

RECREATIONAL USE OF LAKE MICHIGAN IN INDIANA

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ABSTRACT

In this study, data collected from a systematic random sample of 3000 residents of Indiana shoreline counties were analyzed to identify Indiana Dunes National Lakeshore and Indiana Dunes State Park usage patterns, gauge importance of site attributes in choices about recreation, and evaluate ways in which sociodemographic characteristics affect ratings of site attributes and, consequently, choice of recreation facilities.

The fact that most respondents learned about shoreline resources through word of mouth and that most important site attributes are management-controlled facilities, not physical resources, is evidence that advertising, marketing, and management strategies for park facilities could benefit from revision or expansion. The report concludes that demographic information related to the rating of site attributes may be useful in understanding the family choice-making process.

Keywords: Indiana; Recreation; Shoreline Resources; Site Attributes; Sociodemographics; Southern Lake Michigan; Usage

INTRODUCTION

The attractiveness of southern Lake Michigan emphasizes the potential for competition and conflict among alternative recreation uses and tourism development. The 1977 National Urban Recreation Study pointed out that there are almost 8 million people living in the Chicago-Gary region. The Indiana shoreline today is a mix of densely populated cities, small towns, steel mills, petrochemical complexes, and energy facilities set amongst dunes, wetlands, beaches, prairies and forests. Approximately 22 miles of shoreline are in industrial and utility uses and three miles are in residential use. About 14% of all Indiana residents live in the shoreline counties (Lake, Porter and LaPorte).

The 1984 Indiana Outdoor Recreation Plan notes that each year over two million visitors from across the nation enjoy the unique environmental and recreation resources of the eight major shoreline parks. These include the Indiana Dunes National Lakeshore, the Indiana Dunes State Park and six municipal and county parks.

Even though there is a substantial amount of shoreline available for public recreation, visitation varies greatly. Most of the publicly owned shoreline is located in the National Lakeshore and the State Park which are also the most used parks. Neither park can meet visitor demand during the peak summer season. Both often must close their gates early in the day on summer weekends. On the other hand, some of the municipal parks are underutilized due to poor access, lack of facilities, or lack of public awareness of their existence.

Boating and fishing access to the lake and its tributaries is particularly limited. Demand for marina slips, not only from Indiana residents but also from Michigan and Illinois residents, exceeds the supply many times over. The high cost of expanding existing marinas or developing new ones has proven a formidable obstacle. Michigan City, Gary, Hammond, East Chicago, Lake County, Indiana Dunes National Lakeshore, and the Little Calumet River Basin Development Commission all have plans at various stages of development. In all cases, the high cost of developing marina facilities or acquiring lakefront land has slowed the progress of these projects.

Indiana has one of the best trout and salmon fisheries on the Great Lakes. While there is limited fishing access at most of the shoreline parks and at the electric generating stations, there are even fewer public access sites on the main Lake Michigan tributaries (the Little Calumet River and Trail Creek). These tributaries are prime fishing locations, particularly during the salmon runs. The result is overcrowding on existing public lands and problem trespassing on private property. Limited local and state resources have not allowed an aggressive fishing site acquisition program. The 1984 Indiana Outdoor Recreation Plan has noted the activity of a number of organizations, commissions, county park and recreation departments, and cities to improve recreation opportunities along the shoreline. Part of this is related to economic opportunity.

Recreational opportunities associated with the shoreline have a very positive impact on Indiana's economy. The 2 million plus visitors are estimated to contribute \$14 million into the economy. Further, for every \$1 spent on Great Lakes trout and salmon programs an estimated \$230 is returned in economic benefits. The further development and enhancement of the shoreline resources will not only provide recreation benefits but also make a substantial economic contribution to both the local and state economies (IORP 1984:54).

Certainly one of the critical questions in the public sector will have to be how to allocate a finite investment to meet the needs of recreation consumers now and in the future.

Potential problems in the area also include competitive pressure on the fishery resource, overcrowding at marinas and parks, property rights allocation between public and private access to the lakeshore, maintenance of waterfowl habitat, shoreline erosion, and air and water pollution. The decrease in selected manufacturing and production industries in northern Indiana also makes the prospect of tourism one alternative to assist in maintaining employment and an economic base.

