

future participation can then be made by incorporating predicted changes in key variables.

Measuring the Supply of Wilderness Recreation

As less and less of our wilderness remains undeveloped, fears of its looming scarcity increase the difficulty of managing the remainder. While many resources wilderness offers are renewable, like timber, the land from which they are produced is not.

Industrial use of wilderness, even where designed to provide a perpetual flow of resources, changes and consumes wilderness. And our society increasingly values wilderness for its own sake, for its natural beauty and for its solitude.

But how does one characterize the supply of wilderness and outdoor recreation resources? More than a measure of the acreage of parks, the geographical distribution of recreation resources with respect to ecological diversity and population centres matters. The pressures on land, and the value of land, typically increase as population density increases, rendering land for recreation increasingly scarce just where it is most valuable.

Like demand, the total supply of recreational resources consists of potential supply and effective supply. In Ontario, the amount of potential wilderness recreation area is massive. At present, there are few restrictions on the use of unoccupied Crown land for recreation. But the majority of this area is inaccessible

and remote, and presents barriers to effective use of it for recreation. The effective supply of wilderness recreation areas is constrained, for the most part, to national and provincial parks, private camps and campgrounds, and private land. And even much of this area is inaccessible to any but the hardiest of campers.

Recreational resources cannot be measured solely by their physical elements: they must satisfy human needs to be recreationally useful. In part, human satisfaction is constrained by the physical environment itself. Beaches are unsuitable for mountain-climbing, and mountains are unsuitable for surfing. Some environments are physically and climatically suitable for certain activities only. The useful supply of recreational area depends, then, on whether it satisfies the demands made upon it. And because human demands change over time, we require a changing, or at least changeable, supply over time.

Once environmental supply matches human demand, other elements of effective supply must still be considered. What is the capacity of the resource? How many people can sunbathe on the same beach, or hike the same trail at the same time before the resource becomes congested and degraded? A recreation site can only provide so many opportunities for recreation. These opportunities may be measured by space standards, e.g., metres

per person of hiking trails, or square feet per person of beach space; by accessibility, i.e., how easy is it to access the resource by car or on foot; by turnover rate, the number of opportunities per day that a site provides; and by season length.

Yet another essential component of supply is the experience offered by a recreation site. Different people demand different experiences. A park trail may supply both a cyclist seeking the thrill of great speed and a pedestrian escaping from the pressures of daily life and enjoying the peace and solitude of nature. However, providing both experiences at the same time is impossible. The dawdling pedestrian will frustrate the speeding cyclist, while the cyclist's zooming will disrupt the peace and quiet the pedestrian demands. The provision of park services must take behavioural considerations into account.

Taking all these factors into account is extremely complicated. However, the supply of recreation resources depends equally on factors of quality as well as those of quantity. The questions facing park managers must include not only how much land to commit to parks, but, what land, where is it located, and how should it be managed?

Scarcity

Unlike other resources such as timber and minerals, the relative scarcity of park and outdoor recreation resources is not

adequately reflected by their price. As the supply of conventional commodities, like copper, is depleted, the supply curve shifts upward and the price rises, indicating scarcity. Likewise, if demand for a commodity increases, the demand curve shifts upward, and the price rises, also indicating scarcity. But because of the non-market nature of wilderness recreation, its "price" is not available.

One approach to pricing wilderness preservation for the creation of parks is to estimate the cost of the lost opportunity to develop the area for industry, for instance by harvesting the timber. But this opportunity cost approach ignores the recreation factor of parks: how people use the area. It is difficult, however, to generalize about the value of recreation experiences. The value of a hike at one park may be different than its value at another, due to differences in scenery or climate.

Also, recreational values are offered not only by park operators but by park visitors. One visitor may hike every trail, climb every mountain and lie on every beach, making the most of his park visit, while another may refuse to leave his car, preferring to sit in the parking lot. The recreational value obtained from the same park may differ tremendously among participants.

And, indeed, the price of the park, or the cost to the participant of a visit to the park, may well exceed the monetary cost of a park visit. The cost of travelling to visit the park is a legitimate part of the cost of a park visit. In Ontario during the summer months, one must plan park visits and reserve a campsite well in advance of the trip because of the high demand during peak periods. This advance planning, and the congestion of the parks at peak times adds a cost to each visit not counted in monetary terms.

Participation Patterns

Patterns of outdoor recreation - who goes where and does what - are defined in spatial, temporal and human terms. The interdependence of supply and demand defines the spatial distribution of outdoor recreation opportunities. The interaction of supply and demand also distributes recreation opportunities over time: if demand exceeds supply, new supply may enter the relationship, or crowding and higher costs may temper demand so that in the future supply and demand will be matched.

Demand and supply are inexorably linked to human preferences and social values. Ontario's population has grown larger, embracing new cultures and ideas, and grown older. It has become more affluent and better educated, and its industry and the attitude of its work force have also changed. And as the population has changed, its needs and demands have changed too.

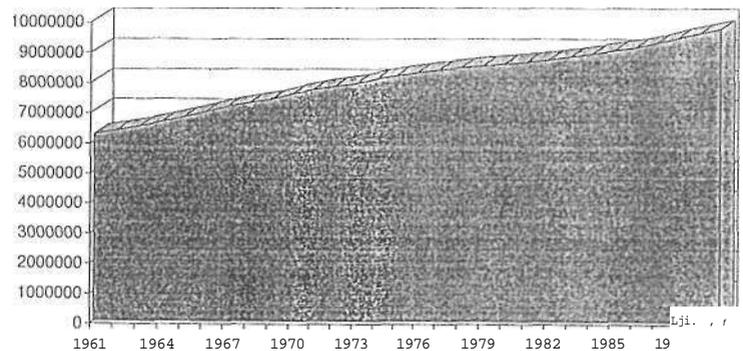
Participatxon patterns are comprised of a number of components including number and frequency, location, duration, timing, accommodation, and size of group. The number of participants measures the level of activity at a single moment in time while the frequency of visits indicates activity over a longer period of time. Location includes distance from population centres and the attributes of a particular site. Timing refers to the incidence of recreation activity, whether occurring daily, weekly or annually. Accommodation means whether temporary accommodation such as a tent is necessary. (Statistics Canada monitors the quantity of camping equipment purchased on an annual basis as an indicator of trends in camping). The size of groups can indicate the attractions of a particular area - highly scenic and easily accessible areas are especially appropriate for tour bus groups or school groups - or may indicate whether outings are on an individual or family basis. More remote and inhospitable areas, for example, are less popular among families, and more popular among individuals.

