

THE UNIVERSITY OF MANITOBA

AN ANALYSIS OF CAMPING BY WINNIPEG RESIDENTS AT
SELECTED PARKS IN MANITOBA WITH PROJECTIONS
OF PARTICIPATION TO 1976

by

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CHAPTER I

INTRODUCTION

A. THE GROWTH OF RECREATION IN CANADA

The terms "leisure" and "recreation" are rapidly becoming important and popular in the vocabulary of today's society. The phenomena described by these two words apply particularly to the industrialized nations, and especially to the "Western World" to which Canada belongs. Despite the relative novelty of the concern for this subject in academic and administrative fields, a fair amount of discussion has already been generated and expressed through various channels. The Canadian situation with regards to leisure and recreation is of particular interest.

The increase in mechanization and automation, and the favourable economic situation in most aspects of Canadian life (in the home, business and industry) have resulted in an increase in leisure time, mobility, urbanization and per capita incomes. These trends serve to promote recreation participation to varying degrees. The tendency towards more leisure time allows the individual or group to increase his or its participation in recreation. The availability of this free time in Canada has increased considerably over the

years -- from a 60-hour week in 1900 to a 35-hour week in 1970 (Taylor, 1956, pp. 363 - 397), and there are indications that the trend will continue into the future. Greater mobility has decreased the travelling time needed for business or for pleasure, and consequently, more leisure hours may be conserved for recreation. Improved methods of transportation have undoubtedly enabled people to move more freely and at faster speeds, but a paradoxical situation has resulted where there is over-concentration of vehicles, especially in areas such as airports and cities. The growth of population in urban Canada at the expense of the rural countryside has continued to the present. In 1931, 54 percent of the Canadian population was classified as urban, and in 1956, this figure reached 67 percent (Farina, 1961, p. 942). It follows that the demand for recreation has increased in urban areas, and a great deal of this demand is characterized by travelling to the rural scene during leisure hours to recreate.

The rise in per capita incomes has also been accompanied by increased per capita expenditure. Although the cost of purchasing the necessities of life has risen, the amount of food, clothing and housing needed by the family or individual remained fairly constant. Consequently, a greater part of income is available for expenditure on luxury or non-essential items (Clawson and Knetsch, 1969, p. 5). A considerable proportion of this

"freely disposable income" is being spent on tourism and recreation, and the trend is toward an even greater share. (The terms "freely disposable income" and "discretionary income" have been designated to income which is spent on non-essentials.) In many areas, the supply of recreational facilities has been unable to keep up with the pressures exerted by demand of this nature, and a number of problems have evolved from this disparity. For example, congestion and pollution of some parklands or recreation areas are serious realities in the world of recreation and tourism today. Congestion of a park or recreation area can be a highly subjective point of view. What appears to be congested to some may not be regarded as such by others. There can be a limit, however, to the ability of a recreational facility to cope with further demands on its resources. During the last few years, Grand Beach Provincial Park in Manitoba on a sunny and hot summer Sunday in July or August provided a good example of congestion, when attendants have been forced to refuse admission because of overcrowding in the accessible areas of the park. Pollution may be a result of congestion or of other factors. During the past few years, the high incidence of oil spills from wrecked tankers or exploded oil wells have ruined a good number of recreational areas especially beaches, in different parts of the world. Some beaches in Nova Scotia have been polluted by the tanker "Arrow" after it was

wrecked off the coast of that province. If such problems are not solved, there will be a decrease in the supply of suitable recreational resources, which will increase the pressure on the remaining facilities. In addition, any growth in the demand or participation in excess of possible new supply will increase the gravity of the situation. Such eventualities should be avoided, if possible, through practical research and planning by governmental and private agencies. The implementation of research and planning into practical solutions is governed to a large extent by the priorities of expenditure established by these public and private organizations. Within the fields of leisure and recreation priorities also must be established, and one of the ways these priorities can be set is by careful examination of the problem and a region of concern. It is within this framework that camping in Manitoba has been chosen for a more detailed analysis in this thesis.

THE GROWTH OF OUTDOOR RECREATION IN MANITOBA

Manitoba, along with other provinces in Canada, has been able to participate, and consequently benefit (in social and economic terms) from this growth of recreation -- especially outdoor recreation. There has been an increase over time in visitors to various parks, particularly to those operated by the provincial and federal governments.

Facilities provided in these parks permit visitors to participate in a variety of outdoor recreational activities. Evidence of this growth in the number of visits is shown in Table 1.

T A B L E 1

ATTENDANCE AT PROVINCIAL PARKS*

YEAR	ATTENDANCE	NO. OF VEHICLES
1964	1.41	-
1965	1.57	-
1966	1.54	-
1967	1.87	433,523
1968	1.78	384,125
1969	2.42	691,538
1970	2.65	756,948

*Sources: Manitoba, Department of Tourism, Recreation and Cultural Affairs, Research and Planning Branch, Park Statistics (Winnipeg, 1971); Data Book: Tourism and Outdoor Recreation (Winnipeg, 1968), p. 3 - 6.

CAMPING IN MANITOBA

Camping as a form of outdoor recreation has experienced even faster growth trends (Table 2). Consequently this thesis is exclusively devoted to this aspect of outdoor recreation, as it is apparent that the provision of camping

opportunities will continue to be a major concern of park agencies for many years to come.

T A B L E 2
CAMPING AT PROVINCIAL PARKS*

YEAR	NO. OF PERMITS	NO. OF PERSONS
1959	8,116	31,652
1960	10,938	42,658
1961	11,977	46,658
1962	22,423	87,525
1963	28,696	111,627
1964	30,624	119,127
1965	35,594	136,686
1966	41,466	160,796
1967	52,697	199,006
1968	54,227	208,631
1969	69,908	272,159
1970	83,784	309,909

*Source: Preliminary draft of the Department of Tourism, Recreation and Cultural Affairs, Research and Planning Branch (Winnipeg, 1970).

Camping is defined as:

"Living out-of doors overnight, using for shelter a bed-roll, sleeping bag, trailer, tent, or a hut open on one or more sides if the person takes his

bedding, cooking equipment, and food with him."

(California, 1966b, p. 37)

Furthermore, only camping during the summer months is considered in this thesis, and it may include organized group camping or formal camps where these activities have taken place within a provincially operated area.

Coincident with the growth of camping in Manitoba (Table 2) and elsewhere, there has also been a change in the type and attitude towards this form of outdoor recreational activity.

"Traditionally, camping has been viewed as a means whereby one could escape from the soiled environment and social complexities of urban life to the isolation and beauty of an area only slightly touched by man and his machines."

(Hendee and Campbell, 1969, p. 13)

The demand for this type of camping has gradually receded into the background to make way for,

"the modern day camper[who] is able to 'rough it in luxury' due to improvements in tents, sleeping equipment, cook stoves, transistorized radio and a host of other facilities which the manufacturers provide specifically for this relatively new type of well heeled traveller."

(Brooks, 1961, p. 964)

This metamorphosis has undoubtedly affected campground

development and management in Manitoba:

"Campgrounds once primitive and small are now large and intensively developed, with water systems, flush toilets, paved roads, and special equipment for the growing number of trailers."

(Hendee and Campbell, 1969, p. 13)

With such attitudes towards camping today, Manitoba has kept up well with these changing demands and has been able to accomodate them to a large degree.

B. OBJECTIVES OF THE STUDY

As the demands for camping increase, there will be a need for further reassessment and consequent changes in planning and administrative strategy. Knowledge of the character of these demands is imperative in the formulation of an effective policy concerning the development of camping in this province. As a result, the purpose of this thesis is to try and provide a comprehensive study of the participation in camping by Metropolitan Winnipeg residents at selected provincial and national parks of Manitoba during 1969 and 1970, and to test the applicability of one method of demand forecasting to the Manitoba situation; to determine whether a model developed under one set of geographic conditions can be utilized in a different set, or if not, what modifications have to be made. Participation

will be expressed in terms of the number of visitor-nights or group-nights, and projections to 1976 will be made based on the results from those years, because drastic changes in the inter-relationships between the component parts are not usually anticipated in so short a time. It is unfortunate that this project will provide only part of the answers to the whole picture of demand for this activity in Manitoba. To go beyond the scope set for this research would have entailed either the analysis of far more data thoroughly with an increase in the scope of the work or a less intensive analysis than had been planned. As the prime purpose of the thesis is to test the applicability of methodology, a decision was made to subject a small body of data to an intensive form of analysis. It is hoped, however, that this thesis will be useful in contributing some of the answers needed for policy-making for camping by governmental and private agencies, and that this study will provide a beginning for further research in this field.

C. METHOD OF STUDY

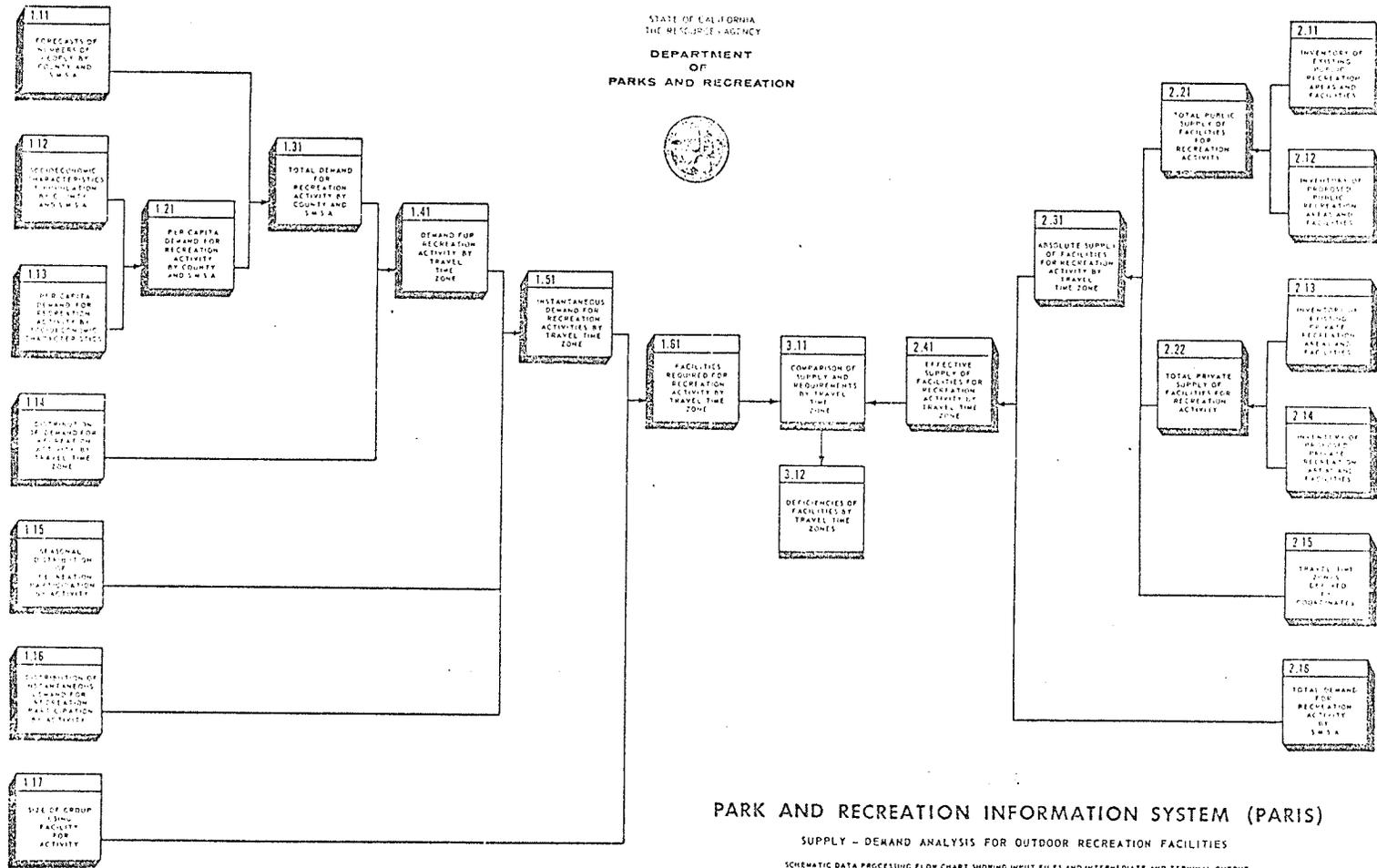
The major part of the plan for this study is based on the 'Park and Recreation Information System' (PARIS) as devised by the Department of Parks and Recreation of California (1966b). The basic design for PARIS is summarized in a schematic flow chart (Figure 1). The

general idea portrayed by the diagram is clear and self-explanatory. PARIS has been chosen for this thesis for several reasons:

1. This model is simple and logical without trying to be mathematically complicated.
2. The data required for the input are objective.
3. The plan is comprehensive, because it accounts for demand as it is affected by socio-economic characteristics and the level of supply. Projections of demand also include changes in the above factors. Such features are highly desirable as advocated by several authors (Cichetti, et al., 1969. Clawson and Knetsch, 1966, p. 117).

PARIS is designed to deal with the whole outdoor recreation system, but the scope of this thesis is on a much smaller scale; therefore, several sections of the plan had to be excluded or modified. For example, the California project deals with both supply and demand, only the sections concerned with the latter are used in this thesis. Furthermore, PARIS deals with all forms of outdoor recreational activities and consequently certain changes have had to be made to limit this study solely to camping. PARIS also included demand from state and out-of-state origins, and therefore adjustments have been made to restrict it to one origin--that of Metropolitan Winnipeg, in this case. Details of further adaptations will be shown in

STATE OF CALIFORNIA
THE RESOURCE AGENCY
DEPARTMENT
OF
PARKS AND RECREATION



PARK AND RECREATION INFORMATION SYSTEM (PARIS)

SUPPLY - DEMAND ANALYSIS FOR OUTDOOR RECREATION FACILITIES

SCHEMATIC DATA PROCESSING FLOW CHART SHOWING INPUT FILES AND INTERMEDIATE AND TERMINAL OUTPUT

1965

SMSA-- Standard Metropolitan Statistical Area

FIGURE 1

appropriate sections in later chapters.

DATA COLLECTION

Data for this thesis was obtained from several sources, the primary being the Canadian Outdoor Recreation Demand Study (CORD study or CORDS), conducted during the summer of 1969, by the Manitoba Department of Tourism and Recreation, Research and Planning Branch. A total of ten provincial recreation areas and one national park were surveyed; they include the following:

1. Grand Beach Provincial Park
2. St. Malo Provincial Recreational Area
3. St. Ambroise Provincial Recreational Area
4. Norquay Beach Provincial Recreational Area
5. Cranberry Portage Campground
6. Bakers Narrows Campground
7. Duck Mountain Provincial Park Campgrounds:
 - a) Childs Lake
 - b) Wellman Lake
 - c) Blue Lake
8. Grass River Provincial Park Campgrounds:
 - d) Simonhouse Lake
 - e) Iskwasum Landing
 - f) Reed Lake
9. Overflowing River Campground

10. Riding Mountain National Park

The locations of these areas are shown in Figure 2. At the first five parks and at Riding Mountain National Park, student assistants were hired to distribute short questionnaires (Appendix A) to a random sample of visitors (further details in Appendix B). For the remainder of the areas surveyed, campground attendants were instructed to distribute questionnaires to each party as they were registered. In both cases, those who received the questionnaires were then asked to return the completed forms to special boxes which were provided. The returns from this survey were not impressive except for a small number of locations (Table 3). However, "the sample obtained was considered adequate in all cases except perhaps Cranberry Portage and the Grass River" (Manitoba, Department of Tourism, Recreation and Cultural Affairs, 1970a, p. 2). There may have been many reasons for such a small sample; for example, this type of "self-administered" survey is often plagued by low response and many other difficulties (Canada, Planning Department of Indian Affairs, National Parks Service, 1970, pp. 17 - 18). The questionnaires were then sent to Ottawa for data processing and analysis. The tabulations for campers did not arrive back in Winnipeg until the spring of 1971. Furthermore, the statistics on the computer print-outs were modified by the officials in Ottawa. The details of this weighting system are explained

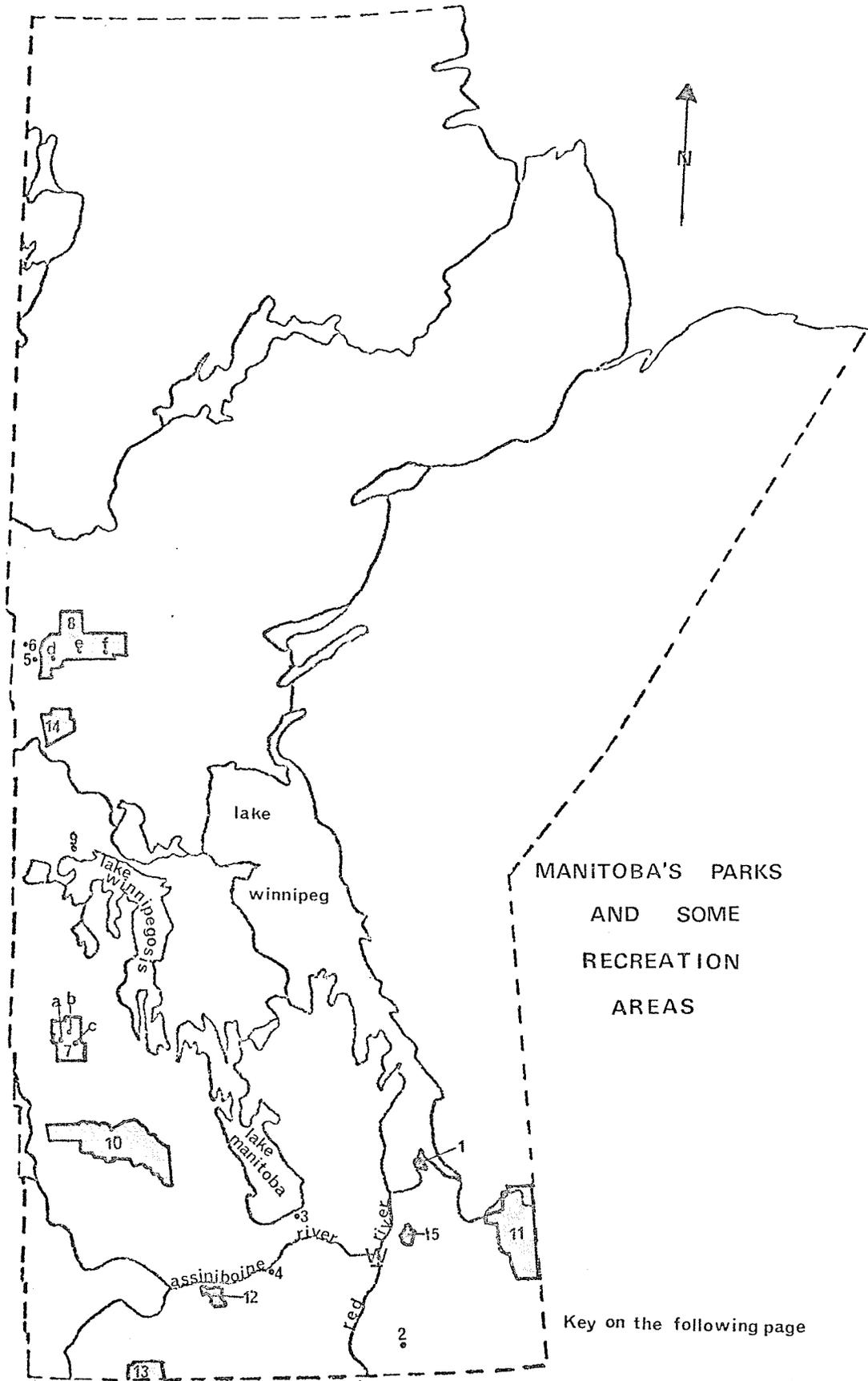


Figure 2

KEY TO FIGURE 2

- 1 Grand Beach Provincial Park
- 2 St. Malo Provincial Recreation Area
- 3 St. Ambroise Provincial Recreation Area
- 4 Norquay Beach Provincial Recreation Area
- 5 Cranberry Portage Campground
- 6 Bakers Narrows Campground
- 7 Duck Mountain Provincial Park Campgrounds:
 - a) Childs Lake
 - b) Wellman Lake
 - c) Blue Lake
- 8 Grass River Provincial Park Campgrounds:
 - d) Simonhouse Lake
 - e) Iskwasum Landing
 - f) Reed Lake
- 9 Overflowing River Campground
- 10 Riding Mountain National Park
- *11 Whiteshell Provincial Park
- *12 Spruce Woods Provincial Park
- *13 Turtle Mountain Provincial Park
- *14 Clearwater Provincial Park
- *15 Birds Hill Provincial Park
- W Metropolitan Winnipeg

* These parks were not included in the 1969 Canadian Outdoor Recreation Demand Study.

TABLE 3
1969 QUESTIONNAIRE RETURNS

Park or Campground	No. of Questionnaires		Percent
	Distributed	Returned	Returned
*Grand Beach	3,288	728	22.1
*St. Malo	1,923	958	49.8
*St. Ambróise	701	286	40.8
*Norquay Beach	663	443	66.8
Overflowing River	944	265	28.1
Cranberry Portage	485	116	23.9
Bakers Narrows	1,363	271	19.9
Duck Mountain	2,233	302	13.5
Grass River	1,060	169	15.9
*Riding Mountain	N.A.	1,174	N.A.

N.A.--Not available.

*Questionnaires distributed at these locations included campers and other visitors. Similar statistics for campers alone were not available for these parks.

Sources: Manitoba, Department of Tourism, Recreation and Cultural Affairs, Research and Planning Branch, Park Statistics, 1970, (Winnipeg: 1971); Park Visitors Surveys, 1969: Summary Report, by H. N. Nixon, (Winnipeg: 1970), p. 2; and Summary of Results, Park Visitor Surveys, 1969, (Winnipeg: 1969), pp. 1-3.

in Appendix C.

In addition to the results from the above survey, other sources of information are also included. Case studies which have been conducted by the Research and Planning Branch of other areas, such as the Whiteshell Provincial Park and the Birds Hill Provincial Park added more data. The Research and Planning Branch continued to gather more information subsequent to the 1969 field season for the Canadian Outdoor Recreation Demand Study, and data from these sources are included where they were found to be relevant to the thesis. Other sources of material, such as the census and the Metropolitan Winnipeg population studies, are also used.

Before analysing the characteristics of Winnipeg campers, it is useful at this point to review the work and the results which have been achieved by other researchers, and to compare their conclusions with those in this thesis. The subsequent chapter will consider studies which relate to camping and recreation demand.

CHAPTER II

REVIEW OF LITERATURE

A. RESEARCH ON CAMPING

Recreational geography is a relatively new field and literature is scarce in this discipline. A number of studies have been conducted in North America concerning recreation in general, and specific-activity studies on camping have been carried out due to the ease of identifying and isolating the camping unit, which in turn facilitates the collection of data. More research into the nature of camping has been conducted in the United States than in Canada. For this reason, the greater part of this literature review will deal with published material from the United States.

RESEARCH DEALING WITH CAMPER CHARACTERISTICS

One of the earliest studies on camping was conducted during the summer of 1959 by I. V. Fine and E. E. Werner (1960) to determine the general characteristics of campers in State Parks and Forests in Wisconsin. These

characteristics are summarized as follows:

1. Fifty-three percent of the campers are over the age of nineteen.
2. Camping is largely a family activity.
3. The average number of persons per party is three, although four to five per group are typical.
4. Seventy-three percent of the campers belong to the \$5,000 to \$9,999 income bracket, and are distributed fairly evenly in the category.
5. The two largest occupational categories include skilled workers, and professional and business proprietor groups.
6. The locational origins of the campers were identified.
7. In general, the campers spend slightly more on equipment which include tent, tent trailers and trailers, than the total of all other expenditures for the camping trip.

One of the most popular and most used references in the field of recreation is Study Report Number 20 of the Outdoor Recreation Resources Review Commission (ORRRC) (1962a). This work dealt mainly with outdoor recreation in general, with a small section on camping as a specific-activity study. The main conclusions in this report concerning camping are that:

- a) Men are generally more active in outdoor

recreational activities than women, although the male participation rate in camping is only slightly higher than that of women.

- b) There is a sharp decrease in participation of outdoor recreational activities with an increase in age, but in camping, participation increases with age up to the 35 to 44 year age group, and declines sharply beyond this category.
- c) There is an increase in camping up to the \$7,500 to \$9,999 income group and decreases past the \$10,000 bracket.

While this study has assembled data on a national and regional scale, it is not specific enough to be useful when applied to smaller areas. Consequently, studies such as PARIS, the California Recreation and Park Study, and the Michigan Outdoor Recreation Demand Study (Milstein and Reid, 1966) were designed to complement the findings of ORRRC.

The Michigan Outdoor Recreation Demand Study reaches beyond the scope of the reports which have been discussed previously, because it is mainly interested in projections for camping demand rather than with the analysis of camper characteristics. In its most basic and condensed form, the method simply calculates

"the present visit rate* to a facility from each contributing origin. Then by computing the population of users from each origin [at present and

in the future] ..., it would be possible to project use for that facility."

(Milstein and Reid, 1966)

*Visit rate is defined as the number of campers from an origin divided by the total population of that origin.

SOCIOLOGICAL STUDIES ON CAMPING

Besides the familiar research into the socio-economic characteristics of campers, some sociologists have tried to discover what motivates campers, what factors are considered when choosing different types of camping, and what recreational values are involved. These researchers found that:

- a) Campers are mainly motivated by the opportunities for socializing with other individuals rather than by the availability of outdoor recreational resources.
- b) These "socially-oriented" campers are generally attracted to the modern, developed campgrounds, while environmentally-oriented users tend to camp in less accessible, primitive sites (Burch and Wenger, 1967; Cordell and Sykes, 1969; Etzkorn, 1964, pp. 76 - 89; Hendee and Campbell, 1971, pp. 13 - 16; Stone and Taves, 1958, pp. 290 - 305).