With such a diversity of population, interested groups, and potential problems there is a surprising lack of recreation use information for this area. Almost 10 years ago some recreation participation surveys were done for this area by the principal investigator (O'Leary and Dottavio 1976) for inclusion in the 1979 Indiana Outdoor Recreation Plan. Sea Grant funding was made available for a study of boating activities in the Chicago metropolitan area (Absher and Collins 1987). This proposed project expands upon that study by looking at facilities east of Chicago and at sites where activities selected are more encompassing than just boating. In addition, research at Michigan State University has been examining tourist information networks in communities on the Michigan side of Lake Michigan addressing how consumers get tourist information and how communities attempt to advertise. The hunting, fishing and nonconsumptive recreation surveys conducted by the U.S. Fish and Wildlife Service also can provide additional information about activity in the northern Indiana area. Indiana Department of Natural Resources investigations of fishing also complement these data needs.

Given the multitude of interests focusing on this valuable resource, there are going to be a number of tasks in the design, management and planning of recreation resources that require understanding of the site-demand process. Consequently, there is a need for qualitative and quantitative measurement of demand characteristics associated with the use of various public and private facilities along the Indiana shoreline of Lake Michigan.

Complementing the need for information on the site-demand process in the southern Lake Michigan area is the opportunity to work with travel cost methodology emphasizing (a) site attributes that affect site choice, (b) how different types of people identify different attribute priorities, and (c) how a model like this works for describing site demand in a predominantly urban environment. Peterson et al. (1983) have outlined a multinomial site choice model for a selected group of recreation areas in Chicago. This approach shares some similar characteristics with earlier studies using site demand models (Dwyer et al. 1977; Gibson 1978; Ewing 1980) while at the same time drawing on some more recent work in travel forecasting (Stopher and Meyburg 1975, 1979; Koppelman and Hauser, 1979) and trip distribution components of models developed by Cesario and Knetsch (1976) and Ewing (1980). While the study demonstrated potential application for our purposes, it also pointed toward a need to examine the role of sociodemographic variables such as age, income and education in conjunction with site-specific variables to better understand the choice process. This latter concern about preferences for site attributes, borrowing from earlier work done in wilderness and camping areas, has become an important research area in the last several years (Harris et al. 1984; O'Leary 1982; Brown and Ross 1982).

OBJECTIVES

The objectives of this research project were to:

- a) Develop an information base about recreation site use that decision makers can use to formulate policy about the Indiana role in water based recreation on southern Lake Michigan.
- b) Identify the qualitative and quantitative characteristics that affect water based recreation choices in the southern Lake Michigan area.
- c) Identify site attributes that affect site choices that can be manipulated through design or management changes.
- d) Evaluate how sociodemographic factors might interact with site specific attributes in the selection of recreation sites.

DATA COLLECTION AND ANALYSIS

A mail questionnaire was used for data collection. This eight-page survey instrument consists of five broad categories of questions (see Appendix). The first section includes general questions about the respondent's outdoor recreation participation along the shoreline (frequency, means of transportation, sources of information, etc.). In the second section, respondents are asked to rate each of thirty site attributes on a scale from one (not important) to five (very important).

Identification of attributes for inclusion in this section was accomplished primarily through a review of literature (Driver 1977, Driver and Brown 1978, O'Leary et al. 1981, McEwen 1983). These attributes were intentionally selected to provide a broad, somewhat generic list of features that may be characteristic of *any* lakeshore facility, not one in particular.

Section three of the questionnaire includes questions and attribute rating scales dealing specifically with the Indiana Dunes National Lakeshore and State Park. The attribute list used in this section is smaller and more specific than that used in section two. Sections four and five consist of questions dealing with other shoreline facilities and sociodemographic information respectively.

Data were collected from a systematic random sample of 2500 adult residents (age 18 or older), 600 from each of the three Indiana counties touching on Lake Michigan (Lake, Porter, and LaPorte) and 700 from Cook County, Illinois, which includes the city of Chicago. (203 data tables were compiled from the results of this study. They are available upon request from the Illinois-Indiana Sea Grant Program or from the author.) The sample was purchased from R.L. Polk Company, a large marketing firm in Michigan.

