10. Peaking became the dominant feature of camping at the four conservation areas in the Grand River Basin. The highest peaks were recorded on Fridays, following a decrease in camper visitation by Saturday and Sunday, and by Monday camper entries were slight. The statutory holiday weekend of July first produced the greatest number of campers to the four areas on a single day, accounting for 101 campers. By Saturday, the total entrances had decreased to sixty-five entries. Sunday revealed a

FREQUENCY OF CAMPER VISITATION BY DATE
TO THE FOUR CONSERVATION AREAS, 1974



Source: G.R.C.A. camper receipts

Figure 10

Table 12

TOTAL CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR THE FOUR CONSERVATION AREAS, 1974

	Inside the Basin				Outside the Basin			
	Straight line Mileage				Straight line Mileage			
	45<	46-90	90>	Total	45 <	46-90	90>	Total
Length of Stay	1926	42	0	1968	2376	426	147	2949
Entrance Fees ($)	4968.00	96.50	0.00	5065.00	7660.50	1467.50	535.00	9663.00
Number in the camper party	3605	66	0	3671	4701	857	339	5897
Percentage of Camper Entries (%)	34.08	0.53	0.00	34.61	50.11	9.75	5.53	65.39

Source: Grand River Conservation Authority camper receipts.

similar drop in attendance, and by Monday one entrance receipt was listed. The frequency was typical of the other holiday weekends of May twenty-fourth and September fourth (Labour Day), yet visitations on these weekends were not as great in magnitude as the weekends through the month of July. The mid-camper season or vacation period became evident from the figure, displaying increased attendance at the four areas from July first to September first, a longer period than in 1972.

The camper visitation to the four conservation areas for 1974 revealed that the majority of the campers originated from large population centres in Southern Ontario. The principal change from the two samples was not the increase in the number of campers from urban centres but the fact that more campers (seventy percent) were furnished from a fewer number of large urban populations. How this change in the composition of the campers has affected the camping characteristics of the conservation areas becomes obvious when it is considered that urban campers would tend to bring more camper party members with then and stay from one to two days at the conservation areas, preferably on the weekends. The campers were found to have larger camper parties on the average than in 1972, pay more in fees due to the fee increase, but were found to stay longer; a length of stay almost equivalent to the length of stay of Provincial Park campers. The inference which can be made from these changes is that overall the conservation areas have become oriented to servicing urban populations, particularly urban campers who have originated from the large population centres from outside of the Grand River Basin. The changing length of stay characteristics of the conservation area campers tends to demonstrate that these areas have begun to influence the camper travel characteristics of other recreational camping areas in Southern Ontario. This was also exemplified in the

increased visitation of campers who travelled less than forty-five miles to camp at the conservation areas for the purpose of low cost camping opportunities in contrast to the longer distances and higher fees of the Provincial Park campgrounds.

The camper information analysis for the four conservation areas revealed the importance of the larger population centres as camper generators, particularly outside the basin. How these camper origins vary in camper provision according to the individual conservation areas will be shown through an analysis of the four individual conservation areas.

3.2.2 Brant Conservation Area, 1974

The analysis of Brant Conservation Area camper entrance receipts yielded seventy-four camper origins in Southern Ontario (Figure 11) (Appendix B, Table 15). Of the seventy-four origins, twelve centres were found to produce over one percent each in camper attendance, accounting for seventy-three percent of all visitation to Brant (Table 13). The campers from the twelve centres stayed a total of 950 days, brought 1783 persons in their camper parties and paid $2885.00 for camping privileges. In contrast, the remaining sixty-two population centres that provided less than one percent each in camper attendance accounted for only twenty-one percent of the camper entries. These campers stayed 241 days in total, spent $849.00 in entrance fees and brought 531 persons in their camper parties.

The City of Brantford, located adjacent to Brant Conservation Area, furnished thirty-six percent of camper visitation to the area. This was twenty percent higher than the second major camper origin of Hamilton and fifteen percent higher than total visitation provided by the smaller sixty-two centres. Brantford campers were found to stay 518

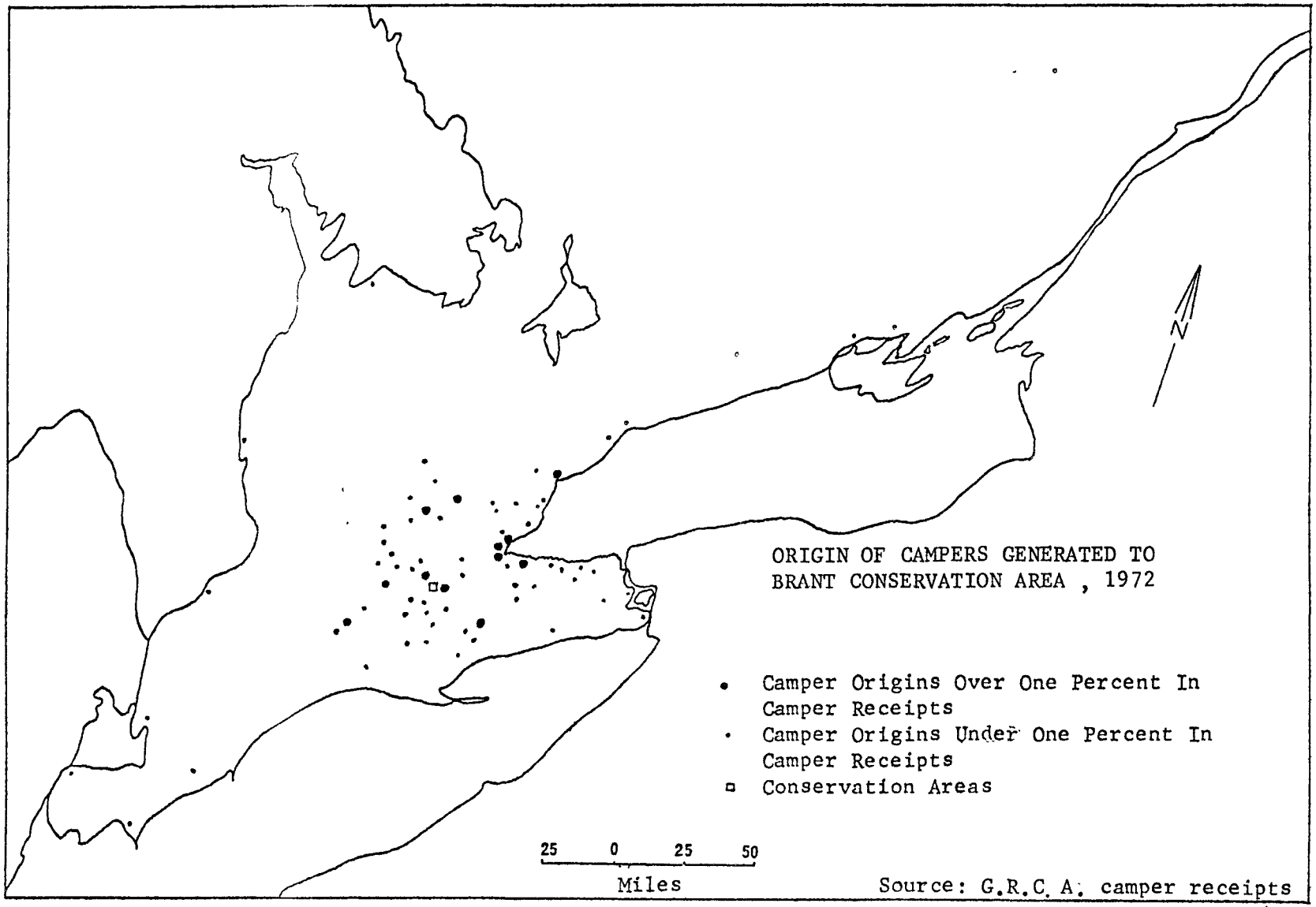

ORIGIN OF CAMPERS GENERATED TO
BRANT CONSERVATION AREA , 1972
Camper Origins Over One Percent In Camper Receipts
Camper Origins Under One Percent In Camper Receipts
Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 11

Table 13

CAMPER STATISTICS BY ORIGIN FOR

BRANT CONSERVATION AREA, 1974

Cities	Number of Entries	Days Stayed	Fees Paid ($)	No. in Party	% of Campers
Woodstock	7	9	32.00	22	1.08
Hamilton	100	178	590.00	374	15.43
Paris	14	25	80.50	52	2.16
Burlington	16	38	126.50	50	2.47
Brantford	234	518	1441.50	914	36.11
Toronto	34	50	175.50	126	5.40
London	9	17	56.50	27	1.39
Kitchener-Waterloo	14	26	88.50	54	2.16
Dundas	9	28	85.50	42	1.39
Stoney Creek	13	21	75.00	54	2.01
Guelph	10	16	57.00	29	1.54
Hagersville	12	24	76.50	39	1.85
Total (12)	472	950	2885.00	1783	72.83
Cities less than 1.0% (62)	137	241	849.00	531	21.14
Out of Canada	32	49	165.50	149	4.94
Out of Province	7	14	58.00	19	1.08
Total Sample (74)	648	1254	3957.50	2482	100.00

Source: Grand River Conservation Authority camper receipts.

days in total, pay $1441.00 for entrance fees and bring 914 members in their camper parties. Of the twelve major centres, Brantford accounted for fifty percent of the total days stayed, fees paid and members in the camper party. The Cities of Hamilton and Toronto were next in camper generation to the area, with fifteen and five percent of the total camper entries respectively.

Campers that originated from the United States accounted for five percent of the camper attendance to Brant Conservation Area. This was found to be a significant camper percentage when it was realized that the American campers ranked fourth in the total camper visitation to the area. Out of province campers only provided one percent of the camper entries, reinforcing the length of distance that Canadian Provincial campers had to travel to camp in the Grand River Basin.

The average values for the camper length of stay, entrance fees and camper party size were calculated and listed on Appendix B, Table 16. The average figures revealed that Brant campers stayed approximately two days, paid average entrance fees of $6.10 and had an average party size of 3.8 persons. The twelve centres about one percent in camper generation were found to stay longer, but pay the same fees and bring the same number of persons in the camper party on the average as the total camper sample. Dundas campers had the highest number of days stayed, entrance fees and camper party members on the average than all the other centres. Following Dundas campers were Burlington and Brantford campers in the average days stayed, Kitchener-Waterloo and Hagersville campers in average fees paid and Stoney Creek and Toronto campers in the average camper party size. American campers provided the largest average camper party size but was superceded by the other province campers in the average amount of fees paid for camping purposes.

Other province campers were found to stay longer on the average than American campers.

The length of stay of campers at Brant Conservation Area was predominantly overnight camping oriented, with campers that stayed for one day accounting for forty-seven percent of the total days stayed. The percentage of the days stayed decreased to thirty-two percent for campers that stayed for two days and twelve percent for the campers that stayed for three days. The campers that stayed from four to fourteen days accounted for only eight percent of the total days stayed at the area.

Unlike the four conservation areas in total, Brant Conservation Area experienced an equal number of camper entries that originated from inside and outside of the Grand River Basin (Appendix B, Table 17). Although there were minor differences in the total days stayed, fees paid and members in the camper party, they reflected the same percentage differences as the number of camper entries. The difference between the two categories was evident in the distance travelled to camp at Brant. Almost one hundred percent of the in-basin resident campers travelled less than forty-five miles to camp at Brant in contrast to the sixty-six percent of the campers that originated from outside the basin. The decay of camper participation with distance to Brant was extremely rapid for basin resident campers in comparison to out-of-basin residents.

The frequency of camper visitation to Brant Conservation Area reflected a similar attendance rate as the four conservation areas. Weekend attendance peaks were evident from the figures with Friday as the major attendance day, followed by decreasing attendance on Saturdays and Sundays. The holiday weekend of July first had the highest attendance rate, followed by the August first weekend. Attendance on the May twenty-fourth weekend accounted for only one camper

visit, while Labour Day weekend had twenty camper entries on the Friday. Weekend peaking seemed to be the trend of the area, with little steady camper visitation through the mid-camper season.

Brant Conservation Area, although being supplied with campers from more population centres, had the majority of the campers originate from the large urban populations of Southern Ontario in greater percentage than in 1972. This was particularly true in the case of the City of Brantford which increased its percentage of attendance over the two years. The implication of the increase in the camper attendance from large population centres located short distances from the conservation area is that the area has become one of serving and providing opportunities to urban oriented campers. With the increases in the population of these centres, such as Brantford and Hamilton, the camper attendance has also increased, but primarily from the same origins that provided campers in 1972. The campers in their travels to the conservation area had also increased the average camper party size over that of 1972; a factor that seemingly accompanies camping in an urban environment.[1] Thus Brant Conservation Area has come under the influence of urban campers that desire to consume the activity of camping close to home, on weekends and in congested campsites.

3.2.3 Byng Conservation Area, 1974

The analysis of Byng Conservation Area revealed that fifty-nine centres in Ontario provided campers to the area (Figure 12) (Appendix B, Table 18). Of the fifty-nine origins, fifteen centres contributed over one percent each in camper attendance which accounted for eighty percent of the total

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[1] R. N. Clarke, J. C. Hendee and F. L. Campbell, "Values, Behavior and Conflict in the Modern Camping Culture," p. 144.

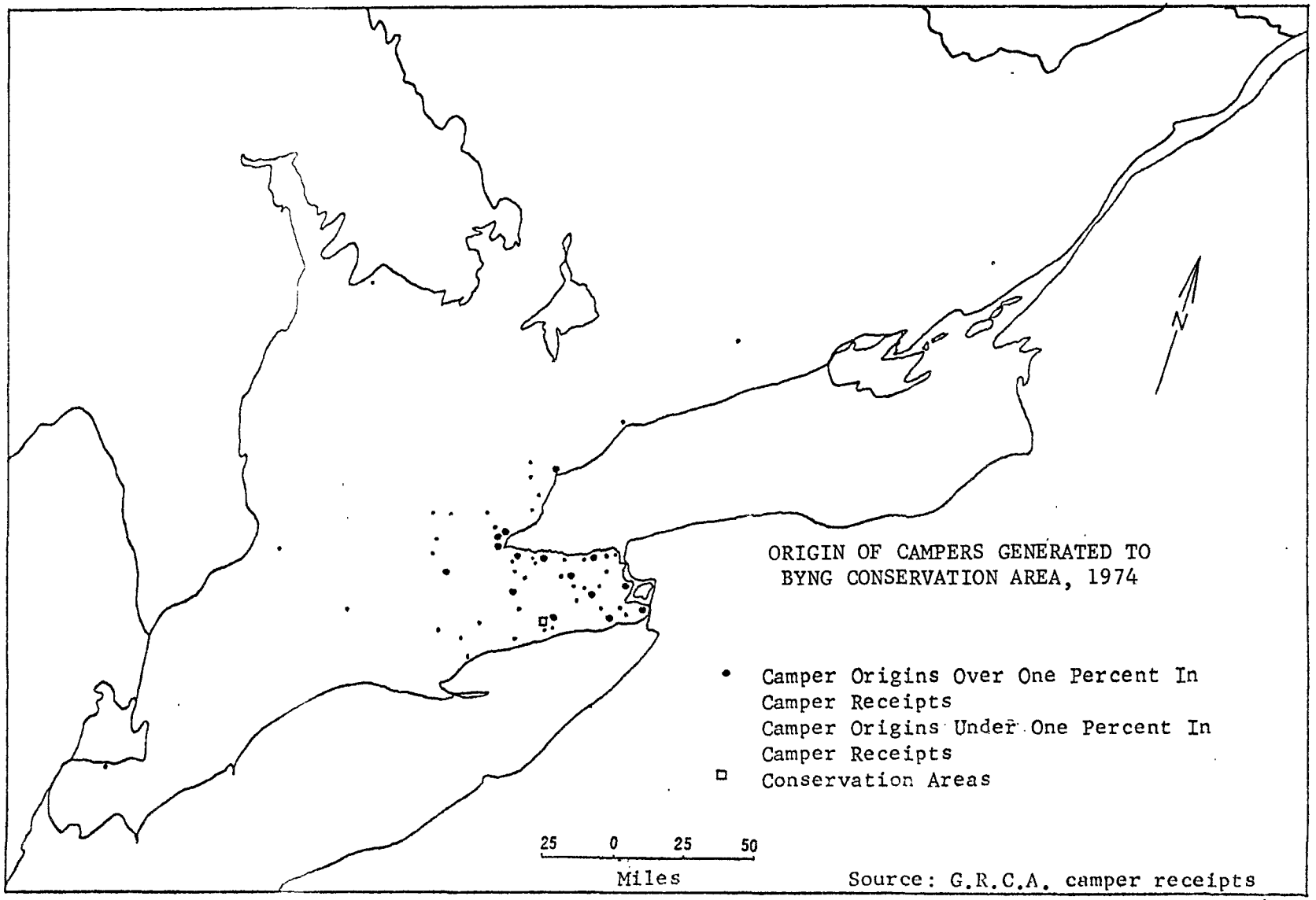
ORIGIN OF CAMPERS GENERATED TO
BYNG CONSERVATION AREA, 1974
Camper Origins Over One Percent In Camper Receipts
Camper Origins Under One Percent In Camper Receipts
Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 12

visitation (Table 14). The remaining forty-four centres that furnished less than one percent each in camper entries accounted for fifteen percent of the total entries to Byng. The fifteen centres had campers that stayed a total of 926 days, paid $2654.00 in entrance fees and brought 1668 persons in their camper parties.

The City of Hamilton contributed twenty-six percent of the toal visitation to Byng. Hamilton campers stayed 364 days in total, brought 576 camper party members and paid $1008.00 for camping purposes. Following the camper entrances by Hamilton were campers from the Cities of Welland, Niagara Falls and St. Catherines, with fifteen, six and five percent of the camper entries, respectively. The City of Toronto provided only two percent of the total visitation to the area.

The forty-four centres that provided only one percent each of the camper entries was forty-five percent less in entries than the total percent entries from Hamilton and was equal to the visitation by Welland campers. American camper visitation, although greater than the total camper entries of the four areas was second to American visitation to Brant Conservation Area. Other province campers that travelled to Byng were found to be the lowest in camper entry percentage of the four areas, and one-quarter of the visitation by United States campers.

The average figures for Byng Conservation Area showed that the campers stayed an average of 2.3 days, paid approximately seven dollars and had an average party size of 4.39 persons (Appendix B, Table 19). Of the four conservation areas, Byng campers were found to stay the longest, spend more money for camping and brought more people in their camper parties than the three other areas. Hamilton campers, besides accounting for the largest percentage camper attendance to Byng, also stayed the largest number of days and

Table 14

CAMPER STATISTICS BY ORIGIN FOR BYNG

CONSERVATION AREA, 1974

Cities	Number of Entries	Days Stayed	Fees Paid ($)	No. in Party	% of Campers
Hamilton	128	364	1008.50	576	26.83
Burlington	9	18	55.50	30	1.89
Brantford	7	15	36.50	29	1.47
St. Catherines	28	52	167.50	141	5.87
Toronto	10	19	63.50	26	2.10
Niagara Falls	30	52	165.50	123	6.29
Fort Erie	11	25	84.50	41	2.31
Port Colbourne	23	54	154.50	95	4.82
Dundas	5	10	35.00	24	1.05
Smithville	6	9	34.50	31	1.26
Welland	75	188	510.00	324	15.72
Stoney Creek	11	31	87.50	40	2.31
Grimsby	11	24	67.50	58	2.31
Dunnville	23	56	156.50	106	4.82
Caledonia	5	9	28.50	24	1.05
Total (15)	382	926	2654.50	1668	80.08
Cities less than 1.0% (44)	72	161	689.50	340	15.09
Out of Canada	19	35	121.00	69	3.98
Out of Province	4	4	14.00	15	.84
Total Sample (59)	477	1126	3318.00	2092	100.00

Source: Grand River Conservation Authority camper receipts.

paid the most in entrance fees of the fifteen major centres. Following Hamilton were Stoney Creek campers in the average days stayed and fees paid, but Grimsby and the largest average party size, followed by Smithville and St. Catherines. All of these centres are located not too distant from Byng, with the majority less than forty-five miles away. American visitors stayed approximately twice as long and paid twice the average fees as did the other province campers who stayed only one day on the average and paid the required $3.50 on the average for one night's stay.

The largest discrepancy in the percentage attendance from origins outside and inside the basin occurred at Byng Conservation Area (Appendix B, Table 20). Eighty-seven percent of the visitors to Byng originated from outside of the Grand River Basin. This was evident earlier in the discussion since the main reason for the large difference is due to the narrowing of the drainage basin at the mouth which exits at Port Maitland on Lake Erie. Although the majority of the campers came from outside of the basin, ninety-four percent of the campers travelled less than forty-five miles to camp at Byng, which displayed a rapid decrease in the camper visitation with increasing distance. The length of stay, fees paid, and camper party members all demonstrated the same percentage variation in origin location.

The campers that attended Byng Conservation Area differed in their length of stay from the other three areas. The campers that stayed for one day at Byng accounted for thirty-five percent of the total days stayed, with campers that stayed for two days providing thirty-four percent of the total days stayed. The campers that stayed for three days supplied seventeen percent of the total visitation five to eight percent more than the three other areas. The campers that stayed from four to fourteen days accounted for thirteen

percent of the total days stayed, the largest percentage of the four conservation areas in this category. It would seem from the figures that camping at Byng is increasing in the length of stay when compared to the other areas.

The frequency of camper attendance by date to Byng Conservation Area showed a similar weekend peaking as Brant Conservation Area attendance. The holiday weekend of July first had the highest number of camper entries of all weekends throughout the summer months. Again the weekends of the month of July had higher attendance figures than the other statutory holiday weekends of May twenty-fourth and September fourth. The month of July accounted for more campers than the three months of May, June and August combined.

The major changes in the camping characteristics of Byng Conservation Area were the decreases in the overall attendance of the campers and the tendency of the campers to stay longer than in 1972. The principal factor that influenced the camper changes was the inaccessibility of the conservation area to the urban populations of Southern Ontario. Although the total number of camper origins increased over the two years, the camper attendance increases were provided by centres of population located close to the conservation area as examplified by the increased attendance from the City of Welland and the decrease in the visitation from Hamilton and Niagara Falls. Byng Conservation Area has seemingly become more isolated from the populations of Southern Ontario and has tended to become oriented to campers that forgo the extra travel distance and costs to camp longer at a less congested inaccessible campground in contrast to the urban oriented areas of Brant and Elora Conservation Areas.

3.2.4 Elora Conservation Area, 1974

Elora Conservation Area, located on a scenic natural

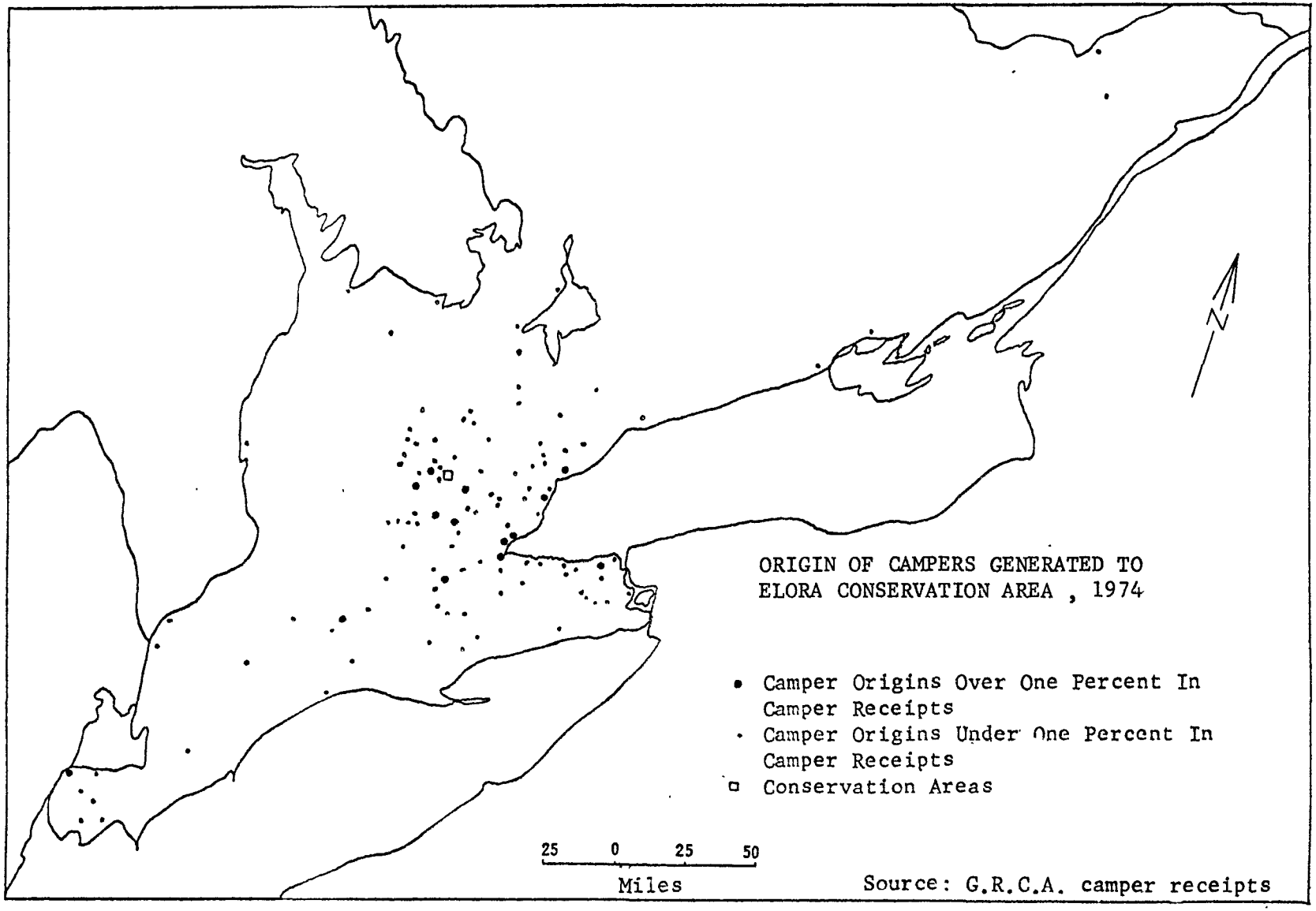
ORIGIN OF CAMPERS GENERATED TO
ELORA CONSERVATION AREA , 1974
• Camper Origins Over One Percent In Camper Receipts
· Camper Origins Under One Percent In Camper Receipts
▫ Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 13

resource at the junction of the Irvine and Grand Rivers, had 112 centres listed as camper origins in Ontario (Figure 13, Appendix B, Table 21). Of the 112 origins, fifteen centres were found to generate over one percent each in total camper entries, which accounted for seventy-four percent of the total camper attendance (Table 15). The fifteen centres had campers that stayed a total of 1203 days, paid $3809.00 in entrance fees and brought 2184 persons in their camper parties. The remaining ninety-seven centres that provided less than one percent each in camper entries furnished twenty percent of the total visitation to Elora.

The combined entrance receipts for the twin Cities of Kitchener-Waterloo accounted for twenty percent of the camper entries to Elora Conservation Area. Kitchener-Waterloo campers stayed a total of 307 days, paid entrance fees of $952.00 and included 573 members in their camper parties. Kitchener-Waterloo campers were followed by the larger metropolitan areas of Hamilton and Toronto, with camper entries of twelve and eleven percent of the total camper entries respectively.

The twenty percent of the camper entries accounted for by the 97 origins, less than one percent each in camper entries, equalled the percentage of entries from Kitchener-Waterloo; yet the campers stayed longer, paid more in fees and had a larger number of camper party members. The number of camper entries from the United States was third in percentage contribution of the four areas in total. The three percent supply of entries by American campers was double the percentage of the otherprovince samples which comprised only 1.5 percent of the total visitation.