A study of outdoor recreation around Quebec City demonstrated a relationship between participation rates, leisure time and distance travelled.¹² As one might expect, those with more leisure time tend to travel further and recreate at more distant locations than those with less leisure time. But a comprehensive analysis of the factors affecting wilderness recreation has not been done despite the need for knowledge in this area.

Predicting the future from such a basis is, of course, fraught with difficulties. But four general "fuelling factors" may be identified: population, income, travel and leisure.¹³

Over the last thirty years, from 1961 to the present, Ontario's population has increased from 6,236,100 to 9,731,000¹⁴ - an increase of 56 percent. The annual rate of increase over those 30 years has been slightly more than 107,300 per year.

Statistics Canada's projections for Ontario's future population, based on the most conservative assumptions, ie., that fertility and



immigration will not increase from present rates, predict that Ontario's population will increase at an annual rate of 68,000 per year, to reach over 11 million by the year 2010. This alone indicates increased demand for outdoor recreation.

But the most definite trend in Ontario is the ageing of its population. The number of Ontarians over the age of 65 in the year 2000 is likely to be double their number in 1971.¹⁵ And this group of seniors will likely be substantially different than their predecessors: they will be more affluent; have better

health and increased mobility; they will be better educated and have travelled more extensively; and will engage in activities that the present over-65 cohort does not.

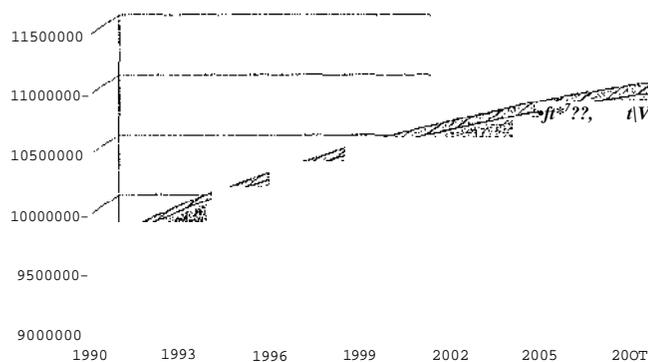


Figure 3 Projected Population of Ontario 1990-2010

While the numbers of over-65, and the population between the ages of 18-64 will most certainly increase, the number of children and young teenagers will probably decrease. As a result, the median age of Ontario's population will rise sharply from less than 34 to over 42 in one generation.

We expect the attitude of seniors in the year 2010 to be significantly different from seniors' attitudes today and the

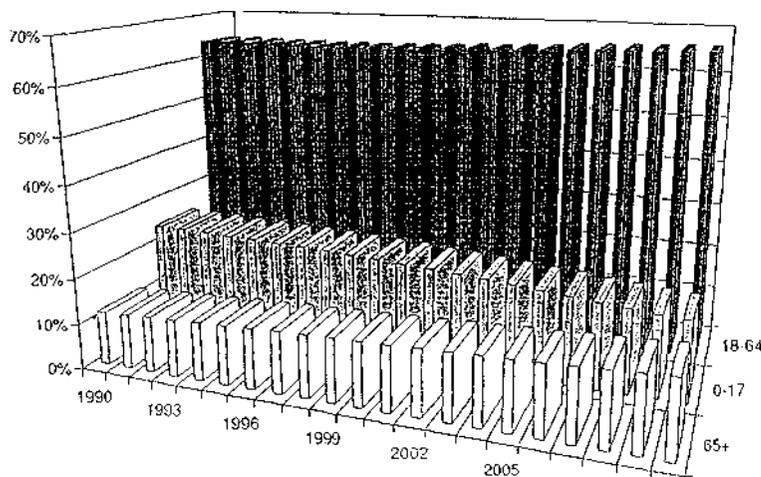


Figure 4 Projected Age Distribution for the Population of Ontario 1990-2010

typical park visitor of the future to

demand a different set of services and facilities than is presently offered. Beaches and playgrounds will be

proportionately less important than moderately challenging hiking trails, and peaceful, serviced campsites.

Higher incomes result in changed preferences for recreational experiences and expand the number of opportunities open

	38,
	36
	34
	32



to the potential wilderness recreationist.

Figure 5 Projected Median Age for the Population of Ontario 1990-2010

Real per capita incomes in Ontario have risen dramatically over the last forty years, and are sure to continue to rise, although perhaps not as rapidly as they have in the past. A study of wilderness users in California in 1970 concluded that wilderness users are relatively wealthier.¹⁶ The income distribution among wilderness users, however, exhibited a bimodal pattern: people in both the less-than-\$1000-per-year category and people in the \$10,000-to-\$25,000 range used wilderness more frequently than people in other categories, and relatively more than their incidence in the population at large would suggest. The least affluent class of income earners was dominated by students, suggesting a correlation between higher education and higher future incomes, and suggesting that education as well as income

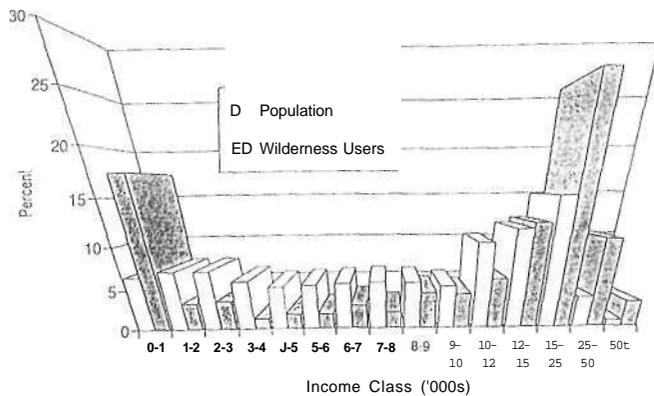


Figure 6 Income Distribution Among Wilderness Users and the Population of California (1970)

indicates a preference for wilderness use. The implications for Ontario are that, as incomes rise, as they are sure to do, wilderness will receive proportionately more visitors than other outdoor recreation

services. Education is also likely to be an important factor in the appreciation of wilderness values.