A multiple mailing strategy was used for data collection. The initial mailing, consisting of a cover letter, questionnaire, and return envelope was followed up with a postcard reminder and a third mailing (new letter, replacement questionnaire and return envelope) to enhance response rate. This approach has produced relatively high response rates in other research (Dillman 1974, O'Leary and Dottavio 1976). Confidentiality was maintained by using a number placed only on the return envelope so that names could be removed from the mailing list as questionnaires were returned. The response rate for this survey was forty-eight percent.

Data analysis was performed on the Purdue University IBM 3083 computer using SPSSx (SPSS Inc., 1986). Frequency analysis was used to determine the general outdoor recreation participation pattern and sociodemographic profile of the respondent group. It was also used for the attributes in sections two and three to determine which received the highest importance ratings.

The relationship between attribute ratings and sociodemographic variables was identified by means of contingency table analysis generated by the SPSSx subprogram Crosstabs. A cross-tabulation, or cross-classification analysis, has been established as an appropriate statistical procedure for variables that are classified into exhaustive and mutually exclusive categories (Everitt 1977). The Chi-square statistic was used to test for independence between the row and column variables in the cross-classification (Reynolds 1977). While this statistic indicates whether or not two variables are statistically independent, it does not describe the strength or direction of any relationship which may exist. The Kendall's Tau statistic was selected as an appropriate measure of association, following Reynolds' (1977) recommendation that it is a conservative ordinal correlation coefficient that provides a better approximation to the "true" correlation than other available measures. Nie et al (1975) also suggest using this statistic as they feel it is appropriate to use for a rectangular table (one in which the number of rows differs from the number of columns). All contingency tables generated in data analysis were rectangular.

Demographic Data Weighting

In order to determine the representativeness of the purchased random sample, demographic information from the 1980 census (Donnelley Marketing Information Services, 1985) was obtained for comparative purposes. Census data on adult sex and age distributions were obtained for each of the counties involved. The actual distribution of these variables in the population of the sampled area was calculated in the following way. Data for each county was tabulated to find the proportion of males versus females and the proportion of adults in each of six mutually exclusive age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65 and over). These percentages were multiplied by the respective percentage of the sample that each county comprised and summed across counties to arrive at a value that approximates the actual demographic situation of the sampled area:

$$\begin{array}{l} \text{percentage of} \\ \text{variable A} \\ \text{for county X} \end{array} \times \begin{array}{l} \text{percentage of sample} \\ \text{that county X} \\ \text{represents} \end{array} = \begin{array}{l} \text{estimated "actual" value} \\ \text{for variable A} \\ \text{for sample area} \end{array}$$

These estimated "actual" values were compared to the values obtained through frequency analysis. As can be seen in Table 1, males and older age groups are overrepresented in the sample. Weighting factors were calculated (see Table 1) and used so that the percentages for sex and age in the sample data matched the actual values (as estimated) in the population. Cross-classification and factor analysis were performed subsequent to weighting of age values. In a separate procedure, cross-classification analysis was done after weighting the sex variable.

Table 1. Weighting Factor Calculation

	Sample Data (%)	Demographic Data (%)	Weighting Factor
Sex:			
Female	34.0	52.02	1.53
Male	66.0	47.98	0.7269
Age:			
18-24	2.8	18.54	6.51
25-34	20.0	23.61	1.18
35-44	25.9	16.34	0.631
45-54	16.5	14.66	0.888
55-64	17.2	13.49	0.784
65+	17.5	13.35	0.7628

RESULTS AND DISCUSSION

Frequency Analysis

Frequency analysis of demographic data revealed a somewhat older, predominantly male respondent group (Table 2). Median age is forty-five years, and almost twice as many men responded as did women. Almost three-fourths of the respondents are married. It would follow that many of the respondents live in a family group setting, as the median number of persons per household is three. The income data presented in Table 2 implies a relatively high level of affluence for the respondent group as a whole. However, it should be noted that the level of nonresponse to this question is fairly high (31.2%) as is often the case with this type of personal or "threatening" question.