Referring to the average camper values, the Elora campers were found to stay approximately two days on the average, spend an average $6.17 for camping, and contribute an average party size of 3.5 persons, the lowest averages of the four conservation areas (Appendix B, Table 22). The

Table 15

CAMPER STATISTICS BY ORIGIN FOR

ELORA CONSERVATION AREA, 1974

Cities	Entries	Stayed	Paid ($)	Party	Campers
Hamilton	104	210	697.00	342	12.46
Mississauga	22	37	130.50	75	2.63
Burlington	32	70	226.00	102	3.83
Brantford	23	50	133.00	89	2.75
St. Catherines	13	20	71.00	50	1.56
Toronto	95	191	594.50	303	11.38
Waterloo	36	63	173.50	117	4.31
London	16	30	108.50	55	1.92
Kitchener	129	244	779.00	456	15.45
Dundas	9	19	66.00	43	1.08
Cambridge	47	93	269.50	176	5.63
Guelph	56	107	338.50	219	6.71
Elora	13	25	61.50	39	1.56
Windsor	12	21	73.50	56	1.44
Elmira	15	23	87.00	62	1.80
Total (15)	622	1203	3809.00	2184	74.49
Cities less than 1.0% (97)	174	313	1103.00	628	20.83
Out of Canada	27	47	143.00	108	3.23
Out of Province	12	26	97.00	59	1.44
Total Sample (112)	835	1589	5152.00	2979	100.00

Source: Grand River Conservation Authority camper receipts.

Cities of Burlington, Brantford and Dundas all provided the largest average days stayed of over two days in length. The City of Dundas paid the highest average fees, followed by the campers from the Cities of Burlington and London, while Dundas campers also provided the largest average party size of 4.7 persons, followed by the Cities of Windsor and Elmira both with over an average of four persons per camper party. Other province campers comprised the largest average camper party with an average of 4.9 persons and provided the largest average fees paid for camping of $8.00. American campers were found to spend less time and money and bring lower camper party averages than the other province campers, a reversal of the three conservation areas.

The place of origin of campers that travelled to Elora Conservation Area in 1974 was dominantly located outside of the Grand River Basin (Appendix B, Table 23). Elora, being situated in the widest portion of the drainage basin had fifty-six percent of the camper entries originate from outside of the basin. Although not as large as a discrepancy reported for the four conservation areas in total, the findings are attributable to the large population centres of Hamilton and Toronto which furnished twenty-four percent of the total visitation to Elora. Similar to the three other areas, the majority of the campers travelled up to forty-five miles to camp at Elora. This was particularly evident of the basin resident campers, although there were more campers that travelled between forty-six and ninety miles than the three other areas combined. This fact also displays the decrease in camper attendance to Elora with increasing distance from the camper origins.

The length of stay of campers at Elora Conservation Area emphasized the weekend camping of the area. Campers that stayed for one day in length accounted for forty-three percent of the total days stayed. Campers that stayed for two days provided thirty-nine percent of the total days

stayed, which was the largest percentage of the four areas. Campers that stayed for three days furnished eleven percent of the days stayed, while the four to fourteen day campers accounted for seven percent of the total days stayed at Elora.

The frequency of camper visitation to Elora displayed the dominance of the July first holiday weekend over the other eighteen weekends throughout the summer months.

The May twenty-fourth holiday weekend became more visible in attendance than the Brant and Byng Conservation Area frequency curves. The majority of the campers were found to frequent Elora on weekends with visitation commencing on Fridays, with the exception of the July first weekend which had a significant number of entries the preceding Thursday. Overall, the peaking phenomena of weekend attendance at Elora was only surpassed by the frequency of attendance from the four areas combined.

In essence, Elora Conservation Area had no significant changes from that of the camper attendance of 1972. The only changes in the camper visitation was a slight increase in the length of stay, the number of camper origins and an increase in the number of campers that originated from outside of the Grand River Basin. This would imply that the attraction of the scenic natural resource of the Elora Gorge tended to attract the majority of the campers from urban populations of varying distances. The City of Guelph, located close to the area, was the only major population centre to increase its percentage share of the camper attendance. Thus the conservation area seemingly has an equal attraction to most of the population of Southern Ontario.

3.2.5 Pinehurst Conservation Area, 1974

The analysis of the camper entrance receipts for Pinehurst Conservation Area revealed that eighty-two origins in Ontario supplied campers to the conservation area in 1974

(Figure 14) (Appendix B, Table 24). Of the eighty-two origins, fifteen centres were found to provide over one percent each in camper entries (Table 16). The fifteen origins accounted for seventy percent of the total visitation and provided campers that stayed a total of 760 days, paid $2509.50 for camping privileges, and brought 1536 persons in their camper parties. The sixty-seven origins that remain provided less than one percent each in camper visitation to Pinehurst and only accounted for twenty percent of the total camper entrance.

Similar to the three other conservation areas, the City of Hamilton was a major contributor of campers to Pinehurst, accounting for twenty-two percent of all visitation. Hamilton campers stayed a total of 223 days, brought 448 campers in their parties and paid $727.50 for camping purposes. Hamilton campers were followed in percentage attendance by campers that originated from Kitchener-Waterloo, Cambridge and Burlington, with twelve, eight and six percent of the total camper visitation, respectively.

In resemblance to the three other conservation areas the sixty-seven centres of less than one percent each in camper attendance supplied less campers than the major camper origin of Hamilton. Campers that originated from the United States furnished three percent of the camper entries, or twice as many as the percentage of entries from the origins of other province campers.

Pinehurst Conservation Area campers were found to stay approximately two days on the average, pay an average of $6.81 in entrance fees, and have an average party size of 4.29 persons (Appendix B, Table 25). The averages approximate the averages for Byng Conservation Area campers which infer that different types of campers have visited Pinehurst and Byng Areas in comparison to Brant and Elora Area campers. The City of Paris provided campers that stayed the longest period of time and spent the most money on the average than

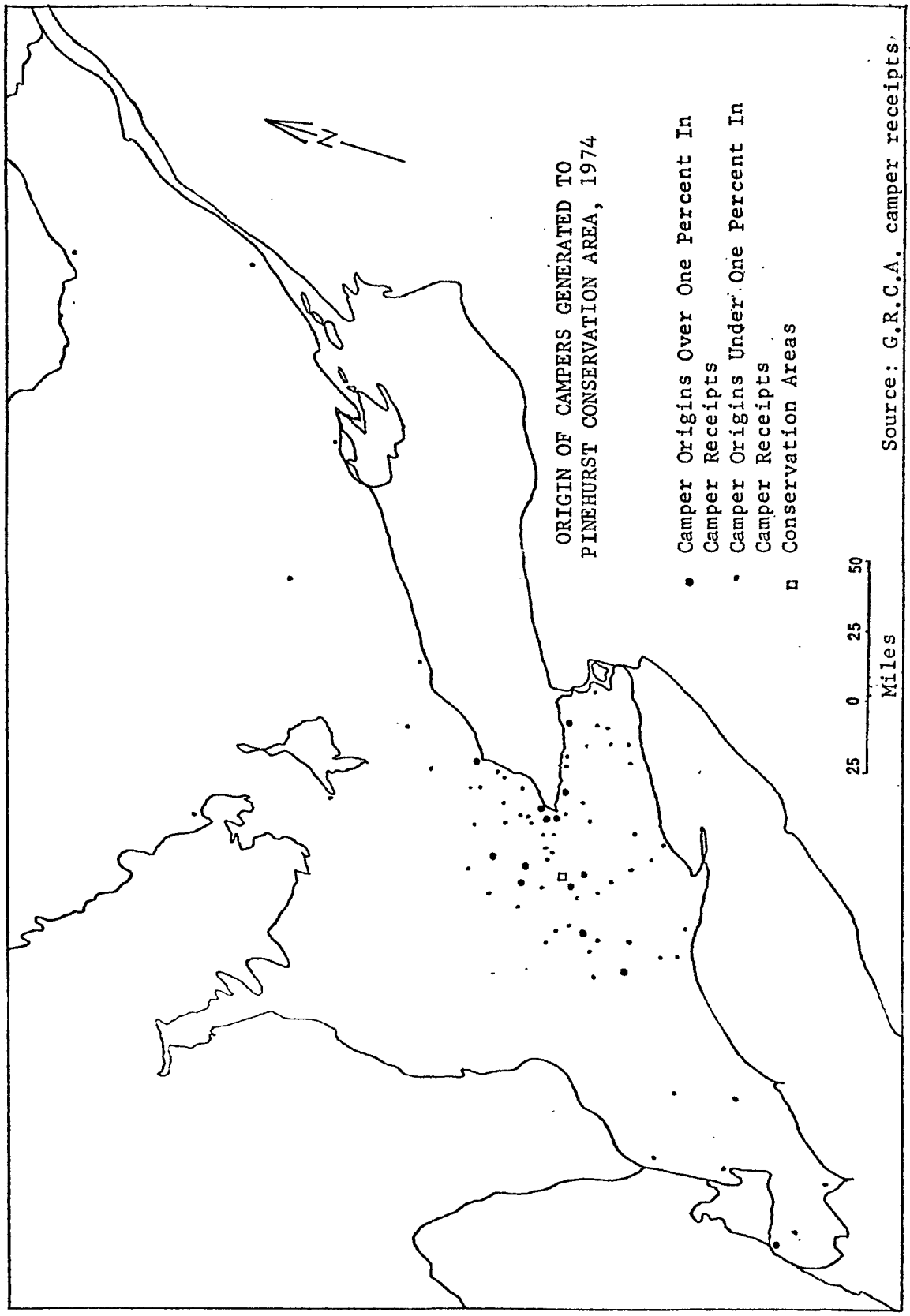
ORIGIN OF CAMPERS GENERATED TO
PINEHURST CONSERVATION AREA, 1974
N
• Camper Origins Over One Percent In Camper Receipts
• Camper Origins Under One Percent In Camper Receipts
Conservation Areas
25 0 25 50
Miles
Source: G.R.C.A. camper receipts

Figure 14

Table 16

CAMPER STATISTICS BY ORIGIN FOR

PINEHURST CONSERVATION AREA, 1974

Cities	Number of Entries	Days Stayed	Fees Paid ($)	No. in Party	% of Campers
Woodstock	17	24	78.50	64	3.62
Hamilton	103	223	727.50	448	21.91
Paris	6	20	64.00	23	1.28
Burlington	27	58	203.00	148	5.74
Brantford	26	55	176.50	121	5.53
St. Catherines	10	24	87.00	40	2.13
Toronto	24	45	165.00	122	5.10
Waterloo	15	22	81.00	79	3.19
London	5	14	57.00	24	1.06
Kitchener	45	111	368.00	189	9.57
Dundas	17	35	121.00	75	3.62
Cambridge	40	104	288.50	136	8.51
Stoney Creek	5	10	37.00	21	1.06
Guelph	6	10	35.00	19	1.28
Windsor	5	5	20.50	27	1.06
Total (15)	351	760	2509.50	1536	74.68
Cities less than 1.0% (67)	98	157	578.00	407	20.85
Out of Canada	15	20	75.00	52	3.19
Out of Province	6	11	38.50	20	1.28
Total Sample (82)	470	948	3201.00	2015	100.00

Source: Grand River Conservation Authority camper receipts.

any other origin in Ontario for 1974. Following Paris campers in the average days stayed were the Cities of London and Cambridge, while St. Catherines and Kitchener followed Paris campers in the average fees paid for camping. The City of Burlington contributed the largest average party size, followed by the Cities of Windsor and Waterloo. American visitors did not stay as long or pay as high a fee for camping on the average as did the other province campers, but the Americans did provide a larger average party size.

The locations of the places of origin for Pinehurst Conservation Area campers mirrored the discrepancies between the in-basin residents and out-of-basin resident campers (Appendix B, Table 26). Campers that originated from outside of the drainage basin accounted for sixty percent of the total visitation to Pinehurst. The dominance of campers that travelled less than forty-five miles for camping at Pinehurst was once again evident from the table, with eighty-five percent of the camper entries in this category. Both the campers from inside the basin and outside the basin produced a rapid decrease of camper participation with increasing distance from the conservation area.

The majority of the campers that travelled to Pinehurst Conservation Area were overnight and weekend oriented. The campers that stayed for one day accounted for forty-nine percent of the total days stayed. This was found to be the largest percentage of day-users of the four areas. The percentage of campers that stayed for two days in length was twenty-nine percent of the total days stayed, while the three-day campers provided nine percent of the total days stayed. But the campers that stayed from four to fourteen days accounted for twelve percent of the total days. This was four percent higher than Brant campers that stayed from four to fourteen days.

The frequency of camper visitation to Pinehurst Conservation Area displayed a similar frequency curve to

Byng Conservation Area. Weekend camper attendance at Pinehurst was not as radical in camper entries as the three other areas except for the months of May and June. The holiday weekends of May twenty-fourth, July first and September first are not as pre dominant as the other conservation area attendances. The mid-camper season of July to August showed a regular attendance pattern with increased visitation on weekends.

Pinehurst Conservation Area campers were found to differ from the campers who attended Brant Conservation Area by staying longer and including more members in their camper parties. Overall, the majority of the campers originated from the large urban centres of Hamilton and Kitchener-Waterloo which both increased their camper representation at the conservation area over the 1972 camper year. Pinehurst was also found to influence the camper travel patterns of Brant Conservation Area campers by attracting a greater percentage of campers from Hamilton. Similar to the total sample of the four areas, Pinehurst had the number of camper origins increase over the 1972 sample but had the majority of the campers originate from only fifteen centres (seventy-five percent). The inference from these differences is that Pinehurst Conservation Area offered a different kind of camping experience than the other three areas. Although Brant Conservation Area increased its camper attendance dramatically over the 1972 camper attendance, Pinehurst, located a short distance away, did not experience the same growth nor the effect of camper overflow from Brant. Thus Pinehurst can be observed as serving a different camper group that has originated from a north by north-east direction. These campers were willing to travel the extra distance to camp at an area that was less congested and environmental aesthetic than the urban oriented campground of Brant Conservation Area.

3.2.6 Summary

The analysis of camper travel patterns to the four conservation areas for 1974 yielded 182 camper origins in Ontario. The ontario origins provided ninety-five percent of all camper visitation to the four areas. Of the 182 camper origins, seventeen centres provided over one percent each of the total camper entries. The seventeen centres accounted for seventy-one percent of all camper attendance to the four areas.

The City of Hamilton contributed to the largest overall number of camper entries. Individually, the major camper origin suppliers for Byng and Pinehurst was the City of Hamilton, but Hamilton was surpassed by the City of Brantford in camper generation to Brant Conservation Area and by Kitchener-Waterloo in camper provision to Elora Conservation Area. American visitors were found to contribute a significant percentage of campers to the four areas when compared to the 165 camper origins that contributed less than one percent each in total camper attendance. United States campers were represented by three times as many entries as the campers that originated from the other Canadian Provinces.

Camper visitation from inside and outside of the drainage basin varied considerably in percentage attendance. The campers that travelled to the Grand River Basin from origins outside the basin accounted for sixty-five percent of the total entries, while the basin resident campers supplied only thirty-five percent of the camper entries. The majority of the campers travelled less than forty-five miles to camp at one of the four conservation areas, while increasing distance from the camper origin decreased camper attendance rapidly.

Weekend camping at the four conservation areas was the dominant feature of the frequency of camper arrivals to

the Grand River Basin. The holiday weekend of July first accounted for the highest weekend attendance with eight percent of the total visitation. The other holiday weekends of May twenty-fourth and September fourth did not display the same attendance record with several mid-summer weekends surpassing them in attendance.

The campers who travelled to the four conservation areas were found to originate from a few large urban population centres in Southern Ontario. It has become apparent over the two years that the conservation areas have become urban oriented campgrounds serving a predominantly non-basin resident camper population. Although the number of camper origins have increased over the two years, the major increases were from the larger population centres. This has implied that a change has occurred in the composition of the campers who now desire to consume urban oriented camping in relatively congested conditions on weekends. Since there has been an increase in the number of camers over the two years and there was a tendency for the campers to stay longer than one day, the regional conservation areas should have an influence on other recreational camping and park areas in Southern Ontario. Conservation areas offer camping in easy access of the campers' origin, except for Byng Conservation Area, and at a lower cost in travel and entrance fees to that of Provincial Park Areas and the St. Lawrence Park Commission areas. This fact infers that the conservation areas fill a gap between City parks and the more distant Provincial Parks, thus fitting into the regional system of parks in Southern Ontario. Instead of an exodus to the Provincial Parks on weekends and holidays, the recreational travel patterns of campers will show a tendency towards the relatively new social environs of the regional conservation areas. This is not to imply that the conservation areas have become the main source of recreational camping for the urban populations but that the conservation areas have

captured some of the campers from the more environmental aesthetic park environments who have desired facility and urban oriented camping.

3.3 Conclusions

Of the numerous factors that influenced the travel for recreational camping to the Grand River Basin, the origin and destination information revealed that the population of the camper origin and the distance travelled to camp at the conservation areas were the major components of the camper travel patterns in Southern Ontario. As distance travelled to the conservation areas decreased the tendency to camp increased, particularly when the camper origin was a large population centre. This was the case when the Cities of Hamilton, Toronto and Brantford were examined. The City of Brantford, located adjacent to Brant Conservation Area, provided thirty-six percent of the camper entries to Brant in 1974. As distance increased, the campers that travelled from Hamilton, being overshadowed by Brantford campers, accounted for only twelve percent of the visitation in 1972. In 1974 there was a similar occurrence, with an increase in Hamilton campers to fifteen percent of the total visitation. With an increase in distance Toronto campers only provided four percent of the camper entries to Brant in 1972 and five percent in 1974. This also occurred with the camper attendance at the three other areas but with Hamilton campers providing the majority of camper participation in 1972 and 1974.

Campers, being a special kind of tourist, may change their travel patterns over the two sample years, particularly when the major variables of population and distance change. When population increases over the two-year period, specifically the urban populations of Brantford, Hamilton and Toronto, the effect should be to increase the number of

campers travelling to the four conservation areas. The origin and destination information has displayed the occurrence with increases in camper attendance over the two sample years. Yet just as importantly is the impedance of distance. Even though populations increase dramatically over the study years, distance should still act as a deterrent to travel. This was found to be true in both samples since the analysis revealed that the majority of the campers travelled less than forty-five miles. But with increasing distance comes more opportunities to camp between the origin and the conservation area destination. Although the effect of intervening camping opportunities is difficult to measure it becomes a function of the friction of distance. Attendance at the conservation areas can also be viewed as a function of accessibility, which can decrease or increase the effect of distance with variation in road types. How distance and population affect the travel patterns of campers in the Grand River Basin will be analysed and explained through the comparison of the two camper samples in the following chapter.

CHAPTER 4

A COMPARATIVE ANALYSIS OF THE CAMPER TRAVEL PATTERNS IN THE GRAND RIVER BASIN FOR 1972 and 1974

The analysis of the origin and destination information for the years of 1972 and 1974 showed an overall increase in camper attendance to the four conservation areas. Referring to Table 1, the attendance, as reflected in the camper units, at the four areas had increased by an average of forty-five percent with day-use visitation increased by twenty-four percent over the two sample years. The largest increase occurred for Brant Conservation Area campers which experienced a 155 percent increase in camper units over the 1972 camper year. Byng Conservation Area was found to increase in the number of camper units by three percent, while Elora and Pinehurst Conservation Areas increased by twelve and ten percent, respectively, in camper units.

The increases in the camper attendance of the four conservation areas showed a similarity to the increases in the camper units reported by the Grand River Conservation Authority, with the exception of Byng Conservation Area. Byng had an overall decrease of fifteen percent in the camper entries from the 1972 camper entries. Brant Conservation Area showed a similar increase in camper visitation in 1974 to that portrayed by the camper unit increase. Elora Conservation Area had a slightly larger increase in camper visitation compared to the camper unit, while Pinehurst campers increased their visitation to the area but not as great as reported by the Grand River Conservation Authority for 1974.

SAMPLE SIZE CHANGES FOR 1972 AND 1974

	1972	1974	Percent Change
Brant Conservation Area	261	648	148.2
Byng Conservation Area	561	477	-14.9
Elora Conservation Area	809	835	3.2
Pinehurst Conservation Area	454	470	3.5
Total	2085	2430	16.5

The overall percentage increase of the four conservation area campers was comparable to the Provincial Park camper percentage increase when the 1973 Provincial Park camper increase was doubled to achieve a value for the 1972 to 1974 study period. This percentage value (13.0%) was considerably less than the average camper percentage change of the Provincial Parks from 1960 to 1973. The average percent change per year was twelve percent, which yielded twenty-four percent over the two sample years of 1972 to 1974.

The camper attendance at the four conservation areas was found to be strongly associated with the large population centres in Southern Ontario, particularly the centres located close to the Grand River Drainage Basin. With an increase in the population of the large centres and surrounding urban communities, camper visitation to the four conservation areas should also increase. In essence, this has occurred when reference was made to the Counties of camper origin (Table 17).

The most significant increase in camper attendance to the four areas was furnished by the Counties of Brant, Wentworth, Oxford and Halton. The minor camper contributors of Simcoe, Ottawa, Norfolk and Dufferin Counties had larger increases in percentage attendance but were relatively small compared to the four former counties. Referring to Appendix A Table 1, Brant County had a population increase of only six percent over the five-year period, while the Counties of Oxford and Wentworth both increased by five percent in population. Halton County had an increase of twenty-five percent

Table 17

CAMPER ATTENDANCE TO THE FOUR CONSERVATION AREAS BY COUNTY OF ORIGIN, 1972 AND 1974

County	1972 Camper Attendance	1974 Camper Attendance	Actual Attendance Change
Algoma	1	0	- 1
Brant	168	567	399
Bruce	8	0	- 8
Dufferin	2	5	3
Elgin	4	8	4
Essex	29	29	0
Frontenac	5	0	- 5
Grenville	1	2	1
Grey	15	7	- 8
Haldimand	86	65	-21
Halton	121	145	24
Hastings	2	3	1
Huron	2	5	3
Kent	6	14	8
Lambton	6	6	0
Leeds	4	0	- 4
Middlesex	29	36	7
Niagara	232	199	-31
Nipissing	1	0	- 1
Norfolk	9	28	19
Northumberland	26	0	-26
Ontario	9	10	1
Ottawa	2	9	7
Oxford	38	49	11
Peel	27	29	2
Perth	41	9	-32
Simcoe	1	9	8
Toronto	147	159	12
Waterloo	386	369	-17
Wellington	213	102	-111
Wentworth	388	561	173
York	155	161	6

Source: Grand River Conservation Authority camper receipts

in population over the five years or an increase of five percent in population per year. In contrast to the above population increases, the County of Peel had an increase of fifty percent in population or ten percent per year, yet the camper increase was only seven percent over the two years. The County of York, a major camper supplier to the Grand River Basin, had a population increase of twenty-one percent over the five years, which yielded a change of four percent per year, yet it only provided an increase of four percent in camper attendance from 1972 to 1974. Metropolitan Toronto accounted for a camper increase of eight percent while only providing a population increase of ten percent or two percent change on the the average per year.

Although the changes in the number of camper entries and the increases in population of the counties did not reveal a strong association, the increases in camper travel to the Grand River Basin over the years should be correlated to the changes in population from the individual centres of origin rather than the county grouping that combines rural and urban populations. Differences in rural resident campers and urban-oriented campers were found to exist in numerous studies.[1] This should then account for part of the discrepancies in camper attendance changes to the four areas.

Another factor that was found to be associated with camper attendance was the travel distance to the site. Brant County campers increased dramatically in attendance to the four areas in comparison to the other major camper producing Counties. This was found to be a factor of the high accessibility of campers to the four conservation areas,

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[1] R. N. Clarke, J. C. Hendee and F. L. Campbell, "Values, Behavior and Conflict in the Modern Camping Culture." See also, M. Blutena and L. L. Klessig, "Satisfaction in Camping: A Conceptualization and Guide to Social Research" and J. C. Hendee, "Rural-Urban Differences in Outdoor Recreational Participation."

particularly to the two conservation areas of Brant and Pinehurst located in Brant County boundaries. Although the population increase per year for Brant County was not as significant as Peel or Halton Counties, the shorter travel distance to the four conservation areas, accountable by the central location of Brant County in the drainage basin and a good highway arterial network, produced the high camper attendance increase over the two years. The increased distance from the Counties of Halton and Peel would have had a negative effect on the population increases and a subsequent reduction in the frequency of camper attendance to the four areas. Accessibility to Elora Conservation Area was high for the Peel and Halton County campers, but the three other conservation areas, particularly Byng Conservation Area, were not as accessible to the campers, and thus were found to have lower camper attendance frequencies than Brant County campers. The potential for camper production from the Toronto Metropolitan Area was high when the population of the area was considered. But with the increased travel distance to the four areas and the resultant inaccessibility of the campers, camper generation became insignificant when it was realized that only 0.044 campers per thousand population were produced from Toronto in 1974.

The County of Wentworth, which rivalled Brant County campers in attendance, had a forty-four percent increase in camper visitation to the four areas over the two sample years. Although the county population increase was less than five percent over five years, the close proximity of the population to the four conservation areas produced the high camper increase.

The table of camper attendance by County origin also displayed the loss of camper attendance from the five Counties of Algoma, Bruce, Frontenac, Leeds and Northumberland. These Counties are located at considerable distances from the

Grand River Drainage Basin, particularly the County of Algoma situated in Northern Ontario. Although all five counties had population increases of two to ten percent from 1966 to 1971, the distance travelled to the areas must have become the overriding factor to travel for camping in the Grand River Basin. The Counties of Frontenac and Algoma have large population centres located in their boundaries, yet these centres did not stimulate campers to travel to the conservation areas. The travel patterns of campers must then differ between rural and urban origins, particularly in the case of the Cities of Brantford, Toronto and Hamilton. But, just as important as the rural-urban distinction between campers, are the alternative opportunities for camping as the distance increases between the origin and conservation area destination. In the case of the more distance Counties and population centres numerous intervening camping opportunities are presented to the campers in their travels to the conservation areas. The reason for the lower attendance of campers from, say, Frontenac and Algoma Counties, are the numerous Provincial Parks, and in the eastern portion of Ontario, the St. Lawrence Parks Commission areas, that afford a more aesthetic environment to that offered by the four urban oriented conservation areas. The four conservation areas were found to serve the local populations of Hamilton, Toronto and Brantford whose campers may have a different perception of what camping should be in comparison to the Canadian Shield residents of Algoma and Frontenac campers.

4.1 A Comparative Analysis of the Four Conservation Areas, 1972 and 1974

The camper origins that provided over one percent each in camper attendance to the four conservation areas were examined to determine the actual changes in attendance to the four areas (Table 18). The largest increase in camper

Table 18

ACTUAL CHANGES IN CAMPER ATTENDANCE BY SELECTED ORIGINS, 1972 AND 1974

City	Brant C.A.*	Byng C.A.	Elora C.A.	Pinehurst C.A.	Total Change
Toronto	22	- 3	-56	1	12
Hamilton	70	-39	18	27	76
Kitchener-Waterloo	7	2	-56	31	-16
Burlington	4	- 7	2	10	9
Stoney Creek	7	0	3	- 5	5
Dundas	6	0	3	9	18
St. Catherines	1	3	1	6	11
Paris	6	1	- 2	- 5	0
Brantford	156	-19	21	-28	130
London	1	- 6	- 5	- 9	-20
Mississauga	0	3	0	- 3	0
Guelph	7	- 2	24	- 8	21
Woodstock	- 3	0	0	- 3	- 6
Cambridge	1	- 1	6	- 9	- 3
Port Colbourne	0	- 5	0	0	- 5
Niagara Falls	4	11	- 3	2	14
Dunnville	0	-24	0	- 3	-27
Annon	1	- 5	- 4	0	- 8
Grimsby	- 4	4	1	- 2	- 1
Oakville	4	- 3	- 4	- 4	- 7
Caledonia	3	4	- 8	- 6	- 7
Windsor	0	0	3	- 5	- 2
Brampton	3	1	- 5	2	1
Elmira	- 1	0	6	2	7
Ayr	0	1	- 1	- 4	- 4
Simcoe	5	1	- 1	4	8
Hagersville	12	0	0	- 1	11
Elora	2	0	7	2	11
Welland	3	8	0	0	11

Source: Grand River Conservation Authority camper receipts.