Of all the factors affecting participation in outdoor recreation, leisure time probably has the most effect. More than any other generation, those born after World War Two have seen their leisure time compartmentalized and parcelled out in ever more clearly defined increments. The prevalence of the nine-to-five, Monday-to-Friday work week means the majority of Ontarians pursue most of their recreation on weekends. As a consequence, parks remain empty all week, only to be crowded to their limits on Saturday and Sunday.

Futurists' predictions of a shortened work week have not yet come to pass. In fact, after a slight decline in the late 1970's, the length of the working week seems once.-again to be on the rise.¹⁷

Nor have job-sharing and flex-time approaches been adopted as widely as expected in Ontario's labour force.

Because the bulk of our leisure time falls in discrete blocks on weekends and periodic statutory holidays, the majority of our recreation pursuits are confined within a fairly limited distance range. For these reasons, recreational areas close to urban centres are more useful and valuable to society than parks in remote and out of the way places, other things being equal.

The season also affects participation patterns. Winter weekends tend to require more travel than summer weekends, and tend to be more expensive.¹⁸ And not all areas offering summertime recreation are suitable for winter activities.

In addition to weekends, the vacation habits of Ontarians determine participation patterns. Once again, seasonal variations significantly affect participation patterns. The summer months, especially the last two weeks of July and the first two weeks of August, experience travel intensities between four and five times the annual monthly average.¹⁹ And of the nearly eight million visitors to Ontario's provincial parks in 1990, only 219,050 visited between November and March.²⁰ Parks designed to accommodate large numbers of visitors at peak summer times remain empty throughout much of the year.

The ageing of Ontario's population carries with it implications for the pattern of leisure time. Older people, mostly retired, will have more leisure time. The more older people there are, relative to the rest of the population, the more leisure time society will have as a whole. Because seniors are not usually restricted to recreating on weekends, and during short vacations from employment, this group will have the time to make more frequent trips, dispersed throughout the seasons, reducing peaking problems recreation areas currently experience.

Projections of Future Participation Patterns

Ontario's provincial parks have proved, to be extremely popular destinations with visitation records broken almost every year. From 1961 to 1990, park visits increased by nearly 25 percent,

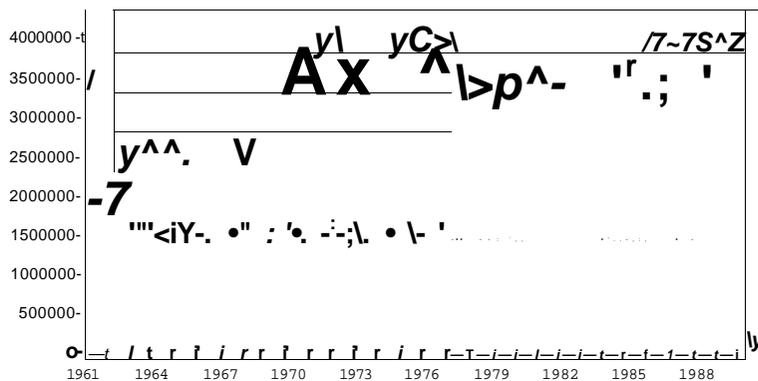


Figure 7 Ontario Provincial Parks Camper Nights 1961-1990

averaging an increase of 245,000 visitors per year, and a rate of increase of 1.7 percent per year. Camper nights have more than doubled over the last 30 years, increasing at an average rate of over 61,000 camper nights per year, more than 3.1 percent per year. The increases in both park visits and camper nights have

exceeded the rate of population growth by two and three times. The more people experience Ontario's provincial parks, the more they seem to want.

Interior camping in Ontario's provincial parks, offering a rugged, back-to-nature experience, promises to increase in popularity

even faster. Because of the limited number

of campsites, the stringent controls on the number of campers allowed at one time - in recognition of the fact that interior campers seek solitude and to protect the fragile environment, and overwhelming demand for an interior camping experience, hopeful campers must book months in advance to reserve a place during peak seasons.

Interior camping has increased at an average annual rate of 1.4 percent, increasing more than 23 percent over the last ten years. Park campers increased by only 18 percent over the same period, demonstrating the relative popularity of interior camping.

Interior camping fluctuates relatively more than regular camping in response to changes in economic conditions, suggesting that

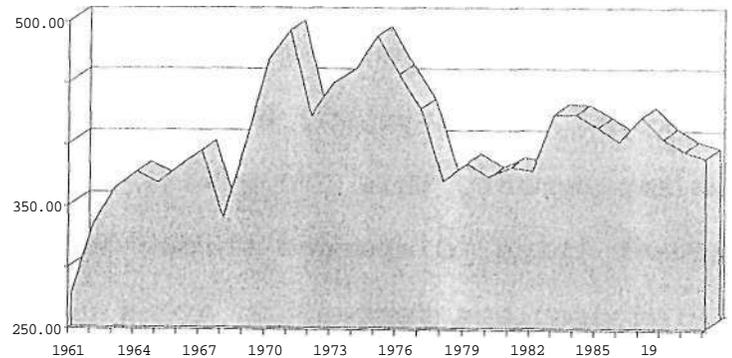


Figure 8 Ontario Provincial Parks Camper Nights per 1000 Population 1961-1990

interior camping is more sensitive to changes in income than regular camping.

It is interesting to note the pattern

between interior camper rates and park

camper rates from 1978 to 1990. It would appear at first that the two are inversely correlated - when interior camping

is more popular,

park camping is

less popular and vice versa - as the decline in interior campers during the 1982-1984 recession was matched by an upturn in park camping. But the pattern is more easily explained using the reasoning that park camping rates recover relatively faster from an economic downturn than do interior camping rates, and that, except for the lagged response of interior camping rates, the patterns are very similar.