B. STUDIES ON RECREATION DEMAND

The study of recreational demand and the forecasting of this type of demand has occupied many researchers from a variety of academic disciplines, including geography. A concern for the magnitude of the future pressures from recreation upon natural resources is of recent origin. As a result, there is, as yet, no agreed-upon methodology, although there is a good deal of experimentation underway. Therefore, it seems appropriate in this thesis to test the applicability of one method which has undergone experimentation. In this chapter, the relationship of that method to the field of outdoor recreation will be shown.

The first major study with the objective of forecasting recreational demand was undertaken by the Outdoor Recreation Resources Review Commission in the United States. ORRRC Study Report Number 26 (1962b) is primarily interested in presenting plausible demand forecasts for outdoor recreation in the United States up to the year 1976 and 2000. The analysis sought to establish relationships between various socio-economic factors and the amount of recreation participation for United States residents over twelve years of age. The aggregate effect of the socio-economic features was then related statistically to its impact on participation rates in seventeen selected recreational activities. The results obtained were found to be highly variable, especially among those activities affected by

seasonal changes. A projection of the demand for outdoor recreation was then made through an extension of past trends as modified by socio-economic elements. This study was perhaps one of the earliest to establish the inter-relationships of outdoor recreation demand and socio-economic characteristics. It served to gather much information which was lacking in the field of outdoor recreation at that time, and it set the pattern for much of the later work.

Marion Clawson and Jack L. Knetsch, two of the foremost authorities on recreation demand, co-authored a book entitled "Economics of Outdoor Recreation" (1966). The approach taken in this book is economic and it set the pattern for further economic studies in the field. Part II of the book is devoted to the demand for outdoor recreation and is of special interest and relevance to this thesis. The authors regard demand as applied to outdoor recreation in the economic sense of the word which they define as "a schedule of volume...in relation to a price..." (Clawson and Knetsch, 1966, p. 41). Price here is to be taken as the cost of the "total recreation experience," which includes five phases: 1) anticipation, 2) travel to site, 3) on-site experiences and activities, 4) travel back, 5) recollection. The authors discuss demand for outdoor recreation, firstly, by introducing some general remarks about demand curves, and secondly, by pointing out that demand is highly dependent on

many factors, namely population, leisure time, transportation, and income. The conclusions which have been reached in this book can be summarized as follows:

1. An increase in population will cause an upward growth in the demand for outdoor recreation.
2. There is an upward trend in real income per capita and a greater proportion of it will be discretionary, with the larger part being spent in recreation and especially in outdoor recreation.
3. There is also a tendency towards increased leisure time per capita, although this trend will not be equally distributed among age groups and differing occupations. The distribution will also be similar among vacation, weekend, daily, retirement and other forms of leisure.
4. With transportation becoming faster and more comfortable, the effect on outdoor recreation demand will be for it to increase.

It can therefore be concluded that outdoor recreation demand is going to increase in future.

The last chapter in Part II of this book is most useful, because it discusses the various methods which had been devised up to that time to predict demand for outdoor recreation. Clawson and Knetsch pointed out that, in many studies, demand becomes "a description of use or consumption" (Clawson and Knetsch, 1966, p. 115), rather

than in keeping with their definition of demand. "Raw attendance figures reflect demand, to be sure, but they also reflect opportunity or supply as well" (Clawson and Knetsch, 1966, p. 115). The writers identified five main approaches which they summarized as follows:

- "1. Simple trend extension of past use in the area, or of the activity, or both, as the case may be. [The disadvantage of this technique is that it assumes discernible past or current trends to remain the same until a projected future date. Such an assumption can be unreliable and misleading if unforeseeable changes do occur, but this method is fairly popular because of its simplicity.]
2. Extension of the trend for the basic causal forces underlying demand for outdoor recreation, and then conversion of the trends in these forces to estimates of the demand for outdoor recreation. [This procedure assumes a knowledge of the causes and how they interact with demand, but they have not been proven to be valid.]
3. Application of the satiety principle, which may set ceilings on the increase in future demand for outdoor recreation. [The difficulty in this instance lies within the lack of research and information on the subject.]
4. Methods based primarily on estimates of the present

relationship between various socio-economic factors, such as personal income, and quantities of recreation demanded. [The most thorough application of this approach was conducted by ORRRC. Clawson and Knetsch term this technique as part-static and part-dynamic. They feel that studies of this nature carried out at intervals may in fact help towards the understanding of the nature and changes, if any, of outdoor recreation demand.]

5. Estimates of the future based upon 'judgement', whereby a number of factors are taken into consideration but not in a simple or easily defined way." (Since the preceding four methods have major limitations and when applied rigidly may produce absurd predictions for outdoor recreation demand, a subjective element under the guidance of experienced and intelligent individuals may help to bring demand predictions closer to the bounds of possibility.)

(Clawson and Knetsch, 1966, p. 117)

One of the most recent studies on recreation demand is a work carried out by Cichetti, Seneca and Davidson (1969), which

"incorporates both physical distance, socio-economic variables, income, and supply indices to develop and estimate an econometric model of the recreation market to predict recreation user's responses to

both demand and supply changes on an activity by activity basis."

(Cichetti et al., 1969, p. 297)

The authors claimed that previous recreation participation research has neglected to take into account the effect of supply factors. These studies have been based on the effect of socio-economic characteristics on recreation demand in the past, and from the findings, projections have been made through estimations of the changes which could be expected of such socio-economic factors. A better procedure is to project in terms of available supply in the future rather than on socio-economic features. Admittedly, it is much easier for planners to effect changes in the supply rather than to alter the socio-economic structure of the population in order to influence recreation demand, and thereby to possibly control this demand. The main objective of this work is

"to utilize economic theory in a qualitative analysis for the purpose of providing recognition of the public versus private good nature of the recreation experience and the implications of this mixed good nature for future expansion of the nation's recreation resources."

(Cichetti, et al., 1969, p. 220)

While the United States leads in conducting research into recreation demand, Canada has been active, although on a

smaller scale. An example of the Canadian work is a paper that has been written by Gordon D. Taylor (1969). The monograph can be divided into two sections. The first part deals with some introductory remarks into the history of recreation demand techniques, and the second portion is a discussion of the Canadian Outdoor Recreation Demand Study.

The historical study of recreation demand can be summarized in the following manner:

1. Lack of research characterized the initial phase of recreation demand study, because it was claimed that "too many unquantifiable variables existed for any meaningful analysis to be made" (Taylor, 1969, p. 1). The indiscriminate expansion of recreation facilities could not last forever, and the previous attitude had to be re-examined and modified.
2. Methods for measuring recreation demand were developed. Predictions in terms of the aggregate number of visitor-days for a given area and year were made by using the gravity model or a "distance-decay function" (Taylor, 1969, p. 3), although there was no regard for intervening or competing opportunities.
3. A newer facet was evolved through individual studies on demand for different activities expressed in terms of the number of visitor-days for each activity. This technique included further

consideration of the social and economic features of the users, although this approach does not reveal changing opportunities in recreation.

The lack of information and planning in Canada has prompted practitioners in the field of recreation to attempt to remedy the situation, and has resulted in a study which is still underway. The assumption or perhaps the realization, that all parks and recreation areas form a system with many component parts motivated full-scale national participation in the study. Another supposition used was that park demand was in fact consumption when it was derived through visitation, and was dependent on supply, demand and price.

The study discussed by Taylor was to be carried out (some of it has already been put into action) in a series of four studies. The initial study was formulated in order to research the recreation habits relating to parklands of a sample of the Canadian population and foreign visitors. The succeeding two projects in the series were actually concerned with discovering in detail what the demand and supply as applied to parks and recreational areas were in Canada. The former included surveying samples of park visitors through interviews and questionnaires, in order to determine several characteristics, such as socio-economic factors and activities in the parks. The supply portion of the plan involved taking a detailed inventory of all

existing public and private recreational facilities. The final stage encompassed all the information gathered thus far, and through careful analysis, it is hoped that accurate projections of outdoor recreation demand in Canada can be made.

The particular purpose of this review of literature is to draw attention to available research conducted in the field of camping and some in outdoor recreation. It is also intended to demonstrate how each one has produced enlightening and interesting results, related to the objectives and the findings in the thesis. Many of the conclusions concerning camper characteristics may be compared to the results which will be discussed in the next chapter. Inevitably, some references may have been omitted due to oversight and some have been considered unimportant. Those which have been included in this chapter, however, have made certain contributions to this field.

CHAPTER III

CHARACTERISTICS OF WINNIPEG CAMPERS

A. SOCIO-ECONOMIC CHARACTERISTICS

As mentioned in Chapter II, PARIS was designed "to at least partially fill some of... [the]gaps" (California, 1966b) left by the ORRRC reports and also the California Recreation and Park Study. Unfortunately, in Canada, until the Canadian Outdoor Recreation Demand Study, there have been no nation-wide or provincial studies into outdoor recreation comparable to the ORRRC projects. While it has been possible for PARIS to utilize information gathered by ORRRC, no such material is available in Manitoba because very little of the results derived from the CORDS data have been published, and it is important in this thesis to include background information of Winnipeg campers in particular.

An analysis of the socio-economic characteristics of Winnipeg campers is important in determining who participates in this type of activity. Unless some unforeseeable changes occur in the near future, the pattern of camping will likely continue unaltered, or perhaps, be

only slightly modified. The basis of short-term projections, therefore, must depend on present conditions. For this purpose, the socio-economic characteristics which will be discussed are education, income, occupation, age, and sex. Two other categories which have been included in the PARIS study have been omitted here, because they are not relevant to the analysis. Place of residence or degree of urbanization was analyzed in PARIS for the purpose of comparing outdoor recreation demand among different types of communities. It is not dealt with here because Metropolitan Winnipeg is the only point of origin used in the thesis. PARIS has included racial origins in terms of Caucasian and non-Caucasian as part of the socio-economic characteristics, because studies conducted in the United States have shown that the non-Caucasians, specifically the negro population, tend to participate to a lesser extent in outdoor recreation than do Caucasians. In Canada, however, such a situation does not exist in similar proportions between the Caucasians and non-Caucasians in this case, because there are not enough non-Caucasians present in the population to affect outdoor recreation participation. Consequently, no information relating to racial origins was collected in the CORD survey.

The material for this analysis is derived mainly from the CORD study. Ten parks with their associated campgrounds were included in this sample, and wherever possible, data

from studies of other parks were also taken into account.

EDUCATION

The statistics on education are for the head of the party. The survey divided levels of formal education into six categories, based on significant stages in the Manitoba school system.

Among sampled Winnipeg residents who have camped at the ten parks, "high school graduates" accounted for 31.9 percent, and the "part high school" group rated second place with 20.1 percent (Table 4). Except for those who have only attained a grade school education, the other three groups were distributed fairly evenly (Figure 3a). In order to compare these campers with the Winnipeg population in terms of levels of formal education, some of the categories have to be modified. The category "part high school" has to be added to the group with a high school education, and the three post-high school categories. This addition increases the percentage to 92.2, which is comparable to 28.7 percent of the Winnipeg population (Canada, Dominion Bureau of Statistics, 1963, p. 101.4). Furthermore, 40.2 percent of the campers have had some University or post-high school (technical-vocational) education, compared to 4.8 percent for the total Winnipeg population. The 1961 census information is the most recent record that is available, and

TABLE 4
LEVELS OF EDUCATION

Sample Parks	Grade School	Part High School	High School Grad.	Part Univer- sity	Univer- sity Grad.	Technical- Vocational	Total
Riding Mountain	194* % 9.5	242 11.9	652 32.0	242 11.9	468 23.0	238 11.7	2036 100.0
Grand Beach	129 % 5.8	448 20.0	780 34.9	251 11.2	215 9.6	413 18.5	2236 100.0
Norquay Beach	13 % 3.9	85 25.5	71 21.3	84 25.2	49 14.7	31 9.3	333 99.9
Saint Malo	74 % 8.7	296 34.7	241 28.2	104 12.2	49 5.7	90 10.5	854 100.0
Saint Ambroise	20 % 11.3	49 27.7	57 32.2	17 9.6	24 13.6	10 5.7	177 100.1
Bakers Narrows	6 % 12.0	10 20.0	12 24.0	3 6.0	13 26.0	6 12.0	50 100.0
Cranberry Portage	0 % 0.0	5 26.3	8 42.1	0 0.0	3 15.8	3 15.8	19 100.0
Grass River	0 % 0.0	2 28.6	2 28.6	1 14.3	0 0.0	2 28.6	7 100.1
Overflowing River	11 % 25.6	7 16.3	16 37.2	4 9.3	2 4.7	3 7.0	43 100.1
Duck Mountain	6 % 8.5	26 36.6	18 25.4	7 9.9	7 9.9	7 9.9	71 100.2
Total	53	1170	1857	713	830	803	5826
% Total	7.8	20.1	31.9	12.2	14.2	13.8	100.0

*Weighted Number of Winnipeg camper parties.

LEVELS OF EDUCATION -

TOTAL FOR ALL SAMPLE PARKS

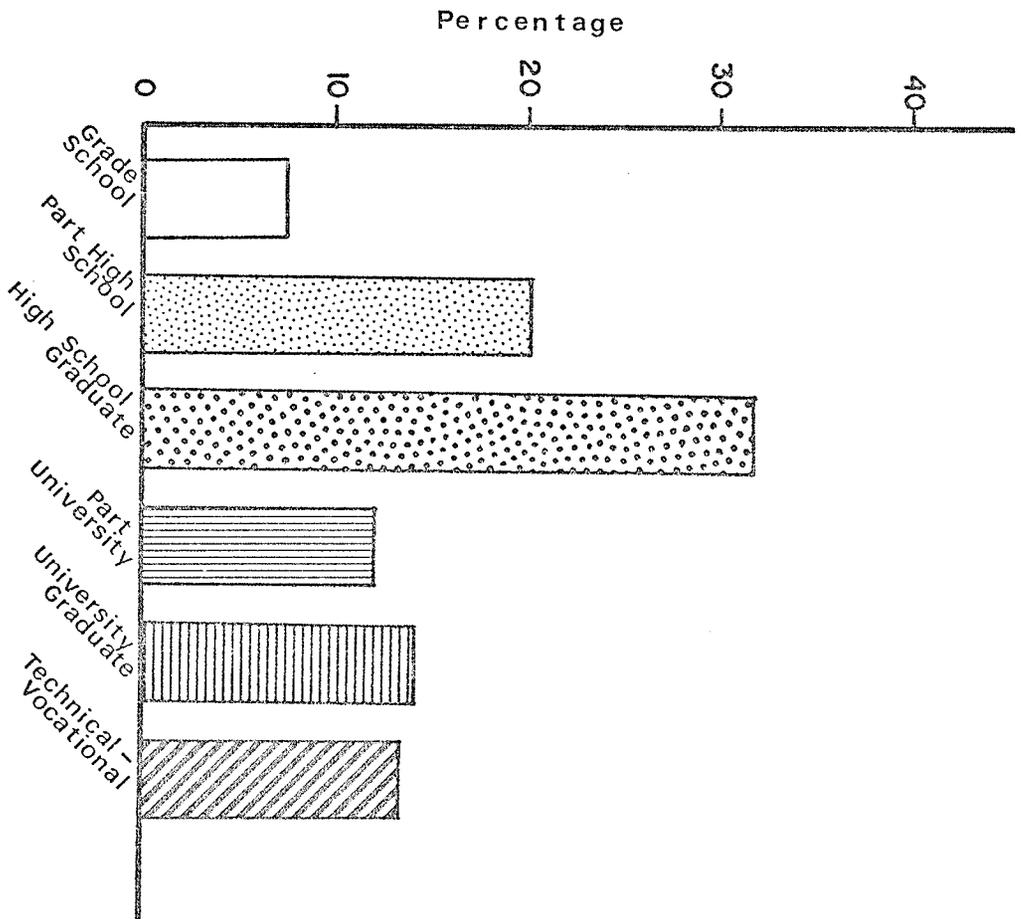


FIGURE 3a

LEVELS OF EDUCATION — EACH SAMPLE PARK

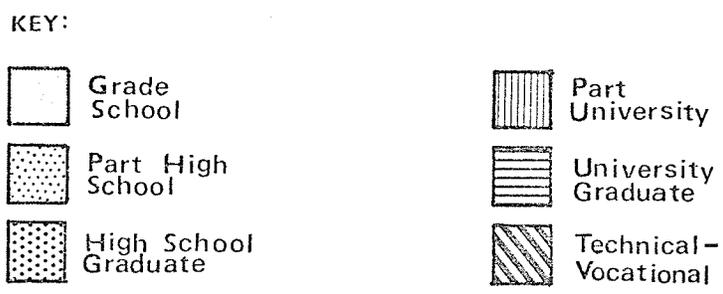
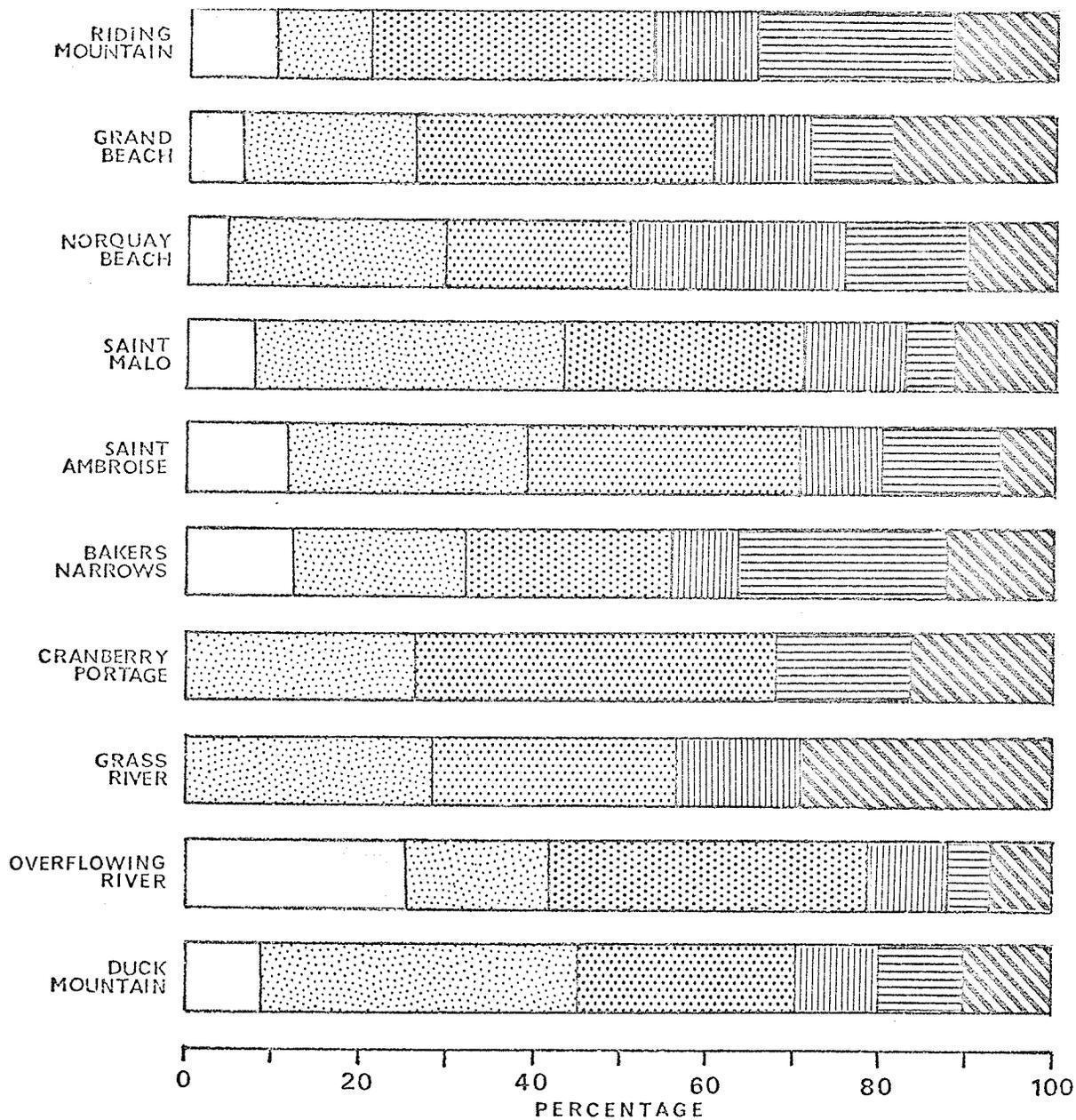


FIGURE 3b

undoubtedly some changes will have occurred since then. These figures, however, serve to indicate that persons with more than a secondary education are over-represented among campers.

For visits to the various individual parks, the distribution does not deviate greatly from the general pattern. Grass River and Grand Beach show a much higher than average attendance in camping by those in the "technical-vocational" group. When compared to occupational classifications (Figure 5b), Grand Beach also shows a high representation of campers in the "clerical-sales" and "craftsmen-labourers" categories (Figure 5b), which could account for this deviation. No campers from the "grade school" sub-group are recorded for the Cranberry Portage and Grass River campgrounds, while Overflowing River recorded 25.6 percent as opposed to the average 7.8 percent.

INCOME

Statistics relating to annual income are based on the household earnings of the party's head. The pattern of participation by income groups approximates that established by education. It is obvious that these two categories would have close correlations, because a high level of education is usually required for a high-paying job, although there are anomalies. For example, it is not unusual for someone

with a grade school education to earn over \$15,000, but it is becoming increasingly difficult to attain high incomes without some form of training beyond the high school level. The \$3,000 to \$15,000 income group for a household would be fairly normal for those with a high school education in 1969 when the survey was taken, if only the husband was working. The highest percentage (39.5 percent) of participation occurs in the \$6,000 to \$7,999 income group (Figure 4a) followed by three other categories which have an almost equal distribution of participation. From the diagram (Figure 4a), it is evident that the two extreme income classifications (under \$3,000 and over \$15,000) show lower camping participation rates. Such evidence further attests to the fact that camping is a popular outdoor recreational activity among the middle and upper-middle income classes (\$3,000 to \$7,999 and \$8,000 to \$14,999 respectively). The increasing popularity of sophisticated and expensive equipment has made it necessary for greater capital outlays in order to camp, but it is still within the range of the middle-income classes. Therefore, it is no longer true that camping is a cheap form of accommodation or outdoor recreation.