*C.A. denotes Conservation Authority.

attendance originated from the City of Brantford, with 130 camper entrances. The City of Hamilton was second in camper attendance increase with seventy-six entries. Hamilton was followed by the City of Guelph with an actual camper visitation increase of twenty-one entries. The City of Dunnville had the largest loss in camper provision to the four areas, followed by the Cities of London and Kitchener-Waterloo. The changes can be related to the population size and population increases of each centre, but more importantly to the distance travelled for recreational camping.

The travel patterns of campers from the Cities of Toronto and Hamilton provided a prime example of how distance operated as a deterrent to recreational travel over the two sample years. The Toronto campers that travelled the sixty-five miles to Brant Conservation Area increased their attendance by twenty-two entries. With an increase of travel distance to Pinehurst Conservation Area, the Toronto camper representation in the campground only increased by one receipt. But with an increase of the distance to Byng Conservation Area, the campers from Toronto decreased over the 1972 camper visitation. Similarly, with the rise in the inaccessibility of Elora Conservation to Toronto campers, attendance at the conservation area decreased below the attendance achieved in 1972. In contrast, Hamilton, with one-seventh of the population of Toronto, provided larger increases in camper attendance due to the shorter distance and increased accessibility of the conservation areas to the Hamilton campers. Brant and Pinehurst Conservation Areas, located twenty-six and thirty-two miles distance from Hamilton, had an increase in the number of Hamilton campers over the two sample years. Both areas are directly linked to Hamilton by first class highways, allowing travel times of less than three-quarters of an hour. Yet with an increase in the distance to Elora, the actual increase in attendance decreased. With a decrease in the accessibility

to Byng Conservation Area, because of travel over secondary road types, the attendance displayed a loss of camper entries over the 1972 camper sample.

Although distance to the conservation areas was a principle factor in impeding recreational camper travel to the four areas, the effect of distance only partially explains camper visitation to Pinehurst Conservation Area. Pinehurst Conservation Area, located approximately ten miles from Brant Conservation Area, had its camper visitation decreased in actual entries from many origins in comparison to the camper entry increases at Brant Conservation Area over the two years. If the term piracy could be applied to the camper attendance at Pinehurst, Brant Conservation Area would be the guilty party. Brant Conservation Area had its attendance increased by 387 campers, which brought the total visitation to 648 camper entries. Although Pinehurst Conservation Area increased in attendance by three percent, Brant surpassed Pinehurst by 178 receipts in 1974, even though Pinehurst had almost double the camper entrances of Brant in 1972.

The City of Brantford provided an increase of 156 camper entries to Brant Conservation Area, which, at the expense of Pinehurst Conservation Area, experienced a loss of twenty-eight camper entries. Hamilton campers were found to prefer Brant Conservation Area by evidence of the increased Brant camper attendance of seventy entries compared to an increase of twenty-seven entries at Pinehurst. Toronto displayed a similar account by generating more campers to Brant than to Pinehurst Conservation Area. The Cities of Oakville, Windsor, Guelph and London all supported Brant in camper attendance in comparison to the Pinehurst Conservation Area visitation.

The majority of the population centres had a directional bias in their camper travel patterns over the two

years. The road network directed the campers to Pinehurst via Brant Conservation Area. Brant, acting as an intervening opportunity to camper travel to Pinehurst, provided an area where the campers could stay without having to travel further and forego the uncertainty of crowded conditions at Pinehurst. The centres located north of Pinehurst, such as Kitchener-Waterloo and Elmira, increased their camper attendance at Pinehurst in 1974 over the camper visits to Brant. There was also an indication that Burlington and Dundas campers supported Pinehurst in camper entries over that of the Brant visitation. The reason behind the camper attendance from Burlington and Dundas was found to be Highway 99. The highway provided a direct link to the City of Paris, which is located almost equidistant between both Brant and Pinehurst Conservation Areas, allowing ease of access to Pinehurst. Yet Paris campers had travelled to Brant for camping purposes to a greater extent than to Pinehurst. Although the statement by Thompson that if two recreational park areas are situated close to each other one will dominate was found to be true,[2] Brant Conservation Area, situated beside the City of Brantford, influenced the urban oriented campers to travel to Brant and leave Pinehurst to the more environmentally oriented campers.

The role of distance was found not only to be the key in limiting camper travel to the Grand River Basin, but to limit the visitation to recreation areas by all types of campers. O'Rourke observed that fifty-four percent of the campers travelled less than forty-eight miles for camping purposes.[3] The origin and destination information for the four conservation areas revealed that seventy-six percent of

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[2]B. Thompson, "Recreational Travel: A Review and Pilot Study."

[3]B. O'Rourke, "Travel in the Recreational Experience —A Literature Review," p. 141.

the campers that attended the areas in 1972 originated from distances of less than forty-five miles, while the total increased to eighty-four percent of the campers in 1974. These findings, coupled with the fact that the majority of the campers stayed for one day in 1972 and 1974, demonstrated that the conservation area campers differed from other types of Southern Ontario campers. In other words, the four conservation areas were oriented towards weekend camping with the minority staying longer than three days in length. Thus, campers that consume this type of camping travel relatively short distances to achieve the maximum of their weekend camping experience.

The City of Hamilton demonstrated that the majority of its campers travelled short distances to the conservation areas. Although the city had a central location to the four areas and a population increase of four percent from 1966 to 1971, the provision of campers to the four conservation areas increased by less than one percent of the total camper entries in 1974. The City of Toronto, which had an increase of seven percent in population from 1966 to 1971 and an actual entrance increase of twelve camper receipts, experienced a decrease in the percentage of camper supply to the four areas due to the longer travel distance to the conservation areas. The twin Cities of Kitchener and Waterloo had a population increase of over four percent per year between 1966 and 1971, but had a decrease of three percent in the overall camper attendance over the two sample years. The City of Brantford, although having a below average increase in city population, experienced the largest growth in the percentage of campers furnished to the four areas between 1972 and 1974. Because of the ease of accessibility of the four conservation areas to Brantford campers, the campers provided twelve percent of the total visitation to the areas in 1974, which was an increase of five percent over the 1972 camper attendance. Overall the differences in the

camper attendance over the two years demonstrated that the total number of camper origins increased by thirty percent in the 1974 sample, while the attendance from the 165 centres that generated less than one percent each in camper attendance only accounted for an increase of four percent in the total camper visitation. This was not a very large increase when compared to the three large population centres of Brantford, Toronto and Hamilton.

The campers that travelled to the four conservation areas in 1974 accounted for eighteen percent more of the total days stayed than for 1972. This reflected the increase in camper visitation to the areas in 1974 and also the tendency towards a longer length of stay by campers. The number in the camper party also increased over the two sample years along with an increase in the entrance fees paid for camping purposes. The increase in fees not only displayed the camper attendance increases but also the increase in the fee structure of the conservation authority areas. The entrance fees for camping were increased from two dollars to $3.50 for one day's camping at the areas.

The percentage increases in the days stayed, the fees paid and the camper party size were found not to increase significantly when the average values for the two sample years were compared. Overall the campers stayed approximately two days in length, paid higher fees in 1974, and brought an average of four persons in their camper parties. In comparison to the Grand River Conservation Authority annual report, the average party size for 1974 was listed as 3.9 persons.[4] The average party size of the conservation areas varied considerably from the average Provincial Park camper party size. The Provincial Parks reported an average camper party size of 2.8 persons in 1973, which varied from 2.3 to three persons per camper party by place

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[4]Grant River Conservation Authority, 1974 Annual Report.

of destination in Ontario. Also the length of stay of Provincial Park campers for 1972 and 1973 was an average of 2.2 days, which varied from 1.8 days to 3.1 days with the area of destination, in comparison to an average length of stay of two days for conservation area campers.[5]

The frequency of camper attendance by date to the four conservation areas changed in the pattern of camper entrance over the two sample years. The major change in camper attendance was during the statutory holiday weekends, particularly the weekends of July first and September fourth. In the 1972 camper season, Labour Day accounted for the highest visitation frequency of all the weekends, with Hamilton campers providing approximately twenty percent of the total entries. In 1974, the weekend of September fourth yielded to an increase in the campers that entered the conservation areas on the July first weekend. The July first weekend supplied seven percent of the total visitation to the four areas in 1974. Hamilton campers were again found to account for over twenty percent of the camper entries on this date. Overall, the date of arrival of campers to the four areas for 1974 displayed a similar weekend peaking to the 1972 camper sample with the mid-camper season remaining relatively stable in attendance over the two years.

4.1.1 An Analysis of the Individual Conservation Areas, 1972 and 1974.

The comparison of the 1972 and 1974 camper entries for Brant Conservation Area revealed that the City of Brantford increased in camper attendance by five percent over the 1972 camper population. The increase of campers from Brantford was due to the average 1.5 percent population increase per year, and more importantly, the short distance that the campers had to travel to Brant Conservation Area.

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[5]Ontario Provincial Parks, Statistical Report 1973.

Distance to the conservation area and ease of accessibility stimulated the City of Hamilton to increase the camper attendance at Brant by four percent. Toronto, with a larger average population increase than Hamilton but with a longer travel distance that limited the camper visitation, increased by one percent in 1974. The City of Burlington, with a dramatic increase in population size, had an actual increase in the percentage of campers provided to Brant Conservation Area. One reason for the decrease of attendance could have been the development of a Provincial Park in the Burlington vicinity. Bronte Creek Provincial Park was only at the conception stage in 1972 and by 1974 it had been built to service the region population's recreational needs.[6] Altogether, the centres that provided over one percent each in camper attendance accounted for seventy-two percent of the camper entries to Brant Conservation Area. The exception was the City of St. Catherines which had an actual loss in percentage attendance of more than one percent from its 1972 camper supply of two percent of the total camper visitation.

American visitation to Brant Conservation Area decreased by two percent of the total camper attendance for 1972. United States campers were found to stay longer in total days and bring a larger number of camper party members in 1974, but the increase in the distance travelled produced by the increased travel time of lowered speed limits on freeways and highways decreased the camper attendance to Brant. Other Canadian campers also decreased in visitation over the two years to a greater extent when the total attendance at Brant Conservation Area grew by 150 percent over the 1972 camper attendance, decreasing the impact of the

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[6]Bronte Creek Advisory Committee, Bronte Creek Provincial Park: Policy Recommendations Report. (Toronto, March 1972).

percentage attendance of the other province campers.

Brant Conservation Area campers had increased both their average length of stay and camper party size in 1974. The increase in the average length of stay reflected the tendency towards the percentage of longer stays from four to fourteen days at the conservation area. Brantford campers were found to increase their average length of stay at the conservation area and bring more persons in their camper party on the average than in 1972. In contrast, the campers from the City of Paris, located between Brant and Pinehurst Conservation Areas, decreased their length of stay and brought a larger number of members in the camper party. The change in attendance characteristics for Paris campers would appear to have demonstrated the changed attitudes of the campers to the urban-oriented Brant Conservation Area in contrast to the more aesthetic Pinehurst Conservation Area.

The remaining sixty-three centres that furnished campers to Brant reflected the attitude of the majority of the campers, that Brant Conservation Area was an overnight or weekend campground providing services for the urban camper. In contrast to the 1972 camper attendance characteristics, American campers were found to stay longer and bring a larger average camper party size in 1974, while other Canadian Province campers increased their lengths of stay but brought fewer members in the camper party on the average than in 1972.

Although camper representation was equal for camper origins located outside and inside the drainage basin, there was an increase in the number of campers from origins located less than forty-five miles distance from Brant Conservation Area. In 1972 this category accounted for seventy-one percent of the camper entries which increased to eighty-four percent in 1974. This reflected the changing character of the conservation area from supplying a

campground to all of Southern Ontario users to a campground that services a local population. This also showed that the conservation area was beginning to service a population that required a recreational area close to their origin so that local campers would not have to travel considerable distances for camping purposes. This was also demonstrated in the frequency of camper visitation over the two years when weekend camping dominated in 1972 and 1974. The 1974 camper attendance frequency from July first to September fourth had every weekend represented in camper visitation greater than in 1972.

In summary, the 1974 Brant Conservation Area campers were found to increase their length of stay, fees paid and camper party size over the 1972 campers. American and Other Canadian Province campers decreased their attendance to Brant but American campers increased their party size while provincial campers increased their average length of stay. The distance travelled by the majority of the campers decreased in 1974, reinforcing the concept that Brant Conservation Area was predominantly a weekend campground serving a local camper population.

The comparison of camper attendances at Byng Conservation Area over the two years revealed a decrease in the actual camper attendance to the area. Although there was not an increase in the number of origins that generated campers to Byng Conservation Area, the forty-four centres that provided less than one percent each in camper entries experienced a loss of over one percent in attendance in 1974.

The inaccessibility of Byng Conservation Area to the majority of the camper origins demonstrated the adjustment of the campers to the increased travel-time to Byng in comparison to the three other conservation areas in 1974. Brant and Pinehurst Conservation Areas were centrally located in the Grand River Basin and Elora Conservation Area

had the attraction of a scenic resource—all of which Byng Conservation Area did not furnish in 1974. The large population centres of Toronto, Hamilton, Burlington and Brantford all increased their attendance at Byng in comparison to the 1972 camper attendance totals. The twin Cities of Kitchener and Waterloo were not represented at the campground in 1972 nor in 1974. The reason behind the absence of Kitchener-Waterloo campers was found to be the long distance to the area, plus the intervening camper opportunities of Brant and Pinehurst Conservation Areas. The Cities of Welland and St. Catherines' campers increased their visitation to Byng since both experienced a relatively large average population increase combined with the shorter travel distance to the area. The most interesting change in camper attendance was from the City of Dunnville. Dunnville campers decreased their attendance by fifty percent in 1974. The reason for the decrease in attendance could be due to a decreasing aesthetic nature of the campground which, with repeated trampling on the predominantly sandy soil, could have been degraded along with the campers' recreation experience. Also the increase in entrance fees could have produced the extra friction to influence the campers' decision not to camp in Dunnville and waylay their attendance plans.

Although Byng Conservation Area was located the shortest distance of the four areas from the United States, American visitation decreased over the two years. The increase in the travel time to Ontario and subsequently to Byng Conservation Area saw a decrease in the camper attendance. Also the camper attendance by travellers from the other Canadian Provinces decreased in total attendance in 1974. The decrease in attendance to Byng can be attributed to the inaccessibility of Byng to provincial campers.

The recreationists that travelled to Byng for camping

purposes in 1974 were found to increase their average length of stay and the average camper party size for the origins that provided over one percent each in camper entries. In fact, most of the campers that attended Byng Conservation Area extended their average days stayed over that of the 1972 camper attendance rate. It can be concluded then that the recreational campers, although decreasing their actual camper attendance, have compensated by staying longer and bringing more camper party members to increase their camper experience and forego the increase in travel-time to the conservation area as compared to the three other areas.

The centres of camper origin for Byng Conservation Area were largely located outside of the basin in 1972 (80%). The origin of the campers from outside increased to eighty-seven percent in 1974. The narrowing of the drainage basin in the Byng Conservation Area explained the discrepancy in camper origin location. Yet the determining factor in camper travel to the conservation area was revealed as distance. Eighty-three percent of the campers travelled less than forty-five miles to camp at Byng. This was an increase of ten percent over the 1972 camper entries in this category. Thus, it would seem that the loss of campers from the origins of Toronto, Cambridge and Kitchener-Waterloo was accounted for by an increase in the number of campers that originated from local populations. This was also observed from the changes in camper entrance frequencies where all the weekends from June first to September first experienced an almost equivalent entrance rate for 1974, except for the holiday weekend of July first which surpassed the attendance in 1972

Overall, Byng Conservation Area campers of 1974, although decreasing in total camper attendance, stayed longer and brought more camper party members than in 1972. The campers were found to decrease their length of travel in 1974 but attended the conservation area on weekends more than in 1972.

The analysis of the camper samples for Elora Conservation Area revealed that the major camper producers of Kitchener and Waterloo decreased in the total camper provision by eight percent from 1972 to 1974. Even though Kitchener-Waterloo had a population increase of four percent per year, camper attendance decreased. Most of the camper attendance loss from the twin Cities of Kitchener-Waterloo to Elora was represented by a gain in camper attendance at Pinehurst Conservation Area over the two years. The loss can be correlated to the difference in the travel time distance. Travel time to Elora from Kitchener was calculated over the shortest route as 0.992 hours in contrast to travel time to Pinehurst of 0.675 hours. Yet Elora Conservation Area, situated on a scenic natural resource area, attracted attendance increases from other population centres located greater distances from the conservation area. Campers that originated from the larger centres of Hamilton, Toronto and Guelph all increased their attendance at the Conservation area supporting Hendee's view that city residents will have their environmental desires enhanced being in an area devoid of aesthetic setting and travel to satisfy their desires in outdoor recreation areas.[7] Elora Conservation Area satisfied the criteria of a recreational setting which provided the attractive force for campers from large centres. Similarly the natural setting stimulated campers from the United States and other provinces to increase their attendance in 1974 and travel the longer distance to camp at Elora Conservation Area.

The Elora Conservation Area campers of 1974 increased their average length of stay and brought approximately the same number of camper party members on the average as the 1972 campers. The major increases in the average length of

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[7] J. C. Hendee, "Rural-Urban Differences in Outdoor Recreational Participation."

stay occurred for the campers from the Cities of Toronto, Hamilton, Mississauga, Dundas and Guelph. The City of Dundas, which was not represented in the 1972 sample, stayed for an average of two days and provided the largest average camper party size of all the origins. Thus the majority of the camper increases to Elora Conservation Area originated from the Toronto-Hamilton region in 1974, an area almost devoid of natural recreational settings and campgrounds.[8]

American and other province campers both increased their average length of stay and average camper party sizes in 1974, emphasizing the attraction of Elora Conservation Area to other than Southern Ontario campers.

The changes in the camper origins from inside and outside of the drainage basin were not as great in 1974 as was the case for Byng Conservation Area. The origin locations remained approximately the same as in 1972 with the campers from outside of the basin accounting for fifty-five percent of the total visitation. The distance travelled to Elora remained relatively stable for the two years with approximately eighty-one percent of the campers travelling less than forty-five miles to camp at Elora Conservation Area. This was also reflected in the frequency of camper attendance over the two years which did not demonstrate a significant change. Even the July first statutory holiday weekend had an equivalent attendance frequency unlike the other three areas. Thus, the majority of the Elora Conservation Area campers oroginated from the Toronto-Hamilton region and travelled less than forty-five miles to camp at

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[8]Ministry of Natural Resources, Conservation Authorities Branch, Guide to Conservation Areas (Toronto, n.d.). See also, Ministry of Industry and Tourism, Camping: Ontario/Canada 1974 (Toronto: Queen's Printer, 1975), and Ministry of Industry and Tourism, Accommodations: Ontario/Canada 1974 (Toronto: Queen's Printer, 1975).

a scenic natural resource. The only change between the two sample years were the decrease in the attendance of Kitchener-Waterloo campers, a lengthening of the average days stayed by most of the campers and an increase in American and other province campers. Overall the scenic natural resource was the main reason why campers travelled the longer distance to camp at Elora instead of attending the other three conservation areas.

The analysis of the campers that travelled to Pinehurst Conservation Area revealed the influence that Brant Conservation Area had on camper attendance to Pinehurst over the two years. The campers from Brantford were found to decrease by three percent in attendance at Pinehurst between 1972 and 1974. Brant Conservation Area captured this attendance loss by increasing its camper visitation from Brantford by five percent over the two years. Yet Pinehurst had camper increases of greater magnitude than Brant Conservation Area over the same period. The City of Hamilton provided an increase of six percent to Pinehurst while only increasing by four percent in attendance at Brant. The Cities of Kitchener-Waterloo also increased their camper attendance at Pinehurst by six percent while Kitchener-Waterloo attendance at Brant Conservation Area decreased. The increased attendance at Pinehurst was almost equivalent to the decrease in camper attendance at Elora Conservation. The concept of Pinehurst being an alternative camping opportunity to Elora and to Brant Conservation Areas was observed as the reason for the increase at Pinehurst. Dundas campers also showed favouritism to Pinehurst Conservation Area by increasing the camper attendance by two percent from 1972 to 1974, while Brant campers from Dundas remained at one percent. The City of Cambridge had an overall decrease in the percentage of camper entries to Pinehurst, but the Brant campers that

originated from Cambridge provided an insignificant percentage for 1972 and 1974. Overall both conservation areas acted as an alternative campground to each other with Pinehurst Conservation Area dominating camper travel from a northerly direction and Brant Conservation Area commandeering camper travel from a sourtherly direction. Both Conservation Areas shared the camper travel from the Toronto to Hamilton region, although Pinehurst was found to attract a higher percentage of campers from this area than Brant in 1974 possibly because of Pinehurst's more aesthetical nature than of Brant's urban orientation.

The average values for Pinehurst Conservation Area campers did not show any appreciable difference in the total average days stayed and average party size. But there were increases from individual camper origins. The Cities of Burlington and Cambridge campers increased their length of stay yet decreased their average party size. Kitchener-Waterloo campers decreased their average length of stay but increased their average party size over the two years. In the case of Brantford campers, an anomaly was found to exist. Brantford decreased its total percentage of camper entries to Pinehurst yet the centres campers increased the average length of stay and camper party size which was larger than the average camper size at Brant Conservation Area. From this it can be inferred that these campers have been motivated by the crowded conditions at Brant Conservation Area in 1974 to camp at Pinehurst where competition for recreational resources is not as intense,[9] Similar to Brant Conservation Area the average length of

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[9]G. H. Moeller, P. G. Larsen and D. A. Morrison, Opinions of Campers and Boaters at the Allegheny Reservoir, U.S.D.A. Research Paper NE-307, Pennsylvania, 1974.

stay of American visitors did increase over the two years but the average camper party size decreased in 1974. It would seem that the American campers were not frequenting the central portion of the Grand River Basin in 1974 and travelled further to attend Elora Conservation Area.

The origin of the majority of the Pinehurst campers, unlike Brant campers, were located outside of the Grant River Basin in 1972 with the percentage increased by six percent in 1974. The major reason for this difference was the directional bias of the highway network in the Pinehurst area. The Cities of Hamilton, Kitchener-Waterloo and Brantford all had direct highway access to the conservation area whereas any campers that travelled from a westerly direction, such as New Hamburg campers, had to travel extra mileage to gain access to Pinehurst.

The majority of the campers in 1972 travelled less than forty-five miles and by 1974 this distance category increased sixteen percent to account for eighty-three percent of the camper entries. The Brant Conservation Area campers majority (88%) also originated from this distance. But, unlike Brant Conservation Area campers, Pinehurst campers did not significantly change in camper entrance frequency over the two years. Both entrance curves for 1972 and 1974 exhibited weekend peaking without any outstanding weekend entries such as the July first holiday weekend at Brant Conservation Area. Thus Pinehurst campers were found to stay an average of two days and consist of an average of 4.3 persons in the camper party. The majority of the campers originated from outside the basin and travelled less than forty-five miles from a northerly direction.

The comparative analysis of the camper samples of 1972 and 1974 has shown that the campers that attended the four conservation areas differed in their on-site and travel characteristics between each other and from

Provincial Park and commercial resort campers. How the camper attendance at the four conservation areas has changed the travel patterns of campers over the two years should be reflected through the changes in the conservation camper market areas. The changes in the camper hinterlands should show the increases in camper attendance and the adjustment in the travel patterns that has been made by the campers in 1974

4.2 Changes in the Conservation Area Camper Hinterlands, 1972 and 1974

The formalization of the estimation of retail trade areas began with Reilly's Law of Retail Gravitation in 1929. The law stated a city would attract trade from the hinterland in direct proportion to the population and inversely to the square of the distance from the city.[10] Converse modified the concept to procure the approximate point between two cities where the trading influence was equal. Retail trade areas of the city could be calculated by connecting the breaking points between the cities and the other competing cities.[11] By adapting one of the population masses of Converse's breaking point formula, the boundaries of the conservation market areas can be determined. This was done previously for the 1972 camper market area in the Grand River Basin. To calculate the 1974 camper hinterlands for the four conservation areas the population capacities were changed to those listed in the Grand River Conservation Report of 1974. The conservation area capacities for the four areas were: Brant Conservation Area, 14816 camper units; Byng Conservation Area, 11936 camper units; Elora Conservation Area, 18193 camper units;

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[10] W. J. Reilly, "The Law of Retail Gravitation."

[11] P. D. Converse, "New Laws of Retail Gravitation."

and, Pinehurst Conservation Area, 10791 camper units (Table 1). The other population mass utilized the 1971 populations for the 182 places of origin that furnished campers to the four areas in 1974 (Appendix C, Tables 4 to 6). The actual shortest route distances were calculated and used in the formula for the distance between the camper origin and the conservation area destination. The breaking points for each population centre were calculated and mapped (Figure 15).

The differences in the camper market areas for the two sample years became apparent without taking into account the population changes. The average distances travelled by the campers changed considerably between 1972 and 1974. The average distance travelled by campers to Brant Conservation Area in 1972 was 53.3 miles. This increased to 61.1 miles in 1974. The distance of camper travel to Elora Conservation Area increased from 59.8 miles in 1972 to 69.4 miles in 1974. Both the conservation areas of Pinehurst and Byng decreased the average distances travelled by campers. Pinehurst decreased from 56.5 miles in 1972 to 53.7 miles in 1974, while Byng campers decreased their travel from 59.8 miles in 1972 to 44.5 miles in 1974. The changes in the distances for the 1974 camper attendance when compared to the distances of Clawson and Knetsch listed on Appendix A, Table 5 showed conservation area campers could be classed as having travelled for the activity of a day-outing. This was also found to be true of the distances recorded by O'Rourke in his survey of recreational travel.[12]

The increases in the average distances for Brant and Elora Conservation Areas were understood since the number of camper origins increased from distant areas. Yet the

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[12]B. O'Rourke, "Travel in the Recreational Experience—A Literature Review," p. 141.

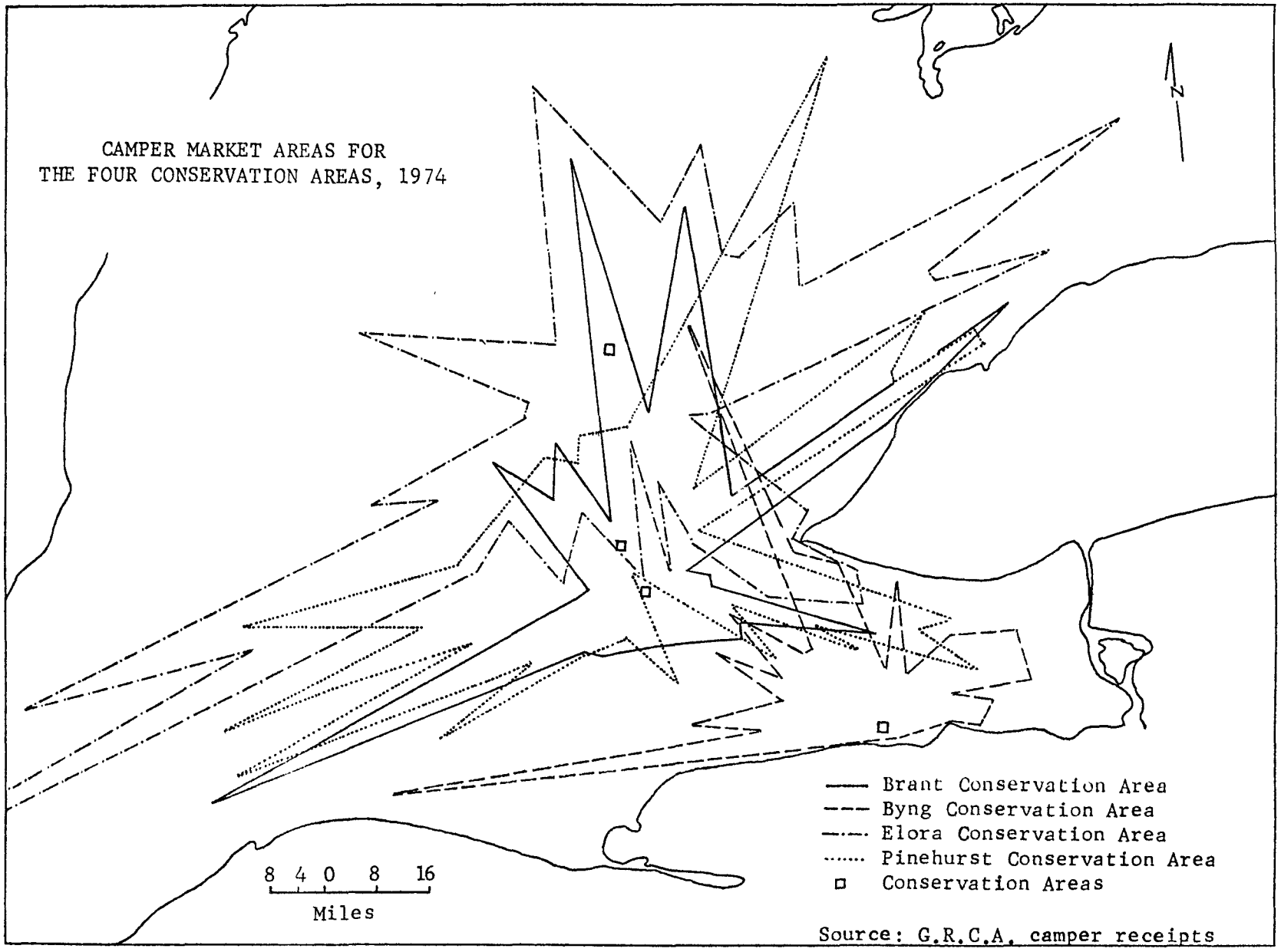
CAMPER MARKET AREAS FOR
THE FOUR CONSERVATION AREAS, 1974
N
Brant Conservation Area
Byng Conservation Area
Elora Conservation Area
Pinehurst Conservation Area
Conservation Areas
8 4 0 8 16
Miles
Source: G.R.C.A. camper receipts

Figure 15

number of camper origins remained the same for Byng Conservation Area and increased for Pinehurst Conservation Area. The explanation of the decreases in camper travel distances was observed as an increase in the number of camper origins close to the two conservation areas. In the case of Byng campers, some of the distant camper origins of 1972 were not represented at the conservation area in 1974 being substituted by camper origins in the local conservation area.