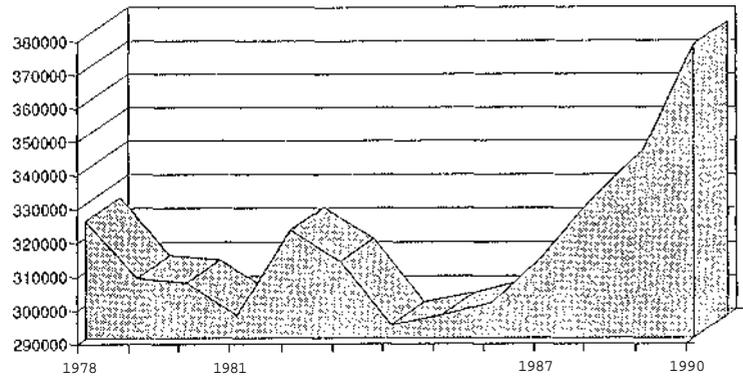


Figure 9 Selected Provincial Parks Interior Camper Nights 1978-1990

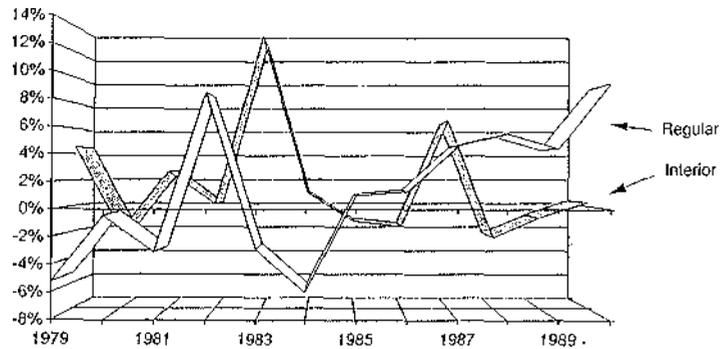


Figure 10 Interior Camper Nights and Regular Camper Nights - Percent Change from Previous Year 1979-1990

The relationship between aggregate economic indicators and rates of camping is difficult to interpret. Factors can act in opposite direction. During a recession one might expect people to substitute a relatively inexpensive camping holiday for one more expensive, boosting camping rates during a recession. But one might equally expect some campers to simply choose to stay at home, thereby decreasing camping rates. Without further information, it is not possible to isolate the substitution or income effects of demand for camping.

Public opinion polls demonstrate that Canadians rate certain issues as more important than others depending on their sense of economic well-being. The environment recently slipped from its number one position in the polls, taking second place to the economy as the most important issue to Canadians. The attraction of camping clearly varies according to the winds of economic well-being as well.

We expect, however, that interest in the environment and wilderness issues, and demand for wilderness camping in parks will increase in the years to come. Extrapolation of current trends suggests that by the year 2010, other things being equal, Ontarians will demand space for more than 5 million camper nights per year, an increase of 32 percent over current levels of demand. But if supply is restricted (having increased markedly

over the last twenty years), demand will likely be tempered by crowding and associated higher costs

Regression analysis demonstrates a very strong relationship between demand for camping and the supply of developed campsites: over the last 30 years, each additional campsite has generated 71 additional campers representing 197 camper nights. According to this relationship, the decline in the number of developed campsites over the last 10 years belies any claims that increasing the area of parks alone increases the supply of camping opportunities.

Interior camping is also likely to retain its popularity. As the population ages,

however, it is possible

visitors to parks will favour developed

campgrounds over "roughing it" at interior camping sites. Park planners face a challenge in developing programs and areas that make valuable wilderness areas accessible to our changing population without compromising the environmental quality and integrity of those areas.

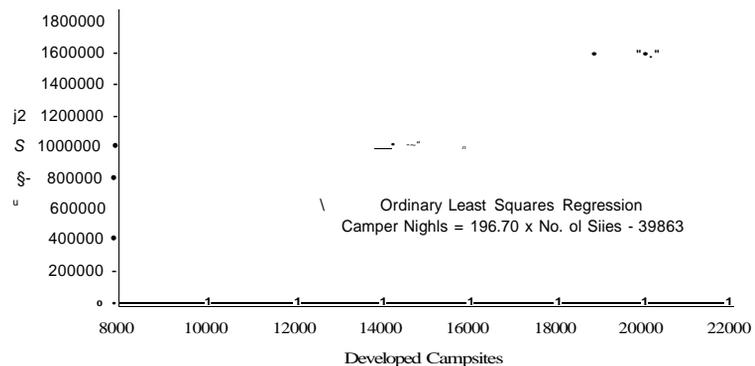


Figure 11 Camper Nights versus the Number of Developed Campsites 1961-1990

Lack of adequate knowledge of participation patterns and the forces that drive outdoor recreation, in wilderness and in Ontario's provincial parks, prevents accurate prediction of participation patterns in the future. Additionally, the lack of a comprehensive profile of current participation patterns and park visitors hinders park planning.

Recommendation #1: That the appropriate Ministry (Ministry of Tourism and Recreation or Ministry of Natural Resources) survey park visitors and compile information on the characteristics of park visitors to facilitate current park planning and the reasonable prediction of participation patterns of the future.

Recommendation #2: That the Ministry of Natural Resources not further reduce the number of developed campsites at Provincial Parks and move instead to increase the number. The restriction of supply this reduction has entailed hampers wilderness recreation by Ontarians, and reduces the value of Ontario's provincial parks.

Barriers to Demand for Wilderness

The Environics Research Group, in its study of the needs and attitudes of disabled Ontarians, concluded: "It is a paradox of our times that the busy, healthy, well-educated, and affluent - who most yearn for more time to pursue recreational and cultural

interests - are the least likely to get it, while those with the most free time are often poorly equipped or unable to use it."

Lack of accessibility often prevents Ontarians from enjoying wilderness. Conventional demand-supply projections based on visitation statistics underestimate wilderness value because they ignore the value placed on wilderness by people with special-needs. Special-needs Ontarians represent latent demand for wilderness - they would like to visit but cannot.

Transforming latent demand into effective demand means identifying those groups with physical disabilities whose needs can reasonably be met by changing park facilities - persons with impaired mobility,²¹ vision, and hearing as well as those with long-term illnesses.²²

Examining camping patterns of the physically challenged allows us to identify demand and supply of physically challenged camping opportunities. Environment Probe interviewed individuals involved in providing camping opportunities to physically challenged Ontarians: organizers and staff at private residential special-needs camps and residential camps that integrate physically challenged with able-bodied campers; groups that place disabled Ontarians in integrated camps; associations for the physically challenged; specialists in the field of accessible

recreation planning and barrier-free design; and park planners at the Ontario Ministry of Natural Resources (MNR).