The over-\$15,000 income participants add up to 3.9 percent of the total participation (Table 5), which is considerably lower than the other groups, mainly because of greater opportunities for substitution. This group, which

ANNUAL HOUSEHOLD INCOME —
TOTAL FOR ALL SAMPLE PARKS

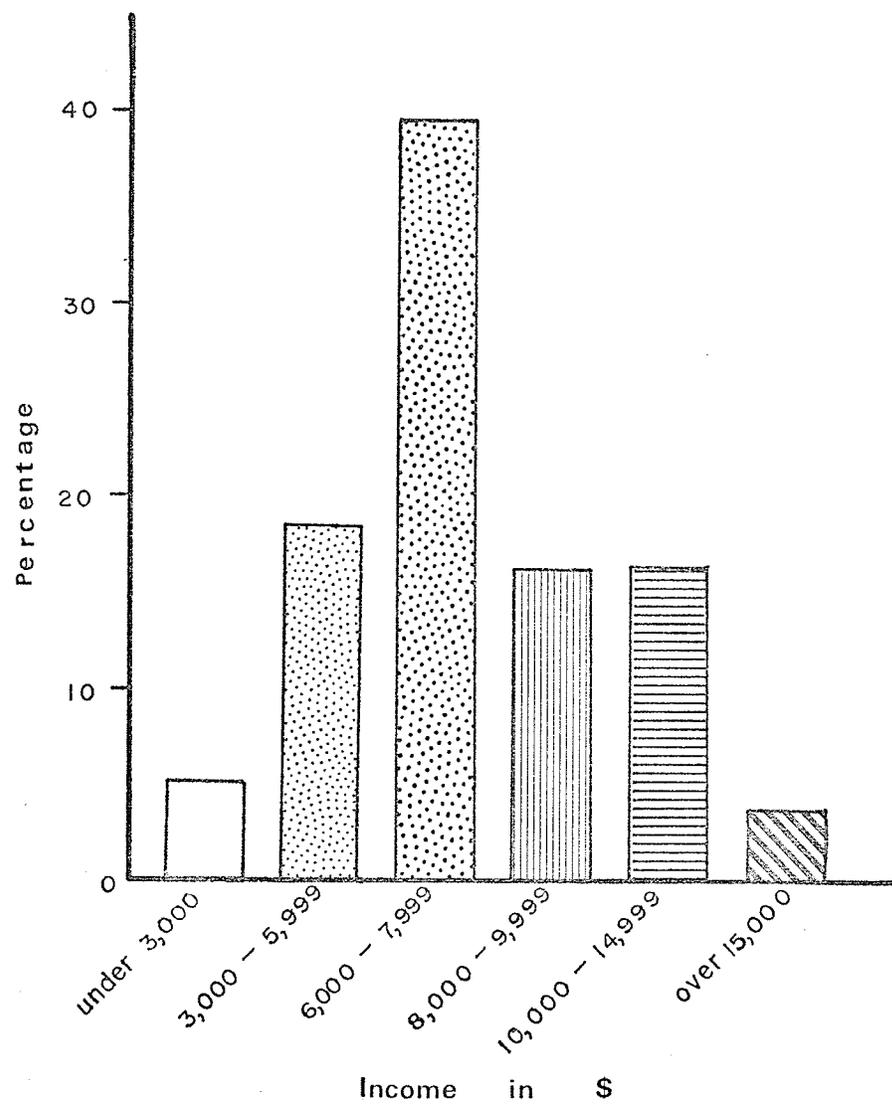


FIGURE 4a

ANNUAL HOUSEHOLD INCOME - EACH SAMPLE PARK

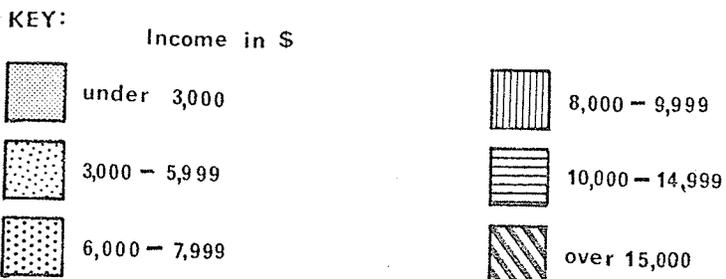
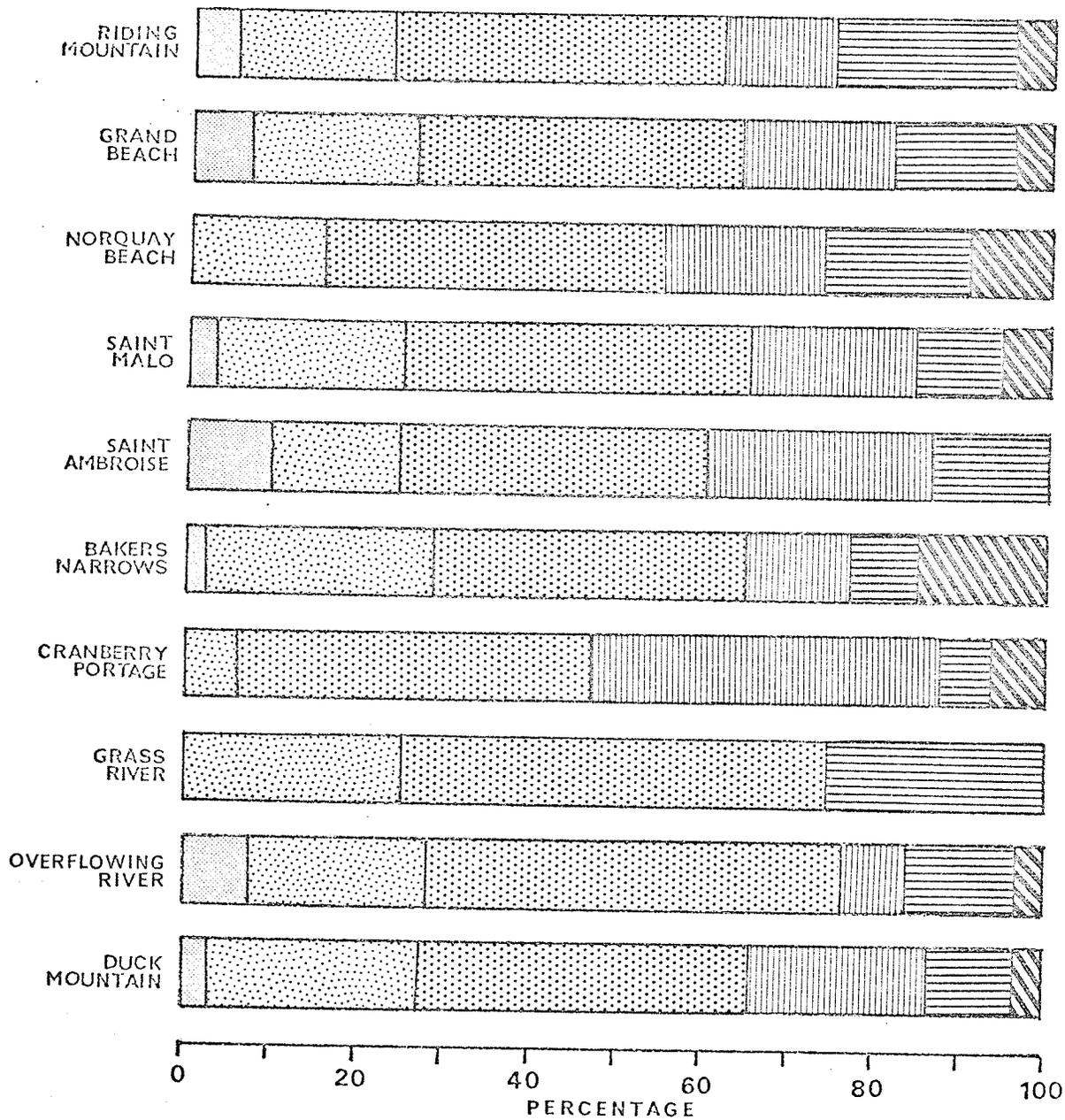


FIGURE 4b

TABLE 5
INCOME OF HOUSEHOLD

Sample Parks	Under \$3,000	\$3,000- \$5,999	\$6,000- \$7,999	\$8,000- \$9,999	\$10,000- \$14,999	Over \$15,000	Total
Riding Mountain	100* % 5.0	374 18.6	772 38.4	266 13.2	420 20.9	80 4.0	2012 100.1
Grand Beach	144 % 6.8	410 19.4	808 38.2	378 17.9	301 14.2	76 3.6	2117 100.1
Norquay Beach	0 % 0.0	49 15.8	123 39.6	58 18.6	54 17.4	27 8.7	311 100.1
Saint Malo	24 % 2.8	149 17.7	382 45.3	147 17.4	117 13.9	25 3.0	844 100.1
Saint Ambroise	16 % 9.6	25 15.0	60 35.9	44 26.3	22 13.2	0 0.0	167 100.0
Bakers Narrows	1 % 2.0	13 26.5	18 36.7	6 12.2	4 8.2	7 14.3	49 99.9
Cranberry Portage	0 % 0.0	1 5.9	7 41.2	7 41.2	1 5.9	1 5.9	17 100.1
Grass River	0 % 0.0	2 25.0	4 50.0	0 0.0	2 25.0	0 0.0	8 100.0
Overflowing River	3 % 7.7	8 20.5	19 48.7	3 7.7	5 12.8	1 2.8	39 100.0
Duck Mountain	2 % 2.8	13 18.3	32 45.1	15 21.1	7 9.9	2 2.8	71 100.0
Total	290	1044	2225	924	933	219	5635
% Total	5.2	18.5	39.5	16.4	16.6	3.9	100.1

*Weighted number of Winnipeg camper parties.



contains a high proportion of executives, professionals, and managers, is more likely to holiday outside the province, or perhaps go to their own cottages. As for those who are self-employed (proprietors), there is usually less time for recreational participation.

The general distribution pattern of campers by income classifications closely reflects the income distribution among the Winnipeg population (Canada, Dominion Bureau of Statistics, 1970, p. 20). Except for the \$6,000 to \$7,999 group, campers generally have lower percentages than their corresponding categories in the population.

None of the patterns of participation of the individual parks differ drastically from the pattern of participation in general, except for Grass River, which is represented by only three groups in the sample (Figure 4b). It is difficult to explain why Bakers Narrows received such a high representation of 14.3 percent (Table 5) from the over-\$15,000 category (a figure not achieved by other campgrounds in the same general area), except to surmise that it is a product of sampling and survey methods. This percentage compares with eight percent at the same campground as determined by Arthur Hoole (1970, p. 94) during the same year. From the charts (Figures 4a and 4b), no correlations can be found between distance travelled and income groups.

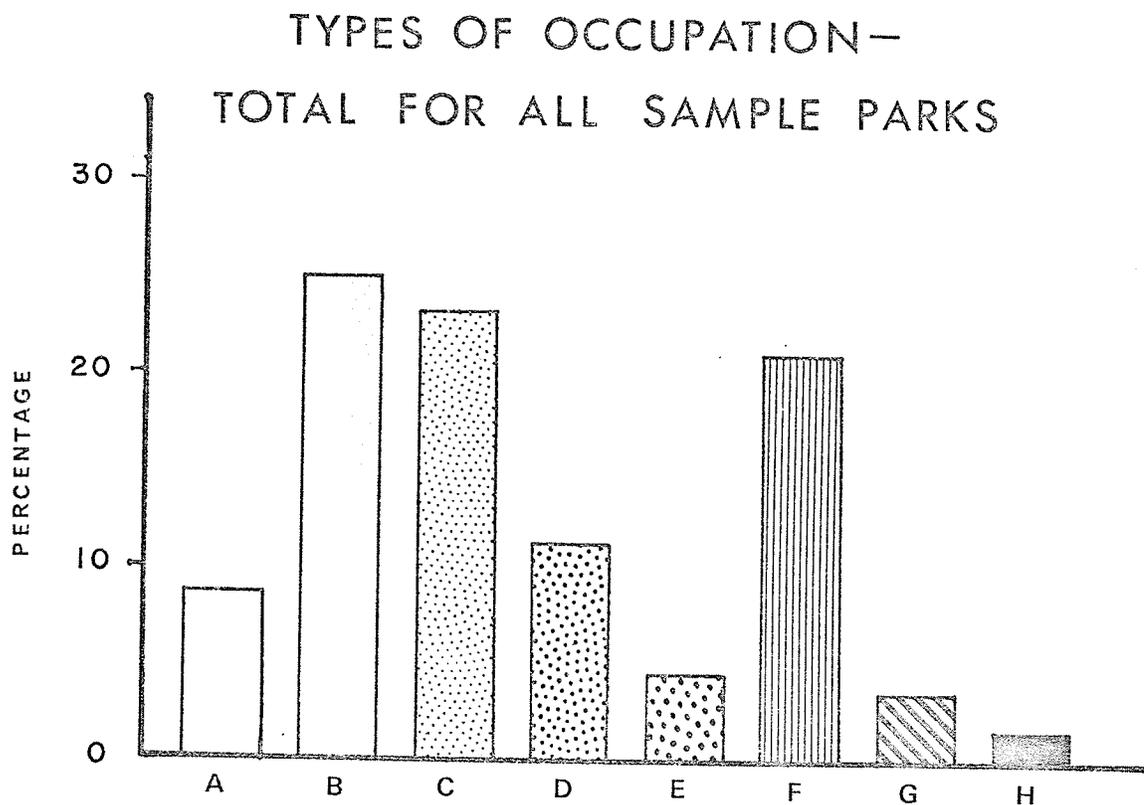
OCCUPATION

The results pertaining to occupation are based on the respondent of the form or the "head of the party". The tabulations returned by Ottawa included some twenty categories under occupation. There were too many categories for successful comparison, and consequently they have been reduced and modified. The classifications which resulted were formulated, as closely as possible, from the categories in the 1961 Canadian census material. To begin with, the section "unemployed", "other" and "no response" were excluded for the following reasons:

- a) "unemployed" is not considered by the writer as an occupation, although to some researchers it may be,
- b) "others" is so vague a term that it means very little,
- c) all three categories represent a very tiny proportion of the parks with the larger returns, and even less for the smaller ones, so that they do not affect the results drastically, if excluded.

Details of how the remaining divisions have been re-organized are shown on page 44 (below Figure 5a).

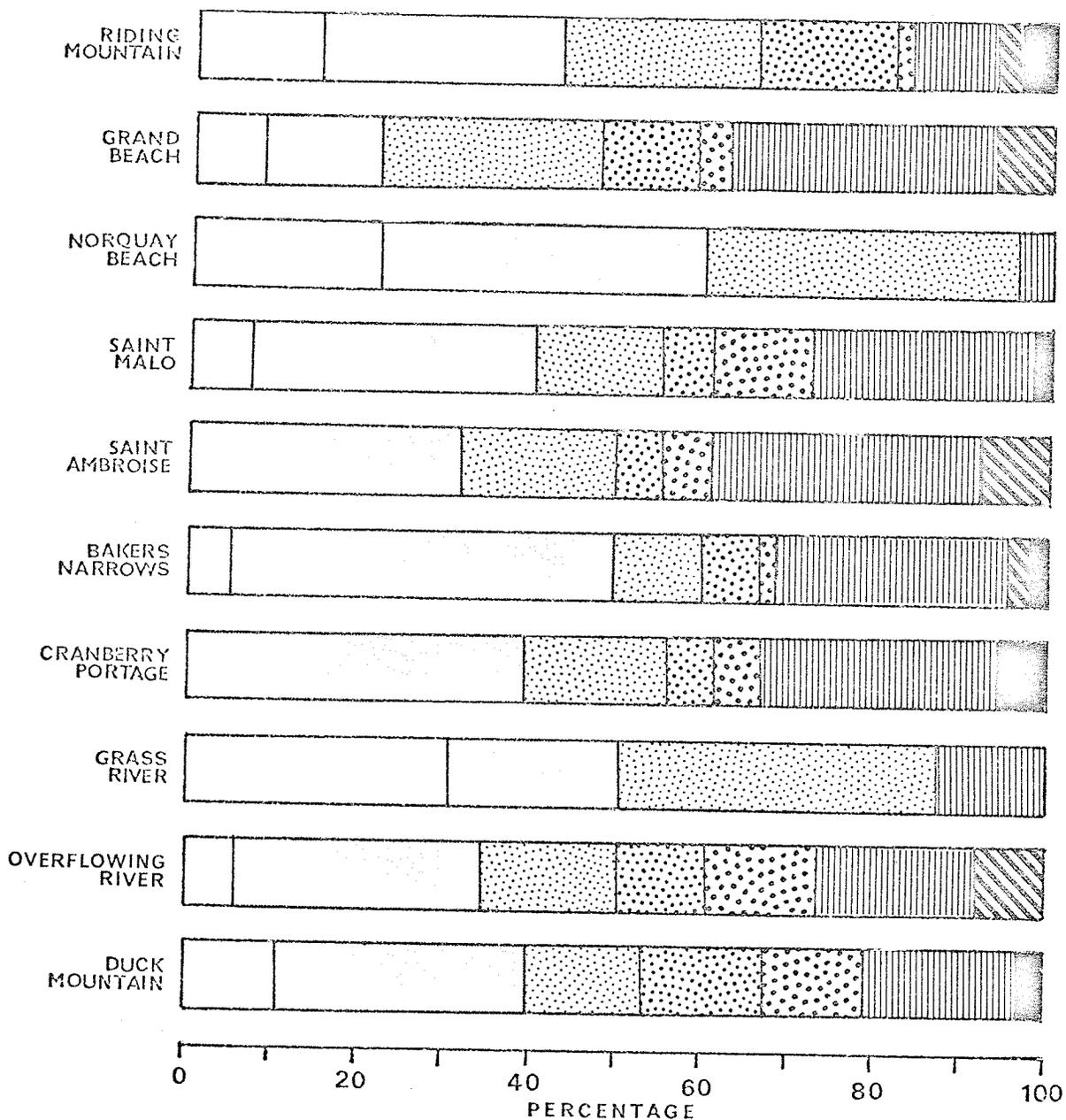
There are three distinct groups of campers, namely, "professional and technical", "clerical and sales", and "craftsmen and labourers", which comprise 69.3 percent (Table 6) of the participation at the sample parks. They are distributed fairly evenly, slightly over the 20 percent



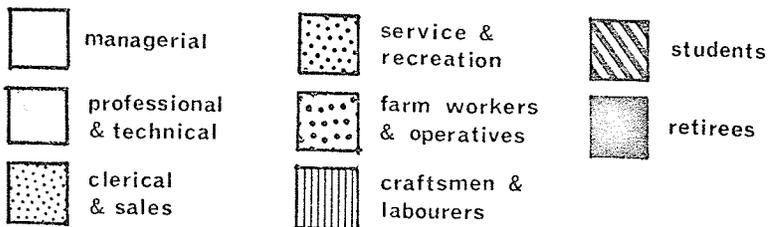
KEY TO OCCUPATIONAL CATEGORIES

- A Managerial: managers, officials, proprietors
- B Professional and Technical: professional, technical, military
- C Clerical and Sales: clerical, sales, white-collar workers
- D Service and Recreation: service workers, private household workers, other service workers, housewives
- E Farm workers and Operatives: farm workers, operatives
- F Craftsmen and Labourers: craftsmen and foremen, blue-collar workers, non-farm labourers
- G Students
- H Retirees

TYPES OF OCCUPATION — EACH SAMPLE PARK



KEY:



A more detailed key on the preceding page

FIGURE 5b

TABLE 6
OCCUPATION^a

Sample Parks	A	B	C	D	E	F	G	H	Total
Riding Mountain %	288 ^b 14.1	582 28.6	464 22.8	320 15.7	50 2.5	206 10.1	50 2.5	76 3.7	2036 100.0
Grand Beach %	163 7.5	299 13.8	562 25.9	249 11.5	84 3.9	678 31.2	139 6.4	0 0.0	2174 100.2
Norquay Beach %	40 11.7	164 48.0	125 36.5	0 0.0	0 0.0	13 3.8	0 0.0	0 0.0	342 100.0
Saint Malo %	58 6.8	285 33.2	125 14.6	52 6.1	98 11.4	225 26.2	5 0.6	10 1.2	858 100.1
Saint Ambroise %	0 0.0	55 31.1	32 18.1	10 5.6	10 5.6	56 31.6	14 7.9	0 0.0	177 99.9
Bakers Narrows %	2 4.3	21 44.7	5 10.6	3 6.4	1 2.1	13 27.7	1 2.1	1 2.1	47 100.0
Cranberry Portage %	0 0.0	7 38.9	3 16.7	1 5.6	1 5.6	5 27.8	0 0.0	1 5.6	18 100.2
Grass River %	2 25.0	2 25.0	3 37.5	0 0.0	0 0.0	1 12.5	0 0.0	0 0.0	8 100.0
Overflowing River %	2 5.3	11 29.0	6 15.8	4 10.5	5 13.2	7 18.4	3 7.9	0 0.0	38 100.1
Duck Mountain %	7 10.3	20 29.4	9 13.2	10 14.7	8 11.8	12 17.7	0 0.0	2 2.9	68 100.0
Total	562	1446	1334	649	257	1216	212	90	5766
% Total	9.7	25.1	23.1	11.3	4.5	21.1	3.7	1.6	100.1

^aThe key to the occupational categories is on the following page.

^bWeighted number of Winnipeg camper parties.

mark (Figure 5a), with the "professional and technical" category maintaining the highest percentage. The "service and recreation" group has a higher percentage than the managerial class. Farmers and operatives do not feature strongly in camping activities, because summer is the busiest time of year for the farmer. The peaks in participation correlate closely with those in income and education, although they may not be immediately evident because of the slightly different groupings involved.

Grass River and Norquay Beach have unusually high participation by the "managerial" and "clerical and sales" sub-groups than in other parks (Figure 5b) From the tabulations (Table 6), representation of other occupational groups at these two parks are insignificant, as they have the lowest variety of occupational categories. The small percentage of retirees appears to favour the parks which are located at a fairly great distance from Winnipeg, such as those in northern Manitoba. Except for Saint Malo which is comparatively close to Winnipeg, the other parks with "retiree" participation are quite far away. This phenomenon may be due to the fact that retired people prefer the less crowded parks which are further away from the population centres, and also to the greater availability of leisure time which allows them to travel longer distances.

AGE GROUPS

Data on age groups are based on individuals and include all members of the camping party. Instead of the five-year age-group intervals totalling fifteen, as used by CORDS, six sub-divisions were employed. The classification closely represents units of people with similar activities and interests, which is a more meaningful method of separating the different age categories, rather than dividing them at regular intervals.

The 25 - 44 age sub-division ranks highest in participation (Figure 6a) at 31.1 percent (Table 7). This high percentage is a result of the large range of ages included in this group. The three lower echelons exhibit an appreciable proportion of participation, despite the small range that is represented by each one. Such high participation subscribes to the fact that camping is overwhelmingly a family activity. The 25 - 44 age group, therefore, comprises the parents of the family unit and the 1 - 14 age group being the children. The 15 - 24 age category is a class which serves as a transition between the two main roles in the nuclear family. It can be seen that camping is not as popular for those between 45 - 64, and this situation is even more pronounced for those over 65.

Both Saint Ambroise and Norquay Beach have a high representation (Figure 6b) of children under 10 years; the 10 - 14 group is over-represented at Overflowing River.

AGE GROUPS—
TOTAL FOR ALL SAMPLE PARKS

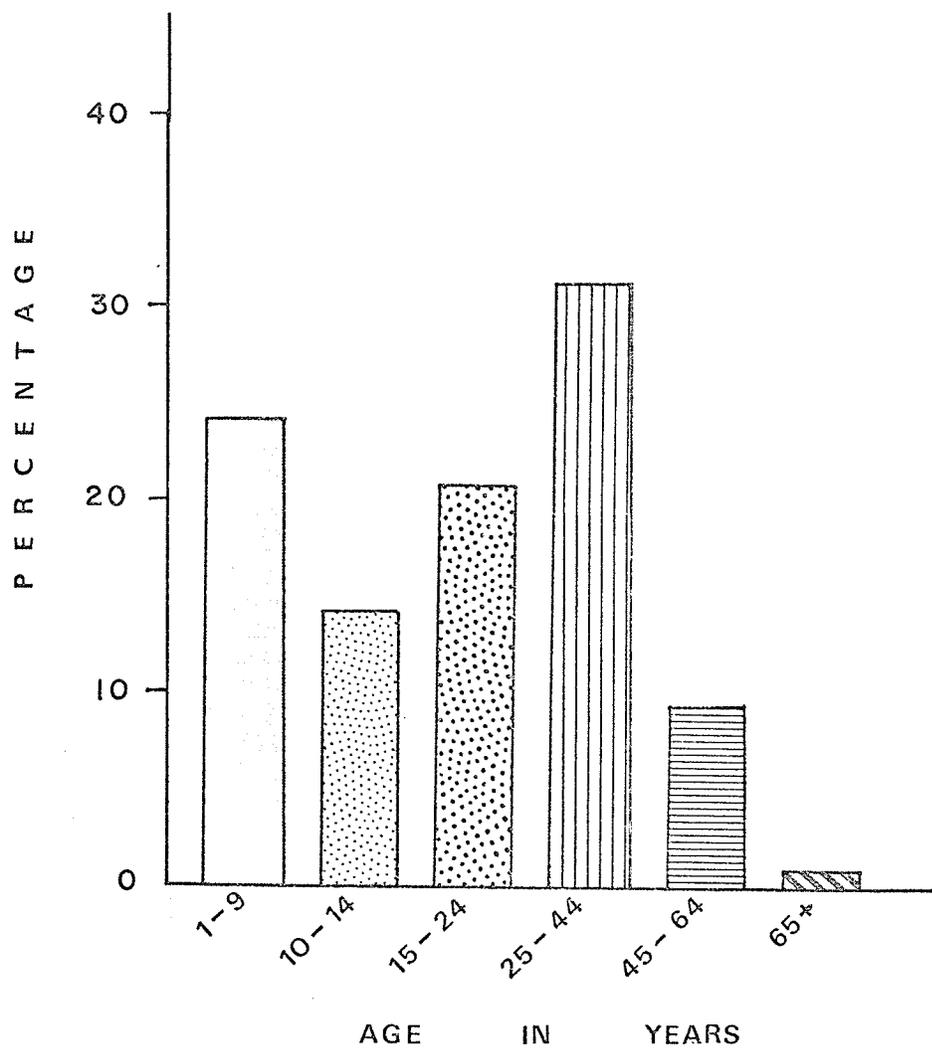


FIGURE 6a

AGE GROUPS — EACH SAMPLE PARK

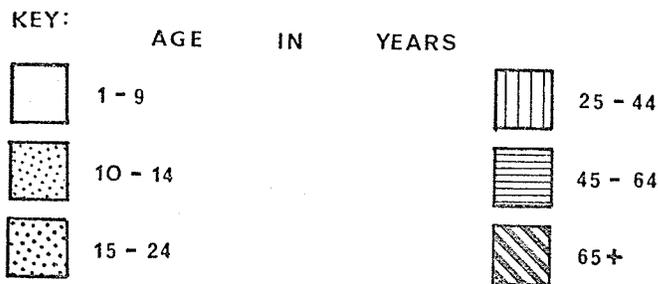
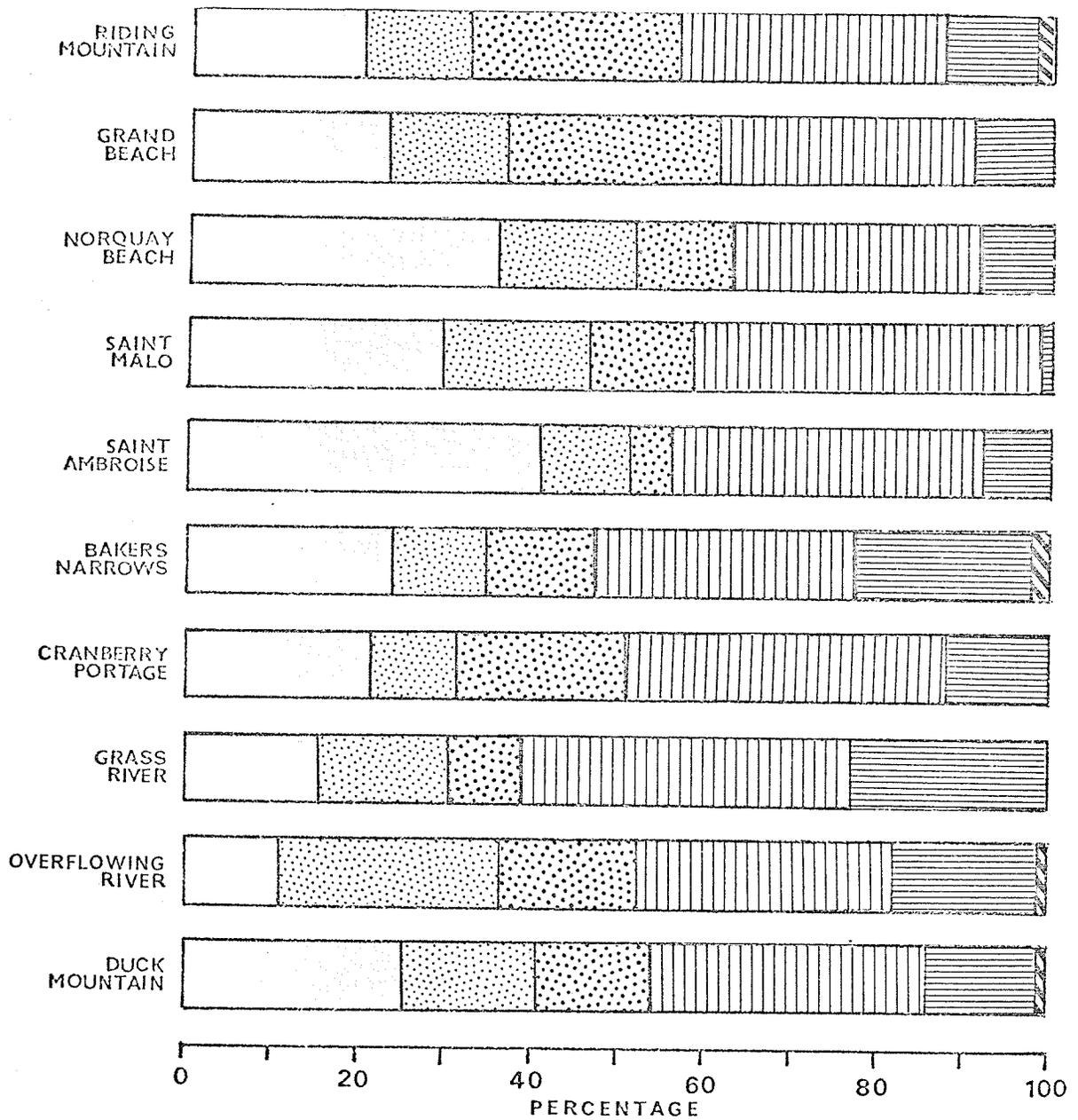


FIGURE 6b

TABLE 7
AGE IN YEARS

Sample Parks	1-9	10-14	15-24	25-44	45-64	Over 65	Total
Riding Mountain	1438*	944	1824	2286	814	114	7420
%	19.4	12.7	24.6	30.8	11.0	1.5	100.0
Grand Beach	1976	1224	2194	2617	765	19	8795
%	22.5	13.9	24.9	29.8	8.7	0.2	100.0
Norquay Beach	559	249	169	463	124	0	1564
%	35.7	15.9	10.8	29.6	7.9	0.0	99.9
Saint Malo	1165	674	482	1368	276	24	3989
%	29.2	16.9	12.1	34.3	6.9	0.6	100.0
Saint Ambroise	290	76	34	261	54	0	715
%	40.6	10.6	4.8	36.5	7.6	0.0	100.1
Bakers Narrows	39	18	21	51	34	3	166
%	23.5	10.8	12.7	30.7	20.5	1.8	100.0
Cranberry Portage	14	7	13	25	8	0	67
%	20.9	10.4	19.4	37.3	11.9	0.0	99.9
Grass River	4	4	2	10	6	0	26
%	15.4	15.4	7.7	38.5	23.1	0.0	100.1
Overflowing River	33	28	27	50	28	2	168
%	19.6	16.7	16.1	29.8	16.7	1.2	100.1
Duck Mountain	66	41	36	85	34	3	265
%	24.9	15.5	13.6	32.1	12.8	1.1	100.0
Total	5584	3265	4802	7216	2143	165	23175
% Total	24.1	14.1	20.7	31.1	9.2	0.7	99.9

*Weighted number of Winnipeg campers.