When the breaking points were mapped to discern the differences in camper market area patterns, the 1974 conservation area hinterlands showed an increase in the overlapping of their areas, particularly for the two conservation areas of Brant and Pinehurst (Figures 2 and 15). The Elora camper trade was observed to serve the majority of the campers that originated in the northern portion of the basin, while the Byng camper trade area displayed the relative isolation of the conservation area in the southern portion of the drainage basin serving the campers from Niagara, Haldimand and Norfolk Counties in 1974. Both Brant and Pinehurst camper areas were found to service the central portion of the Grand River Drainage Basin. The two conservation areas showed a west to east directional bias in camper hinterlands. The Pinehurst camper hinterland displayed a stronger directional bias to the MacDonald-Cartier Freeway (Highway 401) than did Brant Conservation Area, although Brant's camper trade area was found to project in a northerly direction competing with Elora Conservation Area. The camper areas also showed the influence of the small camper origins over the larger population of Toronto, Hamilton and London. The hinterland areas demonstrated the effect of the large populations which had the potential to overpower the conservation areas in attendance compared to the smaller rural origins. The figures also display the diversity of the metropolitan campers which had access to numerous alternate intervening recreational areas.

In comparison to the 1972 conservation area hinterlands, the 1974 camper trade areas increased in size and directional magnitude. The Brant camper market area increased in size, particularly in a northern direction, while the rest of the area left unserved in 1972 was covered by Brant's trading influence in 1974. The effect of the Kitchener-Waterloo population centre was found to exert more influence in 1974 than in 1972, displaying the decrease in camper attendance over the two years and the diversity of the Kitchener-Waterloo campers to camp elsewhere. The hinterland spur that was projected towards the Niagara Peninsula was shorter than in 1972, but the southern portion of the market area was expanded due to the additions of several camper origins from this area. The addition of these origins was due to the changing nature of Brant Conservation Area and the desire for campers to camp at the most accessible campground area. The region to the south of Brantford has little in the way of overnight camping to offer recreationists except the Provincial Parks that are located on Lake Erie which are of considerable distance away from the camper origins.

The Cities of Windsor and Chatham have also increased the size of the Brant market area population, producing a spur that extended past the City of London. The actual differences in the 1972 and 1974 camper hinterlands can be observed from the average distances of the breaking points between the camper origins and conservation area destinations. In 1972, the average breaking point distance was 18.8 miles. This distance increased in 1974 to an average of 33.9 miles, demonstrating the overall growth of the market area. The growth of the market area was primarily due to the centrality of Brant Conservation Area to the camper population of Southern Ontario and the direct route connectivity of the camper origins to Brant.

The camper area for Byng Conservation Area for 1974 displayed a compacting of the camper hinterland when

compared to the 1972 camper market area. The 1974 trade area increased to service the Counties of Lincoln, Niagara and the southern half of Wentworth County. The conservation area remained in isolation although the two figures showed an extension towards the Cities of Winsdor and Owen Sound. Byng Conservation Area was found to serve a predominantly local population with camper increases from the Cities of Welland and St. Catherines and the larger centre of Hamilton. The other areas of Kitchener-Waterloo, Brantford, London and Toronto all decreased their attendance which demonstrated the adjustment of the campers to the inaccessibility of Byng Conservation Area. The centrality and overall accessibility of the three other conservation areas was the prime factor of the camper loss at Byng Conservation area for 1974.

The decrease in camper representation to Byng from distant origins was observed from the average camper area area distances between the camper origin and the conservation area destination. The average breaking point distance in 1972 was 28.4 miles. The breaking point distances decreased in 1974 to yield an average distance of 26.7 miles, showing the increase of local camper origins over the decrease in distant origins.

The camper trade area for Elora Conservation Area was also found to extend in direction and magnitude over the two sample years. With an increase in the number of camper units to Elora, the spur of camper breaking points that extended past London in 1972 doubled in size to account for an increase in the number of origins and campers from the Counties of Middlesex, Lambton, Kent and Essex. These Counties, similar to the area directly below Brantford, are also lacking in camping opportunities of that offered by the conservation area. Also the Provincial Parks that are located on Lake Huron have tended to become overcrowded and the camping experience could have deteriorated resulting in

the loss of camping satisfaction. The surrounding areas of the conservation area experienced an increase in the camper origins and representation from the local areas. The major change in the camper hinterland was in the direction of the Cities of Burlington and Hamilton, which supplied camper increases to Elora, but more importantly the addition of new camper origins in the Niagara Peninsula. The growth of the camper market area over the two years was reflected in the increase of the average distance of the breaking points. In 1972 the average breaking point distance was 33.5 miles. The breaking point distance increased in 1974 to an average of 40.7 miles. This again reinforced the effect that the large population centres had on increasing the average breaking point distance in addition to the enlargement of the representation of smaller origins outside of the Grand River Basin.

The camper market area for Pinehurst Conservation Area demonstrated a dramatic increase in the size and directional magnitude of the hinterland over the two-year period. The directional bias of the camper hinterland in 1974 was strongly associated to the MacDonald-Cartier Freeway (Highway 401) to a greater extent than in 1972. The camper area also displayed the effect that Brant Conservation Area and the City of Brantford, which were excluded from the 1972 and 1974 market areas, had on camper travel patterns to Pinehurst. Overall, the Pinehurst hinterland filled in the camper shadows left vacant in the 1972 camper market area by having the market area move towards the Cities of Kitchener and Waterloo. The main reason for this filling effect of the conservation area hinterland was the increased congestion at Brant and Elora Conservation Areas. In relation to Elora, Pinehurst Conservation Area was more accessible to the larger population centres of Southern Ontario and thus was able to capture some of Elora's camper market.

Pinehurst also was the intervening campground to Brant Conservation Area and seemingly disrupted the travel patterns of Brant campers that originated from a northerly direction, thus the exclusion of Brantford from Pinehurst's market area. The effect of Toronto and Hamilton on the market area patterns was still evident, demonstrating the overpowering effect of the large population centres with the increase in camper unit capacity. Although Pinehurst Conservation Area increased its camper attendance and camper market area, it experienced a decrease in the average distance of the breaking points over the two years. In 1972 the market area had an average distance of 27.9 miles in breaking point distances. The camper area breaking points decreased to 25.3 miles in 1974 which showed the effect of the numerous small origins that were added to the camper attendance in 1974.

The market area analysis, which used Converse's breaking point formula, depicted the changes in the camper travel patterns to the Grand River Basin between 1972 and 1974. The figure for 1972 demonstrated that a large portion of the camper hinterland was situated outside of the drainage basin. In 1974 the camper origins increased their representation from the outside of the drainage basin as evidenced through the expansion of the Brant and Elora camper market areas. The camper market areas also revealed the effect of the factors of distance and population on the camper travel patterns over the two years. The growth of the camper hinterland for Pinehurst Conservation Area was linked to the accessibility of the area to a large majority of the campers, specifically the campers from Hamilton and Burlington. The highway network surrounding the Conservation Areas of Brant and Pinehurst provided the ease of accessibility that was necessary to stimulate campers to travel to the two areas. In contrast, the inaccessibility of Byng Conservation Area was revealed through the market analysis

which showed a trend towards further isolation from Southern Ontario campers.

The changes in the travel patterns of campers and the camper market areas should reflect a change in the type of camper experience consumed at the conservation areas. Similar to the different kinds of shopping behavior of retail consumers, campers may travel to certain areas for different types of reasons, one being to remain longer at a conservation area to extend the recreation experience. Campers that travelled to the four conservation areas, particularly to Byng Conservation Area, should increase their length of stay at the areas if they have travelled considerable distances. Byng Conservation Area campers were found to lengthen their total and average days stayed over the two years. With the changes in the camper market area, the length of stay characteristics of the campers should also change over the two years.

4.3 Changes in the Camper Length of Stay, 1972 and 1974

As the four conservation areas in the Grand River Basin become more accessible to Southern Ontario campers, more campers will frequent the areas and extend their length of stay. As distance increases the travel cost to camp at distant recreational areas also increases. Yet with the increase in the travel distance and time in travel, the desire to stay longer at a recreational campground should increase. This was found to be true of Byng Conservation Area in the analysis of the origin and destination information where the campers tended to extend their length of stay due to their adjustment to the inaccessibility of the area. Clawson and Knetsch provided some average distances for selected recreational activities. They reported that day-users travel from twenty to fifty miles, weekend users travel up to 150 miles and short vacationers travel between

400 and 600 miles.[13] With an increase in family incomes and recreational leisure time, the desire to stay longer at campgrounds should increase with an increase in the distance travelled as exemplified by Clawson and Knetsch.

The analysis of the length of stay with the distance travelled to the four conservation areas revealed that the majority of the recreational campers stayed from one to two nights with a tendency towards longer stays of up to three days in length in 1972 (Table 19). In 1974, there was a stronger tendency for campers to camp longer, but the majority still camped from one to two days (Table 20). Referring to the individual conservation areas, the majority of the Brant Conservation Area campers in 1972 originated from centres of less than thirty miles distance and stayed from one to two days. Camper attendance decreased rapidly from origins located thirty-one to sixty miles from Brant, with a greater majority staying one to two days. The decay of camper attendance with increased distance was reflected in the sixty-one to ninety miles category with a corresponding decrease in the number of campers that stayed from three to fourteen days. In 1974, there were more campers that originated from longer distances, but the overwhelming tendency was to stay from one to two days. The greatest increase in the length of stay of campers of four to fourteen days was found in the less than thirty-mile category. There were only two camper entries that originated from centres 270 to 330 miles distance that stayed for three days. Although Brant Conservation Area was centrally located to the camper population of Southern Ontario, the impedence of distance to travel for camping purposes was the principal factor in limiting travel to the conservation area. This tends to

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[13] M. Clawson and J. Knetsch, "Economics of Outdoor Recreation," pp. 98-99.

Table 19

THE LENGTH OF STAY BY DAYS AND THE NUMBER OF CAMPER ENTRIES BY ACTUAL ROUTE NETWORK DISTANCE FOR THE FOUR CONSERVATION AREAS, 1972

Actual Distance (miles)	Brant Conservation Area 1	2	3	4-14	Byng Conservation Area 1	2	3	4-14	Pinehurst Conservation Area 1	2	3	4-14	Elora Conservation Area 1	2	3	4-14
	(days)				(days)				(days)				(days)			
9- 30	71	58	11	13	59	66	32	21	74	61	23	12	30	14	4	6
31- 60	27	16	2	1	93	104	34	36	69	67	21	14	222	152	48	21
61- 90	12	7	5	0	6	17	2	0	30	13	6	6	92	70	35	7
91-120	2	1	1	1	9	2	3	1	2	0	1	0	28	18	6	1
121-150	3	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0
151-180	1	0	1	0	5	4	2	0	8	4	1	0	1	1	1	0
181-210	1	1	0	0	1	1	0	0	0	1	0	0	1	1	0	0
211-240	1	0	0	0	0	0	0	0	1	3	0	0	6	4	0	0
241-270	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
271-300	1	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0
301-330	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0
Total	119	83	20	15	174	195	73	59	186	151	52	32	386	260	94	35
Percent	50.2	35.0	8.4	6.3	34.7	38.9	14.5	11.7	44.1	55.8	12.3	7.6	49.8	33.5	12.1	4.5

Source: Grand River Conservation Authority camper entrance receipts.

Table 20

THE LENGTH OF STAY BY DAYS AND THE NUMBER OF CAMPER ENTRIES BY ACTUAL ROUTE NETWORK DISTANCE FOR THE FOUR CONSERVATION AREAS, 1974

Actual Distance (miles)	Brant Conservation Area				Byng Conservation Area				Elora Conservation Area				Pinehurst Conservation Area			
	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14
	(days)				(days)				(days)				(days)			
0- 30	216	152	54	46	61	68	23	29	51	49	9	11	83	53	15	30
31- 60	52	33	16	5	94	79	54	37	188	169	69	25	112	65	25	23
61- 90	27	16	4	2	8	10	1	2	84	72	14	14	16	17	4	4
91-120	5	1	0	0	1	2	1	0	11	20	2	1	3	0	0	0
121-150	6	2	2	0	1	0	2	0	3	1	0	0	5	4	0	0
151-180	1	1	0	0	1	0	1	0	4	4	0	2	7	0	0	0
181-210	2	0	1	0	0	1	0	0	3	0	0	0	1	0	0	0
211-240	0	0	0	0	0	0	0	0	10	4	1	1	0	0	0	0
241-270	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
271-300	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0
301-330	0	1	1	0	0	0	0	0	6	4	0	1	2	0	0	0
7330	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Total	309	207	79	53	167	160	82	68	360	324	95	56	230	139	44	57
Percent	47.6	31.9	12.1	8.13	35.0	33.5	17.1	13.5	43.1	38.8	11.3	6.7	48.9	29.5	9.3	12.14

Source: Grand River Conservation Authority camper entrance receipts.

show that Brant Conservation Area has remained as a short term camping area even though there was a tendency for campers to come from more distant origins in 1974 than in 1972.

The isolation of Byng Conservation Area caused the campers to travel further for camping purposes in 1972, with the majority of the campers originating from thirty to sixty mile distances. The majority of the campers in this category stayed for two days with more campers staying from four to fourteen days than Brant Conservation Area campers. Byng, with an increase of distance to sixty-one to ninety miles, the number of camper entries by length of stay decreased rapidly, yet the tendency was still to camp for two days. There was only one camper entry in 1972 from the 270 to 330 mile category that stayed from four to fourteen days. In 1974, the tendency towards longer stays increased but only in the categories of less than thirty and thirty-one to sixty miles. With an increase of distance campers dis not stay longer, in fact, the limiting distance to Byng Conservation Area was 210 miles in 1974. As was the case for Brant Conservation Area, Byng campers who travelled the extra distance did not stay any longer in 1974 than 1972. The campers generally stayed for two days in the form of weekend camping. The inference is that Byng has remained as a weekend oriented campground, falling within the general distance category of Clawson and Knetsch for weekend travel. The increase of the length of stay in the thirty to sixty mile category tends to imply that the campers remained longer at the area because of an increase in their overall camping experience[14] as opposed to the three other conservation areas.

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[14]G. L. Blutena and L. L. Klessig, "Satisfaction in Camping: A Conceptualization and Guide to Social Research," Journal of Leisure Research, 1969.

The majority of the campers that travelled to Pinehurst Conservation Area in 1972 only stayed one to two days, with twenty percent of the campers staying from four to fourteen days. An almost equal number of campers originated from centres in the two categories of less than thirty miles and thirty-one to sixty miles. The two categories also shared similar lengths of stay with an almost equal twenty percent of the campers staying from three to fourteen days. Campers that originated from centres located greater than ninety miles stayed from one to two days. In 1974, camper attendance from distant origins decreased in the number of camper entries with the campers from these centres staying only one day. The majority of the campers that stayed from four to fourteen days originated from centres located less than sixty miles distance to Pinehurst Conservation Area. In fact, there was a decrease in camper attendance from origins located over sixty miles distance. Overall the tendency of Pinehurst campers in 1974 was to travel shorter distances while staying longer at the area than in 1972. This fact tends to defeat the hypothesis that with increasing distance campers will stay longer at the conservation area. In reality the change in the conservation area to serving a more local population of campers and the area being more aesthetically oriented than Brant Conservation Area has tended to influence campers to stay longer. Also the campers who journeyed to the conservation area from distant origins may have used Pinehurst for stopover purposes in a multiple-destination trip.[15] Along with increasing distance was an increase in alternative opportunities for camping which also tended to work as an

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[15]B. Thompson, "Recreational Travel: A Review and Pilot Study."

impedence to camper travel to the conservation area.[16]

Elora Conservation Area campers of 1972 had the majority of its campers originate from less than sixty miles and stay only one to two days. Unlike the three other areas, the campers that stayed from three to fourteen days originated from centres located more than thirty and less than ninety miles distance from Elora Conservation Area. In 1974, the tendency was towards longer stays by more campers that originated from less than ninety miles distance. In fact, there was an increase in the number of campers from distant origins in 1974 but the majority only camped for one to two days. The reason for the increased length of stay by campers in the less than ninety mile distance category was that the major camper origins of Hamilton and Toronto were situated in this distance range. The area surrounding the two city regions was almost devoid of camping areas in 1972 and 1974[17], plus the tendency of the campers to leave the city environment to camp at the most accessible natural area[18], stimulated the campers to visit Elora and camp as long as they normally would at other recreational campgrounds located at further distances.[19]

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[16] R. L. A. Adams, The Demand for Wilderness Recreation in Algonquin Provincial Park, Unpublished M. A. Thesis, Department of Geography, Clarke University, 1966, p. 42.

[17] Department of Industry and Tourism, Travel Research Branch, The Canadian Tourism Facts Book, 1972. See also, Ministry of Industry and Tourism, CAmping: Ontario/Canada 1974. (Toronto: Queen's Printer, 1975).

[18] R. C. Weaver, "Recreational Needs in Urban Places," in Small Urban Spaces, edited by W. H. Seymour, (New York: N. Y. University Press, 1969).

[19] Ontario Provincial Parks Statistical Report 1973, Ministry of Natural Resources, (Toronto, March 1974). See also, Ontario Department of Tourism and Information, Travel Research Branch, A Study of the Travel Habits of Ontario Households; June 15, 1966 to June 14, 1967 (Toronto, June 1969).

Overall visitation to Elora showed an increase of camper entries from distant origins with a slight tendency towards longer length of stays than one to two days.

The camper entrances to the four conservation areas by actual distance and length of stay differed when the distance measurement was changed to travel time (Table 21). In 1972, the majority of the campers that travelled to the four conservation areas travelled between 0.5 and 1.0 hours in distance. But a considerable increase in the number of camper entries occurred for the category of one hour to 1.5 hours distance. This was the case for Elora and Pinehurst Conservation Area campers. The tendency was for the length of stay to increase with an increase in the travel time. In 1974, Elora and Pinehurst both reflected the 1972 findings (Table 22). This was contrary to the previous observation for Byng Conservation Area that the campers should have had their travel time increased over that of Pinehurst campers due to its isolation in the southern portion of the drainage basin. In fact, the travel time calculations made little difference in the number of camper entries to Byng in 1974 since the majority of the campers had already spent an hour in travel time to camp at the area.[20]

The analysis of the length of stay with distance did not reveal any significant changes in the number of days stayed at the four conservation areas for 1972 and 1974. Referring to the average length of stay by campers from individual city origins for each conservation area, the majority displayed an average stay of one to two days even though the average distance travelled to Brant and Elora Conservation Areas increased over the two years. The average

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[20]For a discussion of the effect of recreational travel inertia see, J. Beaman, "Distance and the Reaction to Distance as a Function of Distance," and R. I. Wolfe, "The Inertia Model."

Table 21

THE LENGTH OF STAY BY DAYS AND THE NUMBER OF CAMPER ENTRIES BY TIME TRAVEL DISTANCE FOR THE FOUR CONSERVATION AREAS, 1972

Time Travel Distance (miles)	Brant Conservation Area (days)				Byng Conservation Area (days)				Pinehurst Conservation Area (days)				Elora Conservation Area (days)			
	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14
0 -0.5	47	32	8	11	13	31	11	17	50	19	15	3	11	4	4	2
0.6-1.0	40	35	4	2	132	130	53	38	76	81	27	20	151	105	25	16
1.1-1.5	18	14	4	1	8	10	2	2	18	30	5	3	88	61	24	8
1.6-2.0	7	1	0	0	3	17	2	0	29	10	3	6	86	56	30	8
2.1-2.5	0	0	3	0	7	2	1	0	3	0	1	0	36	26	9	1
2.6-3.0	3	0	0	1	4	0	2	1	0	1	0	0	1	1	0	0
3.1-3.5	1	0	0	0	0	0	0	0	0	1	0	0	3	1	1	0
3.6-4.0	1	1	1	0	2	0	1	0	8	4	1	0	3	1	1	0
4.1-4.5	0	0	0	0	2	5	1	0	0	1	0	0	4	5	0	0
4.6-5.0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0
5.1-5.5	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
5.6	1	0	0	0	3	0	0	1	0	1	0	0	2	0	0	0
Total	119	83	20	15	174	195	73	59	186	151	52	32	386	260	94	35
Percent	50.2	35.0	8.4	6.3	34.7	38.9	14.5	11.7	44.1	35.8	12.3	7.6	49.8	33.5	12.1	4.5

Source: Grand River Conservation Authority camper entrance receipts.

Table 22

THE LENGTH OF STAY BY DAYS AND THE NUMBER OF CAMPER ENTRIES BY TIME TRAVEL DISTANCE FOR THE FOUR CONSERVATION AREAS, 1974

Time Travel Distance (hours)	Brant Conservation Area (days)				Byng Conservation Area (days)				Elora Conservation Area (days)				Pinehurst Conservation Area (days)			
	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14	1	2	3	4-14
0 - .5	136	102	36	36	51	63	25	25	15	17	2	2	25	21	4	11
.6-1.0	109	57	27	12	89	76	46	37	167	149	56	26	58	38	12	18
1.1-1.5	44	32	8	5	19	9	9	5	58	53	21	8	102	61	24	24
1.6-2.0	11	11	1	0	5	11	1	1	65	65	11	15	25	14	4	3
2.1-2.5	3	0	0	0	2	0	0	0	26	22	4	2	2	2	0	1
2.6-3.0	8	2	1	0	0	0	0	0	6	5	0	0	6	2	0	0
3.1-3.5	0	0	1	0	0	0	3	0	1	3	0	2	1	1	0	0
3.6-4.0	2	0	1	0	0	0	0	0	4	1	0	0	7	0	0	0
4.1-4.5	1	1	0	0	1	1	0	0	10	3	1	1	1	0	0	0
4.6-5.0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
5.1-5.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
75.6	0	2	1	0	0	0	1	0	6	5	0	2	2	0	0	0
Total	309	207	79	53	167	160	82	68	360	324	95	56	230	139	44	57
Percent	47.6	31.9	12.1	8.13	35.0	33.5	17.1	13.5	43.1	38.8	11.3	6.7	48.9	29.5	9.3	12.1

Source: Grand River Conservation Authority camper receipts.

days stayed by camper origin were calculated with the actual route network distance for the four conservation areas. Similar to the findings of the length of stay and distance for each conservation area, the relationship between the average length of stay and the distance travelled to the four conservation areas did not display any correlation between the two variables in 1972. The analysis demonstrated that campers stayed from one to two days with no dependency upon the distance travelled to the four conservation areas. The average distance travelled varied between fifty-one and fifty-nine miles in 1972, while the average length of stay at the four areas ranged from 1.75 days to 2.18 days stayed. Although the previous analysis of the length of stay for 1974 showed an increase in the tendency to camp longer at the four conservation areas, the length of days stayed by the individual camper origins revealed a similar finding to that of the 1972 camper travel patterns.

The analysis demonstrated that there was no relationship between the length of stay and distance travelled to the conservation areas in 1974. Campers that originated from local origins camped just as long as campers that travelled over three hundred miles to camp at the four conservation areas. The average distance travelled to the Grand River Basin in 1974 varied from forty-four miles to sixty-nine miles, while the average length of stay varied from 1.90 days to 2.36 days stayed. Thus, it can be concluded that the distance travelled to the four conservation areas in 1972 and 1974 did not influence the campers to stay longer than two or three days. The conservation areas were predominantly designated as two-day or weekend campgrounds, with a minority staying longer in total days from all distance camper origin locations.

In comparison to the Provincial Pakrs campers, who varied in their length of stay with the distance travelled,

conservation areas were found to occupy a small niche in the recreational campground system in Southern Ontario. The purpose of the conservation areas was shown in 1972 and 1974 to supply camping for weekend and short vacation users who travelled shorter distances than other types of campers reported in the studies by Clawson and Knetsch,[21] O'Rourke,[22] Milstein and Reid [23] and Fine.[24]

4.4 A Gravity Model Analysis of the Changes in the Camper Travel Patterns for 1972 and 1974

The origin and destination information and the camper market area analysis emphasized the effect of distance and the size of the origin population in the generation of camper travel to the four conservation areas in 1972 and 1974. The larger the population of the camper origin, the greater was the number of campers supplied to the four conservation areas. Distance played an even greater role, displaying that the majority of the campers originated from centres located short distances from the conservation areas. As the friction of distance increased, the number of recreationists that travelled for camping purposes decreased. Simply, the larger the population origin and the shorter the travel distance to the conservation area, the larger the number of campers that will be generated from the origin to the conservation area destination.

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[21] M. Clawson and J. Knetsch, "Economics of Outdoor Recreation," pp. 98-99.

[22] B. O'Rourke, "Travel in the Recreational Experience—A Literature Review."

[23] D. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study.

[24] I. V. Fine, Wisconsin and the Vacationer.

The social gravity concept employs the two variables of distance and population with the recreational campground capacity to produce indices of potential camper interaction to the recreational campground areas from camper origins. The simple gravity model takes the form of:

$$I_{ij} = \frac{P_i \cdot P_j}{D_{ij}^2}$$

where: I_{ij} = the interaction between centers i and j;

P_i = a measure of population centre i;

P_j = a measure of population centre j; and,

D_{ij} = the distance between centres i and j.[25]

To validate the importance of the distance, population and campground capacity variables in generating camper travel to the four conservation areas and to assess the changes in the travel patterns of campers over the two sample years, the gravity model was utilized to predict recreational camper travel for 1972 and 1974. The gravitational camper travel analysis was completed by using three distance measures, the 1971 populations of the camper origins for 1972 and 1974 and the campground capacity in the number of camper units reported by the Grand River Conservation Authority for 1972 and 1974. The three gravity models used straightline distance, actual route network distance and time-travel distance as the distance component of the models (Appendix C, Tables 1 to 6). Time-travel distances were calculated for each conservation area camper origin by utilizing the three values of accessibility reported by the Conservation and Recreation Report of the Niagara Escarpment

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[25] P. Haggett, Locational Analysis in Human Geography, p. 36.

(1968).[26] The values used in the time-travel calculations were: fifty miles per hour on freeways; forty miles per hour on highways; and, thirty miles per hour on secondary roads. The potential camper interaction indices produced by the gravity models were correlated to the actual camper attendance from each camper origin by simple linear regression analysis for 1972 and 1974 camper samples.