Fourteen percent of Ontarians have some sort of long-term disability which limits their activity either at home, at school or at work - and many of these have more than one disability. Of this

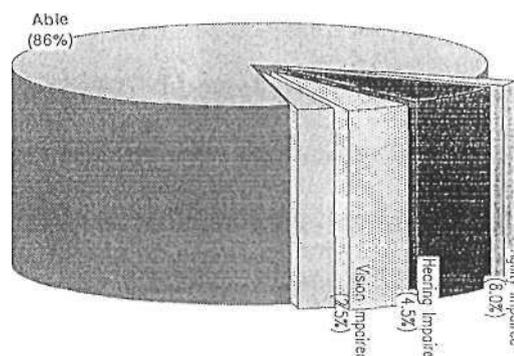


Figure 12 Distribution of Disabled Persons in Ontario 1990

fourteen percent, 65 percent suffer from impaired mobility, 32.2 percent suffer hearing loss, and 17.6 percent are visually impaired (percentages do not total 100 percent due to persons with multiple disabilities).²³

Information on provincial park visitation patterns by physically challenged persons is sparse. The MNR survey only queried park visitors regarding their difficulty accessing facilities as a result of impaired mobility. No information was obtained on the less severely mobility impaired, visually impaired, hearing impaired, or persons with long-term illnesses. Because of this we only compare physically challenged visitation patterns between the public and private parks for the mobility impaired group.

Barriers to Mobility Impaired Ontarians

The majority of Ontario's 125 provincial parks providing camping opportunities have wheelchair accessible washrooms, but few provide any outdoor activities accessible to wheelchair users. Of the 71 provincial parks with wheelchair accessible washrooms, only eight provide wheelchair access to picnic areas, two to self-guided trails, one to an outdoor interpretive program, and none to backpacking trails or playgrounds. Furthermore, some wheelchair accessible washrooms in Ontario's provincial parks, while they meet the building code, fail to be fully accessible to wheelchair users.²⁴

Since mobility impaired Ontarians, like everyone else, go to provincial parks primarily to enjoy the outdoors, these areas should be made accessible to wheelchair users. This can be achieved simply by widening or hardening the surface of trails. Because in many cases it is both easier and less environmentally disruptive to modify equipment to access the environment than to make the environment accessible, providing equipment rentals like rough-terrain wheelchairs or pontoons (wheel-chair accessible boats)²⁵ can open up wilderness to mobility impaired persons.

Mobility impaired Ontarians do not camp often in provincial parks. Out of 3,780,098 camper-days at provincial parks in 1990, persons with impaired mobility accounted for only 29,160²⁶ - at

0.77 percent, significantly less than the estimated 8.5 percent of Ontarians who suffer from impaired mobility.²⁷

Instead of camping in provincial parks, physically challenged Ontarians may go to private facilities - and many do. Organized private camps alone play host to physically challenged Ontarians for more than 18,616 camper-days per year.²⁸

Because information on private campground mobility-impaired visitation is not collected centrally, it is estimated based on the number of mobility-impaired camper-days at provincial parks. If private campgrounds attract the same number of mobility-impaired camper-days per campsite at a campground with wheelchair accessible washrooms as do the provincial parks, private campgrounds would play host to 16,854 mobility-impaired camper-days each year.²⁹ Organized private camps and private campgrounds would, therefore, provide more camping opportunities for mobility impaired individuals than do provincial parks (35,470 vs. 29,160 camper-days/year).

Organized private camps give evidence of mobility impaired persons' unmet demand for wilderness. The Ontario March of Dimes, provider of camping opportunities for physically challenged adults, has 500 persons on its summer camp waiting list.³⁰ Since the average length of stay at Ontario March of Dimes camps is 10 days, this waiting list indicates the existence

of an annual unmet demand for 5000 more mobility-impaired camper-days - probably an underestimate of the demand as many people, discouraged by the length of the waiting list, may have refrained from adding their names. Waiting lists at Camp Awakening, a canoe tripping camp for disabled children, indicate the camp needs to expand by 50 percent - representing a need for 392 additional camper-days per year to accommodate their waiting list. Reach for the Rainbow, a new placement service for both physically and mentally challenged children grows every year,³¹ suggesting the existence of unmet demand for integrated camping, where able and disabled campers are integrated, as well as special group camping experiences.

Barriers to Ontarians with Long-term Illnesses

Private camps in Ontario provide camping opportunities to persons with long-term disabilities such as haemophilia, diabetes, asthma, cystic fibrosis, and cancer for more than 10,300 camper-days every year.³² Barriers to camping in public parks relate to the absence of health care provisions. Although some camps require sophisticated health centres for persons with cancer, cystic fibrosis, and kidney dysfunction, some camps need only wheelchair accessibility and medical supervision such as those for asthmatics, diabetics and haemophiliacs.

To increase the accessibility of provincial parks to persons with long-term illnesses, provincial parks could provide first-aid

stations. Many of the groups travel with their own medical staff, equipment and medication and would benefit immensely with even an unstaffed, basic first-aid station.³³

Barriers to Visually Impaired Ontarians

The Canadian National Institute for the Blind (CNIB) owns and operates a large, well-equipped camp for visually impaired persons on Lake Joseph. In a single year, this camp, with a capacity for 1,800 visitors at a time, plays host to visually impaired persons on approximately 4,878 camper-days and for other special-needs groups on 7,000 camper-days.³⁴

Although the camp coordinator felt that the camp managed to serve all of the interested visually impaired persons, the camp's waiting lists indicate a demand for 504 more visually impaired camper-days every year.³⁵ Furthermore, the peak season (the last week of July and the first week of August) is usually completely booked five months in advance.