Grass River and Saint Ambroise have a small sample of those between the ages of 15 and 24. The northern Manitoba parks (lower five parks in Figure 6b) have a high representation of the 45 - 64 age group. The over-65 year age category at Grand Beach and Saint Malo have been excluded from the diagram, because it was impossible to measure off 0.2 percent and 0.6 percent respectively on the scale used. It is also interesting to note that the parks which have been visited by those over sixty-five years of age correspond well with the campgrounds used by persons in the retired category (Figure 5b).

SEX CHARACTERISTICS

Males comprise 51.9 percent and females 48.1 percent of the total Winnipeg campers. These statistics correspond closely to the results arrived at by ORRRC (1962a, p. 62). The 1961 census showed that there were slightly more females (50.7 percent) than males in the Winnipeg population (Canada, Dominion Bureau of Statistics, 1963, p. 16.4).

B. OTHER CHARACTERISTICS

The remainder of this chapter will be concerned with discussions of other aspects of the camping unit, namely,

type of party, length of stay, type of equipment used and the activities of the campers. These factors have not been included in the PARIS study, but they provide interesting insights into the camping party, and therefore are included here.

Size of party will not be discussed, because there is no information on the exact number in each party, except for the "one person" and "one couple" classifications. The average size of four persons per party, however, has been established for Winnipeg campers.

TYPE OF PARTY

The six sub-divisions for party type (Figure 7a) correspond closely to the eight categories used by CORDS (Appendix A). For the purpose of this thesis, "group of friends" have been combined with "two or more couples", and the category "others" was added to "organized group."

From an examination of the graph (Figure 7a), the nuclear family or "one family with children", comprising 65 percent of total participation (Table 8), is the most dominant of the camping groups. One of the reasons for this predominance may be considered psychological. Various sociological studies (Bultena and Klessig, 1961, pp. 348 - 354; Etzkorn, 1964, pp. 76 - 89; Hendee and Campbell, 1969, pp. 13 - 16) and ORRRC Report Number 20 (1962a) have

PARTY TYPE —
TOTAL FOR ALL SAMPLE PARKS

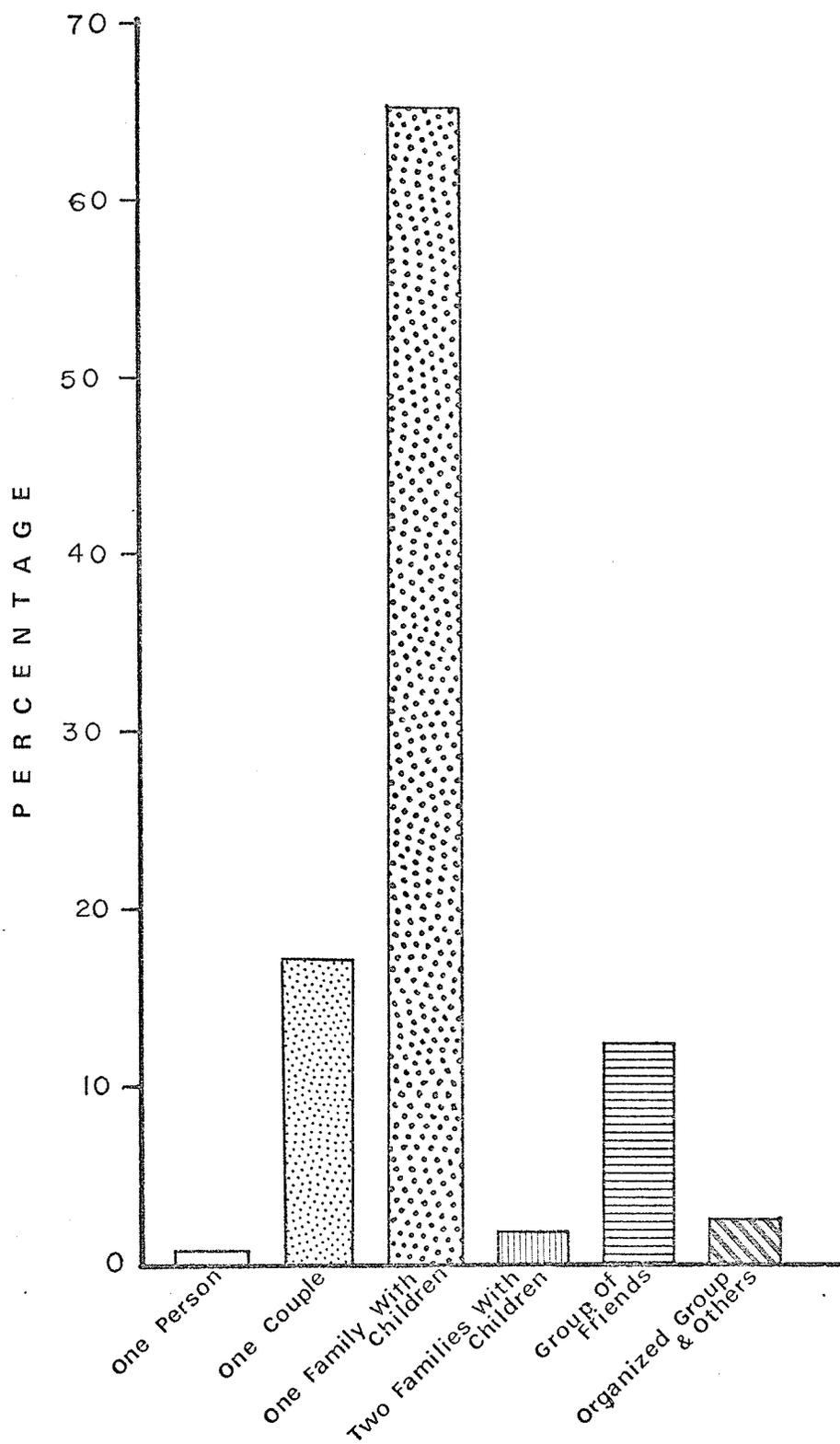
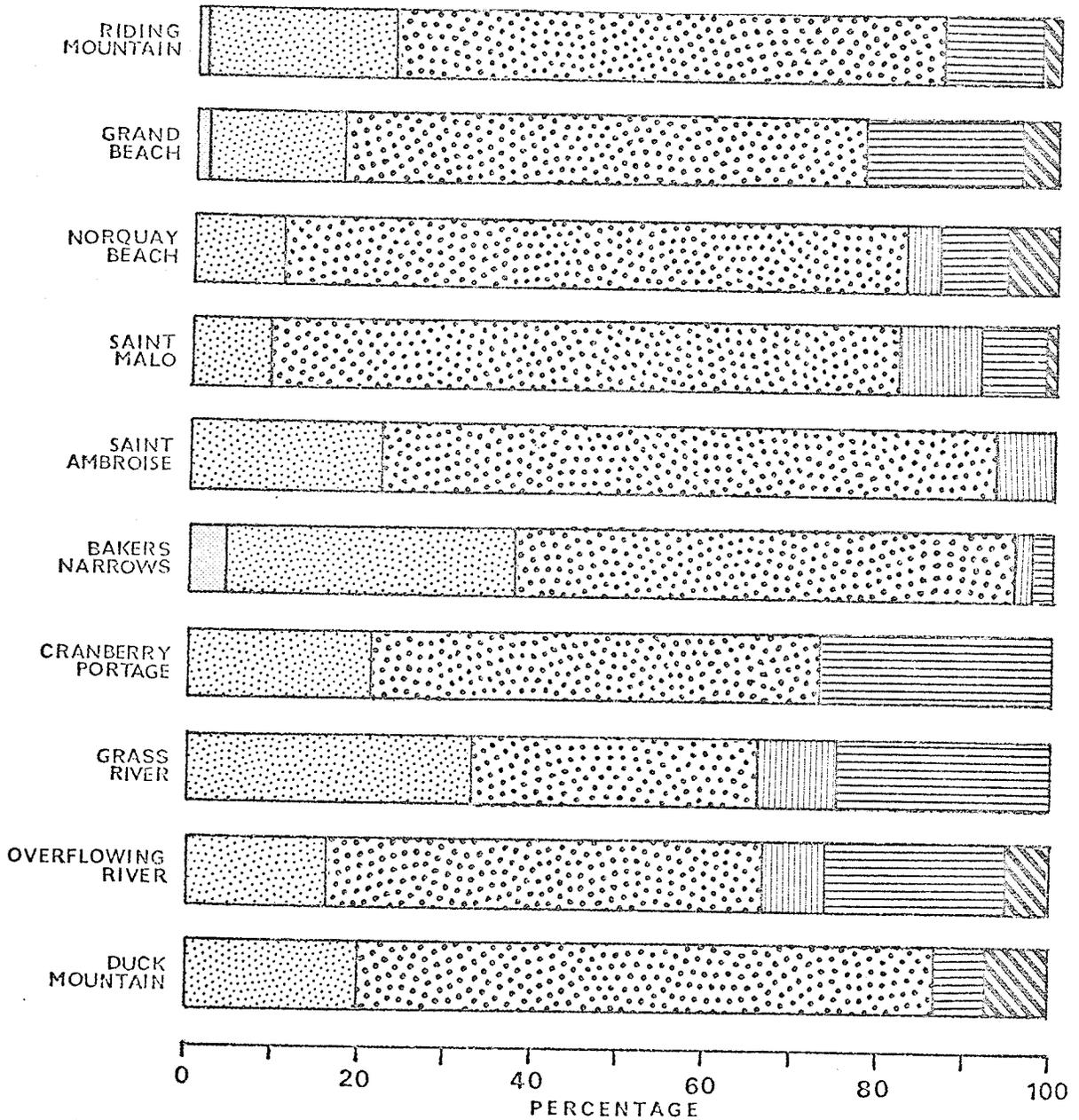


Figure 7a

PARTY TYPE — EACH SAMPLE PARK



KEY:

- one person
- two families with children
- one couple
- group of friends
- one family with children
- organized group & others

Figure 7b

TABLE 8
TYPE OF PARTY

Sample Parks	One Person	One Couple	One Family & Children	Two Families & Children	Group of Friends	Other	Total
Riding Mountain	12* % 0.6	452 22.0	1334 65.1	0 0.0	214 10.4	38 1.9	2050 100.0
Grand Beach	38 % 1.7	354 15.8	1354 60.6	0 0.0	406 18.2	84 3.8	2236 100.1
Norquay Beach	0 % 0.0	35 10.2	249 72.8	13 3.8	27 7.9	18 5.3	342 100.0
Saint Malo	0 % 0.0	79 9.1	637 73.4	83 9.6	64 7.4	5 0.6	868 100.1
Saint Ambroise	0 % 0.0	40 22.0	131 72.0	11 6.0	0 0.0	0 0.0	182 100.0
Bakers Narrows	2 % 4.0	17 34.0	29 58.0	1 2.0	1 2.0	0 0.0	50 100.0
Cranberry Portage	0 % 0.0	4 21.1	10 52.6	0 0.0	5 26.3	0 0.0	19 100.0
Grass River	0 % 0.0	3 33.3	3 33.3	1 11.1	2 22.2	0 0.0	9 99.9
Overflowing River	0 % 0.0	7 16.3	22 51.2	3 7.0	9 20.9	2 4.7	43 100.1
Duck Mountain	0 % 0.0	14 20.0	47 67.1	0 0.0	4 5.7	5 7.1	70 99.9
Total % Total	52 0.9	1005 17.1	3816 65.0	112 1.9	732 12.5	152 2.6	5869 100.0

*Weighted number of Winnipeg camper parties.

determined that the camping groups desire a change from the routines of everyday life and to be out-of-doors as the most important reasons for undertaking this outdoor recreational activity. Furthermore, campgrounds are in close proximity to areas where outdoor recreation is easily accessible, and where family groups can be accommodated readily. Camping is ideally a group activity, and therefore is highly popular with nuclear family units (which is a natural group in itself). Economic reasons may have been important in the past, but they are no longer the prime reasons for camping. It may still be true for some of those who tent, and for cross-country campers who wish to sightsee without having to spend too much on accommodations. On the whole, campers' tastes have tended towards more luxurious and more expensive types of equipment, which can duplicate the comfort of home life. Consequently, the idea of change as claimed by the campers interviewed in the above studies is perhaps only true of the wider environment, while tremendous effort is made to maintain the status quo on the immediate surroundings and home life.

Next in importance are the categories "one couple" and "group of friends" with 17.1 percent and 12.5 percent respectively (Table 8). It is also obvious that camping is not an activity which is indulged by one person.

The family group is dominant throughout all the parks sampled (Figure 7b). More couples and groups of friends are

represented in the northern and less developed campgrounds than in the southern ones. It may be caused by the desire to seek more private campgrounds away from the crowded southern parks. (There will be references in the remainder of this thesis to "northern" and "southern" parks or campgrounds. The northern parks in the sample consist of Bakers Narrows, Cranberry Portage, Grass River, Overflowing River and Duck Mountain. The southern parks include Grand Beach, Norquay Beach, Saint Malo and Saint Ambroise. Riding Mountain is in a transition zone and may be included in either sub-division; it is considered as a northern park in this case.) While the wish for social interaction is strong among family groups, couples and groups of friends may feel that their own unit provides enough social relationships without associating with others. It has been found that wilderness-oriented campgrounds are mainly frequented by groups who wish to establish closer relationships with nature than with other camper groups (Burch and Wenger, 1967, p. 26).

LENGTH OF STAY

Length of stay was measured in terms of the number of nights that each party camped at a particular site. All controlled provincial campgrounds (camping is under supervision here and permits are sold in these campgrounds) enforce a maximum length of stay for visitors, ranging from one to three weeks during the peak summer season (Manitoba, Department of Tourism, Recreation and Cultural Affairs,

Tourist Branch, 1971, p. 27).

Most camper units stayed for a duration of one to two nights (Figure 8a). In fact, this group amounted to 57.3 percent and a length of stay of three to four nights only rated 20.1 percent (Table 9). The other groupings show a lower percentage. Except for Saint Ambroise and Overflowing River, all other sampled parks indicate that the "one to two nights" category is close to the average established for all the parks in the survey. A one to two night duration coincides well with the length of the weekend, when most of the camping takes place, and indeed, when there is generally higher visitation at the parks.

Saint Ambroise and Overflowing River have a higher proportion of one to two night campers, 97.3 percent and 88.4 percent respectively (Table 9) than the other campgrounds. Overflowing River is a highway stop only, and the facilities at Saint Ambroise probably do not encourage the majority of campers to stay for more than two days. In general, the northern campgrounds which are at a greater distance from Winnipeg tend to show a larger percentage of parties which camp for longer periods, about five days or more (Figure 8b). Riding Mountain is in a transition zone between the northern and the southern parks, so that it has features of both. It is close enough to Winnipeg for a weekend or long weekend camping trip, and it can be considered far enough to warrant a longer "length-of-stay".

LENGTH OF STAY — TOTAL FOR ALL SAMPLE PARKS

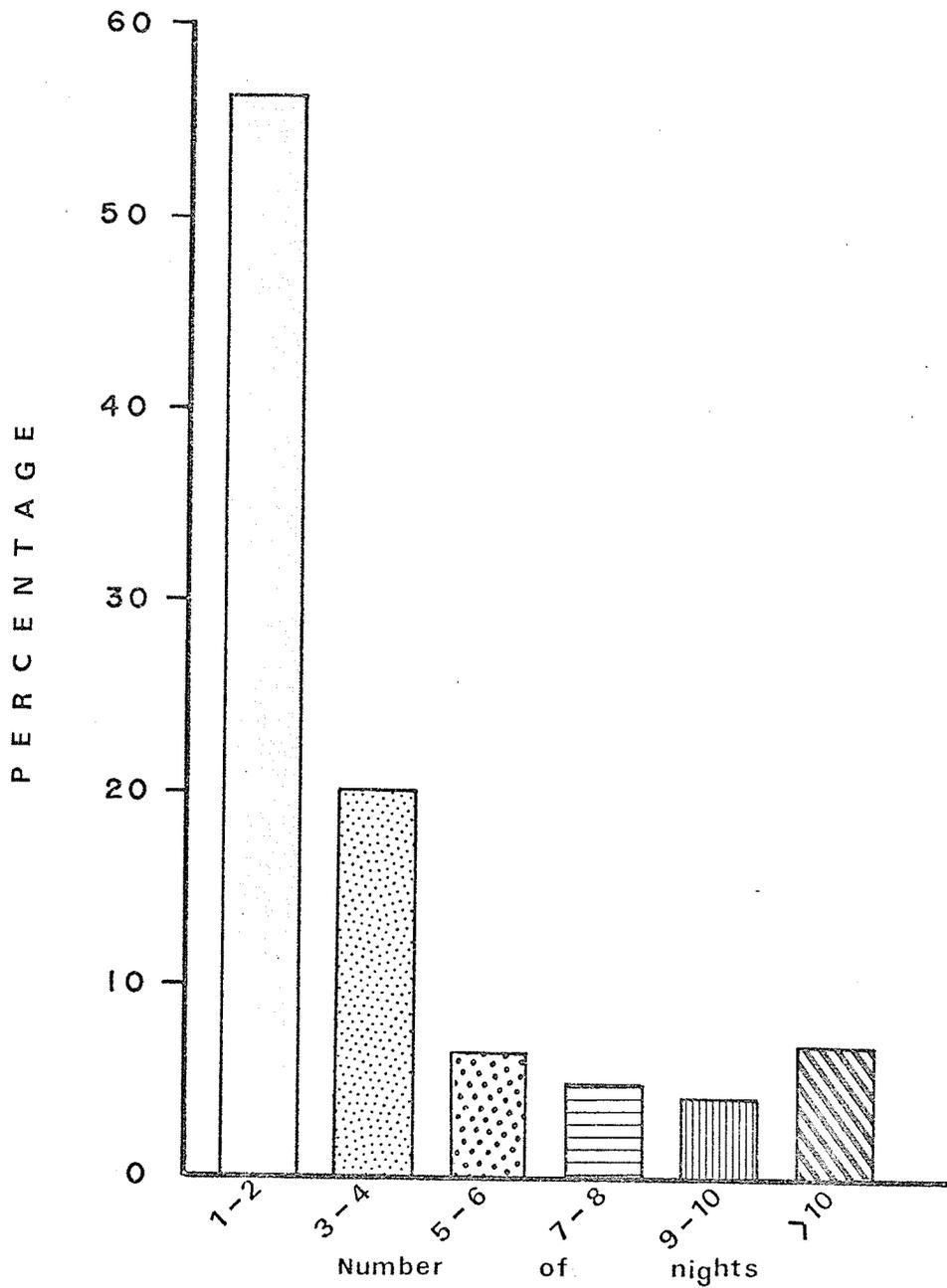
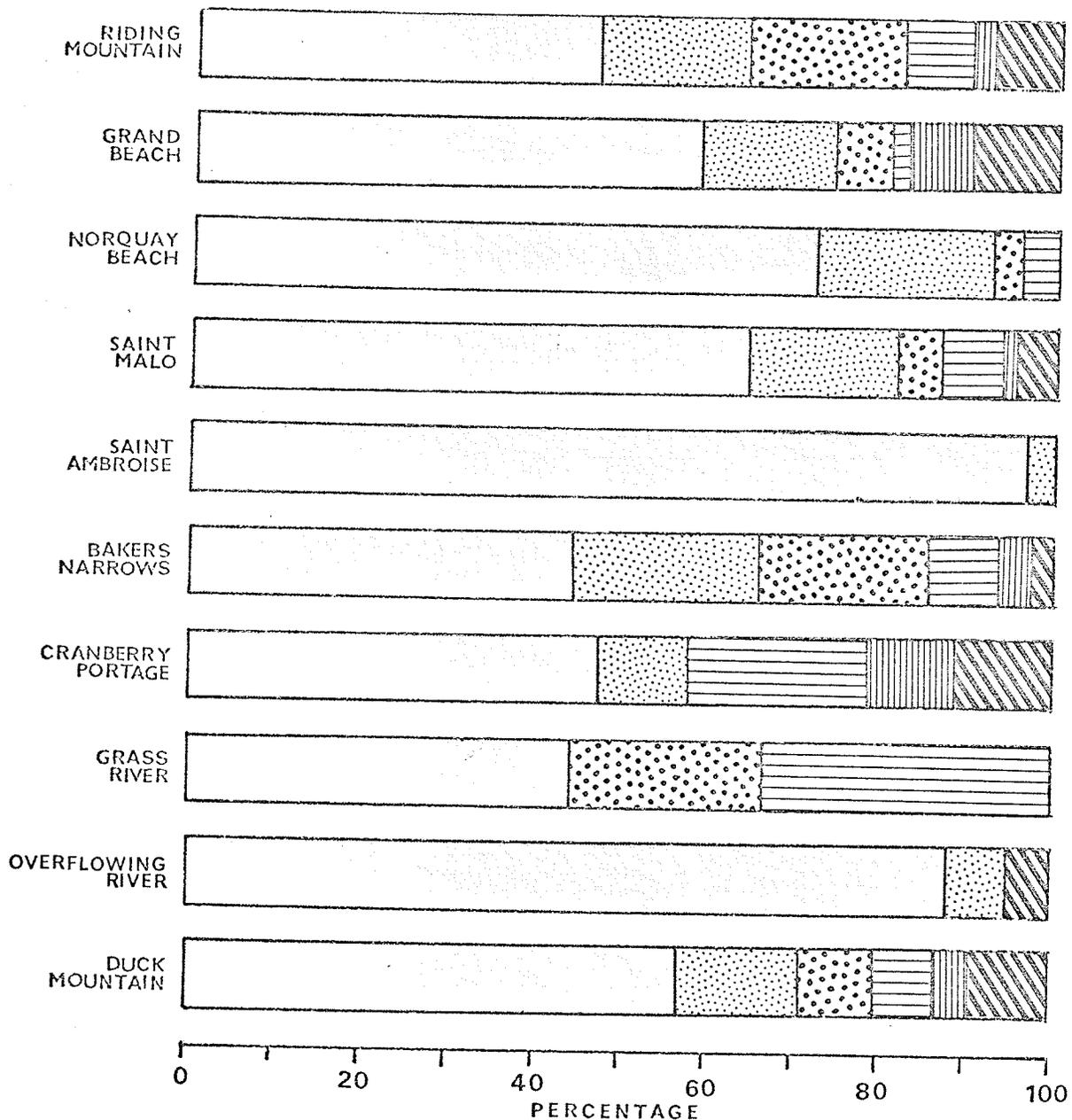


Figure 8a

LENGTH OF STAY — EACH SAMPLE PARK



KEY:



Figure 8b

TABLE 9
LENGTH OF STAY IN NIGHTS

Sample Parks		1-2	3-4	5-6	7-8	9-10	Over 10	Total
Riding Mountain	%	958* 46.7	564 27.5	170 8.3	160 7.8	54 2.6	144 7.0	2050 99.9
Grand Beach	%	1312 58.7	360 16.1	144 6.4	38 1.7	172 7.7	210 9.4	2236 100.0
Norquay Beach	%	248 72.5	72 21.1	9 2.6	13 3.8	0 0.0	0 0.0	342 100.0
Saint Malo	%	557 64.2	154 17.7	46 5.3	63 7.3	14 1.6	34 3.9	868 100.0
Saint Ambroise	%	177 97.3	5 2.7	0 0.0	0 0.0	0 0.0	0 0.0	182 100.0
Bakers Narrows	%	22 44.0	11 22.0	10 20.0	4 8.0	2 4.0	1 2.0	50 100.0
Cranberry Portage	%	9 47.4	2 10.5	0 0.0	4 21.1	2 10.5	2 10.5	19 100.0
Grass River	%	4 44.4	0 0.0	2 22.2	3 33.3	0 0.0	0 0.0	9 99.9
Overflowing River	%	38 88.4	3 7.0	0 0.0	0 0.0	0 0.0	2 4.7	43 100.1
Duck Mountain	%	40 57.1	10 14.3	6 8.6	5 7.1	3 4.3	6 8.6	70 100.0
Total		3365	1181	387	290	247	399	5869
% Total		57.3	20.1	6.6	4.9	4.2	6.8	99.9

*Weighted number of Winnipeg camper parties.