The gravity model analysis for 1972 produced camper interaction indices that displayed a high correspondence to the actual camper attendance of the four conservation areas. The population centres of Toronto, Hamilton and Brantford were all over-estimated for the four individual conservation areas when compared to the other major camper producing origins. Brantford, in particular, was greatly over-estimated in all three model types. Referring individually to the four conservation areas for 1972, the models incorporated with the straightline distance and actual route network distances showed the highest visual correspondence to the actual camper attendance of Brant Conservation Area. Although the Cities of Brantford and Hamilton were grossly over-estimated in the camper attendance, the straightline distance measurements brought the more distance inaccessible origins close to the conservation area. With an increase of distance to the time-travel distance measurements the smaller camper origins located on secondary roads were found to be underestimated in camper potential and thus had their rank order changed in comparison to the large population centres in Southern Ontario. The Cities of Windsor, Sarnia and London, all with large populations had their rank order increased in predicted camper travel and were

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[26]"Niagara Escarpment Study: Conservation and Recreation Report, June 1968," Regional Development Branch, Treasury Department: Finance and Economics (Toronto, 1968), pp. 24-26.

overestimated due to the increased accessibility of the Cities of Brant Conservation Area.

The isolation of Byng Conservation Area was shown when the three gravity model indices were analysed. The majority of the actual camper attendance to Byng originated from the Cities of Hamilton, St. Catherines and Welland. The straightline distance model adjusted the camper centre origins to coincide with the actual camper attendance from all the camper origins. With an increase in the distance produced by the actual distance model the smaller camper origins were further underestimated in potential camper indices while the three large camper producing centres remained with exaggerated camper indices. When the time-travel distance model camper indices were compared to the actual camper attendance, the three major centres increased their indice values while the smaller population centres were pushed to locations too distant from Byng Conservation Area, resulting in an adjustment to their rank orders in camper attendance and underestimation of their camper attendance.

Elora Conservation Area camper attendance produced by the gravity models showed a higher association to the actual camper attendance for the straightline distance model and the actual route network distance model than to the travel-time distance model. The travel-time distance model underestimated the origins of Kitchener-Waterloo, Guelph and Cambridge in comparison to the more accessible areas of Elora, Fergus and Elmira which had lower attendance ranks than those produced by the gravity model. The straightline distance and the actual distance models brought the Cities of Toronto, Burlington, Hamilton and Kitchener-Waterloo closer to the conservation area and increased their gravity model index ranks in perspective to the actual camper attendance.

A similar account occurred for the Pinehurst

Conservation Area gravity models when compared to the actual camper attendance. The Cities of Hamilton, Brantford and Kitchener-Waterloo were greatly overestimated in camper attendance compared to Paris and Cambridge campers when the time-travel distance model was examined. The former three centres were located more distant than Paris campers but their populations produced the exaggerated values in comparison to the smaller origins. The straight-line distance gravity model and the actual distance gravity model produced the interaction indices that brought the potential interaction closer to the actual camper attendance ranks and reduced the variation between the actual camper attendance and the predicted values.

When the gravity model indices for the four conservation areas were compared to the actual camper attendance for 1972, the straightline distance and the actual distance models were found to have the highest correlation of the three models (Table 23). For the straightline distance model the variables of population, distance and camper capacity were found to explain sixty to ninety-two percent of the factors of camper travel to the four conservation areas. The actual distance model revealed that the change from the straightline distance measurement did not appreciably change the relationship between camper attendance and the predicted camper indices for Brant, Elora and Pinehurst Conservation Areas. But there was a decrease in the explanation for Byng Conservation Area which displayed the effect of increased distance on camper attendance to the area in 1972.

The actual distance gravity model revealed that the variables of population, actual route distance and camper unit capacity explained between forty-seven and ninety-two percent of the factors involved in the generation of camper travel to the four conservation areas. The increase in the friction of distance produced by the time-travel model

Table 23

CORRELATION COEFFICIENTS OF THE GRAVITY MODELS AND THE ACTUAL CAMPER ATTENDANCE FOR 1972

Conservation Area		Straightline Distance Model	Actual Distance Model	Time-Travel Distance Model
Brant	(r)	0.959*	0.959*	0.218
	(r^2)	0.920	0.919	0.047
Byng	(r)	0.841*	0.686*	0.393*
	(r^2)	0.708	0.470	0.154
Elora	(r)	0.776*	0.805*	0.433*
	(r^2)	0.603	0.649	0.188
Pinehurst	(r)	0.843*	0.842*	0.608*
	(r^2)	0.711	0.709	0.369

*significant at 0.05 probability.

decreased in percentage explanation of the factors of camper travel with only Pinehurst campers being susceptible to an increase in the distance factor. The correlation coefficients reinforced the fact that campers that travelled to the Grand River Basin in 1972 originated from large population centres located short distances from the four conservation areas. The inaccessibility of Byng Conservation Area was revealed with the increase in the friction of distance, while Elora Conservation Area, also located on secondary roads, had a higher correlation with the actual route distance model revealing the attraction of the scenic natural resource in stimulating campers from more distant origins than the other three areas. The coefficients also demonstrated the dominance of Brant Conservation Area in camper attendance over Pinehurst Conservation Area. Brant, being more accessible to campers than Pinehurst Conservation Area, had the time-travel distance model produce camper indices that were not associated with the actual camper attendance. This revealed that the campers had an almost straightline access to Brant Conservation Area. The Pinehurst coefficients demonstrated that some of the camper entries to the area were explained by an increase in the friction of distance produced by the travel time model.

The gravity model analysis of the 1974 camper attendance to the four conservation areas demonstrated a similar occurrence in the overrepresentation of camper potential indices from large population centres in comparison and exclusion of the smaller camper origins in Southern Ontario. Referring to the correlation coefficients of the actual camper attendance in 1974 and the potential camper interaction indices of the three gravity models, Brant Conservation Area was found to have the variables of population, distance and campground capacity decrease in the percent explanation of the factors of camper travel over the two years (Table 24).

Table 24

CORRELATION COEFFICIENTS OF THE GRAVITY MODELS AND THE ACTUAL CAMPER ATTENDANCE FOR 1974

Conservation Area	Straightline Distance Model	Actual Distance Model	Time, Travel Distance Model
Brant (r)	0.810*	0.815*	0.357*
(r^2)	0.656	0.665	0.125
Byng (r)	0.848*	0.763*	0.531*
(r^2)	0.719	0.582	0.282
Elora (r)	0.818*	0.756*	0.482*
(r^2)	0.669	0.571	0.238
Pinehurst (r)	0.780*	0.745*	0.400*
(r^2)	0.608	0.555	0.160

*significant at 0.05 probability

Pinehurst Conservation Area experienced a similar decrease in the explanation of the factors of camper travel between 1972 and 1974. Although the percent explanation varied from fifty-five to sixty-five percent of the factors of camper travel, the concept of intervening opportunities could provide a major portion of the remaining explanation. Brant Conservation Area had its attendance doubled over the two years but Brant did experience a loss of campers to Pinehurst Conservation Area. Similarly, Pinehurst had campers attracted from its campsites to attend Brant Conservation Area. The addition of the concept of intervening camping opportunities to the three variables of population, distance and campground capacity should increase the explanation of the factors of camper travel.[27]

The explanation of the factors of camper travel to Byng Conservation Area increased over the two years. With the compaction of Byng's camper trade area, the role of distance became even more crucial than in 1972. With an increase in the friction of distance produced by the time-travel distance gravity model, the actual camper attendance and the model indices did not show a significant association although the explanation did increase over the 1972 coefficient. Similarly, Elora Conservation Area had the time-travel distance relationship increase over the two years which revealed that some of the camper attendance was influenced by the road variability to the area in 1972 and to a greater degree in 1974. The majority of the camper travel to Elora was explained through the straightline distance model, demonstrating that the majority of the campers ignored the travel distance to Elora to participate in a natural setting. This was particularly true of Hamilton

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[27]B. Thompson, "Recreational Travel: A Review and Pilot Study," p. 540.

campers that travelled over highways in an almost straight line to camp at Elora Conservation Area.

In conclusion, the gravity model analysis revealed that the variables of population, distance and campground capacity explained the majority of the factors of camper travel to the four conservation areas in 1972. The three variables decreased in the percent explanation of the 1974 camper travel patterns which revealed that other factors began to play a more important role in stimulating camper travel to the four areas. The concept of intervening opportunities was considered as one of the factors that could offset the travel for camping purposes in 1974. But other factors such as the population increase, the increase in family incomes and the amount of leisure time, to name a few, not introduced into the models, could account for the remaining percentage explanation of the factors of camper travel. But the overall conclusion is that recreational camper travel patterns were directly influenced by large population centres located short distances from the four conservation areas.

4.5 Summary and Conclusion

The comparative analysis of camper travel patterns in the Grand River Basin in 1972 and 1974 revealed that the camper attendance to the four conservation areas increased by sixteen percent in 1974. Brant Conservation Area accounted for the greatest increase of the four areas with a 150 percent increase over 1972. Elora and Pinehurst Conservation Areas both increased by over three percent in 1974, while Byng Conservation Area decreased in camper attendance by fifteen percent in 1974. The Counties of Brant, Wentworth, Oxford and Halton were found to account for the largest camper increased over the two years. The camper increase was not significantly associated with the county population nor

with the increases in the camper origin populations. Although all the camper origins increased in population, recreational camper travel to the four areas did not increase porportionately but was observed to adjust to the travel distance to the areas over the two years. With the examination of the individual origins there was no difference found between rural campers from small origins and urban campers in the distance travelled to a conservation area and the frequency of camper attendance. The difference that was revealed between the two origins was the actual increase in the number of campers from the large population centres. Although the number of origins increased, the majority of the camper attendance to the four conservation areas was generated from seventeen centres in 1974.

The City of Brantford had the largest percentage increase in the number of campers between 1972 and 1974. The Cities of Toronto, Hamilton and Guelph decreased in the percentage of camper entries over the two years even though the centres experienced an increase in the number of entries to the four conservation areas. The percentage of camper entries from the United States and Other Canadian Provinces also decreased from 1972 and 1974. The major changes in the total sample were the average length of stay and average camper party size at the four conservation areas. The urban oriented campers that originated from the seventeen major camper origins increased their length of stay characteristics over the two years in comparison to the decrease in the length of stay by campers from the rural areas. A similar change occurred in the average camper party size which decreased for the camper origins that provided less than one percent each in camper entries, while the seventeen major camper origins maintained an average camper party size of four persons over the two years.

The changes in the camper travel patterns over the two years was also evident from the increases in the location

of the camper origins inside and outside of the drainage basin increased although the majority were located less than forty-five miles distance from the four conservation areas. The shorter distance travelled to the conservation areas by campers also changed the frequency of camper visitation over the two years. Weekend peaking was more predominant in 1974 than in 1972 with the main holiday weekend attendance being changed from September fourth weekend of 1972 to the July first weekend of 1974.

Brant Conservation Area experienced the greatest change in the camper attendance and travel patterns of the four areas. The percentage increase in the number of campers was provided by the Cities of Brantford, Hamilton and Toronto. The City of Brantford increased the total camper attendance at Brant by five percent but increased in the actual camper entries by 185 percent over 1972. Distance and the accessibility of Brantford, Hamilton and Toronto campers to Brant Conservation Area accounted for the increased in camper attendance. Brant Conservation Area campers were also found to extend their length of stay and increase their average camper party size in 1974. Brant was still predominantly an overnight and weekend camping area for urban oriented campers.

Byng Conservation Area had an overall decrease in camper attendance from 1972 to 1974. The inaccessibility of the conservation area was found to be the overriding factor in limiting camper travel to the area since the average distance in travel decreased when the number of origins in the less than forty-five mile category was examined for the two years. The locations of the camper origins revealed the changing nature of the conservation area over the sample years. Eighty-seven percent of the camper origins were located outside of the Grand River Basin. This was a fourteen percent increase over 1972. Although Hamilton still provided the majority of the

camper attendance to Byng Conservation Area, Welland and St. Catherines increased their camper attendance reinforcing the percentage of camper entries that originated from outside of the basin. The campers that attended Byng in 1974 extended their average length of stay and brought more people in their camper parties than in 1972.

Elora Conservation Area had the camper attendance increase over the two years by the camper origins of Hamilton, Toronto and Guelph. The campers were found to stay longer on the average than in 1972 but brought an equivalent number of persons in their camper parties. The orientation of camper travel to Elora had changed from a circular pattern to serving the Toronto to Hamilton region. Over thirty-five percent of the campers originated from this area in 1974 in comparison to approximately thirty percent of the camper entries in 1972. Although Elora had an increase in the number of camper origins over the two years, the location of the origins inside and outside of the drainage basin remained stable along with the distance travelled by campers. The distance travelled by the majority of the campers was less than forty-five miles for 1972 and 1974. The main reason for camper travel to Elora in 1972 and in 1974 was related to the attraction of the scenic natural resource.

Pinehurst Conservation Area had an increase of three percent in the number of camper entries for 1974. The small increase in the visitation was attributed to the loss of attendance to Brant Conservation Area located approximately ten miles distance. The majority of the campers originated from Hamilton and Brantford which increased their camper attendance over 1972. The Brantford camper increase to Brant Conservation Area was greater over the years than for Pinehurst Conservation Area. Yet the Hamilton campers, although increasing their attendance at both areas was found to favour Pinehurst in its

total attendance. Paris campers also displayed the attractivity of Brant over Pinehurst Conservation Area by decreasing the camper attendance at Pinehurst and increasing the camper attendance at Brant. The over-riding factor in this case was suggested as accessibility to Brant Conservation Area over Pinehurst Conservation Area with the exception of a westerly directional bias in camper attendance from Hamilton and Dundas. There were no appreciable changes in the length of stay and average camper party size for 1974. The origin locations of Pinehurst campers reflected the changing travel patterns of campers over the two years. In 1972 the majority of the camper origins were located outside of the drainage basin and by 1974 this category had increased by six percent. The majority of the campers in 1972 were found to travel less than forty-five miles. By 1974 the camper majority had increased by sixteen percent, displaying the compacting of the conservation area hinterland.

In assessing the changes in the camper travel patterns in Southern Ontario, Converse's method of determining breaking points delineating the boundaries of equal competitive market influence was employed. The market areas of the four conservation areas changed in direction and magnitude of influence in 1974, reflecting the change in the camper travel patterns of 1972 and 1974. The origin and destination analysis of the four conservation areas revealed that the conservation areas increased in the number of origins and in the actual camper attendance over the two years. The camper market areas demonstrated that the conservation areas of Elora and Byng serviced distinctly different camper hinterlands in the northern and southern portions of the basin respectively. In 1974, the increases in the number of origins outside the Grand River Basin increased for Elora Conservation Area and

extended the market area in all directions with a directional bias towards the Toronto to Hamilton region which supplied the majority of the campers. In contrast, Byng's 1974 camper market area decreased in magnitude to service a smaller more local camper population which originated from Niagara, Haldimand and Norfolk Counties. The market areas of the Hamilton region displayed the Hamilton campers' versatility in attending the three other areas by stunting the growth of the Byng camper market area in a northerly direction. Both Brant and Pinehurst Conservation Areas' hinterlands were found to service approximately the same areas. The Pinehurst camper market area had a stronger west to east directional areas than the Brant market ares in 1972. The Pinehurst market area was strongly associated to the McDonald-Cartier Freeway (Highway 401). Brant's camper market area in 1974 was found to expand in a northerly direction, emphasizing the camper increase from the counties of Waterloo and Wellington.

The changes in the conservation area camper market areas reflected the change in the length of stay of campers to the four areas for 1972 and 1974. The analysis of the length of stay with distance revealed that the majority of the campers who stayed from four to fourteen days originated from centres less than sixty miles distance for the four conservation areas. Campers that stayed longer than two days were also found to originate from centres less than sixty miles distant from the four areas. In 1974, the length of stay characteristics remained the same as in 1972, with the exception of Elora Conservation Area. Elora had an increase in the number of entries from distant areas over the entries in 1972. Yet the majority of the campers that originated from distances greater than 210 miles stayed one to two days. When the average length of stay was correlated with distance it was revealed that there was no association between the distance travelled and the length of stay for

1972 and 1974. The finding reinforced the concept that the conservation areas, although servicing an increasing camper population, remained as overnight or weekend camping areas.

The gravity model analysis of recreational camper travel to the four conservation areas displayed the changes in the camper travel patterns over the two years. The gravity model analysis for Elora Conservation Area demonstrated the increasing dependency of the campers to travelling short distances from large population origins. Although there was an increase in the association with the time-travel distance in 1974, Elora campers seemed to forego the increase in travel-time from distant origins to experience the scenic natural resource area. The Byng Conservation Area gravity model analysis supported by the origin and destination information revealed that Byng campers were found to decrease their travel distance and originate from the smaller camper origins located less than sixty miles distant from the area. The analysis for Brant and Pinehurst Conservation Areas showed the increasing dominance of Pinehurst Conservation Area as an intervening camper opportunity to Brant Conservation Area campers in 1974. This was found to be a reversal of the 1972 gravity model analysis. Both areas displayed their versatility in attracting campers from distant origins, although the correlation coefficient decreased in explanation over the two years.

In conclusion, the changes in the camper travel patterns in the Grand River Basin between 1972 and 1974 were directly related to the population of the originating centre, the distance travelled to camp, the accessibility of the four areas to the conservation area campers and the attractivity of the area. Simply, conservation area campers have changed from a mixture of urban and rural campers to campers seeking urban oriented activities. This was reflected in the change of origin location and the increase of camper

attendance from large population centres over the two years. With the exception of Elora Conservation Area, the majority of the conservation area campers did not change in their length of stay, although there was a tendency for stays of longer than three days.

CHAPTER 5

CONCLUSIONS AND LINES OF FUTURE RESEARCH

5.1 Conclusions

The changes in the recreational camper travel patterns to the four conservation areas from 1972 to 1974 were attributable to the population size of the camper origin, the distance travelled and the campground capacity of the conservation area. The increases in the population size of the camper origins were found not to be associated with the increases in camper travel. However, the composition of the population was discovered to provide the impetus to travel for recreational camping to a greater degree in 1974 than in 1972. Campers that originated from urban origins increased their camper attendance over the two years in comparison to a loss of campground visitation from rural residents. Due to the lack of recreational resources in urban areas, specifically recreational campgrounds, urbanites had to increase their travel activities to achieve their outdoor recreational camping desires. The concept of rural recreation as perceived by urban recreationists has originated from the growing scarcity of recreational opportunities in rural and wilderness areas. Yet many people are not interested in the outlying recreation areas and their demand is for urban oriented facilities.[1]

Each urban recreationist has three categories of desires that are directed towards particular resources, towards user image and towards the enjoyable use of leisure time. These desires are weighted by the preference of the camper, the cost to the user and the cost of alternative forms of recreation.[2] These three categories are combined with the recreationists desire to maximize the total recreation experience.

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[1] R. C. Weaver, "Recreation Needs in Urban Areas" in Small Urban Places, edited by G. H. Seymour (New York: New York University Press, 1969), pp. 23, 24.

[2] F. T. Christy, "Human Needs and Human Values for Environmental Resources" in Crisis, edited by R. M. Irving and G. B. Priddle (Toronto: Macmillan of Canada, 1971), pp.213-215.

It may be suggested, therefore, that the increase in the recreational camper to the four conservation areas has shown that the regional conservation areas satisfy the expectations and demands of the urban recreational campers. The conservation areas, located with easy accessibility to the major population centres in Southern Ontario, have had their camper attendance increased over the two years, particularly from the urban centres. The conservation areas have provided the urban recreational camper with an alternative to city recreation facilities and the more distant resource oriented areas such as Provincial Parks and National Parks of Ontario.

Brant Conservation Area presented an example of the conservation areas supply of recreation for urban dwellers, since Brant is situated beside a large city that offers the services and facilities that are desired by urban recreational campers. The location of Brant reduced the cost of travel and provided an alternative to the more distant recreational resources of Pinehurst Conservation Area and Elora Conservation Area. The ease of accessibility of the four conservation areas has allowed campers to participate in the recreational activity of camping for short periods of time, with a minimum of cost. This was revealed when the length of stay of campers was examined by the distance travelled. The majority of the campers stayed from one to two days with a tendency towards longer stays of up to fourteen days.

The increase in the fees for camping and day use purposes at the conservation areas also presented a reason for camper attendance to decrease at Byng Conservation Area Although the increases in the camper fees affected the four conservation areas equally the added cost to the total recreational expenditure could have limited travel to a conservation area. The origin and destination information revealed a change in the travel patterns of campers to Byng Conservation Area from distant origins. There are numerous reasons for

the changes in the camper travel patterns, such as the attractivity of alternative campground areas, but the cost of travel could act as a deterrant to travel similar to alternative camping areas.

Over the years, the rising incomes of families have been accompanied by increases in the costs of transportation, accommodation and inflation. This has had the tendency to reduce the total impact of the increases in the incomes of families. But, more importantly, the increase in the amount of leisure time available for recreational purposes has placed a new importance on how the recreationists will spend the available disposable income over longer periods of free time. The alternatives to the high cost recreational trip to Provincial and National Parks has been provided by the Regional Conservation Area that has allowed the local recreational population to increase their frequency of visitation and maintain a low trip cost.[3]

Regional Conservation Areas bring into perspective the behaviour of an urban population, the potentials of the supply of recreational campgrounds and the consumption of the recreational camper. The behaviour of the urban population has been observed through the increase in camper attendance at the four conservation areas and the shortening of the travel distance by recreationists seeking the camper experience. The Regional Conservation Area has supplied recreation areas to satisfy the demands of the city dwellers camping desires. The increase in the camper attendance to the conservation areas not only demonstrates the increasing consumption of regional conservation area camping opportunities, but also displays that the conservation areas have filled a need for recreational space in

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[3]M. Clawson, and J. Knetsch, Economics of Outdoor Recreation. See also, G. H. Moeller, R. D. Larsen and D. A. Morrison, Opinions of Campers and Boaters at the Allegheny Reservoir, pp. 6, 7.

Southern Ontario. Travel to the conservation areas for recreational camping purposes is a small subsystem within a larger recreational system of Southern Ontario. The Conservation areas provide the resources and facilities for recreational camping and thus have become the supply sector of the system. The demand sector is the urban resident, who upon realizing that the conservation areas supply urban recreation, will consume the resources and facilities. Camping provides the activity that links the supply and demand sectors. As the demand for camping increases, the supply of recreational campgrounds should increase. The Regional Conservation Areas are supplied to meet the recreational camper needs of an urban population that cannot be satisfied by the recreational system of city, provincial or national parks. This was evident through the increases in camper attendance at the conservation areas.

Numerous studies have been conducted on the recreational behaviour of campers that travelled to Provincial Parks and commercial resorts. There has been no attempt to study the regional conservation area campgrounds that, over the past few years, have increased in importance and are now having a considerable impact on the system of recreational camper travel in Southern Ontario. It is hoped that this study will contribute to the information on recreational travel patterns in Ontario and stimulate recreational researchers to consider the regional conservation areas as being interrelated with the total recreational system of Southern Ontario.

5.2. Lines of Future Research

The purpose of this study was to examine the changes in the camper travel patterns in the Grand River Basin. Recreational camper travel was found to be partially explained by population, distance and campground capacity.

Other factors, such as disposable income, available leisure time, the mobility of the campers, as well as the perceptions of the camper to the changing conditions of the conservation area campgrounds also affect the travel for recreational camping. Although these factors were considered in the total motivations of the recreationist to travel to the conservation areas for camping purposes, the investigation of these variables would further explain the changes in the travel patterns of campers to the four conservation areas. Of particular interest would be the reasons behind the urban oriented campers versus the rural campers to travel to the four conservation areas. The actual differences in the socio-economic characteristics of the urban and rural campers coupled with their spatial behaviour would further the explanation of how the conservation areas fit into the recreational system of Southern Ontario.

Since the study has provided information on the travel patterns of conservation area campers, future study should involve a comparison of the conservation area campers to Provincial Park campers. Differences in the social, economic and cultural characteristics are thought to exist between the two types of campers. Since Provincial Parks are located at greater distances from urban populations, provide more aesthetic surroundings and allow longer periods of camper stay, the campers that visit the parks should have higher incomes, higher mobility and more available leisure time for camping than the campers that visit conservation areas.

In reference to the present study, the usefulness of the recreational travel models in explaining the factors of recreational camper participation to the four conservation areas was demonstrated. Although the gravity model implies a simple mathematical relationship, a more complex relationship exists in the generation of campers to conservation

areas. The system's theory approach could view the entire recreation system of the Grand River Drainage Basin by modelling each camper factor separately. Following the example of the conceptual model for the recreational system of Ontario[4] (which conveniently overlooked conservation area recreationists) each component of the recreation system could be analysed and constrained by a parameter specific to the behaviour of a group of similar components. Each component would then be linked into a model, the systems theory model, to imitate and explain the total conservation area camper travel experience.

One area of study left untouched by recreational geographers is the role of the private sector in providing recreational facilities. The basic objectives of this study would be to ascertain why private campgrounds are located adjacent to conservation areas. Two reasons became apparent that require further research. The private campground operators do not have the capital to offer reservoir recreation and the private campground owners locate in close proximity to conservation areas to absorb the overflow of campers during peak conditions. Also, an important question in the analysis is should conservation areas be in a competitive position with the private campground operators. Research of this type would be time consuming, but the results should benefit regional planners and the general public in assessing the optimum location of recreational campgrounds near urban areas.

Although this study examined the travel patterns of campers over the period of two years, the collection of another year of camper entrance receipts would allow the projection of trends of camper participation at the four conservation areas. The changes in camper origin location

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[4]Kates, Peat, Marwick and Company, Tourism and Recreation in Ontario: Concepts of a Systems Model Framework.

may show a trend to increased urban camper participation, changes in the distance travelled for camping purposes, camper impact on the conservation areas and changes in the length of stay characteristics. Of particular interest would be the changes in the camper trade areas in comparison to the major camper producing centres. Hamilton and Toronto were found to exert considerable influence on the camper hinterlands over the two years. If the camper participation increases from these two centres, the conservation areas in the Grand River Basin may become the havens of these campers, which is contrary to the basic objective of the Conservation Authority, to provide recreational opportunities for the Grand River Basin residents.

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APPENDIX A

Tables 1 to 7

Table 1

POPULATION AND PERCENT CHANGE OF COUNTIES IN ONTARIO, 1966 AND 1971

County	1966	1971	Percent Change
Algoma	113561	121937	7.3%
Brant	90945	96767	6.4
Bruce	43085	47385	9.9
Cochrane	97334	95836	- 1.5
Dufferin	17108	21200	23.9
Dundas	17106	17457	2.0
Durham	44549	47494	6.6
Elgin	61912	66608	7.6
Essex	280922	306399	9.1
Frontenac	97138	101692	4.7
Glengarry	18181	18480	1.6
Grenvalle	23429	24316	3.8
Grey	62592	66403	6.1
Haldemand	30020	32673	8.7
Haliburton	7768	9081	16.9
Halton	151924	190469	25.4
Hastings	94127	99393	5.6
Huron	54446	52951	- 2.7
Kenora	53995	53230	- 1.4
Kent	96400	101118	4.9
Lambton	108236	114314	5.6
Lanark	41212	42259	2.5
Leeds	49129	50093	2.0
Lennox & Addington	25202	28359	12.5
Manitoulin	10544	10931	3.7
Middlesex	24903	282014	13.1
Muskoka	27691	31938	15.3
Niagara	324917	347328	6.9
Nipissing	73533	78867	7.3
Norfolk	50578	54099	7.0
Northumberland	45074	48162	6.9
Ontario	170818	196257	14.9
Ottawa-Carlten	413692	471931	14.1
Oxford	76118	80349	5.6
Parry Sound	28735	30244	6.7
Peel	172321	259402	50.5
Perth	60424	62973	4.2

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Table 1 --con't

County	1966	1971	Percent Change
Peterborough	81959	87804	7.1
Prescott	27155	27832	2.5
Prince Edward	21307	20640	- 3.1
Rainy River	25816	25750	- 0.3
Renfrew	89453	90875	1.6
Russel	14878	16287	9.5
Simcoe	149132	171433	15.3
Stormont	59550	61302	2.9
Sudbury	174102	198079	13.8
Thunder Bay	143673	145390	1.2
Temiskaming	47154	46485	- 1.4
Toronto Metropolitan	1881691	2086017	10.9
Victoria	30917	34242	10.8
Waterloo	216728	254037	17.2
Wellington	94177	108581	15.3
Wentworth	383175	401883	4.9
York	136328	166060	21.8
Total	6960870	7703106	10.7

Source: 1971 Census of Canada, Population Census Subdivision Catalogue 92702, Part 1, Vol. 1, Bulletin 1.1, Ottawa: Statistics Canada.