For the most part, visually impaired Ontarians can not access the provincial parks. Currently, provincial parks only provide two self-guided nature trails (also wheelchair accessible) accessible to the visually impaired. The MNR plans to start placing signs in well-lit areas, printing signs with text on light background for clarity, and enlarging the size of the print all of which will help less severe visually impaired people.³⁶

Barriers to visually impaired can be reduced by replacing stairs with ramps (stairs are a hazard to persons with poor depth perception); placing hand-railings along nature trails; using different textured paths (as indicators of place within the park); painting bright colours on buoys, at the water's edge, on steps, and other sites of potential danger (even the legally blind often have some limited vision); and creating a raised map to introduce newcomers to the layout of the park.³⁷

Barriers to Hearing Impaired Ontarians

The hearing impaired, due to their limited ability to communicate with hearing persons, have strong social bonds and generally recreate as a group.³⁸ Provincial parks do not provide any special services for hearing impaired persons. The Ministry of Natural Resources, however, has a telephone device for the deaf (TDD) telephone number providing a 24-hour campsite vacancy report from Victoria Day to Labour Day.³⁹

The only camp in North America for the hearing impaired, the Ontario Camp for the Deaf, provides 4,200 camper-days every year for the hearing impaired and has no waiting list. The camp has modifications to facilitate communication by their signing (sign-language using) patrons: they provide well-lit cabins; lighted trails in the evening; and a telephone device for the deaf (TDD).⁴⁰

Hazards to the hearing impaired can be alleviated by installing light-flashing fire alarms in all buildings. The experiences of the hearing impaired can be enhanced by presenting all information in print and lighting nature trails in the evening to facilitate communication. Since many hearing impaired persons carry their own Telephone device for the deaf that adapt regular pay telephones for use by the hearing impaired, it would be necessary to provide TDD's for those that don't carry their own, and comforting and convenient to provide backups for those that do.⁴¹

Ontario's Seniors

Above all other age groups of disabled persons, seniors feel their lives would be much improved by increased recreation opportunities.⁴² Although the Ontario March of Dimes and the CNIB camps serve a broad range of physically challenged people, the private camping sector does not generally cater to seniors with special needs. Since disabled adults prefer integrated over special services,⁴³ expansion in the organized private camping sector may not be the answer. Rather, improved accessibility at provincial parks can provide seniors with the integrated camping opportunities they prefer.

Close to forty percent of seniors have a permanent disability: they suffer from reduced mobility, visual impairment, hearing impairment or a combination of all three.⁴⁴ Therefore seniors

would be well served at a campsite offering the barrier-free design suggestions mentioned previously. However, wheelchair accessibility does not help seniors with all of their mobility problems: seniors, due to limited strength, endurance and/or coordination, require shorter distances between campsites and parking lots, sites of interest, and facilities. Improving access may include: adding resting spots, like benches, on trails; placing comfort stations more centrally (or reserving closer campsites for seniors); and placing handrails on stairs and in washrooms.⁴⁵

Another way to attract the senior population is to provide peace and quiet. Park managers at the three provincial parks attracting the highest percentage of senior campers believe their parks' solitude initially attracted this clientele. One park manager believes, in addition to the park's solitude, the camp's facilities (a trailer camp with full hook-up) attracted the seniors.⁴⁶ These preliminary findings suggest the need for a thorough investigation of the camping trends, requirements, and desires of seniors for provincial park planning.

We expect seniors' demand for wilderness to grow in the future for two reasons: their growing numbers and their changing demographics. Experts expect a near doubling of the senior population in Ontario in 10 years and a tripling in 20 - a population of seniors who grew up during the 50s and 60s and will

be unlike any preceding older generation. While they may retain some of the same values, these seniors have more money, better health, are better educated, and have travelled more extensively than generations before. Due to their life experiences, many of the baby-boomer seniors will "reject the limitations of old age and continue to travel and engage in activities such as camping, hiking, skiing, swimming, and travelling."⁴⁷

Analysis

When a park is made barrier-free 57 percent of the population benefits: 37 percent are people with disabilities, their loved-ones, and families with small children; 10 percent are people with temporary disabilities; and 10 percent are seniors.⁴⁸ Not surprisingly, in the last few years accessibility has risen to the forefront of recreation planning. The Ontario Ministry of Natural Resources allocated \$5 million for the year 1991 to improve access at provincial parks (most of the money will go to making washrooms wheel-chair accessible). And the government of Alberta has built a completely barrier-free wilderness camp called the William Watson Lodge - a lodge so successful the disabled visitors and their families must book months in advance.

In the U.S., the impetus for change has come from the non-profit sector. In 1988, a volunteer organization, Physically-Challenged Access to the Woods (PAW), raised money to make one campground accessible to physically challenged individuals. Since the local

community became involved and the program gained the support of the Forest Service, PAW has grown so large it became a national organization in November 1990 only two years after its inception. PAW raises money, provides expertise in barrier-free designs and products, and teaches individuals, organizations, and agencies how to assess the accessibility of a facility for all impairment groups. Currently PAW is working to improve access for the visually and hearing impaired. PAW already has four community chapters involved in making their local state park accessible and 28 more waiting to come on board. PAW estimates it will have over 500 chapters in 4 years.⁴⁹

If PAW's experience in the U.S. has currency in Canada, our analysis of the situation in Ontario has only scraped the surface of the latent demand for wilderness by the physically challenged. Some physically challenged groups require expensive and elaborate medical equipment making them unlikely candidates as future public park visitors. However, in most instances, simple design considerations can attract both the physically challenged population currently attending private camps as well as those who currently don't go camping at all.

Ontario needs a survey of physically challenged Ontarians' camping patterns and desires, so that planners can determine which of Ontario's provincial parks should be made accessible and how. Such parks must then undergo an accessibility audit, and

the parks with the easiest barriers to overcome should be modified first.

Recommendation #3: That the Ministry of Natural Resources collect more information on the type of physical challenges their park visitors face.

Recommendation #4: That Provincial parks invest in making outdoor activities accessible to persons of reduced mobility by hardening the surface of and widening trails used in the interpretive programs as well as self-guided wilderness trails and by providing equipment rentals such as rough-terrain wheelchairs, golf-carts, and pontoons.

Recommendation #5: That Provincial parks invest in unstaffed first-aid stations. Many groups for persons with long-term illnesses travel with their own specially-trained medical staff, equipment and medication and could set up a mobile health centre in the station provided.