CAMPING EQUIPMENT USED

Among the four types of accommodation used by Winnipeg campers, the tent trailer is the most popular (Figure 9a), accounting for 43.6 percent of the total (Table 10). The tent and the travel trailer amount to 33.5 percent and 21.3 percent respectively (Table 10). Pickup campers are insignificant as a mode of shelter for camping parties from Winnipeg. CORDS' figures for campers from Manitoba, other than Winnipeg, indicate a greater representation of pickup campers for seven out of ten sampled parks. A large percentage of these Manitobans would be from rural areas, because Winnipeg is the only major urban area in this province. This evidence suggests that pickup campers are more popular in the rural rather than in the urban areas.

Government reports of surveys (Canada, Department of Indian Affairs, National Parks Service, 1967a and 1967b) conducted in some Alberta national parks further indicate that pickup campers are more popular in mountainous rather than in flatter areas. These results would tend to be confirmed by the low percentage of pickup campers in Manitoba--especially in Winnipeg.

The use of the four different types of camping equipment as related to income groups is graphically presented (Figure 9c). The most interesting observation here is the gradual decrease of tenting with an increase in family incomes. The trend is exactly in the reverse for the

CAMPING EQUIPMENT USED - TOTAL FOR ALL SAMPLE PARKS

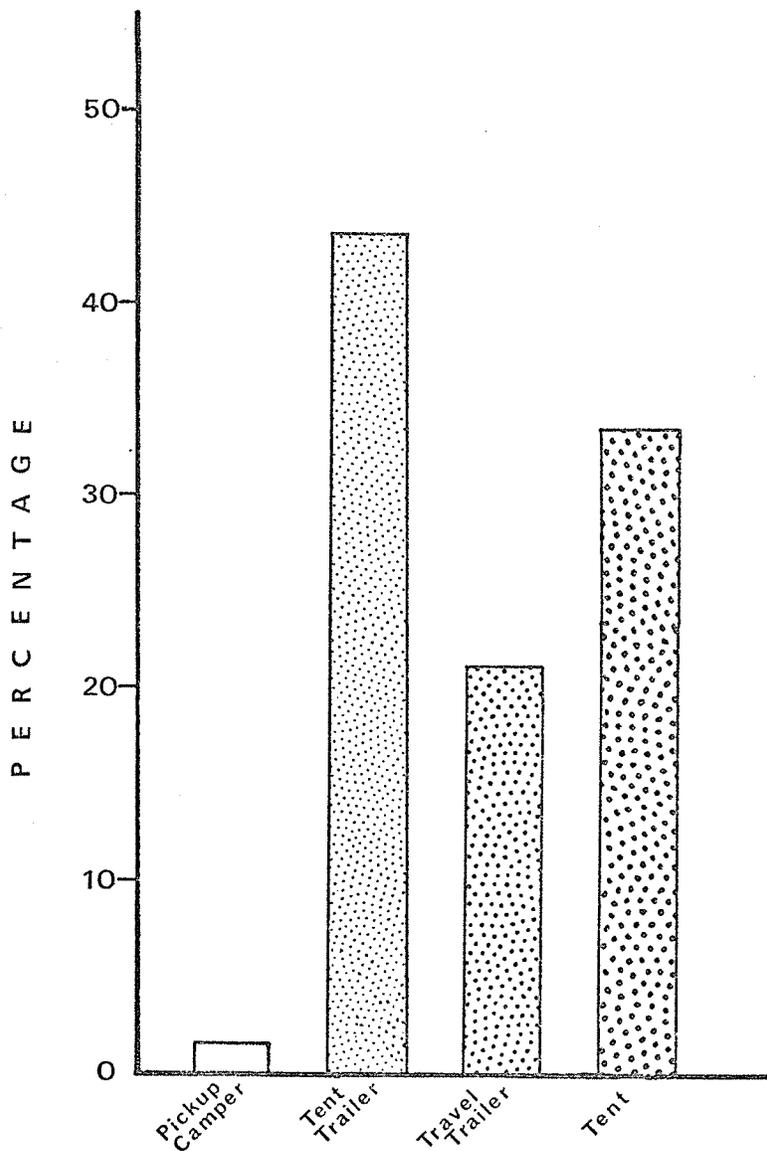
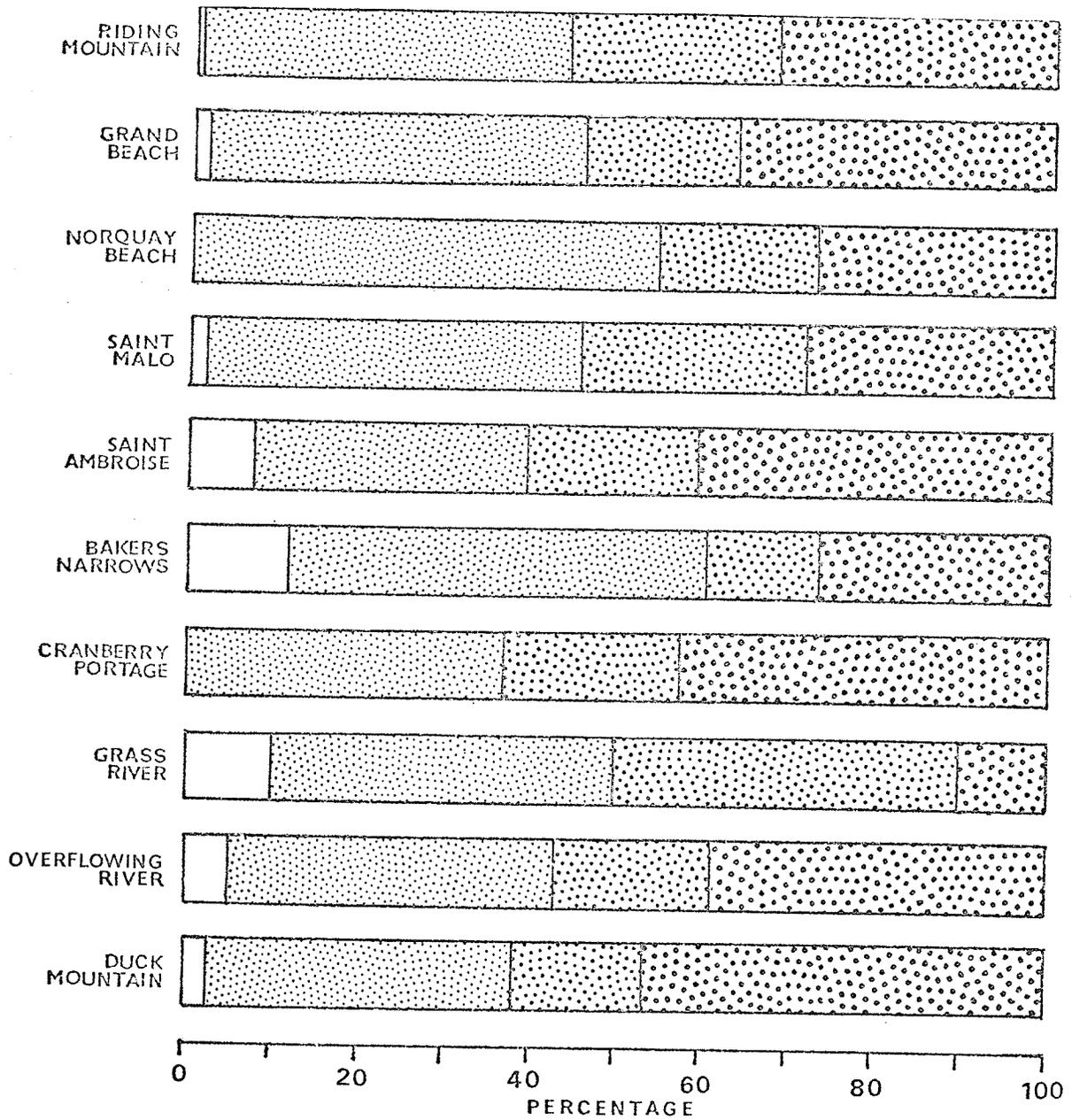


Figure 9a

CAMPING EQUIPMENT USED — EACH SAMPLE PARK



KEY:



Pickup Camper



Travel Trailer



Tent Trailer



Tent

Figure 9b

CAMPING EQUIPMENT USED BY INCOME GROUPS

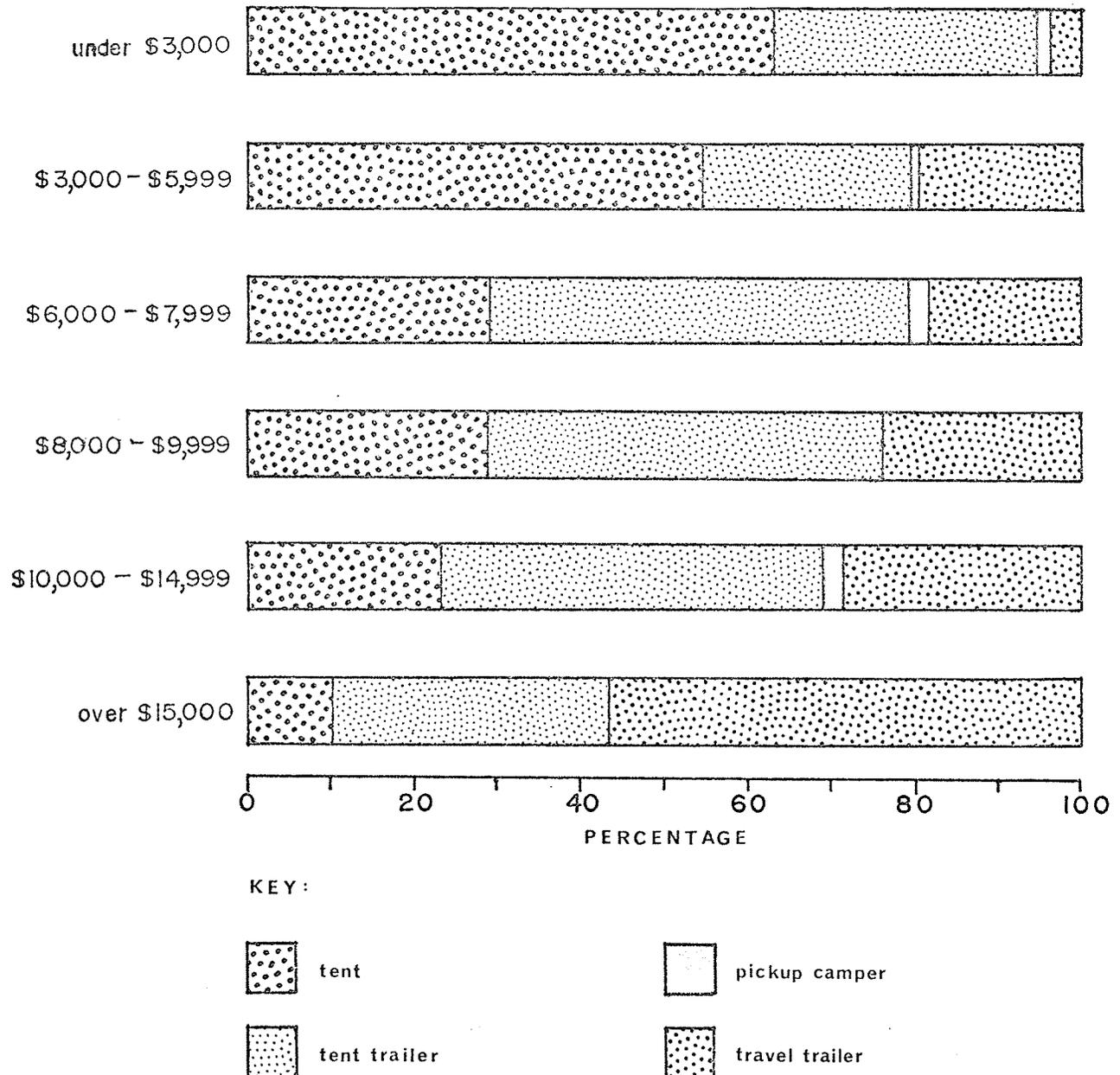


Figure 9c

TABLE 10
CAMPING EQUIPMENT USED

Sample Parks		Pick-up Camper	Tent Trailer	Travel Trailer	Tent	Total
Riding Mountain	%	12* 0.6	904 43.3	504 24.1	668 32.0	2088 100.0
Grand Beach	%	43 1.8	1049 43.7	441 18.4	870 36.2	2403 100.1
Norquay Beach	%	0 0.0	190 54.1	67 19.1	94 26.8	351 100.0
Saint Malo	%	15 1.6	415 43.6	232 24.4	289 30.4	951 100.0
Saint Ambroise	%	16 7.7	65 31.4	42 20.3	84 40.6	207 100.0
Bakers Narrows	%	6 11.3	26 49.1	7 13.2	14 26.4	53 100.0
Cranberry Portage	%	0 0.0	7 36.8	4 21.1	8 42.1	19 100.0
Grass River	%	1 10.0	4 40.0	4 40.0	1 10.0	10 100.0
Overflowing River	%	2 4.5	17 38.6	8 18.2	17 38.6	44 99.9
Duck Mountain	%	2 2.7	26 35.6	11 15.1	34 46.6	73 100.0
Total		97	2703	1320	2079	6199
% Total		1.6	43.6	21.3	33.5	100.0

*Weighted number of Winnipeg camper parties.

TABLE 11
CAMPING EQUIPMENT USED BY INCOME GROUPS

Income Groups		Tent Tent	Trailer	Pick-up Camper	Travel Trailer	Total
Under \$3,000	%	209* 63.1	105 31.7	6 1.8	11 3.3	331 99.9
\$3,000- \$5,999	%	588 54.2	275 25.4	11 1.0	210 19.4	1084 100.0
\$6,000- \$7,999	%	689 28.9	1208 50.6	51 2.1	440 18.4	2388 100.0
\$8,000- \$9,999	%	276 28.9	447 46.9	2 0.2	229 24.0	954 100.0
\$10,000- \$14,999	%	224 23.0	448 45.9	25 2.6	279 28.6	976 100.1
Over \$15,000	%	22 10.0	71 32.4	1 0.5	125 57.1	219 100.1
Total		2008	2554	96	1294	5952
% Total		33.7	42.9	1.6	21.7	99.9

*Weighted number of Winnipeg camper parties.

use of the travel trailer. The cost factor involved for the two extremes in camping equipment is obvious. The histogram (Figure 9c) also shows that tent trailers are mainly used by the middle to lower-upper (\$6,000 to \$14,999) income groups. A government report pointed out that tent trailers are usually the first recreational vehicle bought by campers (Manitoba, Department of Industry and Commerce, Consumer Goods and Textile Branch, 1970, p. 14). In addition, this type of equipment is highly popular with younger families (with parents under thirty), while the travel trailers are mainly purchased by older customers (31 to 60 years). These conclusions fit in well with the graph (Figure 9c), because many campers would have graduated to the higher income brackets when they decide to change to a new and usually more expensive line of camping equipment.

On the whole, most of the individual parks conform to the general pattern, but there are also small variations (Figure 9b). More pickup campers are found in the northern parks (Riding Mountain is not included in this instance). Grass River appears to be quite unpopular with campers using tents, as indicated by their unusually low percentage (Figure 9b). In place of tents, more travel trailers are represented at the same park.

It is interesting to note that the Whiteshell study (Manitoba, Department of Tourism, Recreation and Cultural Affairs, 1970b, p. 45) conducted for all campers to the park

indicates that tents are used in 56.9 percent of cases, tent trailers 24.5 percent, house trailers 12.6 percent and pickup campers 6.0 percent. Although this study does not isolate campers from Winnipeg, a comparison can be made with the different samples in mind. Tent trailers are more popular among Winnipeg campers, while tents are accorded the same position for all campers to the Whiteshell. Tents are a close second for Winnipeggers, while tent trailers are only half as important in the Whiteshell study. Travel or house trailers are ranked in the same position, although campers of Winnipeg origin use a greater percentage than the Whiteshell campers. The situation is similar for pickup campers except that Whiteshell visitors use a greater percentage of these truck campers.

CAMPER ACTIVITIES

Four types of activities dominate the use of leisure time for campers during their sojourn in the parks. These activities are distributed fairly evenly (Figure 10). All the parks sampled offer opportunities for achieving these activities to varying degrees. Fishing ranks low on this graph, because this recreational sport is popular in some parks, namely those in northern Manitoba. Fish are still plentiful in this region, and many campers go to these parks with fishing as their main objective. Many of the southern

ACTIVITIES OF CAMPERS —
Total For All Sample Parks

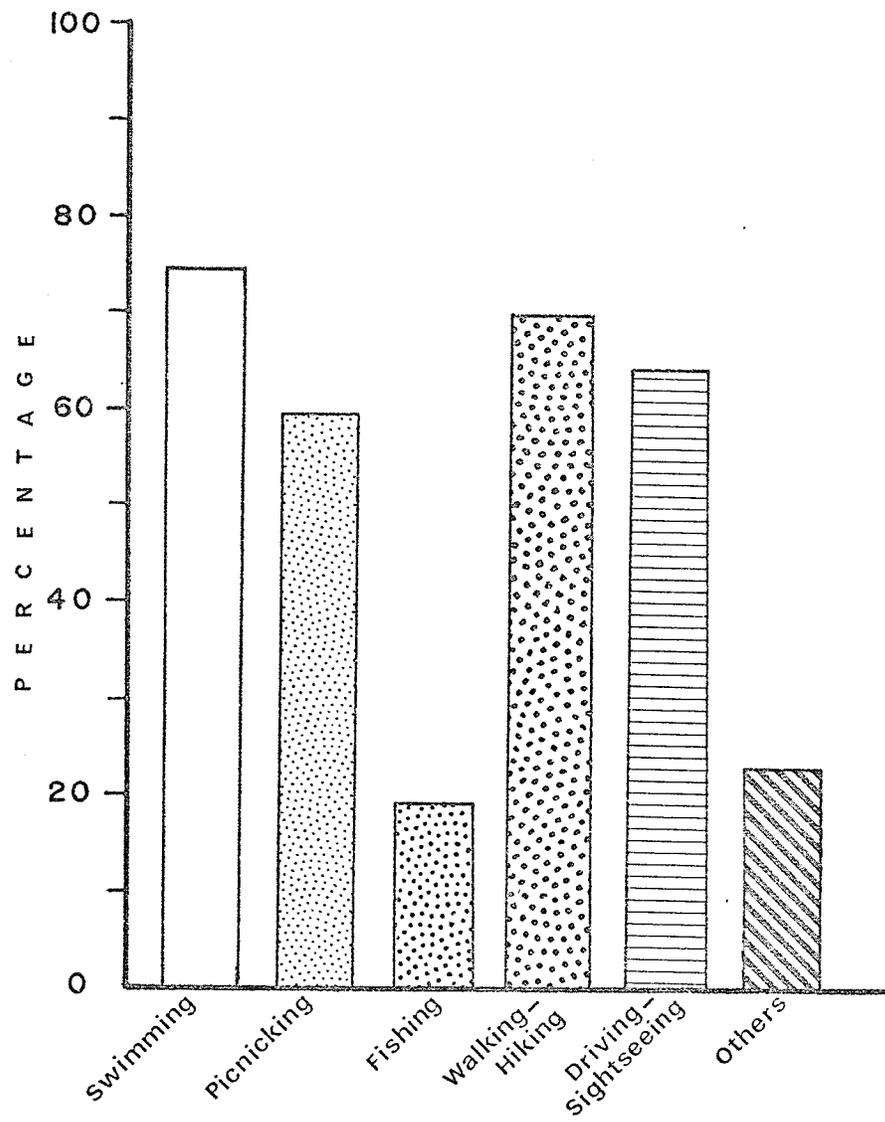


Figure 10

TABLE 12
ACTIVITIES OF CAMPERS

Sample Parks	Swim	Picnic	Fish	Walk- Hike	Drive- Sightsee	Other	Total Respondents
Riding Mountain	4716* % 63.6	4346 58.6	1206 16.3	4946 66.7	6026 81.2	2646 35.7	7420
Grand Beach	7636 % 86.8	5072 57.7	1638 18.6	6502 73.9	5714 65.0	1789 20.3	8795
Norquay Beach	1014 % 64.8	851 54.4	144 9.2	1448 92.6	419 26.8	78 5.0	1564
Saint Malo	3124 % 78.3	2661 66.7	1010 25.3	2740 68.7	2211 55.4	682 17.1	3989
Saint Ambroise	534 % 74.7	584 81.7	16 2.2	449 62.8	169 23.6	99 13.8	715
Bakers Narrows	91 % 54.8	71 42.8	121 72.9	107 64.5	136 81.9	20 12.0	166
Cranberry Portage	42 % 62.7	33 49.3	48 71.6	24 35.8	42 62.7	4 6.0	67
Grass River	2 % 7.7	12 46.2	23 88.5	11 42.3	14 53.8	2 7.7	26
Overflowing River	24 % 14.3	64 38.1	103 61.3	76 45.2	45 26.8	0 0.0	168
Duck Mountain	162 % 61.1	108 40.8	159 60.0	164 61.9	160 60.4	29 10.9	265
Total	17345	13802	4468	16467	14936	5349	23175
% Total	74.8	59.6	19.3	71.1	64.4	23.1	

*Weighted number of Winnipeg campers.

N. B. These percentages do not total to one hundred, because one person may participate in more than one activity.

parks, such as the Whiteshell Provincial Park have become too crowded for the serious-minded fishermen, and the stock of fish in these lakes has diminished a great deal. Consequently, the primary aims of most campers who go to the parks in close proximity to Winnipeg are swimming, picnicking, sightseeing, or driving for pleasure (Table 12).

C. SUMMARY

From the preceding analysis, many factors emerge to reveal the characteristics of Winnipeg campers. Assuming that such features do not change to a great extent in the next five years, a picture of a potential camper from Winnipeg can be drawn. Based on the socio-economic data, the camper would tend to be a high-school graduate and would have had some further training beyond that level. He would most likely be earning between \$6,000 to \$8,000, depending on the degree of inflation in the near future. His occupation would be in the "professional-technical or clerical-sales" or "craftsmen-labourers" categories. The first two occupational classifications offer greater possibilities than the third. A young family group with parents between 25 and 44 with two to three children would tend to be campers staying one to two nights at the parks. With the increasing popularity of more luxurious camping

equipment, the Winnipeg camper party would probably be using a tent or travel trailer, and their leisure time would be spent mainly in swimming, picnicking, walking and sightseeing activities. The results obtained in this chapter strongly reflect the conclusions drawn by other researchers in the same field, as shown in the section on the review of literature.

CHAPTER IV

CALCULATIONS OF PROJECTED CAMPING DEMAND

The purpose of this chapter is to estimate the actual camping participation by Winnipeg residents at the provincial parks, and to determine their projected demand for camping to the year 1976. The term "demand" as used in the field of recreation has been defined in various ways. It could mean "a schedule of volume (visits, user-days, etc.) in relation to a price (cost of recreation experience)" (Clawson and Knetsch, 1966, p. 41), or "the propensity of the population to participate in a recreational activity at a specific level of recreation supply and cost" (Taylor, Personal Communication, 1969). PARIS distinguished between demand which

"is based on the hypothesis that people have certain needs or desires for outdoor recreation regardless of the supply of opportunities available to them and that freedom of choice exists in the selection of free time activities."

(California, 1966b, p. 11)

and "'potential demand' [which] takes into consideration the desire and ability -- both physical and financial -- of

people to participate in recreation activities as well as the existence of facilities necessary for participation" (California, 1966b, p. 11). In this thesis, distinction is made between participation, which is present use and a projection of this use which is termed demand (i.e. demand is projected participation under present conditions and level of supply). For the purposes of brevity and ease of understanding, all units of participation or demand are expressed as groups or parties in this thesis, although they are, in reality, user-units or group-nights. For example, a figure of fifty group-nights implies that it is possible for fifty groups to be using the campgrounds on one night, or that one group may be using the campsite for fifty nights (two extreme cases). Although the resulting impact of these two extreme possibilities on the resources or facilities is essentially the same, it is the expression of the intensity of use that is of importance.

The method utilized is modelled after the Demand Subsystem of PARIS (Sections 1.11 to 1.61) as illustrated in Figure 11. Changes have been made in order to adapt it to the local situation and to the data available. These alterations will be discussed in greater detail as they occur. Furthermore, the order of the plan in the diagram will not be adhered to strictly, but will be rearranged where necessary.