Table 2

POPULATION AND PERCENT CHANGE OF THIRTY-FOUR CITIES IN ONTARIO, 1966 AND 1971

City	1966	1971	Percent Change
Brantford	59854	64421	7.6%
Timmins	29303	28542	- 2.5
St. Thomas	22983	25545	11.1
Windsor	192544	203300	5.5
Kingston	59004	59047	0.07
Owen Sound	17769	18469	3.9
Burlington	65641	87023	32.5
Belleville	32785	35128	7.14
Kenora	11295	10952	- 3.0
Chatham	32424	35317	8.9
Sarnia	54552	57644	5.6
London	194416	223222	14.8
Niagara Falls	56891	67163	18.0
St. Catherines	97101	109722	13.0
Welland	39960	44397	11.1
North Bay	23635	49187	108.1
Oshawa	78082	91587	17.2
Whitby	17273	25324	46.6
Ottawa	290741	302341	3.9
Woodstock	24027	26173	8.9
Brampton	36264	41211	13.6
Stratford	23068	24508	6.2
Peterborough	56177	58111	3.4
Barrie	24016	27676	15.2
Orillia	15295	24040	57.1
Cornwall	45766	47116	2.9
Sudbury	84888	90535	6.6
Thunder Bay	96548	108411	12.2
Toronto	664584	712286	7.2
Galt	33491	38897	16.1
Kitchener	93225	111804	19.9
Waterloo	29889	36677	22.7
Guelph	51377	60087	16.9
Hamilton	298121	309173	3.7
Total	2952989	3255536	10.2

Source: 1971 Census of Canada, Population Census Subdivision, Catalogue 92-702, Vol. 1, Part 1, Bulletin 1.1, Ottawa: Queen's Printer, Statistics Canada.

Table . 3

FAMILY INCOME CHANGES IN ONTARIO AND CANADA,

1965-1973

Year	Ontario Family Income ($)	Percent Change (%)	Canadian Average Family Income (S)
1965	6355		6536
1967	N/A		7602
1969	9663	52.0	8927
1971	11154	15.2	10368
1972	12430	11.4	11300
1973	13912	10.6	12716

Source: Information Canada, Income Distribution By Size in Canada, 1973, Catalogue 13-207 annual (Ottawa: Queen's Printer, July 1975).

Table 4

NATIONAL TIME BUDGET AND TIME DIVISION OF LEISURE, 1900, 1950, 2000

Use of Leisure	1900	1950	2000
	(Billions of Hours)		
Total time for population	667	1329	2907
Sleep	265	514	1131
Work	86	132	206
School	11	32	90
Housekeeping	61	68	93
Preschool population	30	56	110
Personal care	37	74	164
Total of above	490	876	1794
Remaining hours - leisure	177	453	1113
Daily leisure hours	72	189	375
Weekend leisure hours	50	179	483
Vacation	17	35	182
Retired	6	24	56
Other	32	26	16

Source: M.A. Holman, "A National Time Budget For the Year 2000," Sociology and Social Research, 46:1, 1961.

Table 5

ESTIMATE OF LEISURE TIME SPENT IN

OUTDOOR RECREATION, 1960

Activity	Man-hours (Millions)
Travel for pleasure	5330
Visits to public Outdoor Recreation Areas	
National Parks system	660
National Forests	2285
Federal Wildlife Reserves	150
Reservoirs of the Corps of Engineers	900
T.V.A. Reservoirs	432
All State Parks	1620
All municipal and county parks	5000
Fishing	1500
Hunting	1125
Boating	600
Total of enumerated activities	21012

Source: M. Clawson and J. Knetsch, Economics of Outdoor Recreation (Baltimore: J. Hopkins Press, 1966), pp. 24, 25.

Table 6

DISTANCES TRAVELLED BY RECREATIONISTS

Type of Recreationist	Distance Travelled (Kilometers)	Year of Study
Day Visitors	Majority under 32 km	1962-63
	medium distance 18 km	
	85% travelled from 16 to 48 km	1964
	80% less than 32 km	1964
	80% within 48 km	1967
	95% less than 50 km	1969
	Mean distance travelled 80 km	1965
Half day Visitors	Mean Travel distance 46 km	1965
Day and Overnight Visitors	Within 3 hours drive from origin	1950-60
	45% less than 40 km	1963
	25% from 41-80 km	1963
Campers	0-80 km 15.06%	1964
	80-160 16.47%	(Ellis, 1967)
	161-320 22.31%	
	321-640 17.13%	
	640-1280 17.21%	
	over 1280 11.17%	
Recreational Motorists Tourists	38% less than 80 km	1966-67
	27% more than 160 km	
	53.4% from 240-480 kms	1967

Source adapted from: B. L'Rourke, "Travel in the Recreational Experience - A Literature Review," Journal of Leisure Research, 6 (1974), pp. 143-144.

Table 7

ATTENDANCE AND PERCENT CHANGE TO ONTARIO PROVINCIAL PARKS, 1957-1973

Year	Total Visitation	Percent Change (%)	Camper Visitation	Percent Change (%)
1957	2114661		165055	
1958	3232460	52.8	277183	67.9
1959	5106353	57.9	479069	72.8
1960	5692578	11.4	592103	23.5
1961	6215370	9.1	862559	45.6
1962	7820994	25.0	1063127	23.2
1963	9526443	21.8	840491	-20.9
1964	9147218	- 3.9	916281	9.0
1965	8875668	- 3.0	902472	- 1.5
1966	9791671	10.3	994787	10.2
1967	10192533	4.0	1155091	16.1
1968	9440211	- 7.3	1119912	3.0
1969	10459936	10.8	1360639	21.5
1970	12172254	16.3	1531528	12.5
1971	13658619	12.2	1618948	5.7
1972	12320794	- 9.7	1498479	7.4
1973	12136909	- 1.4	1600817	6.8

Source: Ontario Provincial Parks Statistical Report 1973, Ministry of Natural Resources (Toronto, March 1973).

APPENDIX B

Tables 1 to 26

Table 1

PLACES OF ORIGIN THAT GENERATED CAMPERS TO THE FOUR CONSERVATION AREAS IN THE GRAND RIVER BASIN, 1972

Origin Code	Place of Origin	Origin Code	Place of Origin
1	Toronto	36	Binbrook
2	Hamilton	37	Ayr
3	Kitchener-Waterloo	38	Woodstock
4	Galt	39	Simcoe
5	Welland	40	Hillsburg
6	Oakville	41	Hastings
7	Dunnville	42	Annan
8	Campbellville	43	Thorald
9	Burlington	44	Grimsby
10	Stoney Creek	45	Winona
11	Kincardine	46	Georgetown
12	Dundas	47	Tillsonburg
13	St. Catherines	48	Springfield
14	Bramalea	49	Hagersville
15	Paris	50	Fisherville
16	Vinemount	51	Beamsville
17	Wainfleet	52	Bay Ridges
18	Brantford	53	Newmarket
19	Caledonia	54	Burgessville
20	Fruitland	55	Petersburg
21	London	56	Waterdown
22	Mississauga	57	Mount Hope
23	Port Colbourne	58	Lynden
24	Niagara Falls	59	Brownsville
25	Clarkson	60	Nanticoke
26	Windsor	61	Kingston
27	Brooklin	62	Arthur
28	Ancaster	63	Fonthill
29	Lowbanks	64	Vineland
30	Port Rowan	65	Comber
31	Guelph	66	Sarnia
32	St. George	67	Streetsville
33	Stevensville	68	Fergus
34	Byng	69	Chatham
35	Preston	70	Sherkston

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Table 1--con't

Origin Code	Place of Origin	Origin Code	Place of Origin
71	Port Dover	107	St. Thomas
72	Delta	108	Elmira
73	Harrow	109	Acton
74	Oshawa	110	Beaverton
75	Fort Erie	111	Listowel
76	Brockville	112	St. Marys
77	Essex	113	North Bay
78	Elfrida	114	Burford
79	Whitby	115	Caledon
80	Breslau	116	Wiarton
81	New Dundee	117	Jerseyville
82	Fenwick	118	Sault Ste. Marie
83	Beachville	119	Orangeville
84	Markham	120	New Hamburg
85	Staples	121	Komoka
86	Millgrove	122	Alvinston
87	Oil Springs	123	Freelton
88	Ingersol	124	Sheffield
89	Peterborough	125	Lucknow
90	Ottawa	126	Clinton
91	Wallaceburg	127	Grand Valley
92	Milton	128	Dorchester
93	Smithville	129	Morriston
94	Brampton	130	Belleville
95	Ridgeway	131	Kemptville
96	Port Robinson	132	Aurora
97	Eden	133	Alliston
98	Wallenstein	134	Thornhill
99	Hespeler	135	Appin
100	Owen Sound	136	Bloomingdale
101	Wellesley	137	Bancroft
102	Elora	138	Delaware
103	St. Jacobs		
104	Erin		
105	Leamington		
106	Stratford		

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 2

PLACES OF ORIGIN THAT GENERATED CAMPERS TO BRANT CONSERVATION AREA, 1974

Origin Code	Place of Origin	Origin Code	Place of Origin
1	Toronto	25	Woodstock
2	Hamilton	26	Grimsby
3	Kitchener-Waterloo	27	Fisherville
4	Galt	28	Mount Hope
5	Welland	29	Vineland
6	Oakville	30	Sarnia
7	Dunnville	31	Chatham
8	Campbellville	32	Oshawa
9	Burlington	33	Ingersol
10	Stoney Creek	34	Peterborough
11	Dundas	35	Ottawa
12	St. Catherines	36	Milton
13	Paris	37	Brampton
14	Vinemount	38	Hespeler
15	Wainfleet	39	Stratford
16	Brantford	40	Elmira
17	Caledonia	41	Burford
18	London	42	Caledon
19	Mississauga	43	Alvinston
20	Niagara Falls	44	Lucknow
21	Windsor	45	Clinton
22	Ancaster	46	Grandvalley
23	Guelph	47	Belleville
24	Binbrook	48	Bancroft

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 3

AVERAGE VALUES FOR

PLACES OF ORIGIN THAT GENERATED CAMPERS TO

BRANT CONSERVATION AREA, 1972

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Number
Toronto	1.64	4.91	4.18
Hamilton	1.58	4.85	3.77
Kitchener-Waterloo	1.86	5.14	3.57
Burlington	1.33	4.00	4.25
Stoney Creek	1.17	3.50	4.00
Dundas	2.00	6.00	3.67
St. Catherines	1.60	4.50	3.80
Paris	3.13	5.81	3.25
Brantford	1.99	4.53	3.55
London	1.25	2.63	2.63
Mississauga	2.00	5.00	4.67
Guelph	2.00	5.00	3.67
Woodstock	1.80	5.02	3.60
Total (13)	1.79	4.68	3.73
Out of Canada	1.00	3.17	3.50
Out of Province	1.20	3.60	3.20
Total Sample (50)	1.75	4.55	3.66

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 4

CAMPER STATISTICS FROM INSIDE AND OUTSIDE OF THE

GRAND RIVER DRAINAGE BASIN FOR BRANT CONSERVATION AREA, 1972

	Inside the Basin				Outside the Basin			
	Straight Line Mileage				Straight Line Mileage			
	45<	46-90	90>	Total	45<	46-90	90>	Total
Length of Stay	232	6	0	235	124	59	23	206
Entrance Fees ($)	525.00	6.00	0.00	531.00	356.60	165.00	58.50	580.10
Number in the Camper Party	401	6	0	407	290	137	47	474
Percentage of Camper Entries (%)	42.15	0.77	0.00	42.92	29.11	14.55	4.60	48.26

Source: Grand River Conservation Authority camper entrance receipts

TABLE 5

PLACES OF ORIGIN THAT GENERATED CAMPERS TO BYNG CONSERVATION AREA, 1972

Origin Code	Place of Origin	Origin Code	Place of Origin
1	Toronto	30	Simcoe
2	Hamilton	31	Hillsburgh
3	Galt	32	Annan
4	Welland	33	Thorald
5	Oakville	34	Grimsby
6	Dunnville	35	Winona
7	Burlington	36	Fisherville
8	Stoney Creek	37	Bay Ridges
9	Kincardine	38	Burgessville
10	Dundas	39	Mount Hope
11	St. Catherines	40	Nanticoke
12	Bramalea	41	Fonthill
13	Vinemount	42	Vineland
14	Wainfleet	43	Sarnia
15	Brantford	44	Chatham
16	Caledonia	45	Port Dover
17	Fruitland	46	Delta
18	London	47	Fort Erie
19	Mississauga	48	Elfrida
20	Port Colbourne	49	Whitby
21	Niagara Falls	50	Fenwick
22	Ancaster	51	Staples
23	Lowbanks	52	Ingersol
24	Guelph	53	Ottawa
25	St. George	54	Wallaceburg
26	Stevensville	55	Milton
27	Byng	56	Smithville
28	Preston	57	Brampton
29	Binbrook	58	Ridgeway
		59	Port Robinson

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 6

AVERAGE VALUES FOR

PLACES OF ORIGIN THAT GENERATED CAMPERS TO

BYNG CONSERVATION AREA, 1972

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Number
Toronto	2.00	6.00	3.83
Hamilton	2.43	5.51	4.47
Welland	2.16	4.96	4.70
Dunnville	2.15	4.02	4.70
Burlington	2.38	5.16	4.25
Stoney Creek	1.55	3.55	3.91
St. Catherines	1.88	4.74	5.00
Brantford	2.75	7.88	3.50
London	2.57	7.29	4.14
Port Colbourne	2.39	6.48	4.75
Niagara Falls	2.11	6.39	3.68
Binbrook	1.83	4.25	4.17
Hannon	1.50	4.00	6.33
Grimsby	2.43	7.29	6.00
Total (14)	2.15	5.53	4.53
Out of Canada	1.71	5.12	4.06
Out of Province	1.50	4.50	3.50
Total Sample (57)	2.18	5.37	4.51

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 7

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR BYNG CONSERVATION AREA, 1972

	Inside the Basin				Outside the Basin			
	Straight Line Mileage				Straight Line Mileage			
	45 <	46-90	90 >	Total	45 <	46-90	90 >	Total
Length of Stay	148	17	0	165	883	88	25	996
Entrance Fees ($)	285.00	24.00	0.00	309.00	2251.50	201.00	46.50	2500.00
Number in the Camper Party	270	30	0	300	1818	169	83	2070
Percentage of Camper Entries (%)	10.88	0.90	0.00	11.78	73.19	5.9	1.62	80.71

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 8

PLACES OF ORIGIN THAT GENERATED CAMPERS TO ELORA CONSERVATION AREA, 1972

Origin Code	Place of Origin	Origin Code	Place of Origin	Origin Code	Place of Origin
1	Toronto	32	Woodstock	64	Elora
2	Hamilton	33	Simcoe	65	St. Jacobs
3	Kitchener-Waterloo	34	Annan	66	Erin
		35	Georgetown	67	Leamington
4	Galt	36	Beamsville	68	Stratford
5	Welland	37	Petersburg	69	St. Thomas
6	Oakville	38	Waterdown	70	Elmira
7	Dunnville	39	Mount Hope	71	Acton
8	Campbellville	40	Fonthill	72	Beaverton
9	Burlington	41	Comber	73	Listowel
10	Stoney Creek	42	Sarnia	74	St. Marys
11	Kincardine	43	Streetsville	75	North Bay
12	Dundas	44	Fergus	76	Burford
13	St. Catherines	45	Chatham	77	Wiarton
14	Bramalea	46	Port Dover	78	Jerseyville
15	Paris	47	Oshawa	79	Sault Ste. Marie
16	Vinemount	48	Brockville	80	Orangeville
17	Wainfleet	49	Essex	81	New Hamburg
18	Brantford	50	Breslau	82	Komoka
19	Caledonia	51	New Dundee	83	Freelton
20	London	52	Fenwick	84	Sheffield
21	Mississauga	53	Ingersol	85	Dorchester
22	Niagara Falls	54	Ottawa	86	Morriston
23	Clarkson	55	Milton	87	Kemptville
24	Windsor	56	Brampton	88	Aurora
25	Ancaster	57	Ridgeway	89	Alliston
26	Port Rowan	58	Port Robinson	90	Thornhill
27	Guelph	59	Eden	91	Appin
28	St. George	60	Wallenstein	92	Woodstock
29	Preston	61	Hespeler	93	Belmont
31	Ayr	63	Wellesley		

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 9

AVERAGE VALUES FOR

PLACES OF ORIGIN THAT GENERATED CAMPERS TO

ELORA CONSERVATION AREA, 1972

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Number
Toronto	1.69	4.60	3.49
Hamilton	1.79	4.55	3.55
Galt	1.60	4.50	3.40
Kitchener-Waterloo	1.78	4.45	3.44
Oakville	1.50	4.50	3.30
Burlington	1.70	4.00	3.10
St. Catherines	2.08	5.83	3.83
Brantford	2.82	6.00	3.55
Caledonia	1.78	4.67	4.11
London	1.52	3.93	2.86
Mississauga	1.95	4.84	3.27
Windsor	1.44	4.00	4.44
Guelph	1.84	4.45	2.94
Preston	1.90	5.50	3.30
Fergus	2.09	3.95	3.73
Brampton	2.00	6.33	3.78
Elmira	1.44	3.67	4.44
Total (17)	1.81	4.69	3.56
Out of Canada	1.58	4.42	3.79
Out of Province	1.33	3.75	3.50
Total Sample (96)	1.76	4.60	3.51

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 10

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR ELORA CONSERVATION AREA, 1972

	Inside the Basin				Outside the Basin			
	Straight Line Mineage				Straight Line Mileage			
	45<	46-90	90>	Total	45 <	46-90	90 >	Total
Length of Stay	640	1	0	641	540	162	33	735
Entrance Fees ($)	1588.50	3.00	0.00	1591.50	1433.50	399.00	93.00	1925.50
Number in the Camper Party	1206	4	0	1210	1080	335	97	1512
Percentage of Camper Entries (%)	42.73	0.12	0.00	42.85	38.06	12.95	2.81	53.82

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 11

PLACES OF ORIGIN THAT GENERATED CAMPERS TO PINEHURST CONSERVATION AREA, 1972

Origin Code	Place of Origin	Origin Code	Place of Origin
1	Toronto	32	Thorald
2	Hamilton	33	Grimsby
3	Kitchener-Waterloo	34	Georgetown
4	Galt	35	Tillsonburg
5	Welland	36	Springfield
6	Oakville	37	Hagersville
7	Dunnville	38	Beamsville
8	Campbellville	39	Bay Ridges
9	Burlington	40	New Market
10	Stoney Creek	41	Petersburg
11	Dundas	42	Waterdown
12	St. Catherines	43	Lynden
13	Bramalea	44	Brownsville
14	Paris	45	Kingston
15	Vinemount	46	Arthur
16	Brantford	47	Comber
17	Caledonia	48	Streetsville
18	London	49	Fergus
19	Mississauga	50	Chatham
20	Port Colbourne	51	Sherkston
21	Niagara Falls	52	Delta
22	Windsor	53	Harrow
23	Brooklin	54	Oshawa
24	Lowbanks	55	Brockville
25	Guelph	56	Essex
26	Preston	57	Breslau
27	Binbrook	58	New Dundee
28	Ayr	59	Beachville
29	Woodstock	60	Markham
30	Simcoe	61	Millgrove
31	Hastings	62	Oil Springs
		63	Ingersol

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 12

AVERAGE VALUES FOR

PLACES OF ORIGIN THAT GENERATED CAMPERS TO

PINEHURST CONSERVATION AREA, 1972

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Number
Toronto	1.91	4.37	3.87
Hamilton	2.17	5.43	4.51
Kitchener-Waterloo	2.52	6.02	3.69
Galt	1.88	3.61	4.24
Oakville	3.14	7.50	3.86
Dunnville	2.80	7.00	3.40
Burlington	1.59	4.00	9.12
Stoney Creek	2.00	5.40	4.50
Dundas	2.25	6.13	5.38
Brantford	1.40	4.80	4.20
Paris	3.18	6.64	4.73
Caledonia	2.29	5.00	4.71
London	1.86	5.04	3.93
Windsor	1.30	3.80	4.10
Guelph	2.00	4.82	2.93
Preston	1.71	5.07	5.14
Ayr	1.40	3.90	4.80
Woodstock	2.15	6.45	5.00
Simcoe	1.83	5.50	4.17
Total (19)	2.07	5.31	4.54
Out of Canada	1.16	3.72	4.00
Out of Province	1.67	5.00	5.00
Total Sample (64)	1.93	4.87	4.39

Source: Grand River Conservation Authority camper entrance receipts.

TABLE 13

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR PINEHURST CONSERVATION AREA, 1972

	Inside the Basin				Outside the Basin			
	Straight Line Mileage				Straight Line Mileage			
	45 <	46-90	90 >	Total	45 <	46-90	90 >	Total
Length of Stay	326	17	0	343	316	124	39	479
Entrance Fees ($)	729	44.00	0.00	773.00	851.50	318.00	113.00	1282.00
Number in the Camper Party	655	26	0	681	785	278	96	1159
Percentage of Camper Entries (%)	34.79	1.54	0.00	36.33	32.37	15.60	5.30	53.37

Source: Grand River Conservation Authority camper entrance receipts

Table 14

PLACES OF ORIGIN THAT GENERATED CAMPERS TO THE FOUR CONSERVATION AREAS, 1974

Origin Code	City	Origin Code	City
1	Woodstock	36	Dunnville
2	Hamilton	37	Campden
3	Mississauga	38	Caledonia
4	Paris	39	Port Dover
5	Burlington	40	Oakville
6	Brantford	41	Beachville
7	St. Catherines	42	Port Robinson
8	Toronto	43	Ottawa
9	Waterloo	44	Beamsville
10	Brampton	45	Campbellville
11	Niagara Falls	46	Elora
12	Fort Erie	47	Peterborough
13	Port Colbourne	48	Innerkip
14	Caledon	49	Georgetown
15	London	50	Port Credit
16	Lowbanks	51	Rockton
17	Copetown	52	St. George
18	Kitchener	53	Scotland
19	Dundas	54	Honey Harbour
20	Burford	55	Fonthill
21	Smithville	56	Wellandport
22	Welland	57	Windsor
23	Cambridge	58	Vineland
24	Stoney Creek	59	Oakridge
25	Uxbridge	60	Fingal
26	Guelph	61	Binbrook
27	Jarvis	62	Bramalea
28	Belleville	63	Sparta
29	Annon	64	Wainfleet
30	Acton	65	Carlisle
31	Simcoe	66	Cayuga
32	Stratford	67	Barrie
33	Tavistock	68	Winona
34	Grimsby	69	Milton
35	Ridgeway	70	Delphi

con't

Table I4--con't

Origin Code	City	Origin Code	City
71	Chelmersfords	112	Harrow
72	Embro	113	Ingersoll
73	Troy	114	Way
74	Ancaster	115	Fergus
75	Waterdown	116	Tillsonburg
76	Virgil	117	Strathroy
77	Brockville	118	Streetsville
78	Elmira	119	Vanessa
79	Niagara-on-the-Lake	120	Markham
80	Maidstone	121	Alberton
81	Leamington	122	Norwich
82	Exeter	123	New Hamburg
83	Sarnia	124	Owen Sound
84	Shawanaga	125	Drumbo
85	Bell River	126	Mount Forest
86	Princeton	127	Harley
87	Whitby	128	Waterford
88	Oshawa	129	Markdale
89	Fruitland	130	Branchton
90	St. Anns	131	Timmins
91	New Castle	132	Port Stanley
92	Thorndale	133	Freelton
93	Chatham	134	Mount Pleasant
94	Bobcaygeon	135	Bright
95	Merlin	136	Alton
96	Wellesley	137	Orillia
97	Mount Hope	138	Hillsburgh
98	Vinemount	139	Lambeth
99	Addisos	140	Harriston
100	Lynden	141	Hickston
101	Ayr	142	Morriston
102	Fenwick	143	Cookstown
103	Stevensville	144	Sudbury
104	Alvinston	145	Markstay
105	St. Thomas	146	New Dundee
106	Wallaceburg	147	St. Jacobs
107	Thorald	148	Napanee
108	Belmont	149	Shakespeare
109	Selkirk	150	Wallenstein
110	Hagersville	151	Listowel
111	Arthur	152	Sheffield

con't

Table 14--con't

Origin Code	City	Origin Code	City
153	Kapuskasing	168	Vernon
154	Petersburg	169	West Montrose
155	Brighton	170	Ashburn
156	Collingwood	171	Petawawa
157	Belton	172	Kirkland Lake
158	Goderich	173	Bright's Grove
159	Bamberg	174	Baden
160	Tottenham	175	Shelbourne
161	Kingsville	176	Deep River
162	Grand Bend	177	Grand Valley
163	Essex	178	Alma
164	Rockwood	179	Plamerston
165	Nashville	180	Orangeville
166	Thornton	181	Atwood
167	Moorefield	182	Dryden

Table 15

PLACES OF ORIGIN THAT GENERATED CAMPERS TO BRANT CONSERVATION AREA, 1974

Origin Code	City	Origin Code	City
1	Woodstock	38	Winona
2	Hamilton	39	Milton
3	Mississauga	40	Delphia
4	Paris	41	Troy
5	Burlington	42	Ancaster
6	Brantford	43	Waterdown
7	St. Catherines	44	Leamington
8	Toronto	45	Princeton
9	Waterloo	46	Whitby
10	Brampton	47	Oshawa
11	Niagara Falls	48	Merlin
12	Fort Erie	49	Mount Hope
13	London	50	St. Thomas
14	Kitchener	51	Wallaceburg
15	Dundas	52	Hagersville
16	Burford	53	Arthur
17	Welland	54	Ingersol
18	Cambridge	55	Wayland
19	Stoney Creek	56	Tillsonburg
20	Guelph	57	Vanessa
21	Jarvis	58	Alberton
22	Belleville	59	Norwich
23	Hannon	60	New Hamburg
24	Simcoe	61	Drumbo
25	Stratford	62	Harley
26	Dunnville	63	Waterford
27	Caledonia	64	Mount Pleasant
28	Oakville	65	Bright
29	Ottawa	66	Lambeth
30	Beamsville	67	Hickson
31	Elora	68	Sudbury
32	Peterborough	69	St. Jacobs
33	Port Credit	70	Napanee
34	St. George	71	Collingwood
35	Scotland	72	Goderich
36	Windsor	73	Bamburg
37	Binbrook	74	Grand Bend

Source: Grand River Conservation Authority camper receipts.

Table 16

AVERAGE VALUES FOR THE PLACES OF ORIGIN THAT GENERATED CAMPERS TO BRANT CONSERVATION AREA, 1974

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Size
Woodstock	1.29	4.57	3.14
Hamilton	1.81	5.97	3.80
Paris	1.79	5.75	3.71
Burlington	2.37	7.90	3.13
Brantford	2.22	6.17	3.92
Toronto	1.61	5.63	4.03
London	1.89	6.27	3.00
Kitchener-Waterloo	1.92	6.50	4.00
Dundas	3.11	9.50	4.67
Stoney Creek	1.62	5.76	4.15
Guelph	1.60	5.70	2.90
Hagersville	2.00	6.37	3.25
Total (12)	2.01	6.11	3.78
Cities less than 1.0% (63)	1.75	6.19	3.80
Out of Canada	1.53	5.17	4.66
Out of Province	2.00	8.28	2.71
Total Sample (25)	1.94	6.10	3.83

Source: Grand River Conservation Authority camper receipts.