Recommendation #6: That Ontario's provincial parks improve accessibility by the visually impaired by replacing stairs with ramps (stairs are a hazard to persons with poor depth perception); placing hand-railings along nature trails; using different textured paths around the park (to indicate a person's

location within the park); posting signs with large print in well lit areas; painting bright colours on buoys, at the water's edge, on steps, and other sites of potential danger; and creating a raised map to introduce newcomers to the layout of the park.

Recommendation #7: For the hearing impaired, that provincial parks must, in case of emergencies, have light-flashing alarms in all buildings. They should also provide all information in print, and light nature trails in the evening to facilitate communication, and provide a telephone device for the deaf.

Recommendation #8: To improve access to provincial parks by seniors, that parks add resting spots like benches on trails; centrally place the comfort stations (or reserve the closer campsites for seniors); and place handrails on stairs and in washrooms.

Recommendation #9: That due to the increasing size of the senior population in Ontario, the appropriate Ministry undertake a thorough investigation of the camping trends, requirements, and desires of seniors is required for provincial park planning.

Recommendation #10: That the appropriate Ministry undertake a survey of physically challenged Ontarians to determine which of Ontario's provincial parks should be made accessible and how. Secondly, that provincial parks undergo an accessibility audit,

and that parks with the easiest barriers to overcome should be modified first.

Park Camper Demand in Selected Provincial Parks

During the summer of 1990, Environment Probe surveyed visitors to seven of Ontario's Provincial Parks. The survey was designed to elicit respondents' travel costs and willingness to pay for their camping experience in the parks surveyed and to indicate park visitors' general preferences for wilderness values.

The format of the survey was an insert designed to fit inside the survey form used by the Ministry of Natural Resources (see appendix). MNR regularly surveys summer visitors to provincial parks on alternate years and, in 1990, surveyed 47 provincial parks. MNR offered to distribute our surveys if they were designed to fit inside their own. In addition, MNR provided Environment Probe with data obtained from the MNR survey.

As Environment Probe's interest was the unrecognized recreation value of wilderness, the survey was intended to be inserted in MNR surveys going to wilderness parks. Of the wilderness parks in the province, only Quetico and Killarney were slated to be surveyed in 1990. For this reason, Environment Probe decided to survey Quetico and Killarney and five others: Darlington, Grundy Lake, Rondeau, Lake of the Woods and Presquile. These parks represent different attributes, all the MNR's administrative

regions save the Northernmost region, and three of MNR's six park classifications: wilderness park (Quetico and Killarney), natural environment park (Rondeau, Grundy Lake, Presquile and Lake of the Woods), and recreation park (Darlington).

The Method of Analysis

The primary result of the survey was the development of a demand curve for camping at each of the parks surveyed. Using Hotelling's travel cost method of valuation (discussed earlier), a demand schedule was estimated for each park based on visitors' willingness to pay to travel to it, including fuel and transportation, food and beverages, accommodation and park fees. In order to estimate the travel cost per visitor-day, visitors were asked how often they went camping, and for how long each time. In addition, the survey asked visitors how much they would be willing to pay if park fees were to rise.

Park visitors were asked to choose from selected improvements that could be made to parks, including more space between campsites, more restrictions on television and radio noise, more opportunities for camping at interior sites, and more forested area surrounding the campsite. We also asked visitors about their willingness to pay for such changes to be made. The final question required visitors to rank the attraction of their park visit according to options designed to identify wilderness

values, from learning about nature to opportunities to socialize and meet new people.

Park Camper Demand

Current demand for the parks surveyed is shown in Table I.

Quetico Provincial Park received more than twice the number of campers of any other park, attesting to its size as well as its popularity. The least popular for camping was Darlington Provincial Park, which received a higher proportion of its total visitors as day users. Rondeau Provincial Park also enjoys a high proportion of day users compared to the other parks surveyed.

Table III Visitors to Selected Provincial Parks 1990

Park	Total Visitors	Day Users	Campers
Grundy Lake	59195	4508	54687
Darlington	95725	43397	52328
Quetico	141405	8010	133395
Killarney	55400	2245	53155
Rondeau	170854	112363	• 58491
Presquile	215541	115223	35828

Detailed analysis of the data on frequency of camping, party size, and travel costs are presented in the appendix. The results of this analysis are presented in Table IV and depicted in Figures 14 through 18, representing demand curves for Grundy

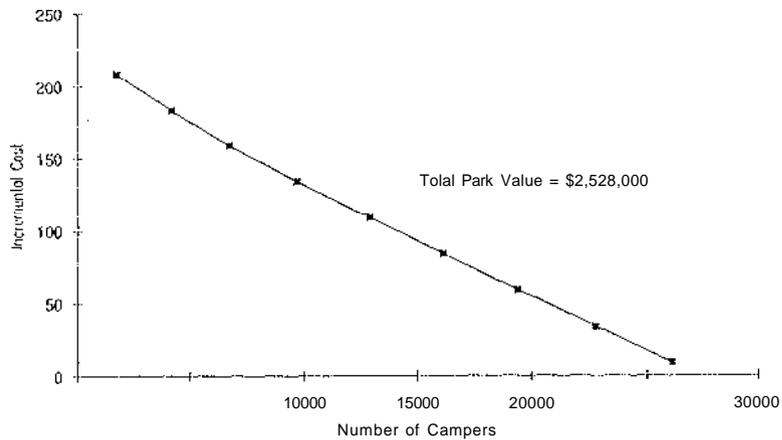


Figure 14 Camper Demand for Darlington Provincial Park

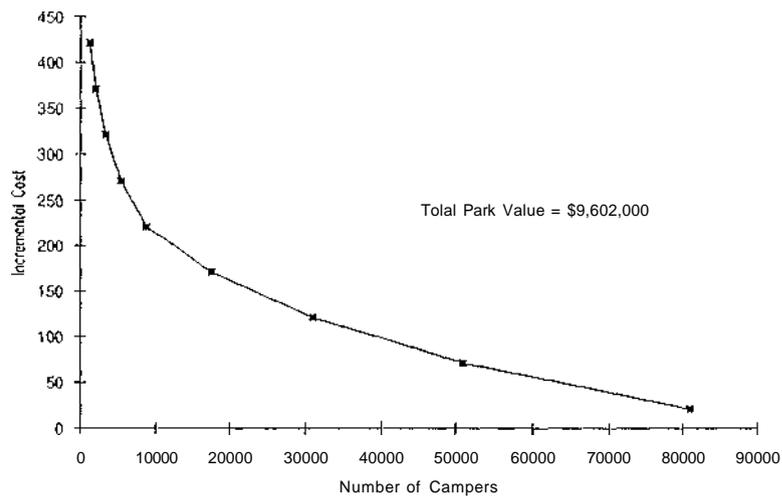


Figure 15 Camper Demand for Quetico Provincial Park

Once we know the value of each park, we can also rank the parks relative to each other. Not surprisingly, Quetico Provincial Park, one of the premier wilderness parks in North America - valued as a destination by Ontarians and Minnesotans alike - was the most highly valued. Killarney, the other wilderness park surveyed, was the next highly valued. Grundy Lake, far from