DEMAND SUB-SYSTEM (PARIS)

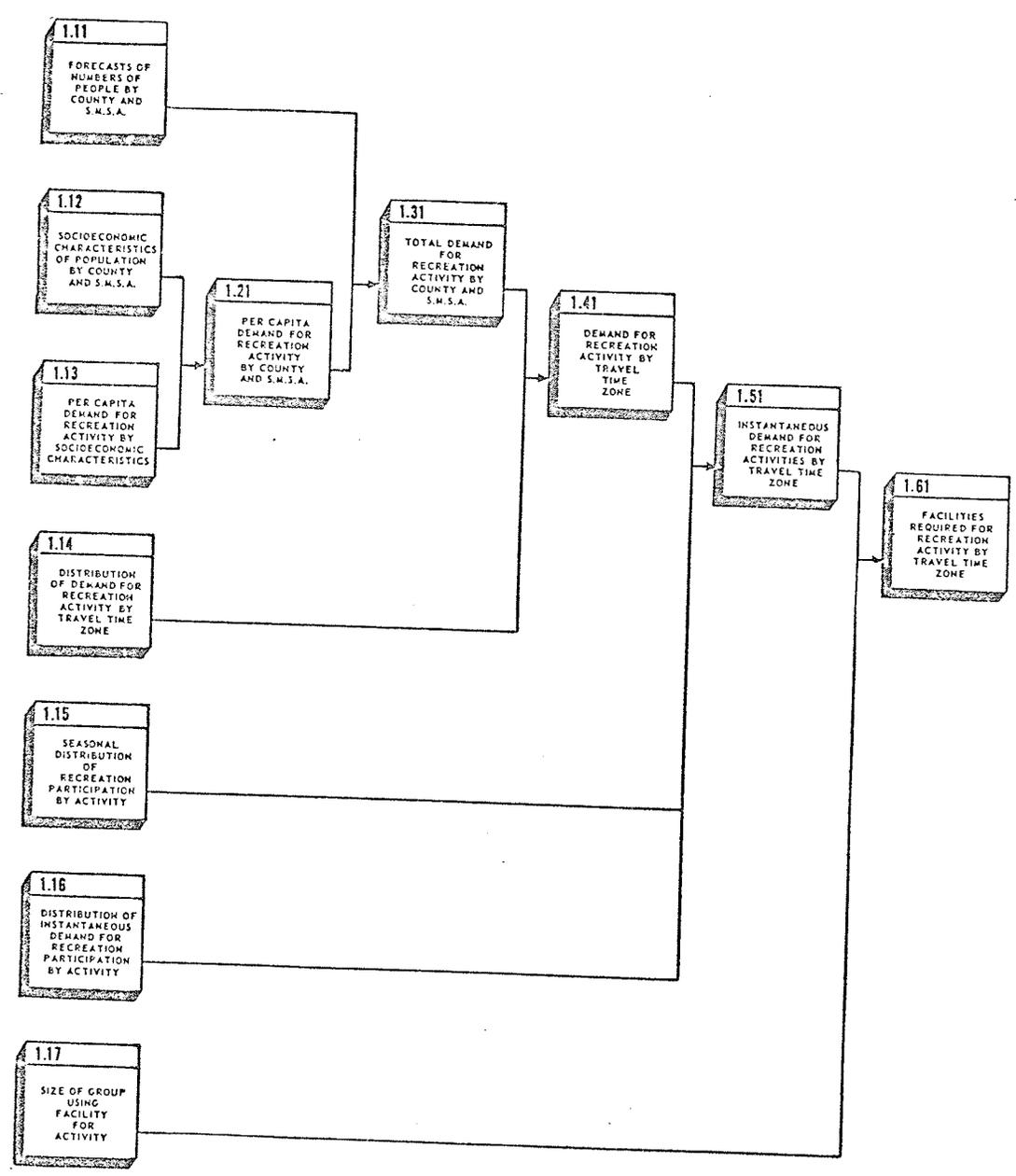


FIGURE II

SIZE OF THE CAMPING GROUP

Throughout the chapter, the basic unit of calculation will be the camper group. PARIS has based its computation throughout its system on the number of individual campers, and then reduced this figure to the group unit at the final stage. It was decided that since most of the work has been based on percentages, absolute figures are not so important. Most of the data had been collected in terms of camper groups or camper group-nights, and, therefore, it was more convenient to convert other figures to the same unit. The size of the camper group has been established at four persons per party, a figure which was also used by PARIS.

ESTIMATING PER GROUP PARTICIPATION FOR CAMPING

Instead of calculating the per capita demand as in PARIS, the object in this section of the thesis is to determine the per group or per party participation. Per group use for camping is expressed in terms of the number of nights a group stayed at a campground. There is no time limit involved, except that camper groups must have stayed overnight. PARIS is based on the premise that demand for recreation is affected by socio-economic status, hence, the per capita estimation is calculated on that basis. A similar procedure was adopted for this thesis, and where necessary, alterations have been made to adapt the system to

local conditions. The difficulties in obtaining suitable data have resulted in what may appear to be an inconsistent use of material from different years. Since a great deal of the computation is dependent on proportions and not on absolute figures, it is not unreasonable to use statistics derived from two consecutive years.

Instead of the seven socio-economic categories incorporated by PARIS, only five are used here. The reasons for this reduction have been discussed in Chapter III. The percentages of participation of each socio-economic group have been calculated for the sample parks surveyed by CORDS during the summer of 1969. Some modifications of the groups have been necessary for the income and education categories, so that comparisons with census figures can be made.

The latest census data, with breakdowns in the five socio-economic classifications, are only available for the year 1961. It is obvious that there is a gap of eight years between the camping participation figures and those of population. Although the 1966 census publications considered age and sex categories, it was decided that consistency was important enough to warrant the use of the 1961 statistics for all groupings, except the income classifications, because it was discovered that the 1961 census material on income was unsuitable, and instead, the data for this classification was derived from another source (Canada, Dominion Bureau of Statistics, 1970, Table 3, p.

20). Some inaccuracy cannot be avoided, because 1961 proportions of different socio-economic groups had to be maintained for 1969 and 1970. Since there are more groups in the CORDS material, the greatest difficulty was encountered with the education category. For example, technical-vocational education was almost non-existent during the time of the 1961 census, and therefore no such information was solicited, but by 1969, this type of education had become important enough to warrant a separate classification in the CORDS study. This category had to be incorporated into the "part university" class in order to enable comparisons to be made with the census data, and this combination is termed "some university" (Table 13). The "part high school" and "high school graduate" sections had to be combined under the heading "secondary" education to facilitate comparisons between census and the CORDS material. "Elementary" is then equivalent to "grade school" (Table 13). Most of the adjustments for occupation have been made in Chapter III. There are, however, two categories ("students" and "retirees") which have been omitted here, because no information on these classifications are available in the census data.

During the summer of 1970, there were actual counts of the total number of groups registered in each controlled campground. These statistics are therefore considerably more reliable than the 1969 CORDS attendance data. Since no

TABLE 13

CALCULATIONS OF PER GROUP CAMPING PARTICIPATION FOR 1970

	% of Camper Groups	No. of Camper Groups (X)	% of Popu- lation	Popula- tion (Groups) (Y)	Per Group Partici- pation (X/Y)
<u>Category: Sex</u>					
Male	51.94	43289.91	49.29	66722.52	0.65
Female	48.06	40056.09	50.71	68644.73	0.58
Total	<u>100.00</u>	<u>83346.00</u>	<u>100.00</u>	<u>135367.25</u>	
Actual Total		83346.00		135367.25	
<u>Category: Education</u>					
Elementary	7.78	6484.32	71.29	96503.31	0.07
Secondary	51.95	43298.25	23.90	32352.77	1.34
Some University	26.02	21686.63	3.94	5333.47	4.07
University Grads.	14.25	11876.81	0.86	1164.16	10.20
Total	<u>100.00</u>	<u>83346.01</u>	<u>100.00</u>	<u>135353.71</u>	
Actual Total		83346.00		135367.25	

TABLE 13--CONTINUED

	% of Camper Groups	No. of Camper Groups (X)	% of Popu- lation	Popula- tion (Groups) (Y)	Per Group Partici- pation (X/Y)
<u>Category: Income</u>					
Under \$3,000	5.15	4292.32	8.3	11235.48	0.38
\$3,000-\$5,999	18.53	15444.01	26.4	35736.95	0.43
\$6,000-\$7,999	39.48	32905.00	23.3	31540.57	1.04
\$8,000-\$9,999	16.40	13668.74	17.1	23147.80	0.59
\$10,000-\$14,999	16.56	13802.10	19.8	26802.72	0.51
Over \$15,000	3.89	3242.16	5.3	7174.46	0.45
Total	<u>100.01</u>	<u>83354.33</u>	<u>100.2</u>	<u>135637.98</u>	
Actual Total		83346.00		135367.25	
<u>Category: Occupation</u>					
Managerial	10.29	8576.30	7.52	10179.62	0.84
Professional and Technical	26.46	22053.35	12.30	16650.17	1.32
Clerical and Sales	24.41	20344.76	27.59	37347.82	0.54
Service and Recreation	11.88	9901.50	14.68	19871.91	0.50
Farm Workers and Operatives	4.70	3917.26	7.38	9990.10	0.39
Craftsmen and Labourers	22.25	18544.49	30.53	41327.62	0.45
Total	<u>99.99</u>	<u>83337.66</u>	<u>100.00</u>	<u>135367.24</u>	
Actual Total		83346.00		135367.25	

TABLE 13--CONTINUED

	% of Camper Groups	No. of Camper Groups (X)	% of Popu- lation	Popula- tion (Groups) (Y)	Per Group Partici- pation (X/Y)
<u>Category: Age in Years</u>					
1-14	38.18	31821.50	30.12	40772.62	0.78
15-24	20.72	17269.29	14.05	19019.10	0.91
25-44	31.14	25953.94	28.07	37997.59	0.68
45-64	9.25	7709.51	18.75	25381.36	0.30
Over 64	0.71	591.76	9.01	12196.59	0.05
	Total	<u>83346.00</u>	<u>100.00</u>	<u>135367.26</u>	
	Actual Total	83346.00		135367.25	

1970 Population = 135367.25 parties (groups)
 1970 Camper Visits = 83346 groups (group-nights)

Per Group Participation $\frac{83346}{135367.25} = 0.62$ group-nights

percentage breakdowns of socio-economic groups were available for 1970, figures were extrapolated utilizing 1969 values. The resulting compilations are listed in Table 13. Through a similar method, the socio-economic groups of the 1970 Winnipeg population were extrapolated from the 1961 census material. These two calculations provided values indicating the number and the proportion of persons who had camped in 1970 and similarly, the number and the percentage of people who were resident in Metropolitan Winnipeg in 1970, by socio-economic strata. Per party values for each group were then computed by dividing the number of campers in each of these groupings by their corresponding population figure. These per group values vary greatly, partly as a result of discrepancies between the census classifications and those of CORDS. However, they are valuable because they emphasize the differences in participation among the various segments of society.

Using similar socio-economic statistics, PARIS researchers were able to make demand predictions based on population projections which were available to them in corresponding form. In other words, the members of the Stanford Research Institute who actually had worked on the plan computed their own future population figures stratified socio-economically, and by employing the per capita values for each characteristic, it was possible for them to calculate the projected participation for each group.

Population projections with detailed socio-economic breakdowns are unavailable for Winnipeg, and consequently, simple population statistics have to suffice. As a result, an overall per group participation value has been computed for all categories, since they have the same totals for camper and population groups. The annual per group participation for camping by Winnipeg residents in 1970 was 0.62 group-nights (Table 13). This figure was obtained by dividing attendance by population. The individual per group participation values for each socio-economic classification are important, in this case, for expressing differences in per party use that can occur among groups. In general, men are more active in outdoor recreation than women, (U.S., ORRRC, 1962a, p. 14) except in camping, where participation by females closely parallels their male counterparts (Table 13). According to the educational category, it appears that camping becomes more popular as the level of formal schooling increases. The per group participation figures are exaggerated here owing to the unavailability of 1969 census data, but the trend which is indicated is correct. The \$6,000 to \$7,999 income group displays the highest per party participation value of 1.04, while camping is only about half as popular among the other classifications (between 0.38 and 0.59). As expected, the "professional and technical" and the "managerial" classes display the highest per group use, supporting the trend in the category under

education, and partially reflecting the pattern under income. The age sub-division exhibits very clearly the high participation of the nuclear family in camping, and that it is definitely not an activity which is indulged by senior citizens to an appreciable extent.

FORECASTS OF METROPOLITAN WINNIPEG'S POPULATION

It has been established that in order to be able to project future camping demand, one of the basic ingredients which must be utilized is forecasts of population at the point of origin. Projections of the total Winnipeg population can be derived from a report produced by "Metro" (Metro, Planning Division, 1968). As mentioned previously, PARIS further requires forecasts of population based on socio-economic groupings. More detailed predictions according to socio-economic breakdowns are not obtainable for Winnipeg. Three projections to the year 1991 were made in the above report, based on high, medium and low estimates. The first of the three estimations, which assumes a natural increase rate of 13.47 per 1000 persons and a migrational rate of 25 percent of the total growth, implying an average annual growth rate of 1.8 percent for the period 1966 to 1991 (Metro, Planning Division, 1968, p. 48) will be employed in the calculations in this chapter. This decision was based on tabulations published by the

Manitoba Government (Manitoba, Continuing Programs Secretariat, 1971). These governmental statistics are considered most accurate, because they have been derived from registrations of Manitoba inhabitants, all of whom must belong to the provincial health scheme. The 1971 population figure for Metropolitan Winnipeg, as compiled from this publication, is 551,215 persons. The projection which is closest to this figure is one which has been calculated from the high estimate. It is tabled as follows:

TABLE 14
POPULATION PROJECTIONS OF THE METROPOLITAN
WINNIPEG AREA 1966-1991

Year	No. of Persons
1966	504,176
1971	551,378
1976	603,001
1981	659,455
1986	721,198
1991	788,723

Source: Metropolitan Corporation of Greater Winnipeg, Planning Division, Metropolitan Winnipeg Population Report 1966-91 (Winnipeg, 1968), p. 105.

Using the average annual growth rate of 1.8 percent, projected figures on a yearly basis from 1971 to 1976 and

1981 are computed (the 1981 estimate has been included as a point of interest). Since the "Metro" report was published in 1968, the statistic for 1971 was a projected figure, but since then it has been possible to establish a more accurate number from the Manitoba Health Department's records. Consequently, the results as listed below (Table 15) are slightly different from Table 14.

TABLE 15
REVISED POPULATION PROJECTIONS OF WINNIPEG
1971 - 1976 AND 1981

Year	No. of Persons
1971	551,215
1972	561,137
1973	571,237
1974	581,520
1975	591,987
1976	602,643
-	-
1981	658,869

The above figures will be used in the projection for demand in camping by Winnipeg residents.

PROJECTIONS OF CAMPING DEMAND

Potential demand for camping can be projected by

combining per group participation and population forecasts. The estimated demand for each year (from 1971 - 1976) can be computed by utilizing a consistent annual growth rate of population and a constant per group use (Table 16). The resulting projection will be essentially linear in design. Although the primary concern in this section is with demand during 1971 - 1976, a calculation will be made for 1981 merely as a matter of interest. The latter figure would not be accurate, because per party participation will no doubt change over a period of ten years and population is unlikely to increase at the same rate over the same interval. The annual demand for camping during the projected years is listed as follows:

TABLE 16

INITIAL PROJECTED CAMPING DEMAND

Year	Population (Groups) (X)	Per Group Use (Y)	Future Demand (Groups) (XY)
1971	137,803.75	0.62	85,438
1972	140,284.25	0.62	86,976
1973	142,809.25	0.62	88,542
1974	145,380.00	0.62	90,136
1975	147,996.75	0.62	91,758
1976	150,660.75	0.62	93,410
-	-	-	-
1981	164,717.25	0.62	102,125

The constant per group participation of 0.62 over the projected years as used in the above table would not materialize for obvious reasons. In order to determine the change in the per party use, the best available information, in the form of camper permit sales for Manitoba from 1959 to 1970, was employed. The number of permits sold each year was divided by the population of Manitoba for the corresponding year to obtain per group participation figures which are listed in Table 17. Columns two to five (population, percentage increase, camping permits, percentage increase) indicate that camping has increased at a phenomenal rate over and above population growth. Consequently, the constant per group use as shown in Table 16 has to be adjusted accordingly for future demand values to be reasonable. A modified exponential curve with a performance test value of 0.9763 was found to have the best fit, and extrapolations up till 1976 were made from it (Table 17, last column, and Figure 12). A number of studies (Burch and Wenger, 1967; King, 1965, p. 6.; Stone and Taves, 1958, pp. 291 - 292) have shown that most campers originate from an urban environment, and since Metropolitan Winnipeg accounts for approximately half of the population of Manitoba, it is within reason to assume a similar modified exponential curve for the camping groups from this city. The following results are achieved:

TABLE 17

CAMPING GROWTH IN MANITOBA

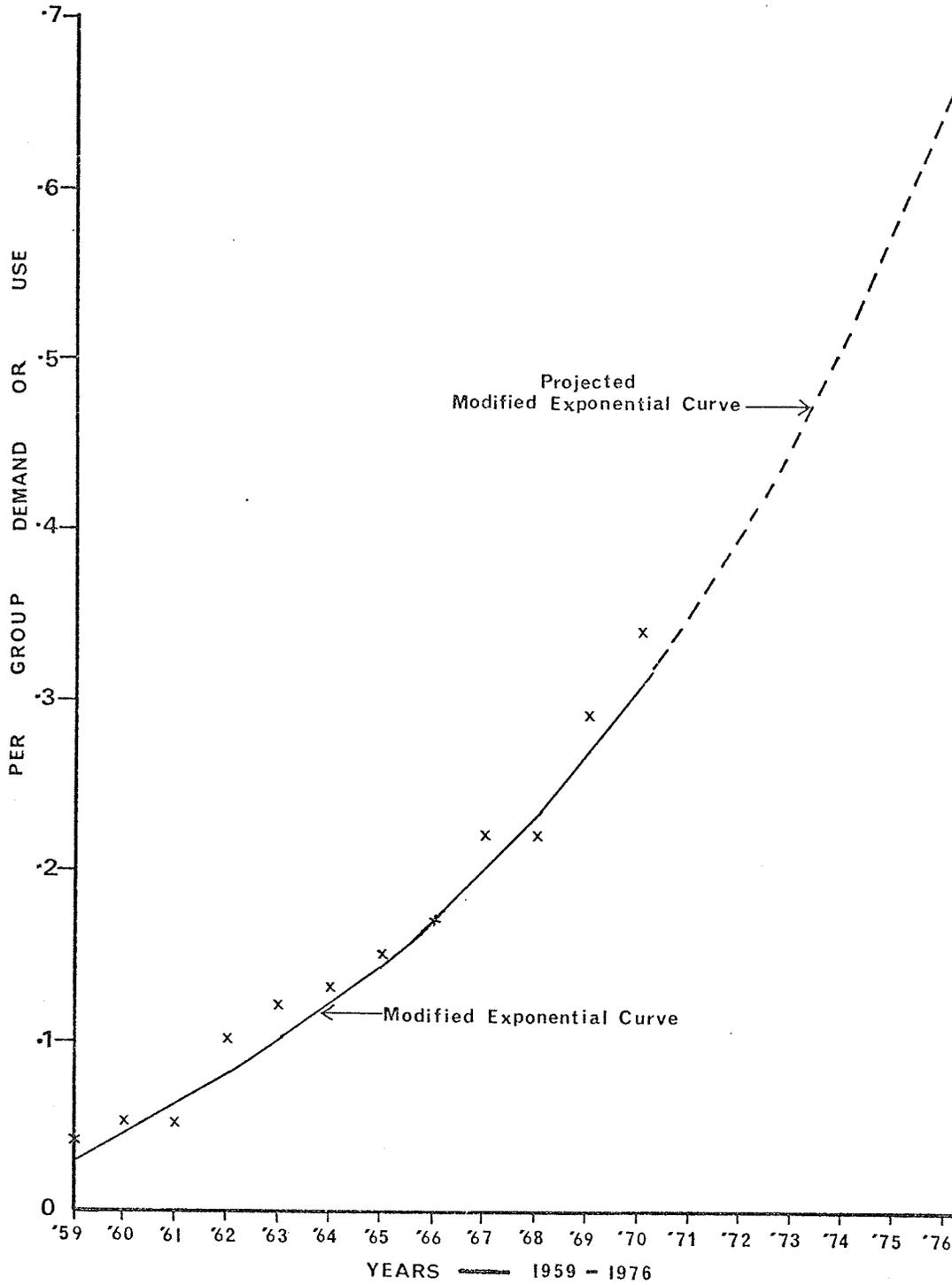
Year	Population (Groups) ^a (X)	% Increase	Camping Permits ^b (Y)	% Increase	Actual Per Group Use (Y/X)	Per Group Values for Modified Exponential Curve
1959	221,150		8,116		0.04	0.033
1960	224,750	1.6	10,938	34.8	0.05	0.048
1961	230,500	2.6	11,977	9.5	0.05	0.064
1962	233,750	1.4	22,423	87.2	0.10	0.081
1963	237,500	1.6	28,696	28.0	0.12	0.101
1964	239,500	0.8	30,624	6.7	0.13	0.122
1965	240,500	0.4	35,594	16.2	0.15	0.146
1966	240,750	0.1	41,466	16.5	0.17	0.173
1967	240,750	0.0	52,697	27.1	0.122	0.202
1968	242,750	0.8	54,227	2.9	0.22	0.234
1969	244,750	0.8	69,908	28.9	0.29	0.270
1970	245,250	0.2	83,784	19.8	0.34	0.310
1971						0.354 ^c
1972						0.403
1973						0.457
1974						0.517
1975						0.584
1976						0.657

^aCanadian Statistical Review, 1959 Supplement, Vol. 34, Table 4, pp. 8-11; and April 1971, Table 1, p. 18.

^bAs each camper group receives one permit, it is reasonable to equate one permit with one group.

^cFigures below this line are extrapolated.

Graph Showing Actual and Projected Per Group Use (1959 - 1976)



x - Actual per group use

Figure 12

TABLE 18

ADJUSTED PROJECTED CAMPING DEMAND FOR WINNIPEG RESIDENTS

Year	Population (Groups) (X)	Per Group Participation (Y)	Future Demand (Groups) (XY)	Percent Change
1970	135,367.25	0.62	83,346*	
1971	137,803.75	0.67	92,329	10.7
1972	140,284.25	0.72	101,005	9.4
1973	142,809.25	0.77	109,963	8.9
1974	145,380.00	0.83	120,665	9.7
1975	147,996.75	0.90	133,197	10.4
1976	150,660.75	0.97	146,141	9.7
			TOTAL:	58.8
				$\bar{X} = 9.8\%$

*Actual number of camper groups.

The continued rate of increase will reach a saturation point, and will start to level off or decrease some time in the future. The actual number of camper groups may still increase, but the rate would decline somewhat. Based on past trends, it is impossible to determine where this inflection in the growth curve would occur. For the purpose of this thesis, it is taken for granted that the inflection will not occur by the year 1976. The newly adjusted figures for camping (Table 18) will be used as the basis for further calculations.

DELIMITATION OF TRAVEL-TIME ZONES

Although future demand for camping is of importance when expressed in terms of quantity alone, it is even more useful to establish the distribution of this demand. PARIS is concerned with almost all outdoor recreation activities, but in this thesis, only demand for camping by Winnipeg residents is considered. Therefore, the travel-time zones which have been developed by PARIS have been modified to suit the local situation. These zones were "determined from the central point of population concentration within a metropolitan area" (California, 1966b, p. 7), and they were also delineated as single-trip, time-distance zones, although consideration was given to the time and distance involved in a round trip. Except for the concept of the return trip, these principles were used in delimiting zones for camping by Winnipeg residents. As camping subsumes at least an overnight stay at the campground, the round trip to the park and back to the home would, in fact, be considered as two single trips on separate days for the camper. Consequently, zones depicting travelling time for one trip need be demarcated here.

A total of five zones would be defined around Winnipeg, ranging from zero-to-one hour to over-four hours travelling time in a vehicle. Only the northern parks could be reached by more than four hours of driving, whereas the use would go outside the province in the south, and it was decided that

there was no necessity to add more zones.

The central point of origin is Winnipeg, but all calculations are taken from the Perimeter Highway. An average travelling time of twenty minutes was allowed for in-city driving. Different classes of roads enable varying speeds, which in turn affect the time factor. Furthermore, it was assumed that the average family would take routine rest stops and would usually travel at speeds somewhat lower than the legal limit. An average speed of 65 miles-per-hour was designated for all multi-lane or divided highways, with a maximum speed limit of 70 miles-per-hour. The two-lane, paved highways with a maximum speed limit of 60 miles-per-hour were assessed an average speed of 50 miles-per-hour. The gravel roads were given an average speed of 45 miles-per-hour. In addition, only the main routes to the various campgrounds were used in the calculation and delimitation of the travel-time zones (Figure 13b). The overlay (Figure 13a) graphically depicts the pattern of roads which were used to delineate the zones, and it also shows the relationship of these principal thoroughfares to the campgrounds. It can be observed that the roads radiate fairly evenly from Winnipeg, and this phenomenon enables the zones to assume an almost circular concentric form.