Table 17

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR BRANT CONSERVATION AREA, 1974

	Inside the Basin				Outside the Basin			
	Straight line Mileage				Straight line Mileage			
	45<	46-90	>90	Total	45<	46-90	>90	Total
Length of Stay	726	6	0	732	371	123	28	522
Entrance Fees ($)	1245.00	4.50	0.00	2149.50	1342.00	365.50	100	1808.00
Number in the camper party	1343	11	0	1354	823	243	62	1128
Percentage of Camper Entries (%)	50.25	0.15	0.00	50.40	33.45	13.24	2.91	49.60

Source: Grand River Conservation Authority camper receipts.

Table 18

PLACES OF ORIGIN THAT GENERATED CAMPERS TO BYNG CONSERVATION AREA, 1974

Origin Code	City	Origin Code	City
1	Hamilton	31	Beamsville
2	Mississauga	32	Peterborough
3	Paris	33	Georgetown
4	Burlington	34	Fonthill
5	Brantford	35	Wellandport
6	St. Catherines	36	Vineland
7	Toronto	37	Binbrook
8	Brampton	38	Bramalea
9	Niagara Falls	39	Wainfleet
10	Fort Erie	40	Cayuga
11	Port Colbourne	41	Winona
12	London	42	Delphi
13	Lowbanks	43	Ancaster
14	Kitchener	44	Waterdown
15	Dundas	45	Virgil
16	Smithville	46	Niagara-on-the-Lake
17	Welland	47	Exeter
18	Cambridge	48	Bell River
19	Stoney Creek	49	Whitby
20	Jarvis	50	Fruitland
21	Hannon	51	St. Anns
22	Simcoe	52	Mount Hope
23	Grimsby	53	Vinemount
24	Ridgeway	54	Addison
25	Dunnville	55	Ayr
26	Condin	56	Fenwick
27	Caledonia	57	Stevensville
28	Port Dover	58	Thorald
29	Oakville	59	Selkirk
30	Port Robinson		

Source: Grand River Conservation Authority camper receipts.

Table 19

AVERAGE VALUES FOR THE PLACES OF ORIGIN THAT GENERATED CAMPERS TO BYNG CONSERVATION AREA, 1974

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Size
Hamilton	2.87	7.96	4.55
Burlington	2.00	6.16	3.33
Brantford	2.14	5.21	4.14
St. Catherines	1.86	5.98	5.04
Toronto	2.00	7.05	3.00
Niagara Falls	1.73	5.51	4.10
Fort Erie	2.27	7.68	3.73
Port Colbourne	2.35	6.71	4.13
Dundas	2.00	7.00	4.80
Smithville	1.50	5.75	5.17
Welland	2.51	6.80	4.32
Stoney Creek	2.82	7.95	3.64
Grimsby	2.18	6.13	5.27
Dunnville	2.43	6.80	4.61
Caledonia	1.80	5.70	4.80
Total (15)	2.42	6.94	4.36
Cities less than 1.0% (44)	2.23	9.57	4.72
Out of Canada	1.85	6.40	3.65
Out of Province	1.00	3.50	3.75
Total Sample (59)	2.36	6.95	4.39

Source: Grand River Conservation Authority camper receipts.

Table 20

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR BYNG CONSERVATION AREA, 1974

	Inside the Basin				Outside the Basin			
	Straight line Mileage				Straight line Mileage			
	45<	46-90	>90	Total	45<	46-90	>90	Total
Length of Stay	108	12	0	120	960	31	15	1006
Entrance Fees ($)	350.50	24.00	0.00	374.50	2788.50	102.00	53.00	2443.50
Number in the camper party	243	21	0	264	1756	50	22	1828
Percentage of Camper Entries (%)	12.12	0.84	0.00	12.96	81.38	4.40	1.26	97.04

Source: Grand River Conservation Authority camper receipts.

Table 21

PLACES OF ORIGIN THAT GENERATED CAMPERS TO

ELORA CONSERVATION AREA, 1974

Origin Code	City	Origin Code	City
1	Woodstock	36	Barrie
2	Hamilton	37	Milton
3	Mississauga	38	Delphi
4	Paris	39	Ancaster
5	Burlington	40	Waterdown
6	Brantford	41	Elmira
7	St. Catherines	42	Niagara-on-the-Lake
8	Toronto	43	Maidstone
9	Waterloo	44	Sarnia
10	Brampton	45	Bell River
11	Niagara Falls	46	Oshawa
12	Fort Erie	47	Fruitland
13	London	48	Chatham
14	Kitchener	49	Mount Hope
15	Dundas	50	Vinemount
16	Welland	51	Lynden
17	Cambridge	52	Fenwick
18	Stoney Creek	53	St. Thomas
19	Guelph	54	Thorald
20	Hannon	55	Arthur
21	Simcoe	56	Harrow
22	Stratford	57	Ingersol
23	Grimsby	58	Fergus
24	Dunnville	59	Strathroy
25	Caledonia	60	Streetsville
26	Oakville	61	Vanessa
27	Ottawa	62	Markham
28	Campbellville	63	Owen Sound
29	Elora	64	Mount Forest
30	Georgetown	65	Waterford
31	Port Credit	66	Markdale
32	Scotland	67	Branchton
33	Windsor	68	Timmins
34	Vineland	69	Port Stanley
35	Bramalea	70	Freelton

con't

Table 21-con't

Origin Code	City	Origin Code	City
71	Alton	92	Essex
72	Orillia	93	Rockwood
73	Hillsburgh	94	Nashville
74	Lambeth	95	Thornton
75	Harriston	96	Moorefield
76	Morriston	97	Varnon
77	Cookston	98	West Montrose
78	Markstay	99	Ashburn
79	New Dundee	100	Petawawa
80	Shakespeare	101	Kirkland Lake
81	Wallenstein	102	Brights Grove
82	Listowel	103	Baden
83	Sheffield	104	Shelburne
84	Kapuskasing	105	Deep River
85	Petersburg	106	Grand Valley
86	Brighton	107	Alma
87	Collingwood	108	Palmerston
88	Bolton	109	Orangeville
89	Goderich	110	Atwood
90	Tottenham	111	Dryden
91	Kingsville		

Source: Grand River Conservation Authority camper receipts.

Table 22

AVERAGE VALUES FOR THE PLACES OF ORIGIN THAT GENERATED CAMPERS TO ELORA CONSERVATION AREA, 1974

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Size
Hamilton	2.02	6.70	3.29
Mississauga	1.69	5.93	3.41
Burlington	2.19	7.06	3.19
Brantford	2.17	5.78	3.87
St. Catherines	1.54	5.46	3.85
Toronto	2.05	6.39	3.26
Waterloo	1.75	4.81	3.25
London	1.88	6.78	3.44
Kitchener	1.89	6.03	3.53
Dundas	2.11	7.33	4.78
Cambridge	1.98	5.73	3.74
Guelph	1.91	6.04	3.91
Elora	1.92	4.73	3.00
Windsor	1.75	6.12	4.67
Elmira	1.53	5.80	4.13
Total (15)	1.93	6.12	3.51
Cities less than 1.0% (96)	1.79	6.33	3.60
Out of Canada	1.74	5.29	4.00
Out of Province	2.17	8.08	4.92
Total Sample (111)	1.90	6.17	3.57

Source: Grand River Conservation Authority camper receipts.

Table 23

CAMPER STATISTICS BY ORIGIN FOR INSIDE AND OUTSIDE OF THE GRAND RIVER DRAINAGE BASIN FOR ELORA CONSERVATION AREA, 1974

	Inside the Basin				Outside the Basin			
	Straight line Mileage				Straight line Mileage			
	45<	46-90	>90	Total	45<	46-90	>90	Total
Length of Stay	683	21	0	704	628	177	80	885
Entrance Fees ($)	2095.00	62.00	0.00	2157.00	2046.00	661.00	288.00	2995.00
Number in the camper party	1266	24	0	1290	1193	325	171	1689
Percentage of Camper Entries (%)	41.45	2.72	0.00	44.17	39.39	11.40	5.04	55.83

Source: Grand River Conservation Authority camper receipts.

Table 24.

PLACES OF ORIGIN THAT GENERATED CAMPERS TO PINEHURST CONSERVATION AREA, 1974

Origin Code	City	Origin Code	City
1	Woodstock	36	Ottawa
2	Hamilton	37	Campbellville
3	Mississauga	38	Elora
4	Paris	39	Innerkip
5	Burlington	40	Port Credit
6	Brantford	41	Rockton
7	St. Catherines	42	St. George
8	Toronto	43	Scotland
9	Waterloo	44	Honey Harbour
10	Brampton	45	Fonthill
11	Niagara Falls	46	Wellandport
12	Caledon	47	Windsor
13	London	48	Oak Ridges
14	Copetown	49	
15	Kitchener	50	Bramalea
16	Dundas	51	Sparta
17	Burford	52	Wainfleet
18	Smithville	53	Carlisle
19	Welland	54	Barrie
20	Cambridge	55	Winona
21	Stoney Creek	56	Milton
22	Uxbridge	57	Delphi
23	Guelph	58	Chalmersford
24	Jarvis	59	Embro
25	Belleville	60	Troy
26	Acton	61	Ancaster
27	Simcoe	62	Waterdown
28	Stratford	63	Brockville
29	Tavistock	64	Elmira
30	Grimsby	65	Maidstone
31	Dunnville	66	Leamington
32	Caledonia	67	Sarnia
33	Port Dover	68	Shenandoah
34	Oakville	69	Princeton
35	Beachville	70	Newcastle

con't

Table 24--con't

Origin Code	City
71	Thorndale
72	Chatham
73	Bobcaygeon
74	Merlin
75	Wellesley
76	Mount Hope
77	Lynden
78	Ayr
79	Alvinston
80	St. Thomas
81	Wallaceburg
82	Belmont

Source: Grand River Conservation Authority camper receipts.

Table 25

AVERAGE VALUES FOR THE PLACES OF ORIGIN THAT GENERATED CAMPERS TO PINEHURST CONSERVATION AREA, 1974

Cities	Average Days Stayed	Average Fees Paid ($)	Average Party Size
Woodstock	1.41	4.61	3.76
Hamilton	2.17	7.06	4.35
Paris	3.33	10.66	3.83
Burlington	2.15	7.51	5.48
Brantford	2.12	6.78	4.65
St. Catherines	2.40	8.70	4.00
Toronto	1.87	6.91	5.17
Waterloo	1.47	5.40	5.27
London	2.80	11.40	4.80
Kitchener	2.47	8.17	4.20
Dundas	2.06	7.11	4.41
Cambridge	2.60	7.21	3.40
Stoney Creek	2.00	7.40	4.20
Guelph	1.67	5.83	3.17
Windsor	1.00	4.10	5.40
Total (15)	2.16	7.14	4.37
Cities less than 1.0% (67)	1.60	5.89	4.15
Out of Canada	1.33	5.00	3.47
Out of Province	1.83	6.41	3.33
Total Sample (82)	2.02	6.81	4.29

Source: Grand River Conservation Authority camper receipts.

Table 26

CAMPER STATISTICS BY ORIGIN FROM INSIDE AND OUTSIDE OF

THE GRAND RIVER DRAINAGE BASIN FOR PINEHURST CONSERVATION AREA, 1974

	Inside the Basin				Outside the Basin			
	Straight line Mileage				Straight line Mileage			
	45<	46-90	>90	Total	45<	46-90	>90	Total
Length of Stay	409	3	0	412	417	95	24	536
Entrance Fees ($)	1278.00	6.00	0.00	1284.00	1484.00	339.00	94.00	1917.00
Number in the camper party	753	10	0	763	929	239	84	1252
Percentage of Camper Entries (%)	38.92	0.43	0.00	39.35	46.24	9.97	4.44	60.65

Source: Grand River Conservation Authority camper receipts.

APPENDIX C

(Tables 1 to 6)

ORIGIN AND DESTINATION INFORMATION FOR

THE FOUR CONSERVATION AREAS

1972 AND 1974

Table 1

ORIGIN AND DESTINATION INFORMATION FOR

THE FOUR CONSERVATION AREAS FOR 1972

Origin Code	Place of Origin	Population 1971	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
1	Toronto	2,086,017	11	12	101	23
2	Hamilton	309,173	31	167	85	75
3	Kitchener-Waterloo	148,481	7	0	221	29
4	Galt	38,897	2	1	15	42
5	Welland	44,397	1	67	4	4
6	Oakville	61,448	2	4	10	7
7	Dunnville	5,576	2	47	1	5
8	Campbellville	270	1	0	4	1
9	Burlington	87,023	12	16	30	17
10	Stoney Creek	8,380	6	11	5	10
11	Kincardine	3,239	0	1	1	0
12	Dundas	17,208	3	5	6	8
13	St. Catherines	109,722	5	25	12	4
14	Bramalea	23,083	0	2	3	5
15	Paris	6,438	8	0	4	11
16	Vinemount	96	1	2	1	1
17	Wainfleet	176	2	3	1	0
18	Brantford	64,421	82	8	11	39
19	Caledonia	3,183	2	5	9	7
20	Fruitland	49	0	1	0	0
21	London	223,222	8	7	21	14
22	Mississauga	156,070	3	1	22	4
23	Port Colbourne	21,420	0	28	0	1
24	Niagara Falls	67,163	2	19	6	3
25	Clarkson	49	0	0	2	0
26	Windsor	203,300	2	0	9	10
27	Brooklin	1,679	0	0	0	1
28	Ancaster	15,326	1	4	2	0

Table 1--con't

Origin Code	Place of Origin	Population 1971	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
29	Lowbanks	49	0	0	0	1
30	Port Rowan	856	0	0	2	0
31	Guelph	60,087	3	2	32	14
32	St. George	949	0	1	1	0
33	Stevensville	49	0	1	0	0
34	Byng	243	0	1	0	0
35	Preston	16,723	0	1	20	7
36	Binbrook	3,826	2	6	1	1
37	Ayr	1,272	0	0	1	5
38	Woodstock	26,173	10	0	5	20
39	Simcoe	10,793	0	1	2	6
40	Hillsburgh	674	0	1	0	0
41	Hastings	938	0	0	0	2
42	Annan, Grey City	49	0	6	5	0
43	Thorald	15,065	0	3	0	1
44	Grimsby	15,770	1	7	0	4
45	Winona	1,411	0	2	0	0
46	Georgetown	17,053	0	0	4	3
47	Tillsonburg	6,608	0	0	0	2
48	Springfield	522	0	0	0	1
49	Hagersville	2,292	0	0	0	1
50	Fisherville	232	1	3	0	0
51	Beamsville	2,537	0	0	2	1
52	Bay Ridges	8,530	0	1	0	1
53	Newmarket	18,941	0	0	0	1
54	Burgessville	329	0	1	0	0
55	Petersburg	145	0	0	2	3
56	Waterdown	2,149	0	0	3	3
57	Mount Hope	565	1	4	1	0
58	Lynden	454	0	0	0	3
59	Brownsville	295	0	0	0	1
60	Nanticoke	213	0	1	0	0
61	Kingston	59,047	0	0	0	4
62	Arthur	1,414	0	0	0	1
63	Fonthill	2,324	0	3	1	0
64	Vineland	1,187	1	5	0	0
65	Comber	624	0	0	1	1
66	Sarnia	57,644	2	1	4	0
67	Streetsville	6,840	0	0	2	2
68	Fergus	5,433	0	0	11	2
69	Chatham	35,317	2	2	1	1
70	Sherkston, Port Colbourne	54	0	0	0	1

Table 1--con't

Origin Code	Place of Origin	Population 1971	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
71	Port Dover	3,407	0	1	1	0
72	Delta	465	0	1	0	1
73	Harrow	1,971	0	0	0	1
74	Oshaws	91,587	1	0	1	1
75	Fort Erie	23,113	0	7	0	0
76	Brockville	19,765	0	0	1	1
77	Essex	4,002	0	0	1	1
78	Elfrida	45	0	2	0	0
79	Whitby	25,324	0	5	0	0
80	Breslau	697	0	0	2	1
81	New Dundee	764	0	0	1	1
82	Fenwick	722	0	1	1	0
83	Beachville	995	0	0	0	1
84	Markham	36,684	0	0	0	1
85	Staples	111	0	2	0	0
86	Mill Grove	190	0	0	0	1
87	Oil Springs	570	0	0	0	1
88	Ingersol	7,783	1	1	2	1
89	Peterborough	58,111	1	0	0	0
90	Ottawa	302,341	1	2	1	0
91	Wallaceburg	10,550	0	1	0	0
92	Milton	7,018	1	1	3	0
93	Smithville	1,418	0	1	0	0
94	Brampton	41,211	1	1	9	0
95	Ridgeway	1,978	0	3	1	0
96	Port Robinson	703	0	1	2	0
97	Eden	116	0	0	1	0
98	Wallenstein	125	0	0	1	0
99	Hespeler	6,343	1	0	6	0
100	Owen Sound	18,469	0	0	4	0
101	Wellesley	816	0	0	1	0
102	Elora	1,904	0	0	6	0
103	St. Jacobs	787	0	0	3	0
104	Erin	1,446	0	0	2	0
105	Leamington	10,435	0	0	1	0
106	Stratford	24,508	2	0	3	0
107	St. Thomas	25,545	0	0	2	0
108	Elmira	4,730	1	0	9	0
109	Acton	5,031	0	0	5	0
110	Beaverton	1,485	0	0	1	0
111	Listowel	4,677	0	0	3	0
112	St. Marys	4,650	0	0	1	0
113	North Bay	49,187	0	0	1	0

Table 1--con't

Origin Code	Place of Origin	Population 1971	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
114	Burford	1,291	2	0	1	0
115	Caledon	910	1	0	1	0
116	Wiarton	2,222	0	0	3	0
117	Jerseyville	165	0	0	1	0
118	Sault Ste. Marie	80,332	0	0	1	0
119	Orangeville	8,074	0	0	1	0
120	New Hamburg	3,008	0	0	1	0
121	Komoka	689	0	0	1	0
122	Alvinston	702	1	0	0	0
123	Freelton	319	0	0	2	0
124	Sheffield	145	0	0	1	0
125	Lucknow	1,047	1	0	0	0
126	Clinton	3,154	1	0	0	0
127	Grand Valley	904	1	0	0	0
128	Dorchester	1,796	0	0	2	0
129	Morriston	213	0	0	1	0
130	Belleville	35,128	1	0	0	0
131	Kemptville	2,413	0	0	1	0
132	Aurora	13,614	0	0	1	0
133	Alliston	3,176	0	0	1	0
134	Thornhill	5,600	0	0	1	0
135	Appin	168	0	0	1	0
136	Bloomingdale	335	0	0	1	0
137	Bancroft	2,276	1	0	0	0
138	Delaware	627	0	0	1	0

Table 2

ACTUAL DISTANCE MEASUREMENTS TO THE

FOUR CONSERVATION AREAS FOR 1972

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
1	Toronto	65	88	71	78
2	Hamilton	26	37	47	32
3	Kitchener-Waterloo	26	0	37	25
4	Galt	17	65	37	7
5	Welland	59	21	90	71
6	Oakville	42	61	59	43
7	Dunnville	49	1	93	62
8	Campbellville	37	0	37	27
9	Burlington	31	41	52	32
10	Stoney Creek	32	32	61	33
11	Kincardine	0	176	85	0
12	Dundas	23	48	49	26
13	St. Catherines	65	37	93	74
14	Bramalea	0	80	56	59
15	Paris	6	0	53	7
16	Vinemount	33	32	53	43
17	Wainfleet	64	15	120	0
18	Brantford	1	49	58	15
19	Caledonia	21	28	77	33
20	Fruitland	0	29	0	0
21	London	55	107	103	59
22	Mississauga	55	70	75	54
23	Port Colborne	0	22	0	78
24	Niagara Falls	72	36	109	85
25	Clarkson	0	0	69	0
26	Windsor	171	0	212	176
27	Brooklin	0	0	0	111
28	Ancaster	18	45	63	0
29	Lowbanks	0	11	0	74
30	Port Rowan	0	0	118	0
31	Guelph	33	84	21	51
32	St. George	0	57	51	0
33	Stevensville	0	53	0	0
34	Byng	0	1	0	0
35	Preston	0	79	41	21
36	Binbrook	29	27	67	44
37	Ayr	0	0	52	12
38	Woodstock	24	0	70	26

Table 2--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
39	Simcoe	0	43	80	31
40	Hillsburgh	0	96	0	0
41	Hastings	0	0	0	168
42	Annan, Grey City	0	167	84	0
43	Thorald	0	32	0	72
44	Grimsby	50	27	0	62
45	Winona	0	32	0	0
46	Georgetown	0	0	49	63
47	Tillsonburg	0	0	0	46
48	Springfield	0	0	0	58
49	Hagersville	0	0	0	34
50	Fisherville	43	17	0	0
51	Beamsville	0	0	82	53
52	Bay Ridges	0	106	0	88
53	Newmarket	0	0	0	93
54	Burgessville	0	71	0	0
55	Petersburg	0	0	46	19
56	Waterdown	0	0	39	27
57	Mount Hope	24	35	64	0
58	Lynden	0	0	0	15
59	Brownsville	0	0	0	54
60	Nanticoke	0	25	0	0
61	Kingston	0	0	0	224
62	Arthur	0	0	0	57
63	Fonthill	0	25	85	0
64	Vineland	55	28	0	0
65	Comber	0	0	198	156
66	Sarnia	119	168	161	0
67	Streetsville	0	0	52	52
68	Fergus	0	0	8	45
69	Chatham	121	165	165	133
70	Sherkston, Port Colbourne	0	0	0	78
71	Port Dover	0	40	90	0
72	Delta	0	280	0	268
73	Harrow	0	0	0	183
74	Oshawa	98	0	110	103
75	Fort Erie	0	41	0	0
76	Brockville	0	0	284	272
77	Essex	0	0	211	168
78	Elfrida	0	27	0	0

Table 2--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
79	Whitby	0	114	0	0
80	Breslau	0	0	35	24
81	New Dundee	0	0	51	22
82	Fenwick	0	19	96	0
83	Beachville	0	0	0	33
84	Markham	0	0	0	79
85	Staples	0	190	0	0
86	Mill Grove	0	0	0	37
87	Oil Springs	0	0	0	123
88	Ingersol	36	82	79	36
89	Peterborough	148	0	0	0
90	Ottawa	310	324	325	0
91	Wallaceburg	0	172	0	0
92	Milton	38	69	49	0
93	Smithville	0	21	0	0
94	Brampton	63	81	62	0
95	Ridgeway	0	32	117	0
96	Port Robinson	0	35	106	0
97	Eden	0	0	95	0
98	Wallenstein	0	0	19	0
99	Hespeler	27	0	38	0
100	Owen Sound	0	0	78	0
101	Wellesley	0	0	37	0
102	Elora	0	0	2	0
103	St. Jacobs	0	0	21	0
104	Erin	0	0	44	0
105	Leamington	0	0	197	0
106	Stratford	54	0	66	0
107	St. Thomas	0	0	110	0
108	Elmira	41	0	15	0
109	Acton	0	0	41	0
110	Beaverton	0	0	135	0
111	Listowel	0	0	37	0
112	St. Marys	0	0	76	0
113	North Bay	0	0	262	0
114	Burford	9	0	71	0
115	Caledon	65	0	55	0
116	Wiarton	0	0	97	0
117	Jerseyville	0	0	68	0
118	Sault Ste. Marie	0	0	474	0
119	Orangeville	0	0	58	0
120	New Hamburg	0	0	53	0

Table 2--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
121	Komoka	0	0	106	0
122	Alvinston	106	0	0	0
123	Freelton	0	0	42	0
124	Sheffield	0	0	49	0
125	Lucknow	103	0	0	0
126	Clinton	84	0	0	0
127	Grand Valley	78	0	0	0
128	Dorchester	0	0	86	0
129	Morriston	0	0	37	0
130	Belleville	182	0	0	0
131	Kemptville	0	0	314	0
132	Aurora	0	0	94	0
133	Alliston	0	0	84	0
134	Thornhill	0	0	82	0
135	Appin	0	0	132	0
136	Bloomingdale	0	0	14	0
137	Bancroft	212	0	0	0
138	Delaware	0	0	114	0

Table 3

TIME-TRAVEL DISTANCE MEASUREMENTS TO THE FOUR CONSERVATION AREAS FOR 1972

Origin Code	Place of Origin	Distance to Conservation Area (hours) Brant	Byng	Pinehurst	Elora
1	Toronto	1.375	1.900	1.700	1.600
2	Hamilton	0.650	0.900	0.850	1.242
3	Kitchener-Waterloo	0.610	2.025	0.675	0.992
4	Galt	0.425	1.625	0.233	0.992
5	Welland	1.475	0.567	1.825	2.317
6	Oakville	0.915	1.435	1.035	1.410
7	Dunnville	1.225	0.033	1.600	2.392
8	Campbellville	0.805	1.635	0.750	1.242
9	Burlington	0.695	0.980	0.850	1.367
10	Stoney Creek	0.775	0.800	0.875	1.522
11	Kincardine	3.125	4.400	2.975	2.208
12	Dundas	0.550	1.175	0.700	1.292
13	St. Catherines	1.465	0.925	1.757	2.162
14	Bramalea	1.310	1.835	1.360	1.467
15	Paris	0.150	1.375	0.233	1.392
16	Vinemount	0.825	0.800	1.075	1.342
17	Wainfleet	1.600	0.375	1.950	3.067
18	Brantford	0.033	1.225	0.425	1.517
19	Caledonia	0.525	0.700	0.875	1.992
20	Fruitland	0.925	0.725	1.200	1.622
21	London	1.215	2.575	1.365	2.347
22	Mississauga	1.200	1.585	1.175	1.770
23	Port Colbourne	1.775	0.550	2.000	2.817
24	Niagara Falls	1.575	0.900	1.900	2.497
25	Clarkson	1.580	1.880	1.905	1.792
26	Windsor	3.545	4.700	3.720	4.442
27	Brooklin	2.105	2.340	2.190	2.427
28	Ancaster	0.450	1.125	0.775	1.602
29	Lowbanks	1.558	0.308	1.883	3.125
30	Port Rowan	1.375	1.942	1.700	3.017
31	Guelph	0.825	2.100	1.350	0.600
32	St. George	0.300	1.425	0.350	1.342
33	Stevensville	2.575	1.358	3.700	2.682
34	Byng	1.250	0.033	1.575	2.442
35	Preston	0.575	1.975	0.600	1.092
36	Binbrook	0.725	0.675	1.150	1.742

Table 3--con't

Origin Code	Place of Origin	Distance to Conservation Area (hours) Brant	Byng	Pinehurst	Elora
37	Ayr	0.450	1.650	0.400	1.392
38	Woodstock	0.600	1.752	0.700	1.687
39	Simcoe	0.600	1.175	0.892	2.117
40	Hillsburgh	1.667	2.442	1.517	0.933
41	Hastings	3.370	3.560	3.720	3.242
42	Annan, Grey City	3.267	4.217	3.142	2.208
43	Thorald	1.575	0.800	1.850	2.347
44	Grimsby	1.200	0.842	0.933	1.847
45	Winona	0.950	0.800	1.275	1.767
46	Georgetown	1.775	2.240	1.625	1.292
47	Tillsonburg	1.242	1.900	1.350	2.967
48	Springfield	1.708	2.367	1.498	2.337
49	Hagersville	0.800	0.750	0.900	2.317
50	Fisherville	1.117	0.567	1.442	2.558
51	Beamsville	1.155	0.900	1.300	1.972
52	Bay Ridges	1.830	2.280	1.910	2.297
53	Newmarket	1.780	1.995	2.025	2.407
54	Burgessville	0.675	1.775	1.000	1.862
55	Petersburg	1.167	2.392	0.550	1.217
56	Waterdown	0.775	1.250	0.725	1.042
57	Mount Hope	0.600	0.875	0.650	1.667
58	Lynden	0.325	1.550	0.425	1.842
59	Brownsville	1.575	2.267	1.367	2.403
60	Nanticoke	1.042	0.833	1.367	1.808
61	Kingston	4.270	4.845	4.625	4.987
62	Arthur	1.625	2.850	1.500	0.567
63	Fonthill	1.500	0.700	1.825	2.192
64	Vineland	1.270	0.825	1.595	2.047
65	Comber	3.230	4.130	3.280	4.217
66	Sarnia	2.915	4.200	3.240	3.897
67	Streetsville	1.335	1.685	1.185	1.508
68	Fergus	1.325	2.550	1.200	0.267
69	Chatham	2.510	3.850	2.860	3.547
70	Sherkston, Port Colbourne	1.675	0.550	2.000	2.725
71	Port Dover	0.800	1.317	1.100	2.317
72	Delta	5.710	5.855	5.460	6.087
73	Harrow	3.897	4.980	4.213	4.722
74	Oshawa	2.060	2.405	2.205	2.447
75	Fort Erie	2.225	0.930	2.475	2.757
76	Brockville	5.450	5.865	5.533	5.882
77	Essex	3.575	4.770	3.592	4.488