Table 2. Selected Demographic Characteristics of Respondents

Sex:	Ethnic Background:	Age:
Male - 66.0%	White - 95.7%	18 to 24 - 28%
Female - 34.0%	Nonwhite - 4.3%	25 to 34 - 20.0%
M ¹ - 4.5%	M - 2.4%	35 to 44 - 25.9%
		45 to 54 - 16.5%
		55 to 64 - 17.2%
		65 and older - 17.5%
Marital Status:	Residence:	
Single - 11.4%	Urban - 23.4%	
Married - 74.4%	Suburban - 55.3%	
Divorced/Widowed/ Separated - 14.2%	Rural - 21.3%	
M - 4.2%	M - 3.5%	
Education:	Income:	
High school - 36.6%	Less than \$25,000 - 21.8%	
Some or completed college - 38.6%	\$25,000 or more - 78.2%	
M - 2.5%	M - 31.2%	

Median respondent age: 45

Median number of persons per household: 3

¹M = missing; % not responding to Question.

Frequency data for the general recreation questions posed in section one of the questionnaire can be found in Table 3. Over three-fourths of the respondents have visited the lakeshore at some time, and just over half have recreated there during 1985. The main source of information about recreation facilities along the lakeshore is word of mouth. This was also found to be the case in a study conducted by Market Opinion Research (1986). That study found that half of American adults mention family/friends as one of their three main information sources; the other half mention newspapers. Newspapers were found to be an important source of information in this study as well, with 49.7% of the respondents reporting use of this medium (32.0% for articles, 17.7% for advertisements).

The majority of respondents visit the lakeshore on the weekend with a group made up of both family and friends, stay only for the day, and use their own non-camping vehicles to get there. Three of the top four activities (swimming, fishing, motorized boating) involve use of the lake.

Table 3. General Question Responses (percent)

Participation in outdoor recreation along the lakeshore:

ever - 78.2
within past year - 51.3

Information sources:

word of mouth - 52.5	brochures - 14.0
prior experience - 48.2	state highway map - 10.5
newspaper articles - 32.0	Wander Indiana brochure - 10.3
newspaper ads - 17.7	highway info. center - 6.3

Group structure:

participate w/both family and friends - 42.1	participate w/friends only - 14.3
participate w/family only - 39.1	participate alone - 4.4

Transportation to lakeshore:

automobile, truck or van not used for camping - 74.2
automobile, truck or van pulling a boat trailer - 5.4
automobile, truck or van pulling a camping trailer - 4.7

Length of stay:

day use only - 70.9
1-2 nights - 5.5
more than 2 nights - 1.8

Time of visit:

weekday - 23.9
weekend - 47.3

Median number of days visited in 1985: 6

Activities:

swimming - 42.0	motorized boating - 14.6
hiking - 32.1	bird watching - 11.4
fishing - 21.8	other - 12.8

Limitations to Participation along Lakeshore

At the end of section one, respondents were asked to give reasons why they had limited their outdoor recreation participation along the lakeshore during the past year, or why they had stopped recreating there altogether. Table 4 shows the five most frequent responses for each question. In both cases, lack of time was the main reason given for limited or discontinued participation. The number of other users at lakeshore facilities also figured into other reasons given. "Places too crowded" placed second for both questions, and a related issue, "personal safety problems" was among the top five reasons for each question.

Table 4. Reasons for Limited or Stopped Participation Along Lakeshore (percent)

Limited Participation:

1. not enough time - 41.9
2. places too crowded - 25.6
3. inadequate info. - 13.5
4. not enough money - 11.1
5. personal safety problems - 10.8

Stopped Participation:

1. not enough time - 20.8
 2. places too crowded - 10.9
 3. not enough money - 7.4
 4. personal safety problems - 7.1
 5. personal health - 6.9
-

Choosing a Recreational Facility

The ten attributes identified by respondents as being the most important to them in choosing a recreational facility are listed in Table 5 in descending order. This order was established by analyzing the frequency with which each attribute was given a score of five (very important). Although the attribute "crowdedness" does not appear on this list (it ranks eleventh, just after "close to home"), four of the ten attributes listed seem to relate to it. Cleanliness, which was given top priority, may be considered to be in part a function of the number of users at the facility. Concern for personal safety (attribute number 2) and enforcement of rules (attribute number 6) may also relate to crowdedness, as visitors may feel somewhat threatened by the large number of other visitors which may potentially "invade" their space. Crowdedness definitely affects the "ample parking" attribute (attribute number 3), since it appears from the data in Table 3 that most visitors bring their own vehicle to the lakeshore rather than use public transportation. Since swimming was identified as one of the main activities along the lakeshore (Table 3) it is logical that two attributes related to it (beach area, lifeguards) would be given high importance ratings.