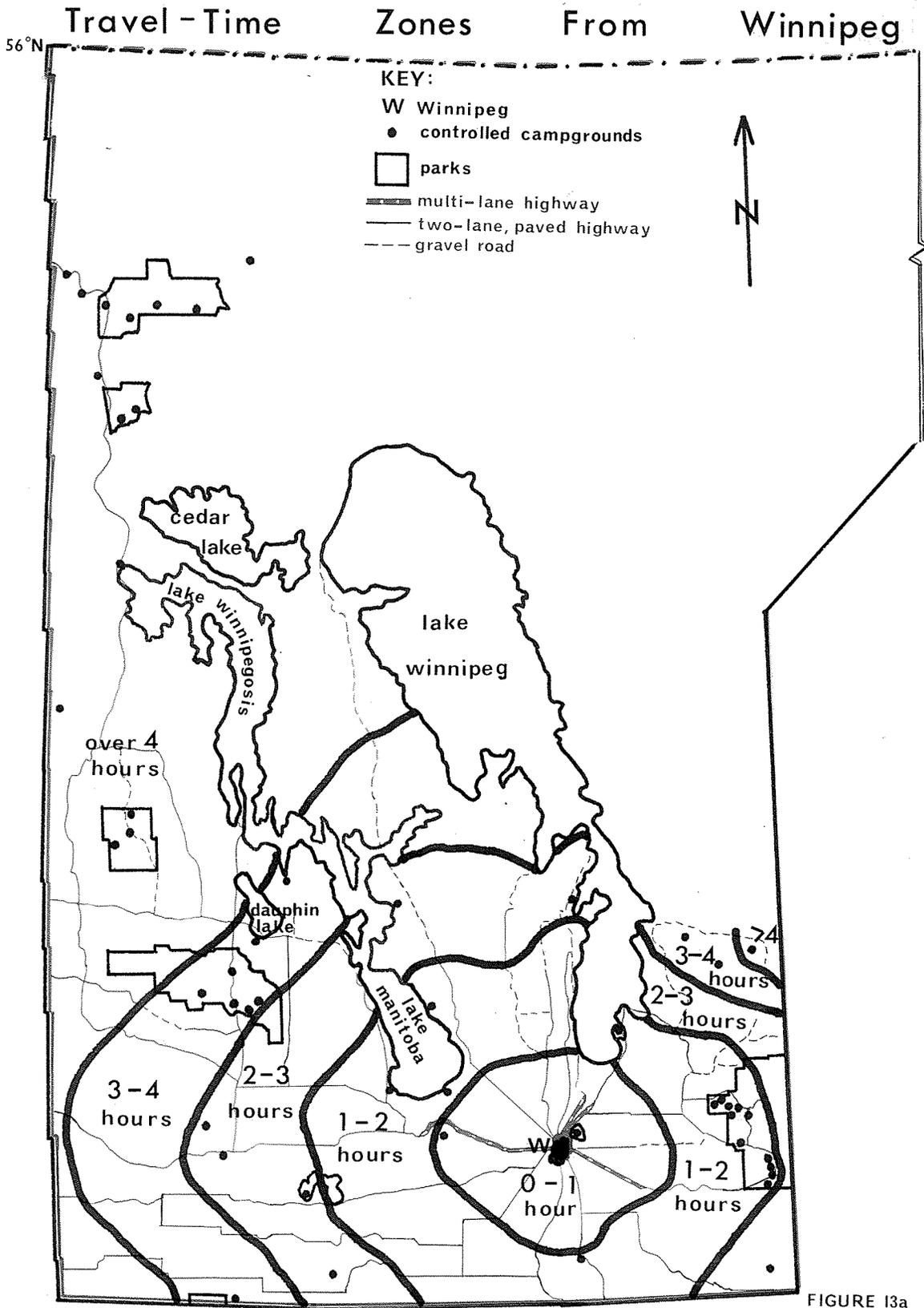


FIGURE 13a

FIGURE 13b

TABLE 19

LIST OF CONTROLLED CAMPGROUNDS BY TRAVEL-TIME ZONES

Travel-Time Zone	No. of Winnipeg Parties (1970 Summer Season)	No. of Sites
<u>0-1 Hour</u>		
Birds Hill	4,461	220
Norquay Beach	<u>931</u>	<u>124</u>
Sub-Total	5,392	344
<u>1-2 Hours</u>		
Grand Beach	11,814	430
Lundar Beach	139	32
Lynch's Point	526	54
Saint Ambroise	1,233	70
Saint Malo	4,424	127
Whiteshell Campgrounds:		
Betula Lake	1,769	40
Big Whiteshell Lake	2,838	152
Brereton Lake	1,524	96
Caddy Lake	1,034	110
Falcon Lake (2 locations)	15,733	421
Nutimik Lake	2,519	300
Opapiskow Lake	1,660	62
Otter Falls	2,288	114
Toniata Beach	1,534	100
West Hawk Lake	7,635	345
White Lake	<u>2,545</u>	<u>77</u>
Sub-Total	59,215	2,530
<u>2-3 Hours</u>		
Beaver Creek	89	10
Grand Valley	231	75
Moose Lake	762	50
Rivers	75	63
Rock Lake	301	30
Kitchi Manitou (Spruce Woods)	1,062	121
Watchorn Bay	<u>160</u>	<u>10</u>
Sub-Total	2,680	359

TABLE 19--CONTINUED

Travel-Time Zone	No. of Winnipeg Parties (1970 Summer Season)	No. of Sites
<u>3-4 Hours</u>		
Caribou Lake	219	30
Manipogo Beach	331	40
Rainbow Beach	317	54
Wanipigow Lake	681	50
William Lake	175	20
Riding Mountain Campgrounds:	8,068 (1969)	
Audy Lake		50
Lake Catherine		110
Moon Lake		25
Wasagaming		532
Whirlpool Lake		<u>15</u>
Sub-Total	<u>9,791</u>	<u>926</u>
<u>Over 4 Hours</u>		
Bakers Narrows	830	56
Cranberry Portage	293	20
Manistikwam	84	20
Overflowing River	209	20
Rocky Lake	352	40
Wallace Lake	849	82
Wekusko Falls	274	24
Whitefish Lake	49	50
Clearwater Lake Campgrounds:		
Camper's Cove	283	22
Pioneer Bay	403	62
Duck Mountain Campgrounds:		
Blue Lake	1,376	90
Childs Lake	338	50
Wellman Lake	407	50
Grass River Campgrounds:		
Iskwasum Landing	282	34
Reed Lake	154	21
Simonhouse Lake	85	<u>12</u>
Sub-Total	<u>6,268</u>	<u>653</u>
Total	83,346	4,812

DISTRIBUTION OF CAMPING BY TRAVEL-TIME ZONES

From Figure 13b, it is possible to determine the campgrounds that are located in each time-distance zone. Complete camping participation figures for Winnipeg campers for the entire season are only available for controlled campgrounds in 1970. Fortunately, it was possible to gain access and subsequently to use this data through the courtesy of the Research and Planning Branch of the Department of Tourism, Recreation and Cultural Affairs. This information had been laboriously compiled from the actual camping permits sold during the 1970 season at campgrounds throughout Manitoba. No such figures could be obtained for Riding Mountain National Park, because it is under federal jurisdiction and functions independently. In this case, the 1969 CORDS material was used. A detailed list of the campgrounds grouped into travel-time zones and the number of camping parties from Winnipeg for the 1970 season is shown in Table 19.

A percentage break-down of the 1970 participation in the five zones are listed in Table 20:

TABLE 20
CAMPING PARTICIPATION BY TRAVEL-TIME ZONES

Travel-Time Zones	No. of Parties for 1970	% of Total
0-1	5,392	6.47
1-2	59,215	71.05
2-3	2,680	3.22
3-4	9,791	11.75
Over 4	6,268	7.52
TOTAL:	83,346	100.01

From an examination of Table 20, it is evident that the one-to-two hour travel-time zone with 71.05 percent of the participation is the most popular for Winnipeg campers, and bears almost no resemblance to the pattern of distribution as determined by PARIS (California, 1966b, Figure 11, p. 17). In the California situation, camping use increased from 11.6 percent in the zero-to-one hour zone to 27.5 percent in the one-to-two hour zone, and to 30.8 percent in the two-to-four hour zone. The over-four hour zone witnessed a decline in participation to 30.1 percent; 16.0 percent of this use included out-of-state visitors. There are two obvious explanations for the intensive pressure on the one-to-two hour travel zone in Manitoba. The Whiteshell Provincial Park is the main attraction and accounts for 69.4 percent of camping in this area. Without this park, the

distribution of participation would most certainly be different. Furthermore, this zone is ideal for camping excursions on the weekend, when a great proportion of this activity occurs. This phenomenon can be demonstrated further by comparing the percentage of use in each zone with the percentage of the number of sites in the corresponding zone.

TABLE 21
COMPARISON BETWEEN PERCENT OF USE AND PERCENT
OF SITES IN EACH TIME-DISTANCE ZONE

Travel-Time Zones	No. of Sites	Percent of sites	Percent of use
0-1	344	7.15	6.47
1-2	2530	52.58	71.05
2-3	359	7.46	3.22
3-4	926	19.24	11.75
Over 4	653	13.57	7.52
TOTAL:	4812	100.00	100.01

The one-to-two hour zone is the only one which shows a greater percentage of use as opposed to the percentage of campsites available. The three-to-four hour zone ranks second in use, because of the presence of Riding Mountain National Park which attracted 82.4 percent of the campers in this area. In California, the gradual increase and decrease

in participation in terms of travel-zone-hours may be dependent on the willingness of people to drive certain distances, but in Manitoba, it appears that the distribution of the campgrounds is more important, and this fact exemplifies the impact of the resource on use.

Using these percentage distributions, it is possible to approximate the number of campers in each zone for the whole season. By utilizing the projected camping demand figures to 1976, a similar procedure will determine analogous breakdowns for those years (Table 22).

THE PEAK SEASON DISTRIBUTION OF CAMPING USE

Besides ascertaining where camping demand would most likely occur, it is also desirable to determine when the demand would be highest. In order to achieve this goal, PARIS examined "some attendance records of selected recreation areas throughout the State" (California, 1966b, p. 21) to discover what percentage of the total demand occurs on peak days. Data for the peak season use of Winnipeg campers is not readily attainable, and consequently, statistics of this form have to be compiled from a variety of sources. The camping season officially begins by the third weekend in May and campgrounds generally remain open till the last weekend in September (Manitoba, Department of Tourism and Recreation, Tourist Branch, 1971,

TABLE 22

CAMPING USE AND DEMAND BY TRAVEL-TIME ZONES (1970-1976)

Travel-Time Zones	Percent Participation	1970 ^a	1971 ^b	1972	1973 (Groups)	1974	1975	1976
0-1 Hour	6.47	5392	5974	6535	7115	7807	8618	9455
1-2 Hours	71.05	59215	65600	71764	78129	85732	94636	103833
2-3 Hours	3.22	2680	2973	3252	3541	3885	4289	4706
3-4 Hours	11.75	9791	10849	11868	12921	14178	15651	17172
Over 4 Hours	7.52	6268	6943	7596	8269	9074	10016	10990
Total	100.01	<u>83346</u>	<u>92339</u>	<u>101015</u>	<u>109975</u>	<u>120676</u>	<u>133210</u>	<u>146156</u>
Actual Total		83346	92329	101005	109963	120665	133197	146141

^aActual number of parties (party-nights) for 1970.

^bFigures for 1971-1976 have been derived from percent participation.

p. 26). The peak season usually occurs during the two months of July and August at the great majority of parks. July and August are the warmest months of the year and the school vacation period also occurs at the same time. In some of the northern parks, however, the month or months of greatest attendance may coincide with the height of the fishing and hunting seasons. When there is deviation from the mode, the peak seasons will be chosen accordingly.

The method that is adopted here is based on camping permit sales. "Manitoba Park Statistics 1970" enumerates the types of permits sold monthly. There are three classifications of permits: daily, weekly and seasonal. The seasonal permits have not been considered, because they are rare when compared to the other two categories, and it is almost impossible to estimate from the data how often these permit holders camp during the peak season. The omission of seasonal passes results in some under-counting. The weekly permits are all weighted by seven, and therefore assumes that a camper unit with such a pass would stay in the campground for the duration of the permit. There is probably some over-counting in this instance, because weekly passes are sold at a slight discount, and some campers may still consider it worth their while to buy such a pass even though they do not intend to stay for the length of the permit. The results for each supervised campground in Manitoba are enumerated in Table 23. The first column of

TABLE 23

1970 PEAK SEASON CAMPING IN PERCENTAGE BY TRAVEL-TIME ZONES

Campground	<u>1970 Peak Season</u>			<u>1970 Season</u>	Peak Season % (% of Total Season) (XY/Z)(100)
	Total No. of Groups (X)	Percent Winnipeg (Y)	Number Winnipeg (XY)	Number Winnipeg (Z)	
<u>0-1 Hour Zone</u>					
Birds Hill	8724	27.27	2379.03	4461	53.33
Norquay Beach	5654	11.13	629.29	931	67.59
	Total 14378		3008.32	5392	
	Percentage for Zone	20.92			55.79
<u>1-2 Hour Zone</u>					
Grand Beach	8615	81.88	7053.96	11814	59.71
Lundar Beach	165	46.67	77.01	139	55.40
Lynch's Point	741	32.90	243.79	526	46.35
Saint Ambroise	940	76.76	721.54	1233	58.52
Saint Malo	3578	74.57	2668.11	4424	60.31
Brereton Lake	1132	76.63	867.45	1524	56.91
Caddy Lake	825	71.54	590.21	1034	57.08
Falcon Lake (2 sites)	17296	43.16	7464.95	15733	47.45
Nutimik Lake	1498	79.75	1194.66	2519	47.43
Opapiskow	1004	78.83	791.45	1660	47.68
Otter Falls	1433	74.39	1073.45	2288	46.92
Toniata Beach	992	89.62	899.03	1534	57.96
West Hawk Lake	6301	63.78	4018.78	7635	52.64
White Lake	1431	78.14	1118.18	2545	43.94
	Total 45951		28782.57	54608	
	Percentage for Zone	62.64			52.71

TABLE 23--CONTINUED

Campground	<u>1970 Peak Season</u>			<u>1970 Season</u>	Peak Season % (% of Total Season) (XY/ZX100)
	Total No. of Groups (X)	Percent Winnipeg (Y)	Number Winnipeg (XY)	Number Winnipeg (Z)	
<u>2-3 Hour Zone</u>					
Kitchi Manitou Rivers	1731	39.21	678.73	1062	63.91
Grand Valley	632	4.11	25.98	75	34.64
Moose Lake	2521	8.62	217.31	231	94.07
	<u>671</u>	59.04	<u>396.16</u>	<u>762</u>	51.99
Total	5555		<u>1318.18</u>	<u>2130</u>	
Percentage for Zone		23.73			61.88
<u>3-4 Hour Zone</u>					
Caribou Lake	156	52.14	81.34	219	37.14
Wanipigow Lake	400	75.07	300.28	681	44.09
Manipogo Beach	<u>1565</u>	15.02	<u>235.06</u>	<u>331</u>	71.02
Total	2121		<u>616.68</u>	<u>1231</u>	
Percentage for Zone		29.07			50.10

TABLE 23--CONTINUED

Campground	<u>1970 Peak Season</u>			<u>1970 Season</u>	Peak Season % (% of Total Season) (XY/Z)(100)
	Total No. of Groups (X)	Percent Winnipeg (Y)	Number Winnipeg (XY)	Number Winnipeg (Z)	
<u>Over 4 Hour Zone</u>					
Bakers Narrows	1795	32.47	582.84	830	70.22
Manistikwam	249	23.63	58.84	84	70.05
Overflowing River	898	19.95	179.15	209	85.72
Rocky Lake	967	28.27	273.37	352	77.66
Wallace Lake	667	76.54	510.52	849	60.13
Wekusko Falls	1125	18.52	208.35	274	76.04
Whitefish Lake	225	14.29	32.15	49	65.61
Blue and Singush Lakes	1883	38.10	717.42	1376	52.14
Childs Lake	777	15.24	118.41	338	35.03
Camper's Cove	613	17.26	105.80	283	37.39
Pioneer Bay	1133	17.08	193.52	403	48.02
Iskwasum Landing	995	19.90	198.01	282	70.22
Reed Lake	672	8.21	55.17	154	35.82
Cranberry Portage	675	22.95	154.91	293	52.87
	<u>Total</u>	<u>12674</u>	<u>3388.46</u>	<u>5776</u>	
	Percentage for Zone		26.74		58.66

figures apply to all campers in Manitoba campgrounds, and in order to isolate the Winnipeg campers, several procedures had to be taken. Firstly, percentages for attendance by Manitobans were presented in "Manitoba Park Statistics 1970", but not for Winnipeg residents alone. From the actual camping permits, the Research and Planning Branch had established the proportion of Winnipeg campers to those of Manitobans. These two sets of figures were combined in order to produce the percentage of Winnipeg campers in relation to all camping parties to the parks. This final value enabled the actual number of peak season users from Metropolitan Winnipeg to be calculated, and it was completed for almost all controlled campgrounds (Table 23). (The campground statistics for some parks, especially for those in the two-to-three hour zone were not available, and therefore it was eliminated.) Finally, the percentage of peak season use as opposed to total attendance could be computed (Table 23). The percentage for each travel-time zone was further determined by calculating the arithmetic mean for the parks in each zone. Although the arithmetic means which have been derived for the last three zones varied between 50.10 percent and 61.88 percent, the actual percentages for the individual parks showed some extremes at both ends of the continuum (Table 23). Using these figures, it was possible to calculate the actual peak season attendance for 1970, and the projected values to 1976 (Table

TABLE 24

PEAK SEASON USE AND DEMAND BY TRAVEL-TIME ZONES (1970-1976)

Travel- Time Zones	Percent Partici- pation	1970	1971	1972	1973 (Groups)	1974	1975	1976
0-1 Hour	55.79	3008	3333	3646	3969	4356	4808	5275
1-2 Hours	52.71	31212	34578	37827	41182	45189	49883	54730
2-3 Hours	61.88	1658	1840	2012	2191	2404	2654	2912
3-4 Hours	50.10	4905	5435	5946	6473	7103	7841	8603
Over 4 Hours	58.66	3677	4073	4456	4851	5323	5875	6447

24).

CAMPSITES REQUIRED

The purpose of this section of the system as outlined by PARIS is to arrive at some guideline for the level of development of outdoor recreational facilities. Only a small part has been incorporated into this segment of the thesis, because its scope does not allow for the establishment of guidelines nor for accurately determining the extent of the supply capacity.

From the foregoing calculations, it is possible to approximate the number of campsites which may be needed by the year 1976. The number of campsites available in 1970 are listed in the first section of Table 25 according to the different travel-time zones. Since this thesis deals only with Winnipeg campers, it is necessary to determine the percentage of Winnipeg use. Ultimately, it is possible to isolate the actual number of campsites used by Winnipeg campers (Table 25) during the 1970 season. This procedure may be demonstrated by using the zero-to-one hour time-distance zone as an example. The number of sites which are available to the Winnipeegers is seventy-two. This number would accommodate one percent of all Winnipeg camper groups in 1970, but if two percent of the camper parties decided to participate in this activity on the same night,

TABLE 25

LEVEL OF CAMPSITE USE AND DEMAND COMPARED TO
EXISTING AND PROPOSED SUPPLY

<u>Existing Supply</u>			
Travel- Time Zones	Total No. of Campsites (X)	Winnipeg Use (Percent)	Winnipeg Use (Sites) (XY)
0-1 Hour	344	20.92	72
1-2 Hours	2530	62.64	1585
2-3 Hours	359	23.73	85
3-4 Hours	926	29.07	269
Over 4 Hours	653	26.74	175
Total	4812		2186

Existing and Proposed Participation

0-1 Hour Zone

<u>1970 Use</u> (Parties)	<u>1976 Demand</u> (Parties)
1% -- 54	1% -- 95
2% -- 108	2% -- 189
3% -- 162	3% -- 284
4% -- 216	4% -- 378
5% -- 270	5% -- 473

1-2 Hour Zone

<u>1970 Use</u> (Parties)	<u>1976 Demand</u> (Parties)
1% -- 592	1% -- 1038
2% -- 1184	2% -- 2077
3% -- 1776	3% -- 3115
4% -- 2369	4% -- 4153
5% -- 2961	5% -- 5192

TABLE 25--CONTINUED

Existing and Proposed Participation2-3 Hour Zone

<u>1970 Use</u> (Parties)	<u>1976 Demand</u> (Parties)
1% -- 27	1% -- 47
2% -- 54	2% -- 94
3% -- 80	3% -- 141
4% -- 107	4% -- 188
5% -- 134	5% -- 235

3-4 Hour Zone

<u>1970 Use</u> (Parties)	<u>1976 Demand</u> (Parties)
1% -- 98	1% -- 172
2% -- 196	2% -- 343
3% -- 294	3% -- 515
4% -- 392	4% -- 687
5% -- 490	5% -- 859

Over 4 Hour Zone

<u>1970 Use</u> (Parties)	<u>1976 Demand</u> (Parties)
1% -- 63	1% -- 110
2% -- 125	2% -- 220
3% -- 188	3% -- 330
4% -- 251	4% -- 440
5% -- 313	5% -- 550

Suggested approximate number of sites needed to meet 1.0 percent to 1.5 percent of the 1976 demand:

<u>Zones</u>	<u>Number of Sites</u>
0-1 Hour	90-140
1-2 Hours	1040-1560
2-3 Hours	50-70
3-4 Hours	170-260
Over 4 Hours	110-160

theoretically, there would be over-crowding. Similar statistics can be computed for other zones and for the projected years (Table 25). (The purpose of this section is served by showing 1976 demand values only in Table 25.) Comparisons can then be made in order to discover where pressures on the facilities will be greatest. It can be observed that there are enough facilities to handle one percent of the campers simultaneously even in 1976, except for the zero-to-one hour zone. On some peak days, such as the long weekends in summer, it is possible for attendance at the campgrounds to reach two to three percent of the total demand, and in theory, there would not be enough campsites to handle this flood of campers. This occurrence is uncommon, and it would not be economical to expand campgrounds just to accommodate this rare influx. A decision has to be made concerning the number of additional sites needed to reduce overcrowding to a minimum. PARIS has recommended that,

"a reasonable first objective from the standpoint of economics is to provide camping facilities to satisfy one and one-half percent of the total summer camping demand on any one night, which will result in about 19 over-crowded days."

(California, 1966, p. 22)

The number of sites which would accommodate 1.0 to 1.5 percent of total camping demand in 1976 was found to be

suitable for Winnipeg (final section, Table 25), especially when there are considerably less "over-capacity days" than in California. In comparing the proposed number of sites to those already present, it is the zero-to-one hour time-distance zone which needs expansion. An addition of about 18 to 68 sites would be required (Table 25), and according to the Canada Land Inventory classification for outdoor recreation, there is enough suitable land for such a small number of sites in this zone. The other zones appear to provide adequate supply without requiring new facilities.

The figures which have been shown here represent only a small part of the input required for this section of the system. These statistics deal exclusively with Winnipeg campers, and it is reasonable to assume that there will be changes if other aspects of camping are considered. For example, the non-Winnipeg campers will most certainly affect these statistics in their present form, and it is important that these figures be considered in their correct context.

CONCLUSIONS

The calculations in this chapter show that there will be a projected increase of 58.8 percent over the period 1971 to 1976 (inclusive), and an approximate average yearly growth of 9.8 percent (Table 18). This percentage increase also includes the 1.8 percent growth per annum of the

population of Metropolitan Winnipeg. The distribution of this demand has been determined both spatially and temporally. The one-to-two hour zone shows an area of very high significance for Winnipeg campers, especially during the months of July and August. Despite the popularity of the one-to-two hour zone, the last section indicates that it is equipped to handle the pressures exerted upon it. It is the zero-to-one hour time-distance zone which requires expansion of facilities.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

Several features of camping by Winnipeg residents have been established in the previous chapters. The socio-economic characteristics of the majority of the campers closely parallel the results of other researchers in the field. The head of the camper party earns between \$6,000 and \$7,999, has at least a high school education, and occupies a professional or clerical position (a tertiary occupation). The camper party usually is comprised of young parents and small children. Camping trips to the park generally do not extend for more than two days, and tent trailers are becoming increasingly popular as a mode of accomodation. Activities such as swimming, picnicking and driving for pleasure occupy most of the campers' time in the parks. The average size of the party is four persons, a figure which corresponds to results from PARIS and other studies.

The per party participation based on gross population and attendance figures has been established at 0.62 group-nights. It must be emphasized that there are fairly

significant differences in the per group participation of each socio-economic sub-category, and these values serve to point out the varying use patterns among the social classes. In other words, the detailed per group use statistics show what section of the population camps more often than others, or who would be more likely to undertake this activity. In the case of Winnipeg residents, the figures indicate that families in the middle-income classes (\$6,000-\$10,000) with family heads who hold "managerial" or "professional and technical" occupations, and who have received a university education, are highly active in camping.

The main part of this thesis deals with the forecast of camping demand by Winnipeg residents at provincial parks from 1971 to 1976. The two criteria, which have been used for projecting camping demand in this work, are population forecasts and changes in per party participation over the years. It was discovered that the second criterion is very important in the case of Winnipeg campers, because of the spectacular growth in camping in the province over the last decade while the population has remained fairly stable. Using the 1971 population as derived through the Manitoba health records, "Metro's" population projection has been revised, and the new figure for 1976 is calculated to be 602,643. Projected camping demand or future use has been computed for each year from 1971 to 1976 by using per group participation and the population statistics for the

corresponding years. By 1976, there is a projected number of 146,141 group-nights as opposed to 83,346 in 1970.

The distribution of this projected participation has been expressed in terms of five travel-time zones delineated for Manitoba, with Winnipeg as the central point. Almost three-quarters (71.05 percent) of the total use occurred in the one-to-two hour zone, and 69.4 percent of these parties camped at the Whiteshell Provincial Park. This concentration of use in one area exemplifies the importance of supply in attracting demand or consumption, and also the fact that it is at an ideal distance from the population centre for weekend visits. The three-to-four hour zone contains the next highest percentage of participation (11.75 percent) and 82.4 percent of this use is focussed in the Riding Mountain National Park, which contains fairly large campgrounds. The peak camping season generally occurs during the two warmest months, July and August, which also coincides with the schools' summer holidays. The more crowded period for campgrounds in northern Manitoba, on the other hand, varies between spring and fall, corresponding with the fishing and hunting seasons.