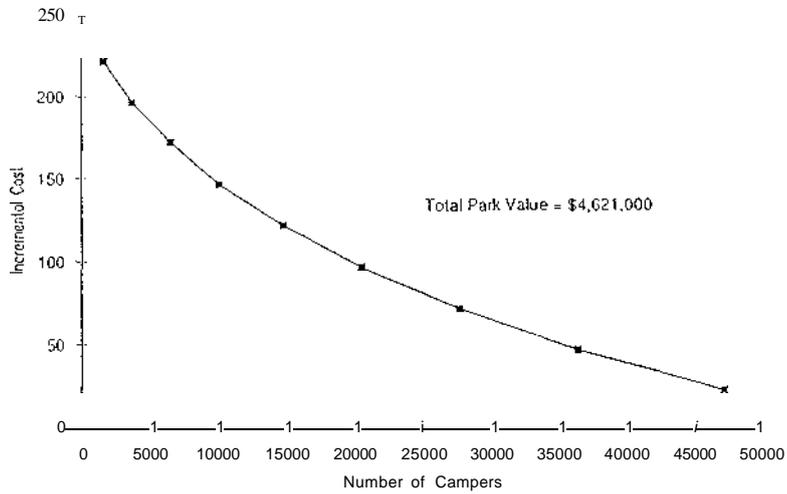


Figure 16 Camper Demand for Killarney Provincial Park

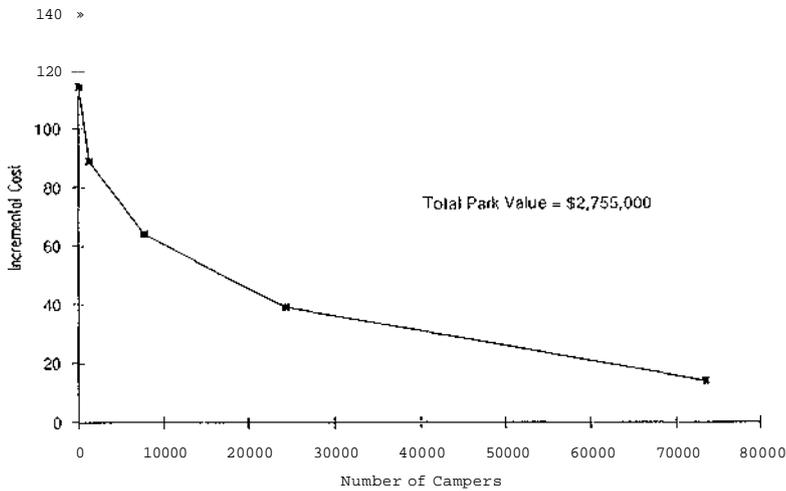


Figure 17 Camper Demand for Rondeau Provincial Park

population centres, and without any distinguishing features, was the least valued. But even Grundy Lake was worth more than \$1.5 million to the park visitors that camped there.

But ranking in aggregate terms can be deceiving. Quetico, the highest valued park, is also the largest by a huge margin at over

Table V Selected Provincial Parks Statistics 1990

Park	Area	Campsites	Camper nights	Value
Grundy Lake	2554	520	54,687	\$1,575,000
Darlington	209	348	52,328	\$2,528,000
Quetico	475,819	130	133,395	\$9,602,000
Killarney	48,500	122	53,155	\$4,621,000
Rondeau	3254	226	58,491	\$2,755,000
Park	Value per hectare	Value per Developed Campsite	Value per Camper Night	Present Value per Camper Night
Grundy Lake	\$617	\$3,029	\$29	\$526
Darlington	\$12,096	\$7,264	\$48	\$882
Quetico	\$20	\$73,862	\$72	\$1,314
Killarney	\$95	\$37,877	\$87	\$1,587
Rondeau	\$847	\$12,190	\$47	\$860

475,000 hectares. Darlington, by comparison, comprises only 209 hectares. One might expect that by sheer virtue of its size, Quetico would be valued more than its counterparts. The value of each park on a per hectare basis gives a different impression than aggregate value. On a per hectare basis, Quetico is the least valued of the parks, at \$20 per hectare. Darlington, on the other hand, is the most highly valued, at over \$12,000 per hectare.

But per hectare valuation gives little more than an appraisal of the real estate value. Darlington is close to Metropolitan

Toronto, and receives proportionately many more visitors per hectare than do Quetico or other wilderness parks. Examining the park value per campsite or per camper night basis is more relevant to the value of the camping experience, and therefore the social benefit of camping in these parks.

On a per campsite basis, Quetico once again is the most highly valued, at \$73,682 per developed campsite. Killarney places second at \$37,877 per campsite; and Grundy Lake places lowest of the parks surveyed, at only \$3029 per campsite. The number of campsites, however, is not always indicative of the camping value. Some parks are fully booked months in advance, and full to capacity all season long, while others always offer vacancies. For this reason, park value per camper night is a reasonable measure of the social benefit of camping at individual parks. Using this measure, Quetico is no longer highest valued, but takes second place to Killarney which is valued at \$87 per camper night. Quetico is valued at \$72 per camper night. The lowest valued is once again Grundy Lake at \$29 per camper night.

These values, however, represent value per camper night in one year only - 1990. The parks will continue to have value to society long into the future. If one assumes that the population grows at a constant rate of 0.66 percent per year (Statistics Canada's conservative estimate) and that park camping increases at this rate (not at its historical rate, which is more than 3.1