Table 5. Most Important Attributes for Shoreline Facilities (percent)*

1. Cleanliness--76.8
 2. Feeling of safety--72.4
 3. Ample parking--63.8
 4. Beach area--63.8
 5. Lifeguards--56.7
 6. Enforcement of rules--54.8
 7. Scenic views--54.1
 8. Picnic facilities--51.6
 9. Variety of plants--40.2
 10. Close to home--38.7
-

*The percentages listed indicate the percentage of the respondent group which rated the given attribute as being "very important."

As previously mentioned, the attributes listed for importance ratings in section two of the questionnaire are not specific to any one facility along the lakeshore. These attributes may be regarded as being "generic" in that they may pertain to many shoreline areas. Harris (1982) refers to these types of attributes as "macrofactors", which are "grosser, more obvious attributes of a recreation area that are more critical in the pre-trip choice process than in any post-trip evaluation of the area." Conversely, microfactors, such as seeing a wild animal or

encountering loud, inconsiderate people, are elements that may add to or detract from a visitor's recreation experience and ultimately affect a visitor's post-trip evaluation of that facility. However, the role of microfactors does come into play until the initial site choice decision has been made.

Several of the attributes (macrofactors) rated as being important in Table 5 could arguably be defined as microfactors. For example, it is possible for a person to know nothing about the cleanliness of recreation area without having been there. Thus, as defined above, the cleanliness attribute could be considered a microfactor. In planning for subsequent trips, however, it could be considered a macrofactor since the recreationist has some knowledge about it and it may influence the pre-trip choice process. It is in this situation that the concept of familiarity becomes an issue. Familiarity has long been recognized as an important factor influencing visitor preference for and during on-site recreational engagements. A familiarity-preference study revealed that previous visits were associated with increased preference after an on-site experience (Hammitt 1981). The relationship of higher preference ratings to number of visits is probably due both to enhanced perception of environmental information and a greater appreciation of the setting by the return visitor.

Recreation Use of Lakeshore Facilities

The level of nonresponse to the questions about "other facilities" in section four of the questionnaire was very high (approximately ninety percent). Of those that did respond, however, the most popular of these areas (based on mean number of days visited in 1985) are Beverly Shores (2.46 days), Burns Ditch (2.09 days), Dune Acres (1.34 days), and Jeorse Park (1.05 days). The mean distance of these areas from respondents' homes ranges from seventeen to twenty miles. People tend to use these facilities in groups with friends or by themselves.

The Dunes

Approximately two-thirds of the respondent group have been to the Indiana Dunes National Lakeshore and the State Park (Table 6). As might be expected, the median number of days visited and median distance from home are very similar (respectively) for each facility.

Table 6. The Indiana Dunes

	<u>National Lakeshore</u>	<u>State Park</u>
Have you been here before?	Yes - 63.9% No - 23.6%	Yes - 69.9% No - 18.6%
Days visited in past year:	2.0 (median)	1.0 (median)
Median distance from home:	15 miles	18 miles
Most important attributes:	1. clean - 48.7% 2. ample parking - 36.3 3. enforcement of rules - 36.1 4. lifeguards - 32.5 5. scenic views - 31.9	1. clean - 41.9% 2. enforcement of rules - 32.0 3. ample parking - 31.5 4. picnic areas - 28.4 5. lifeguards - 27.3 6. scenic views - 26.8
Recommend to friends:	Yes - 63.5% No - 2.1%	Yes - 52.4% No - 2.3%

*Order determined by percentage of "5" (very important) ratings.