An exploratory investigation into the present level of campsite development and projected peak season demand has been included, in order to learn whether the facilities will be able to cope with these pressures. A supply geared towards fulfilling the demands of 1.0 percent to 1.5 percent

of the projected use in 1976 was found to be adequate in all zones, except for the zero-to-one hour belt.

AN EVALUATION OF PARIS

"The Park and Recreation Information System was developed...to provide administrators and planners of outdoor recreation areas and facilities with information on the adequacy of the supply of outdoor recreation opportunities available to the residents of and visitors to California."

(California, 1966b, p.1)

PARIS succeeds well in fulfilling this objective, because its method of comparing demand and supply is useful in indicating whether there will be deficiencies or surpluses in the outdoor recreation system. To reiterate a point made in Chapter I, PARIS is logical and mathematically simple, and therefore relatively easy to understand.

The plan itself may be transferred to other locations besides California, and a fairly successful adaptation can be made in Manitoba (providing suitable data is available), with only a few changes. The input required by PARIS are relatively easy to collect, except perhaps for population projections in terms of socio-economic characteristics, and statistics on privately-operated recreational facilities.

PARIS does not make actual policy decisions for dealing

with shortages or excesses in supply, but it produces recommendations to provide a framework for action programs in localized areas. PARIS provides suggestions for planners to try and achieve a reasonable target which will minimize rather than eliminate the deficiencies, because it accounts for various priorities and also the economic situation of the locality. Such considerations are realistic and especially important in areas where funds for recreation are not unlimited. Besides actually determining the future supply needed, PARIS also identifies this supply in terms of space and time, which is important in discovering where and when pressures on facilities are greatest.

One of the main weaknesses of PARIS is that there are no provisions for changes in per capita or per group participation, and how such variations will affect future use. Ultimately, the projections are based directly on population growth. In Manitoba, for example, where the growth of camping participation differs greatly from population increase, the dependence on population projections alone for forecasts of camping demand is undesirable. PARIS is bold enough to use the same per capita figure for demand projections until 1980, however, it does concede to constant up-dating of data as being vital.

A second criticism which may be directed at PARIS is that the plan does not measure latent or potential demand successfully. Where there is high participation in a

certain activity, such as camping in Manitoba, demand would also be high. In an extreme case where no participation exists, there would be no demand. This fault of PARIS is not severe, because it is difficult to obtain an operational definition of latent demand, and therefore, it is also difficult to measure such demand. Another shortcoming of the study is that it is vaguely expressed in many areas. Often, results of various calculations are given without any explanation of the methods involved.

As successors to PARIS, studies based on this plan have been completed for all Standard Metropolitan Statistical Areas in California. These monographs are in fact practical applications of PARIS. Unfortunately, the conclusions from these later works are vague and indefinite. Several factors such as the increase in leisure time, variations in the socio-economic structure and the popularity of certain outdoor recreational activities have been considered seriously, and forecasts have been made of possible changes, but how these features can be incorporated into the model are not discussed.

Despite such imperfections, PARIS is a plan which is reasonable in its scope, and is useful as an information system. It can be easily applied to the Manitoba situation with some minor changes and improvements. This study is dynamic, because new factors may be included and existing features up-dated. This plan has been computerized in

California, and it is possible to achieve this goal in Manitoba as well.

B. RECOMMENDATIONS

It is obvious at this stage that one of the major difficulties encountered in this thesis is the availability of suitable data. The best available information is unfortunately rather unreliable, and recommendations towards gathering more accurate statistics have to be made. The idea of the CORD study is excellent, but the organization, the collection and the processing of the survey leaves itself open to many criticisms. There is, however, no desire to comment further on the technical errors of CORDS. The following suggestions are based on the experiences encountered during the preparation of this thesis, and it is hoped that the remarks will be useful to other researchers in the field:

1. Manitoba lacks information and research into the motivational aspect of its campers, and it is this knowledge which aids in the understanding of camping demand. The CORD study has furnished statistics which pertain to the composition and the activities of the camper parties, but it is difficult to state the reasons or the background of certain socio-economic (or behavior and travel) patterns which occur among the campers, without additional

information about their incentives and attitudes as they relate to this specific activity. Studies of this nature have been conducted in other areas (Bultena and Klessig, 1961, pp. 348-354; Burch, 1969, pp. 125-247; Etzkorn, 1964, pp. 76-89; Hendee and Campbell, 1969, pp. 13-16). While it is possible to borrow the results from other works and adapt them to the local situation, there is no guarantee that this procedure will be successful, as the results which have been found in other vicinities may not be applicable to the circumstances present in this province. Hence, it is important to collect similar data for Manitoba campers.

2. In order to enable PARIS to operate better, population projections must also include forecasts of the socio-economic pattern.
3. Good origin-destination data is necessary for camper studies with more than one departure point.
4. More use should be made of the camping permits which are sold at all controlled campgrounds, because they contain the most accurate record of the camper group. Admittedly, the process of obtaining the material from these permits is tedious, but the present format could perhaps be changed in order to enable computerization. It is possible to acquire

from the permits:

- a) the origin and destination of the camper group,
- b) the size of the party,
- c) the length of stay,
- d) the type of facility used,
- e) the date of the party's presence in the campground.

Further camper surveys therefore could omit questions concerning the six topics above. It is then possible to replace them with other significant questions without actually increasing the length of survey forms.

It is also appropriate at this point to reiterate the recommendation that further research be conducted on the basis of this thesis, in order to complete the whole demand sub-system for camping in Manitoba. In conjunction, the supply of existing and proposed camping facilities should also be examined to provide a demand-supply system, which should enable planning and administrative organizations to prepare for the near future. Studies based on PARIS dealing with other activities besides camping will only serve to increase the knowledge of outdoor recreation in the province. Continuous up-dating of the data would also improve the predictability of the model immensely. To date, very little information has been gathered about parks and

campgrounds operated by private enterprise. Private operators are most reluctant to divulge information about their businesses to researchers. Such a situation should be remedied, because it is highly important and desirable to obtain as much material as possible, concerning the whole recreation system.

Although the scope of this thesis is limited to camping by Winnipeg residents, it is still within its confines to make proposals concerning the future development of camping in this province. The distribution of camping especially by Winnipeggers is very uneven, as expressed by the different travel-time zones. The bulk of this participation is centred in the Whiteshell Provincial Park. It is difficult to state whether it is this demand which has led to the tremendous development of facilities for campers, or whether it is the availability of the supply which has increased the use. The intensive use of the Park has resulted in the existence of a large number of facilities in a localized area. This situation may not be desirable, because it could mean overcrowding, and lead to overuse of the environment, even though the facilities may be sufficient to cope with the demand within the next few years. Measures should be taken in order to ensure a more equitable distribution of camping or of other recreation activities.

The logical area for further development of similar campground supply is to the north of Whiteshell Park, which

is the eastern side of Lake Winnipeg. The Government has already considered this region for development of outdoor recreation, but no concrete plans have been made. This area contains topography and scenery similar to the Whiteshell, and this Canadian shield landscape is highly suitable for camping and other recreational activities. With the development of an all-weather highway to this region, it would be within the reach of Winnipeggers in two to four hours. At present, the cost of building such a highway is very high, but in time the benefits which may be gained from obtaining accessibility to this area may deem it a worthwhile project. If more campground units can be developed in this region, it would certainly help to redistribute the present participation pattern to a great extent.

So far only camping during the summer season has been discussed, because winter camping is almost non-existent. For many campgrounds, especially those in the north, where a great deal of hunting and fishing occur, it may be worthwhile for the government to extend the period of operation for campgrounds, so that they may accommodate the hunters and fishermen. Furthermore, it would certainly be worthwhile to investigate the possibilities of keeping several centrally located campgrounds open throughout the winter months in order to provide various essential services for patrons. Manitobans have finally decided that instead of tolerating the relatively long winter months, it is time to enjoy the cold season. Efforts are being made to

publicize the availability of winter outdoor recreational activities, to relieve the long, cold months, and also to attract the recreation dollar. The amazing boom of snowmobiling as a sport, and the increasing popularity of skiing have served to help change this negative attitude towards the Manitoban winter. Snowmobiles are still in the infant stages of development and are, therefore, in great need of further improvements. To those who are ecology-conscious, snowmobiles are hazardous to the environment especially to such fragile areas as parklands, and the dangers are increased by the lack of legislation to prevent their misuse. The great surge of popularity for these machines have ensured their presence for many years to come, and consequently, their use as a sport should be under strict supervision. Areas in the province should be designated for snowmobiling during the winter time, and provincial parks could be considered. The reason for considering provincial parks, even though snowmobiles are potentially dangerous to their ecology, is that parks are already clearly defined areas, and that supervision facilities are available during the summer. It is probably easier to extend this arrangement into the winter months than to create another policing organization. However, if other areas, which are less fragile and which are in close proximity to certain campgrounds and Winnipeg, could be designated for snowmobile use, such a situation would indeed

be better. Campgrounds centrally located to these snowmobile areas could then be kept operative during the cold season. With the trend towards better and more luxurious pickup campers, and tent and travel trailers, it may be possible for more people to camp during the winter without being unduly discouraged by the climate. Moreover, more people may be encouraged to participate in outdoor recreational activities and to leave the city on weekends as they have done during the summer.

Northern Manitoba is an area of great potential for outdoor recreation and is still relatively undeveloped in this respect. One of its main problems is its distance from the major population centres in the south, such as Winnipeg. The shorter work week (about three to four days) with a long weekend is definitely gaining ground especially in eastern Canada, where more and more companies are switching to this new system (Schreiner, 1971, pp. 1 and 4). At least one company in Winnipeg has experimented with the new working hours, and it has been received favourably. Should the trend continue in Winnipeg and spread to other areas in the province, more people would find it possible to travel farther afield on their days off. This ability to move farther from home base could mean a greater demand for the outdoor recreational facilities of northern Manitoba. Furthermore, with the increasing use and perhaps overuse of recreational amenities in the south, northern Manitoba

should be considered a suitable area for diverting such pressures. Greater development of the north for outdoor recreation should be contemplated by both public and private sectors. More campgrounds could be built, and expansion and a greater development of present camping areas could be considered seriously. (Several provincial campgrounds are already undergoing expansion and improvements. Plans for greater development of the outdoor recreational facilities of northern Manitoba have been made, but as yet nothing has been finalized.) The present tendency towards more luxurious and sophisticated camping equipment, which requires campgrounds with a larger number of services, would certainly favour a greater development of campgrounds in the north.

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A P P E N D I C E S

SAMPLE SURVEY FORMS IN ENGLISH AND FRENCH

CANADIAN OUTDOOR RECREATION DEMAND STUDY

Your cooperation in completing this questionnaire will be greatly appreciated and all information will be treated confidentially.

Please deposit this card in the box near the Park exit or hand it to a member of the Park Staff.

1 WHICH OF THE FOLLOWING BEST DESCRIBES THE GROUP IN THIS VEHICLE?
(check only one,

- | | |
|--|---|
| a. <input type="checkbox"/> one person alone | e. <input type="checkbox"/> one couple only |
| b. <input type="checkbox"/> one family with children | f. <input type="checkbox"/> two or more couples |
| c. <input type="checkbox"/> two families with children | g. <input type="checkbox"/> group of friends |
| d. <input type="checkbox"/> organized group
(troop, team, club, etc.) | h. <input type="checkbox"/> other _____
(write in) |

2 DID YOUR GROUP USE ANY OF THE FOLLOWING IN THIS PARK?
(check all answers that apply)

- | | |
|--|---|
| a. <input type="checkbox"/> pickup camper | e. <input type="checkbox"/> motel or other rental accommodation |
| b. <input type="checkbox"/> tent trailer | f. <input type="checkbox"/> private home or cottage |
| c. <input type="checkbox"/> travel trailer | g. <input type="checkbox"/> boat |
| d. <input type="checkbox"/> tent | h. <input type="checkbox"/> canoe |
| i. <input type="checkbox"/> other _____ | |

3 FOR YOUR GROUP, IS THIS:

- | | |
|---|---------------------------|
| a. a one day outing or trip <input type="checkbox"/> | } check only one of a & b |
| b. a trip of one or more nights <input type="checkbox"/> | |
| c. part or all of your annual vacation <input type="checkbox"/> yes <input type="checkbox"/> no | } check both c & d |
| d. a combined business and pleasure trip <input type="checkbox"/> yes <input type="checkbox"/> no | |

4 IS THIS PARK

- your main destination, or a stopover enroute

5 WHERE IS YOUR PRESENT HOME?

Nearest Village Town or City Province or State R.R., Postal Zone or Zip Code

PROV. AGENCY

PARK DATE TIME

PLEASE COMPLETE
REVERSE SIDE

6 WHAT DOES THE "HEAD OF THE PARTY" DO FOR A LIVING?

Occupation (write in, please be specific)

7 WHICH OF THE ANSWERS BELOW BEST DESCRIBES THE LEVEL OF EDUCATION COMPLETED BY THE HEAD OF THE PARTY? (check one)

- a. grade school
- b. part high school
- c. high school graduate
- d. part university
- e. university graduate
- f. post high school technical - vocational

8 WHICH OF THE ANSWERS BELOW BEST DESCRIBES THE TOTAL ANNUAL INCOME OF THE HOUSEHOLD OF THE HEAD OF THE PARTY? (check one)

- a. under \$3000
- b. \$3000 - \$5999
- c. \$6000 - \$7999
- d. \$8000 - \$9999
- e. \$10000 - \$14999
- f. over \$15000

9 HOW LONG DID YOU STAY IN THIS PARK THIS VISIT? (answer one)

Number of hours (if not overnight) _____ OR Number of Nights _____

10 Please write in the ages of the members of your group in the spaces to the right →		AGES - MALE					AGES - FEMALE				
Beneath each person's age please check his activities in this park.	Swimming										
	Picnicking										
	Fishing										
	Walking - Hiking										
	Driving - Sightseeing										
	Others (list below)										

NORQUAY BEACH

IF THIS CARD IS ACCIDENTALLY CARRIED AWAY, PLEASE MAIL TO: THE PROVINCIAL PARKS DEPARTMENT.

ENQUÊTE SUR LES LOISIRS EN PLEIN AIR AU CANADA

Nous vous saurions gré de bien vouloir remplir le présent questionnaire. Tous les renseignements que vous fournirez seront gardés confidentiels.

Veuillez déposer la présente carte dans la boîte placée à la sortie du parc ou la remettre à un membre du personnel du parc.

1 OCCUPANT(S) DE VOTRE VEHICULE:

- | | |
|---|--|
| <p>a. <input type="checkbox"/> personne seule</p> <p>b. <input type="checkbox"/> une famille</p> <p>c. <input type="checkbox"/> deux familles</p> <p>d. <input type="checkbox"/> groupe organisé
(troupe, équipe, club, etc.)</p> | <p>e. <input type="checkbox"/> un seul couple</p> <p>f. <input type="checkbox"/> deux couples ou plus</p> <p>g. <input type="checkbox"/> groupe d'amis</p> <p>h. <input type="checkbox"/> autre (s) _____
(Précisez)</p> |
|---|--|

2 LOGEMENT ET MATÉRIEL UTILISÉ:

- | | |
|--|---|
| <p>a. <input type="checkbox"/> camionnette habitable</p> <p>b. <input type="checkbox"/> tente-remorque</p> <p>c. <input type="checkbox"/> remorque</p> <p>d. <input type="checkbox"/> tente</p> <p>i. <input type="checkbox"/> autre _____</p> | <p>e. <input type="checkbox"/> motel ou autre installation locative</p> <p>f. <input type="checkbox"/> maison particulière ou chalet</p> <p>g. <input type="checkbox"/> bateau</p> <p>h. <input type="checkbox"/> canoë</p> |
|--|---|

3 GENRE DE VOYAGE:

- a. sortie ou excursion d'une journée
- b. excursion de deux jours ou plus
- c. oui non, partie ou totalité de vos vacances annuelles
- d. oui non, voyage d'affaires et d'agrément

4 CE PARC EST:

- votre destination ultime ou une étape de voyage

5 LIEU DE VOTRE DOMICILE:

Localité ou ville la plus proche Province ou État Zone Postale ou Zip

PROV. ORGANISME

PARC DATE TIME

VOIR VERSO, S.V.P.

6 OCCUPATION OU PROFESSION DU "CHEF DE VOTRE GROUPE":

Occupation ou profession (précisez)

7 NIVEAU D'INSTRUCTION DU CHEF DE VOTRE GROUPE:

- a. études primaires
- b. études secondaires partielles
- c. études secondaires complètes
- d. études universitaires partielles
- e. études universitaires complètes
- f. études post-secondaires, techniques ou professionnelles

8 REVENU FAMILIAL ANNUEL DU CHEF DE VOTRE GROUPE:

- a. moins de \$3,000
- b. de \$3,000 à \$5,999
- c. de \$6,000 à \$7,999
- d. de \$8,000 à \$9,999
- e. de \$10,000 à \$14,999
- f. plus de \$15,000

9 DURÉE DE VOTRE SÉJOUR DANS LE PARC:

Nombre d'heures _____ OU Nombre de
(si vous n'avez pas passé la nuit) nuits _____

10 ÂGES DES MEMBRES DE VOTRE GROUPE:		SEXE MASCULIN					SEXE FEMININ				
Cocher la case (ou les cases) correspondant aux activités de chacun	Natation										
	Pique-nique										
	Pêche										
	Marche -- randonnées										
	Promenade en voiture visite touristique										
	Autres activités (précisez ci-dessous)										

ST. MALO

SI VOUS EMPORTEZ
CETTE CARTE,
RENOYEZ-LA PAR LA
POSTE AU SERVICE DES
PARCS PROVINCIAUX

APPENDIX B

TERMS OF REFERENCE

PARK USER SURVEYS - 1969

The park user studies to be conducted in a selected group of Provincial Parks and Recreation Areas in Manitoba will utilize a handout questionnaire form. The form will be distributed to the visitors at the park entrances. The visitors will be asked to complete the questions and return the form to us at the completion of their visit by dropping it into one of the collection boxes located in the area, or near the exits as the case may be.

PERIOD OF SURVEY

The survey will be conducted at each park on the days outlined on the attached project schedule. The survey on each of these days will extend from 9:00 a.m. until 6:00 p.m.

The schedule is designed so as to sample visitors entering on week-days (Monday through Friday) and weekend days (Saturday and Sunday) in the summer (from July 1) at each of the parks.

PARKS TO BE SURVEYED

The parks and recreation areas to be surveyed using this procedure include the following:

- (a) Grand Beach
- (b) Patricia Beach (omitted)
- (c) St. Ambroise Beach
- (d) St. Malo
- (e) Norquay

SURVEY PROCEDURETraffic Counts

Total traffic counts for each day during the spring and summer seasons and for each survey period on the survey days are the responsibility of the Department of Tourism and Recreation where no traffic counters are used. Where traffic counters are in use these shall be read and recorded by the contractors at the beginning and end of each survey period on the survey days.

Distribution

During the survey period each sample vehicle entering the park or recreation area will be recorded on one of the attached survey forms (Form A or Form B) On Form B a record will be kept of each sample vehicle entering the area which did not receive a questionnaire. Sample vehicles which do not receive questionnaires include the following types:

- (a) vehicles carrying park staff which include all persons who are working in the park area.
- (b) other government and service vehicles (police, business vehicles, milk trucks, etc.)
- (c) repeaters - parties who have received a questionnaire previously on the same visit.
- (d) refusals - parties who refuse to accept the questionnaire form.

(e) others - other sample vehicles which did not receive a questionnaire. Note should be made as to why these sample vehicles were missed.

On Form A a record will be kept of the residence of each sample vehicle which was given a questionnaire form. Each questionnaire distributed shall have the date it was distributed indicated clearly upon it.

The questionnaire should be given to the party in the vehicle in a courteous manner with a brief explanation which indicates what it is; that we would appreciate their completing it and returning it to us by dropping it in the collection box located _____ at the end of their visit.

These should be no deviation from the sample ratio as established for each park or recreation area.

Collection

The collection boxes will be emptied daily, preferably in the early morning by staff of the Department of Tourism and Recreation. These questionnaires for each day are to be bundled together with a note attached indicating the date on which they were collected. They will be turned over to the contractor upon request for initial editing then submitted within a few days to the Research and Planning Branch.

This procedure should permit a clear record to be made for each survey day indicating:

1. total traffic,
2. total traffic during survey period 9:00 a.m. 6:00 p.m.
3. total questionnaires distributed (by residence)
4. total sample vehicles not receiving questionnaire (by reason)
5. total questionnaires returned (by date of return)

Initial Editing

The contractor is responsible for the initial editing of all questionnaires collected before these are submitted to the Research and Planning Branch. This editing shall include discarding totally unusable or blank forms, and when possible clarifying illegible entries. They will be submitted to the Research and Planning Branch in the bundles indicating their date of collection from the collection boxes.

SAMPLE SIZE AND RATIOS

It is considered that a return of 300-500 questionnaires for each park-season-week part should be aimed for. Within the time and staff constraints this may not be possible according to 1968 traffic counts at some of the parks. These factors have been taken into account in the outline of the survey schedule which is attached. The number of staff and the number of survey days required in each season for each park or recreation area are outlined in the table below.

<u>Park</u>	<u>Spring</u>		<u>Summer</u>		<u>No. of Staff</u>
	<u>Weekdays</u>	<u>Weekend Days</u>	<u>Weekdays</u>	<u>Weekend Days</u>	
GRAND BEACH	3	4	6	4	3
PATRICIA BEACH	6	4	10	5	1
ST. MALO	6	4	10	5	2
NORQUAY	6	4	10	5	2
ST. AMBROISE	6	4	10	5	1

The sample ratio established for each area is as follows:

<u>PARK</u>	<u>SAMPLE RATIO</u>
GRAND BEACH	1 in 5
PATRICIA BEACH	1 in 1
ST. MALO	1 in 1
NORQUAY	1 in 1
ST. AMBROISE	1 in 1

These sample ratios must not be varied.

Schedule

The attached schedule outlines the part of the project in which this contractor will be engaged. It is possible that during the course of the work some interchanging can be done between the three contractors to allow for variety and to ensure that each can become well acquainted with all of the parks. Similar interchanges should be worked out at the individual parks with more than one gate to ensure a fair distribution of effort.

Additional Notes

Lunch Time - a lunch break should be worked into the survey day at a time when traffic flows are light.

Travel time - the time spent by the contractor in travel to and from the parks is compensated to some extent in the additional days-off during July and August.

MAY 20	Orientation and	JUNE (1	Grand Beach
21	organization of	2	Norquay
22	survey work	3	Norquay
23		4	X
(24	Grand Beach	5	X
(25	Norquay	6	Grand Beach
26	Grand Beach	(7	Norquay
27	St. Malo	(8	St. Malo
28	St. Malo	9	Grand Beach
29	X	10	Norquay
30	X	11	X
(31	St. Malo	12	X
		13	St. Malo
		(14	St. Malo
		(15	Norquay
		16	X
		17	X
		18	X
		19	Norquay
		20	Norquay
		(21	Grand Beach
		(22	St. Malo
		23	St. Malo
		24	X
		25	X
		26	St. Malo
		27	Norquay
		(28	Norquay
		(29	Grand Beach
		-30	St. Malo

JULY 1 X

2 X

3 St. Malo

4 Grand Beach

{5 Grand Beach

{6 Norquay

7 Grand Beach

8 X

9 X

10 X

11 Norquay Beach

{12 St. Malo

{13 Grand Beach

14 Norquay Beach

15 St. Malo

16 X

17 X

18 Norquay Beach

{19 St. Malo

{20 Norquay

21 St. Malo

22 Grand Beach

23 X

24 X

25 X

26 Norquay

27 St. Malo

28 Norquay Beach

29 St. Malo

30 Norquay

31 X

AUGUST 1 X

{2 X

{3 X

4 St. Malo

5 Norquay Beach

6 Norquay Beach

7 St. Malo

8 St. Malo

9 X

10 X

11 X

12 Norquay Beach

13 Grand Beach

14 Norquay Beach

15 St. Malo

{16 Norquay

{17 St. Malo

18 Grand Beach

19 X

20 X

21 St. Malo

22 Norquay

{23 Grand Beach

{24 Grand Beach

25 X

26 X

27 X

28 Grand Beach

29 St. Malo

{30 X

{31 X

Sept 1 X

2 -5 collection of all forms
removal of boxes and signs

APPENDIX C

EXPLANATION OF WEIGHTING SYSTEM

Department of
Indian Affairs and
Northern Development



Ministère des
Affaires indiennes et
du Nord canadien

Mr. Neil Nixon,
Department of Tourism
and Recreation,
313 Legislative Building,
Winnipeg 1, Manitoba.

Ottawa, Ontario K1A 0H4
February 19, 1971

our file/notre dossier 20-20-5A
your file/votre dossier

Dear Mr. Nixon:

On February 18 we sent you, by air mail, two copies of the tabulations which you requested for day visitors and for overnight visitors. Tables 5, 6, 18, and 19 for day visitors and tables 10, 11, 14, and 15 for overnight visitors are for the individual whereas the rest of the tables are based on the party. As you discussed with Miss McGinn of Computer Information Systems Division, tables 1 and 20 for day visitors and tables 1 and 16 for overnight visitors will be sent at a later date.

The weights used in these tables are to adjust for the different probabilities of selection of visiting parties between weekend day and week days. The weights are the inverse of the probability of selection of the party on a particular day times the inverse of probability of selection of that day. For example, if every second party were given a questionnaire on six weekend days and every party were given a questionnaire on eight week days the weights would be $2/1 \times 19/6$ for weekend days and $1/1 \times 43/8$ for week days, where 19 is the number of weekend days and 43 the number of week days in July and August.

We hope you find these tables satisfactory and if you have any questions we will be happy to answer them for you.

Yours sincerely,

W. Zayachkowski,
Departmental Statistician.