Table 3--con't

Origin Code	Place of Origin	Distance to Conservation Area (hours) Brant	Byng	Pinehurst	Elora
78	Elfrida	0.725	0.675	1.050	1.742
79	Whitby	1.940	2.465	2.105	3.027
80	Breslau	0.800	2.050	0.675	0.942
81	New Dundee	0.783	1.983	0.708	1.425
82	Fenwick	1.642	0.575	1.992	2.467
83	Beachville	0.825	2.125	0.875	1.837
84	Markham	1.900	2.345	1.793	2.347
85	Staples	3.280	4.008	4.255	4.292
86	Mill Grove	0.625	0.775	0.925	1.667
87	Oil Springs	2.665	4.350	2.715	3.947
88	Ingersol	0.840	2.050	0.880	1.837
89	Peterborough	3.070	3.550	3.145	3.542
90	Ottawa	6.285	6.665	6.460	6.747
91	Wallaceburg	3.010	3.655	3.360	4.047
92	Milton	0.950	1.605	0.905	1.292
93	Smithville	1.155	0.625	1.250	1.912
94	Brampton	1.360	1.810	1.685	1.617
95	Ridgeway	2.050	0.960	2.350	2.607
96	Port Robinson	1.575	0.875	1.925	2.487
97	Eden	1.342	2.000	1.450	2.247
98	Wallenstein	1.125	2.550	1.100	0.550
99	Hespeler	0.675	1.800	0.425	1.017
100	Owen Sound	3.100	4.050	2.875	2.017
101	Wellesley	1.567	2.758	0.717	0.925
102	Elora	1.525	2.750	1.400	0.067
103	St. Jacobs	1.150	2.325	0.925	0.592
104	Erin	1.500	2.275	2.600	1.167
105	Leamington	3.480	4.208	4.455	4.272
106	Stratford	1.350	2.550	1.300	1.717
107	St. Thomas	1.675	2.200	1.825	2.487
108	Elmira	1.025	2.425	0.975	0.442
109	Acton	1.575	2.040	1.425	0.825
110	Beaverton	3.300	3.741	3.260	3.442
111	Listowel	1.600	3.000	1.250	0.992
112	St. Marys	1.340	2.625	1.415	1.992
113	North Bay	5.500	5.700	5.310	5.497
114	Burford	0.225	1.400	0.500	2.140
115	Caledon	1.625	2.525	1.600	1.207
116	Wiarton	3.600	4.550	3.375	2.492
117	Jerseyville	0.458	1.683	0.597	1.767
118	Sault Ste. Marie	9.670	9.920	9.645	9.727
119	Orangeville	1.850	2.625	1.700	1.517

Table 3--con't

Origin Code	Place of	Distance to Conservation Area (hours) Brant	Byng	Pinehurst	Elora
120	New Hamburg	1.175	2.400	1.025	1.392
121	Komoka	1.415	2.775	1.565	2.312
122	Alvinston	2.335	4.025	2.250	3.547
123	Freelton	0.800	1.310	0.675	1.117
124	Sheffield	0.550	1.475	0.550	1.292
125	Lucknow	2.575	3.850	2.325	1.658
126	Clinton	2.100	3.325	2.100	2.517
127	Grand Valley	2.116	2.500	1.842	0.725
128	Dorchester	1.015	2.415	1.185	1.997
129	Morriston	0.975	1.435	0.800	0.992
130	Belleville	3.750	3.985	3.790	4.027
131	Kemptville	6.300	6.715	5.950	6.637
132	Aurora	1.680	1.895	1.925	2.207
133	Alliston	2.500	3.275	2.300	2.167
134	Thornhill	1.467	1.925	1.650	1.907
135	Appin	2.275	3.925	2.150	3.080
136	Bloomingdale	1.058	2.183	0.842	0.467
137	Bancroft	5.285	5.685	5.540	5.777
138	Delaware	1.315	2.675	1.465	2.592

Table 4

ORIGIN AND DESTINATION INFORMATION FOR THE FOUR CONSERVATION AREAS FOR 1974

Origin Code	Place of Origin	Population 1973	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
1	Woodstock	26,173	7	0	5	17
2	Hamilton	309,173	101	128	104	102
3	Mississauga	156,070	3	4	22	1
4	Paris	6,428	14	1	2	6
5	Burlington	87,023	16	9	32	27
6	Brantford	64,412	238	9	32	11
7	St. Catherines	109,722	6	28	13	10
8	Toronto	2,086,017	33	9	93	24
9	Waterloo	36,677	2	0	36	15
10	Brampton	41,211	4	1	4	2
11	Niagara Falls	67,163	6	30	3	2
12	Fort Erie	23,113	1	11	1	0
13	Port Colbourne	21,420	0	23	0	0
14	Caledon	910	0	0	0	1
15	London	223,222	9	1	16	5
16	Lowbanks	49	0	3	0	0
17	Copetown	148	0	0	0	1
18	Kitchener	111,804	12	2	129	45
19	Dundas	17,208	9	5	9	17
20	Burford	1,291	4	0	0	1
21	Smithville	1,412	0	6	0	1
22	Welland	44,397	4	75	4	4
23	Cambridge	61,963	4	1	47	40
24	Stoney Creek	8,380	13	11	8	5
25	Uxbridge	3,077	0	0	0	1
26	Guelph	60,087	10	0	56	6
27	Jarvis	965	1	4	0	3
28	Belleville	35,128	2	0	0	1
29	Annon	66	1	1	1	0
30	Acton	5,031	0	0	0	2
31	Simcoe	10,793	5	2	1	4
32	Stratford	24,508	1	0	3	1
33	Tavistock	1,477	0	0	0	1
34	Grimsby	15,770	5	11	1	2
35	Ridgeway	1,978	0	3	0	0
36	Dunnville	5,576	2	23	1	2
37	Campden	218	0	1	0	0

Table 4--con't

Origin Code	Place of Origin	Population 1973	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
38	Caledonia	3,183	5	5	1	1
39	Port Dover	3,407	0	3	0	1
40	Oakville	61,448	6	1	6	3
41	Beachville	26	0	0	0	4
42	Port Robinson	703	0	0	1	0
43	Ottawa	302,341	2	0	5	1
44	Beamsville	2,537	1	2	0	0
45	Campbellville	270	0	0	1	1
46	Elora	1,904	2	0	13	2
47	Peterborough	58,111	2	1	0	0
48	Innerkip	417	0	0	0	1
49	Georgetown	17,053	0	1	3	0
50	Port Credit	9,442	1	0	2	1
51	Rockton	147	0	0	0	1
52	St. George	949	2	0	0	3
53	Scotland	596	2	0	1	1
54	Honey Harbour	132	0	0	0	1
55	Fonthill	2,324	0	1	0	1
56	Wellandport	251	0	2	0	2
57	Windsor	203,300	2	0	12	5
58	Vineland	1,187	0	1	1	0
59	Oakridges	3,640	0	0	0	1
60	Fingal	349	0	0	0	1
61	Binbrook	3,826	3	1	0	0
62	Bramalea	23,083	0	1	4	1
63	Sparta	320	0	0	0	1
64	Wainfleet	176	0	3	0	2
65	Carlisle	401	0	0	0	1
66	Cayuga	1,084	0	2	0	0
67	Barrie	27,625	0	0	2	1
68	Winona	1,411	1	2	0	2
69	Milton	7,018	3	0	5	1
70	Delhia	3,894	5	1	2	2
71	Chelmersford	3,058	0	0	0	1
72	Embro	692	0	0	0	1
73	Troy	84	1	0	0	2
74	Ancaster	15,326	5	0	3	1
75	Waterdown	2,149	1	1	1	1
76	Virgil	902	0	1	0	0
77	Brockville	19,765	0	0	0	1
78	Elmira	4,730	0	0	15	2
79	Niagara-on-the-Lake	12,552	0	3	1	0

Table 4--con't

Origin Code	Place of Origin	Population 1973	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
80	Maidstone	117	0	0	1	1
81	Leamington	10,435	1	0	0	2
82	Exeter	3,354	0	2	0	0
83	Sarnia	57,644	0	0	4	1
84	Shawanage	52	1	0	0	1
85	Bell River	2,877	0	1	1	0
86	Princeton	368	3	0	0	1
87	Whitby	25,324	1	1	0	0
88	Oshawa	91,587	2	0	3	0
89	Fruitland	49	0	2	1	0
90	St. Anns	136	0	4	0	0
91	Newcastle	1,942	0	0	0	1
92	Thorndale	434	0	0	0	1
93	Chatham	35,317	0	0	4	1
94	Bobcaygeon	1,518	0	0	0	1
95	Merlin	633	3	0	0	0
96	Wellesley	816	0	0	0	1
97	Mount Hope	565	1	1	2	2
98	Vinemount	96	0	1	2	0
99	Addison	101	0	1	0	0
100	Lynden	454	0	0	1	2
101	Ayr	1,272	0	1	0	1
102	Fenwick	722	0	1	1	0
103	Stevensville	49	0	1	0	0
104	Alvinston	702	0	0	0	1
105	St. Thomas	25,545	2	0	2	1
106	Wallaceburg	10,550	2	0	0	1
107	Thorald	15,065	0	1	1	0
108	Belmont	789	0	0	0	1
109	Selkirk	380	0	1	0	0
110	Hagersville	2,292	12	0	0	0
111	Arthur	1,414	1	0	1	0
112	Harrow	1,981	0	0	3	0
113	Ingersol	7,283	2	0	1	0
114	Way (Cochrane)	873	1	0	0	0
115	Fergus	5,433	0	0	4	0
116	Tillsonburg	6,638	2	0	0	0
117	Strathroy	6,592	0	0	3	0
118	Streetsville	6,840	0	0	4	0
119	Vanessa	140	1	0	1	0
120	Markham	36,684	0	0	1	0
121	Alberton	66	1	0	0	0
122	Norwich	1,806	1	0	0	0

Table 4--con't

Origin Code	Place of Origin	Population 1973	Conservation Area Attendance			
			Brant	Byng	Elora	Pinehurst
123	New Hamburg	2,008	1	0	0	0
124	Owen Sound	18,469	0	0	2	0
125	Drumbo	458	3	0	0	0
126	Mount Forest	3,037	0	0	1	0
127	Harley	87	2	0	0	0
128	Waterford	2,403	1	0	1	0
129	Markdale	1,236	0	0	1	0
130	Branchton	163	0	0	1	0
131	Timmins	28,542	0	0	1	0
132	Port Stanley	1,752	0	0	2	0
133	Freelton	319	0	0	2	0
134	Mount Pleasant	490	1	0	0	0
135	Bright	336	1	0	0	0
136	Alton	475	0	0	1	0
137	Orillia	24,040	0	0	1	0
138	Hillsburgh	674	0	0	1	0
139	Lambeth	2,719	1	0	1	0
140	Harriston	1,785	0	0	1	0
141	Hickston	152	1	0	0	0
142	Morriston	205	0	0	1	0
143	Cookston	897	0	0	2	0
144	Sudbury	90,545	1	0	0	0
145	Markstay	360	0	0	1	0
146	New Dundee	764	0	0	2	0
147	St. Jacobs	787	1	0	0	0
148	Napanee	4,638	1	0	0	0
149	Shakespeare	375	0	0	1	0
150	Wallenstein	125	0	0	1	0
151	Listowel	4,677	0	0	2	0
152	Sheffield	145	0	0	3	0
153	Kapuskasing	12,834	0	0	1	0
154	Petersburg	145	0	0	1	0
155	Brighton	2,956	0	0	1	0
156	Collingwood	9,262	0	0	3	0
157	Bolton	2,984	0	0	3	0
158	Goderich	6,723	1	0	1	0
159	Bamberg	42	1	0	0	0
160	Tottenham	1,616	0	0	1	0
161	Kingsville	4,076	0	0	1	0
162	Grand Bend	696	1	0	0	0
163	Essex	4,002	0	0	1	0
164	Rockwood	864	0	0	1	0
165	Nashville	137	0	0	1	0

Table 4--con't

Origin Code	Place of Origin	Population 1973	Conservation Area Attendance Brant	Byng	Elora	Pinehurst
166	Thornton	312	0	0	1	0
167	Moorefield	290	0	0	1	0
168	Vernon	216	0	0	1	0
169	West Montrose	65	0	0	1	0
170	Ashburn	132	0	0	1	0
171	Petawawa	5,784	0	0	1	0
172	Kirkland Lake	14,689	0	0	1	0
173	Bights Grove	773	0	0	1	0
174	Baden	945	0	0	1	0
175	Shelbourne	1,790	0	0	1	0
176	Deep River	5,671	0	0	1	0
177	Grand Valley	904	0	0	1	0
178	Alma	172	0	0	1	0
179	Palmerston	1,855	0	0	1	0
180	Orangeville	8,074	0	0	1	0
181	Atwood	598	0	0	1	0
182	Dryden	6,939	0	0	1	0

Table 5

ACTUAL DISTANCE MEASUREMENTS TO THE

FOUR CONSERVATION AREAS FOR 1974

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
1	Woodstock	24	0	70	26
2	Hamilton	26	37	47	32
3	Mississauga	55	70	75	54
4	Paris	8	51	53	7
5	Burlington	31	41	52	32
6	Brantford	1	49	58	15
7	St. Catherines	65	37	93	74
8	Toronto	65	88	71	78
9	Waterloo	26	0	38	32
10	Brampton	63	77	62	58
11	Niagara Falls	72	36	109	85
12	Fort Erie	91	41	120	0
13	Port Colbourne	0	22	0	0
14	Caledon	0	0	0	55
15	London	55	107	103	59
16	Lowbanks	0	11	0	0
17	Copetown	0	0	0	21
18	Kitchener	28	81	37	25
19	Dundas	23	48	49	26
20	Burford	9	21	0	15
21	Smithville	0	21	0	49
22	Welland	59	21	90	71
23	Cambridge	27	65	38	7
24	Stoney Creek	32	32	61	33
25	Uxbridge	0	0	0	105
26	Guelph	18	0	21	51
27	Jarvis	35	32	0	41
28	Belleville	182	0	0	189
29	Annon	122	167	84	0
30	Acton	0	0	0	39
31	Simcoe	24	43	80	31
32	Stratford	54	0	66	49
33	Tavistock	0	0	0	39
34	Grimsby	50	27	71	62
35	Ridgeway	0	32	0	0
36	Dunnville	49	1	93	62
37	Campden	0	0	0	65

Table 5--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
38	Caledonia	21	28	77	0
39	Port Dover	0	40	0	39
40	Oakville	42	61	59	43
41	Beachville	0	0	0	33
42	Port Robinson	0	35	0	0
43	Ottawa	310	0	325	302
44	Beamsville	55	28	0	0
45	Campbellville	0	0	37	27
46	Elora	55	0	2	47
47	Peterborough	148	156	0	0
48	Innerkip	0	0	0	29
49	Georgetown	0	72	49	0
50	Port Credit	51	0	66	59
51	Rockton	0	0	0	25
52	St. George	13	0	0	12
53	Scotland	13	0	64	19
54	Honey Harbour	0	0	0	148
55	Fonthill	0	25	0	58
56	Wellandport	0	13	0	55
57	Windsor	170	0	212	176
58	Vineland	0	28	81	0
59	Oakridges	0	0	0	81
60	Fingal	0	0	0	88
61	Binbrook	29	27	0	0
62	Bramalea	0	80	56	59
63	Sparta	0	0	0	81
64	Wainfleet	0	15	0	74
65	Carlisle	0	0	0	39
66	Cayuga	0	18	0	0
67	Barrie	0	0	83	107
68	Winona	38	32	0	43
69	Milton	38	0	49	38
70	Delhia	36	56	88	41
71	Chelmersford	0	0	0	309
72	Embro	0	0	0	38
73	Troy	17	0	0	15
74	Ancaster	18	0	57	28
75	Waterfown	31	50	39	27
76	Virgil	0	42	0	0
77	Brockville	0	0	0	272
78	Elmira	0	0	15	39
79	Niagara-on-the-Lake	0	47	107	0

Table 5--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
80	Maidstone	0	204	209	170
81	Leamington	144	0	0	142
82	Exeter	0	136	0	0
83	Sarnia	0	0	151	119
84	Shawanage	197	0	0	188
85	Bell River	0	193	198	0
86	Princeton	18	0	0	13
87	Whitby	97	114	0	0
88	Oshawa	98	0	110	0
89	Fruitland	0	29	82	0
90	St. Anns	0	19	0	0
91	Newcastle	0	0	0	121
92	Thorndale	0	0	0	62
93	Chatham	0	0	165	133
94	Bobcaygeon	0	0	0	163
95	Merlin	133	0	0	131
96	Wellesley	0	0	0	40
97	Mount Hope	24	35	64	26
98	Vinemount	0	30	30	0
99	Addison	0	290	0	0
100	Lynden	0	0	55	15
101	Ayr	0	63	0	12
102	Fenwick	0	19	96	0
103	Stevensville	0	53	0	0
104	Alvinston	0	0	0	121
105	St. Thomas	75	0	110	76
106	Wallaceburg	137	0	0	131
107	Thorald	0	32	105	54
108	Belmont	0	0	0	75
109	Selkirk	0	17	0	0
110	Hagersville	19	0	0	0
111	Arthur	54	0	20	0
112	Harrow	0	0	212	0
113	Ingersol	36	0	79	0
114	Way (Cochrane)	1115	0	0	0
115	Fergus	0	0	8	0
116	Tillsonburg	47	0	0	0
117	Strathroy	0	0	125	0
118	Streetsville	0	0	52	0
119	Vanessa	18	0	73	0
120	Markham	0	0	84	0
121	Alberton	12	0	0	0
122	Norwich	25	0	0	0

Table 5--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
123	New Hamburg	43	0	0	0
124	Owen Sound	0	0	78	0
125	Drumbo	21	0	0	0
126	Mount Forest	0	0	35	0
127	Harley	14	0	0	0
128	Waterford	21	0	73	0
129	Markdale	0	0	72	0
130	Branchton	0	0	15	0
131	Timmins	0	0	478	0
132	Port Stanley	0	0	113	0
133	Freelton	0	0	42	0
134	Mount Pleasant	7	0	0	0
135	Bright	31	0	0	0
136	Alton	0	0	51	0
137	Orillia	0	0	128	0
138	Hillsburgh	0	0	27	0
139	Lambeth	70	0	108	0
140	Harriston	0	0	40	0
141	Hickston	37	0	0	0
142	Morriston	0	0	31	0
143	Cookston	0	0	79	0
144	Sudbury	298	0	0	0
145	Markstay	0	0	270	0
146	New Dundee	0	0	51	0
147	St. Jacobs	43	0	0	0
148	Napanee	203	0	0	0
149	Shakespeare	0	0	59	0
150	Wallenstein	0	0	19	0
151	Listowel	0	0	37	0
152	Sheffield	0	0	49	0
153	Kapuskasing	0	0	582	0
154	Petersburg	0	0	46	0
155	Brighton	0	0	172	0
156	Collingwood	0	0	90	0
157	Bolton	0	0	65	0
158	Goderich	96	0	109	0
159	Bamberg	49	0	0	0
160	Tottenham	0	0	61	0
161	Kingsville	0	0	210	0
162	Grand Bend	106	0	0	0
163	Essex	0	0	211	0
164	Rockwood	0	0	29	0
165	Nashville	0	0	70	0

Table 5--con't

Origin Code	Place of Origin	Distance to Conservation Area (miles) Brant	Byng	Elora	Pinehurst
166	Thornton	0	0	85	0
167	Moorefield	0	0	20	0
168	Vernon	0	0	340	0
169	West Montrose	0	0	7	0
170	Ashburn	0	0	46	0
171	Petawawa	0	0	324	0
172	Kirkland Lake	0	0	443	0
173	Bights Grove	0	0	152	0
174	Baden	0	0	52	0
175	Shelbourne	0	0	58	0
176	Deep River	0	0	342	0
177	Grand Valley	0	0	25	0
178	Alma	0	0	8	0
179	Palmerston	0	0	38	0
180	Orangeville	0	0	58	0
181	Atwood	0	0	42	0
182	Dryden	0	0	1136	0

Table 6

TIME-TRAVEL DISTANCE MEASUREMENTS TO THE FOUR CONSERVATION AREAS FOR 1974

Origin Code	Place of Origin	Distance to the Conservation Area (hours) Brant	Byng	Pinehurst	Elora
1	Woodstock	0.600	0.000	0.700	1.687
2	Hamilton	0.650	0.900	1.242	0.850
3	Mississauga	1.200	1.585	1.175	1.770
4	Paris	0.150	1.275	0.233	1.392
5	Burlington	0.675	0.980	0.850	1.367
6	Brantford	0.033	1.225	0.425	1.517
7	St. Catherines	1.460	0.925	1.727	2.167
8	Toronto	1.375	1.900	1.700	1.600
9	Waterloo	0.600		0.850	
10	Brampton	1.360	1.750	1.230	1.617
11	Niagara Falls	1.575	0.900	1.900	2.497
12	Fort Erie	2.275	0.930		2.710
13	Port Colbourne		0.550		
14	Caledon			1.350	
15	London	1.215	2.575	1.365	2.347
16	Lowbanks		0.308		
17	Copetown			0.525	
18	Kitchener	0.610	2.025	0.675	0.992
19	Dundas	0.550	1.175	0.700	1.292
20	Burford	0.225	0.625	1.255	
21	Smithville		0.625	1.225	
22	Welland	1.475	0.567	1.825	2.317
23	Cambridge	0.647	1.625	0.233	1.017
24	Stoney Creek	0.775	0.800	0.875	1.522
25	Uxbridge			2.310	
26	Guelph	0.255		1.350	0.650
27	Jarvis	0.875	0.800	1.083	
28	Belleville	3.750		3.850	
29	Annon	3.083	4.217		2.208
30	Acton			0.975	
31	Simcoe	0.600	1.175	0.892	2.117
32	Stratford	1.350		1.225	1.717
33	Tavistock		0.975		
34	Grimsby	1.200	0.842	1.550	1.696
35	Ridgeway		0.960		
36	Dunnville	1.225	0.003	1.600	2.392
37	Campden			1.625	

Table 6--con't

Origin Code	Place of Origin	Distance to the Conservation Area (hours) Brant	Byng	Pinehurst	Elora
38	Caledonia	0.525	0.700		1.992
39	Port Dover		1.317	1.008	
40	Oakville	0.912	1.435	1.035	1.410
41	Beachville			0.875	
42	Port Robinson		0.875		
43	Ottawa	6.285		6.110	6.747
44	Beamsville	1.375	0.825		
45	Campbellville			0.750	1.242
46	Elora	1.375		1.175	0.067
47	Peterborough	3.070	3.795		
48	Innerkip			0.800	
49	Georgetown		1.813		1.292
50	Port Credit	1.185		1.475	1.562
51	Rockton			0.617	
52	St. George	0.375		0.300	
53	Scotland	0.325		0.475	1.733
54	Honey Harbour			3.200	
55	Fonthill		0.700	1.450	
56	Wellandport		0.375	1.375	
57	Windsor	4.475		3.720	4.442
58	Vineland		0.875		1.942
59	Oakridges			1.725	
60	Fingal			2.317	
61	Binbrook	0.775	0.675		
62	Bramalea		1.835	1.360	1.467
63	Sparta			2.142	
64	Wainfleet		0.375	1.872	
65	Carlisle			1.050	
66	Cayuga		0.450		
67	Barrie			2.225	2.143
68	Winona	0.950	0.800	1.075	
69	Milton	0.950		0.830	1.292
70	Delhia	0.900	1.400	1.083	2.267
71	Chelmersford			7.225	
72	Embro			1.008	
73	Troy	0.425		0.375	
74	Ancaster	0.450		0.700	1.456
75	Waterdown	0.775	1.250	0.725	1.042
76	Virgil		1.083		
77	Brockville			5.533	
78	Elmira		0.975	0.442	
79	Niagara-on-the-Lake		1.250		2.602

Table 6--con't

Origin Code	Place of Origin	Distance to the Conservation Area (hours) Brant	Byng	Pinehurst	Elora
80	Maidstone		4.580	3.520	4.195
81	Leamington	3.065		3.060	
82	Exeter		3.400		
83	Sarnia			2.975	3.897
84	Shawanaga	3.972			3.965
85	Bell River		4.495		4.080
86	Princeton	0.450		0.325	
87	Whitby	2.040	2.465		
88	Oshawa	2.060			2.447
89	Fruitland		0.725		1.972
90	St. Anns		0.529		
91	Newcastle			2.305	
92	Thorndale			1.550	
93	Chatham			2.860	3.547
94	Bobcaygeon			3.600	
95	Merlin	2.735		2.725	
96	Wellesley			1.058	
97	Mount Hope	0.600	0.875	0.606	1.667
98	Vinemount		0.567	1.875	
99	Addison		6.015		
100	Lynden			0.425	1.442
101	Ayr		1.642	0.400	
102	Fenwick		0.575		2.467
103	Stevensville		1.358		
104	Alvinston			2.685	
105	St. Thomas	1.875		1.900	2.487
106	Wallaceburg	2.915		2.690	
107	Thorald		0.800	1.205	2.487
108	Belmont			0.989	
109	Selkirk		0.567		
110	Hagersville	0.633			
111	Arthur	1.417			
112	Harrow				4.642
113	Ingersol	0.840			1.832
114	Way (Cochrane)	9.750			
115	Fergus				0.267
116	Tillsonburg	1.175			
117	Strathroy				2.862
118	Streetsville				1.508
119	Vanessa	0.492			1.933
120	Markham				2.167
121	Alberton	0.300			
122	Norwich	0.685			

Table 6--con't

Origin Code	Place of Origin	Distance to the Conservation Area (hours) Brant	Byng	Pinehurst	Elora
123	New Hamburg	1.075			
124	Owen Sound				2.017
125	Drumbo	0.565			
126	Mount Forest				0.914
127	Harley	0.368			
128	Waterford	0.553			1.897
129	Markdale				1.867
130	Branchton				0.395
131	Timmins				9.950
132	Port Stanley				2.612
133	Freelton				1.117
134	Mount Pleasant	0.233			
135	Bright	0.775			
136	Alton				1.342
137	Orillia				2.672
138	Hillsburgh				0.900
139	Lambeth	1.565			2.345
140	Harriston				1.067
141	Hickston	0.925			
142	Morriston				0.842
143	Cookston				2.047
144	Sudbury	7.180			
145	Markstay				6.000
146	New Dundee				1.425
147	St. Jacobs	1.075			
148	Napanee	3.705			
149	Shakespeare				1.517
150	Wallenstein				0.550
151	Listowel				0.992
152	Sheffield				1.292
153	Kapuskasing				9.999
154	Petersburg				1.217
155	Brighton	3.450			3.595
156	Collingwood				2.250
157	Bolton				1.692
158	Goderich	2.400			2.725
159	Bamberg	1.300			
160	Tottenham				1.592
161	Kingsville				4.355
162	Grand Bend	2.650			
163	Essex				4.488
164	Rockwood				0.792
165	Nashville				1.792

Table 6--con't

Origin Code	Place of Origin	Distance to the Conservation Area (hours) Brant	Byng	Pinehurst	Elora
166	Thornton				2.192
167	Moorefield				0.667
168	Vernon				6.850
169	West Montrose				0.233
170	Ashburn				0.642
171	Petawawa				9.999
172	Kirkland Lake				9.075
173	Bights Grove				3.475
174	Baden				1.387
175	Shelbourne				1.517
176	Deep River				9.999
177	Grand Valley				0.833
178	Alma				0.267
179	Palmerston				1.017
180	Orangeville				1.517
181	Atwood				1.125
182	Dryden				27.999