In this section of the questionnaire, respondents were asked to rate the importance of eighteen attributes for each park. This attribute list is shorter and somewhat different than the "generic" list used in section two of the questionnaire, although there is a substantial amount of overlap. This overlap becomes very evident when the attributes rated as more important features at the Dunes Parks also place in the top ten most important attributes as rated in section two.

The top six attributes for the national lakeshore and state park are identical; only their order varies between parks. The cleanliness issue was considered most important - it heads both lists for the Dunes parks, as well as the list in Table 5. The next two items, ample parking and enforcement of rules, may relate to crowdedness (although the "not crowded" attribute did not place in the top six for either facility), as previously discussed. The importance of lifeguards and picnic areas perhaps suggests a use pattern in which visitors come for the day only (overnight use was not indicated as the "campground" attribute was given low importance ratings), swim at the beach, and bring lunch and/or dinner with them to eat in the park. Aesthetics is also important to visitors, as evidenced by the high rating of "scenic views." More respondents would be inclined to recommend the national lakeshore to friends (63.5%) than they would the state park (52.4%).

Cross-Classification Analysis

In order to determine the relationship between attribute ratings and sociodemographic variables, contingency tables were prepared comparing each attribute in section two with each of the sociodemographic variables in section five. Table 7 shows one such cross-classification comparing the "accessible by public transportation" attribute with the respondents' educational level. A statistically significant Chi-square statistic (Chi-square = 29.9050, $P < 0.0029$) was led to the rejection of the null hypothesis that the two variables are independent. Hence, there is a relationship between the respondent's educational level and his or her rating of the "accessible by public transportation" attribute. The strength and direction of this relationship is given by Kendall's Tau C measure of association. This statistic can range from -1.0000 to 1.0000 inclusive. The value of the statistic in this case (Tau C = -0.13319, $P < 0.0000$) indicates a statistically significant (albeit weak) relationship. The fact that this statistic is negative indicates that the important ratings increase as the value of the education variable decreases. Therefore, people with lower educational levels tend to assign a higher importance rating to this attribute than do more educated respondents.

Table 7. Contingency Table: Accessible by Public Transportation vs. Education

"Accessible by Public Transportation" Importance Rating	Education*			
	1	2	3	4
1	42.9%	32.0%	44.6%	47.9%
2	0.0	12.4	14.4	14.9
3	0.0	17.6	15.1	15.7
4	14.3	14.7	11.4	9.1
5	42.9	23.2	14.4	12.4
Chi-square = 29.9050	Significance: $P < 0.0029$			
Kendall's Tau C = -0.13319	Significance: $P < 0.0000$			

*1 = grade school (grades 1-8) 3 = college
 2 = high school (grades 9-12) 4 = post-graduate

One may infer from this that people with lower educational levels may have lower-paying jobs and must rely on public transportation more heavily than do people with more education and (presumably) higher-paying jobs and personal vehicles for transportation.

Table 8 lists the Kendall Tau C coefficients from contingency tables in which the Chi-square value is statistically significant. While in an absolute sense these relationships are relatively weak, they are among the strongest relative to other values generated in these data analyses. The Kendall's Tau C coefficient has a negative value for all educational attribute comparisons listed in Table 8. Analysis of cell percentages indicate that the subgroup of respondents with a high school education (41.2% of the sample) tend to give proportionately higher ratings to the attributes listed than do other subgroups. This group was assigned a value of two (out of four) for the nominal-scale education variable. The association of a low value for educational level with high importance ratings led to negative Kendall coefficients. The same holds true for income, where the highest ratings came from people in the lowest income range (\$17,500 to \$19,999). Only one attribute had a statistically significant relationship with income. When cross-classification analysis was performed for marital status, area of residence (urban, suburban, rural) and population of residence, no statistically significant relationships with the attributes were revealed.

*Table 8. Site Attributes vs. Sociodemographic Variables:
Kendall's Tau C When Chi-Square is Statistically Significant*

Variable	Attribute	Kendall's Tau C	Significance
Education	Accessible by public transportation	0.13319	p<0.0000
	Bait and tackle shop	-0.12421	p<0.0000
	Availability of staff	-0.12049	p<0.0000
	Food concession	-0.10249	p<0.0002
Income	Accessible by public transportation	-0.12958	p<0.0000

Weighted Cross-classification Analysis

Subsequent to frequency analysis, the age and sex variables were weighted so that the data from the sample would more accurately reflect the true demographics of the Indiana Lakeshore region. The weighted data were then subjected to cross-classification analysis. Table 9 shows the Kendall's Tau C values and their respective significance levels for association with statistically significant Chi-square values. The attribute/age interactions bear out some associations that might logically be hypothesized. For example, one might suggest that older visitors look for a more peaceful, relaxing kind of experience with a passive recreation focus. This was found to be the case, as indicated by the strong positive Kendall's Tau C values for enforcement and quietness. All other attribute/age interactions have negative Kendall's Tau C values, high importance ratings by younger age groups. As seen in Table 9, all of the attributes rated as important by younger respondents are activity-oriented (athletic facilities, boat rental, bait and tackle shop, etc.).

Table 9. Site Attributes vs. Weighted Age, Sex Variables:
Kendall's Tau C When Chi-Square is Statistically Significant

Variable	Attribute	Kendall's Tau C	Significance
Age	Enforcement	0.22183	p<0.0000
	Athletic facilities	-0.21549	p<0.0000
	Boat rental	-0.20289	p<0.0000
	Picnic facilities	-0.16877	p<0.0000
	Opportunity for other activities	-0.16516	p<0.0000
	Quiet	0.16247	p<0.0000
	Bait and tackle shop	-0.15400	p<0.0000
	Bicycle trails	-0.11609	p<0.0000
	Playground equipment	-0.11539	p<0.0000
	Commercial marina	-0.10938	p<0.0000
Sex	Feeling of safety	0.16943	p<0.0000
	Boat launch ramp	-0.16263	p<0.0000
	Food concession	0.15027	p<0.0001
	Scenic views	0.14984	p<0.0000
	Close to home	0.14512	p<0.0001
	Availability of staff	0.13931	p<0.0003
	Bait and tackle shop	-0.13333	p<0.0004
	Lifeguards	0.12898	p<0.0003
	Amount of information available	0.12592	p<0.0009
	Playground equipment	0.11274	p<0.0030
	Beach area	0.10504	p<0.0012
	Public marina	-0.10382	p<0.0042
	Educational	0.10289	p<0.0052
	Enforcement	0.10228	p<0.0029

With regard to the attribute/sex analysis, only three of the fourteen attributes listed are rated more highly by men than by women (boat launch ramp, bait and tackle shop, public marina). This points strongly to a fishing and/or boating use pattern for men (or, at the very least, the desire for such a use pattern). The other attributes listed are considered more important by women. These attributes are more "pragmatic" and "landbased."

In reading through this attribute list, one may envision a scenario of a mother taking her kids to the beach for the day. She would like to go to a good facility that's not too far (thus the importance of "amount of information available" and "close to home" attributes). Being by herself with several children, safety is a big concern (feeling of safety, availability of staff, enforcement of rules). Since the purpose of the trip is to swim, it is important to have a good beach with lifeguards. A playground provides a nice alternative when the children tire of swimming. It must be easier to buy lunch and/or dinner on-site since the food concession was rated high in importance (note that the "picnic facilities" attribute did not place on the list; the Chi-square value for this attribute was not statistically significant). Although the trip may have a swimming/activity focus, there is also some value in aesthetic and educational enjoyment as well.

Factor Analysis

Factor analysis was performed on the data after the age variable had been weighted. Table 10 shows the results of this analysis. Factor 1 consists of items that would be found in developed facilities. While "beach area" may be considered a natural feature and as such inconsistent with other items in this group, it can be thought of as a developed beach area--developed in the sense that the beach area is well-defined and maintained (boundaries are given, litter is picked up, lifeguards are present, etc.). This latter description of a "beach" is consistent with the attributes in Factor 1.

Table 10. Importance Item Factor Analysis
(factor loadings given in parentheses)

<p><u>Factor 1: Day Use/Developed Facilities</u></p> <p>Athletic facilities (0.60518) Playground equipment (0.73263) Picnic facilities (0.75781) Ample parking (0.67218) Food concession (0.56820) Beach area (0.66969)</p> <p><u>Factor 3: Local/Protected</u></p> <p>Lifeguard (0.44043) Cleanliness (0.61273) Close to home (0.43193) Amount of info. available (0.50300) Enforcement (0.78640) Feeling of safety (0.74262) Availability of staff (0.67490)</p> <p><u>Factor 5: Transportation-Related</u></p> <p>Accessible by public transportation (0.53103) Bicycle trails (0.66381) Cross-country ski trails (0.75145)</p>	<p><u>Factor 2: Boating & Marina</u></p> <p>Commercial marina (0.70011) Public marina (.88350) Yacht/Boat club (.68544) Boat launch ramp (.85598) Bait and tackle shop (.76400) Boat rental facilities (.59765)</p> <p><u>Factor 4: Appreciative</u></p> <p>Variety of plants/trees (0.80649) Amount of wildlife (0.82884) Opportunity for other activities (0.40551) Variety of environments (0.68168) Scenic views (0.60551) Quiet (0.68168) Educational (0.55231)</p> <p><u>Factor 6: Number of Other Uses</u></p> <p>Crowdedness (0.85309)</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The attributes in Factor 2 all relate to the use of boats. Although it is not necessarily tied directly to boating, "bait and tackle shop" certainly is closely related to the other items. With attributes such as "close to home," "feeling of safety," and "enforcement of rules," Factor 3 strongly suggests local use at facilities where visitors can feel safe.

The items in Factor 4 stress passive use of natural resources. Although "opportunity for doing other activities" can be broadly interpreted to include almost any activity, the location of this attribute in Factor 4 suggests activities such as birdwatching, photography, and other appreciative behavior. Two of the three items in Factor 5 are activity-related (bicycle trails, cross-country ski trails). The presence of the "accessible by public transportation" attribute in this factor seems somewhat inconsistent, but it may be considered to be related (perhaps weakly) to the other items in that they all concern some form of transportation.

SUMMARY AND CONCLUSIONS

Survey data presented here reveal a participation pattern along the Indiana shoreline that includes transportation via private noncamping vehicles and day use, primarily on weekends. Two of the three main activities (swimming, hiking, and fishing) center around the water resource. Word of mouth was found to be the main means by which people gather information about shoreline facilities. This fact strongly points to the need to reevaluate existing advertising strategies and develop more effective tourist information systems.

Importance rating scales were used to determine which attributes are considered to be top priority in the recreation site choice process. Chief among these are cleanliness, feeling of safety, and ample parking. Several of the ten most important attributes relate directly or indirectly with either the issue of crowdedness or the beach area. Knowledge about which attributes are key in recreation decision-making have many implications for the retailing or marketing of recreational facilities (Schroeder 1982).

Cross-classification analysis revealed a relationship between certain attributes and certain sociodemographic variables. These associations were found to be statistically significant, although somewhat weak. Knowledge of the interaction between site attributes and sociodemographic variables could be helpful in predicting visitation changes resulting from recreation development or improvement. Such knowledge may also be helpful in understanding the family decision-making process and reference group influences as they relate to recreation choices. (For discussion of family decision-making and reference group influences, see Assael 1984.)

With regard to management implications, it appears that management attention should be given to the related issues of cleanliness and especially crowding. In all attribute rating scales, respondents consistently rated cleanliness as the most important of all the attributes. Crowdedness and related attributes (feeling of safety, enforcement of rules, etc.) were also considered important, and several of these attributes were significantly related to older respondents and to female respondents. Second only to "not enough time," crowdedness was also one of the main reasons why people limited or stopped their outdoor recreation participation along the Indiana lakeshore. Being in such close proximity to a large urban area, high visitation rates and large crowds at lakeshore facilities might be expected. The data presented here, however, suggest that new visitation policies should be developed and evaluated. Controlling (reducing) the number of visitors at heavily-used sites would likely improve the cleanliness of the facility (fewer people, less litter), would make visitors feel less crowded and less threatened, and would serve to enhance the visitors' overall recreation experience. Reducing crowd size at heavily-used facilities does not mean that demand should be reduced but rather redistributed so that underutilized areas receive more visitation. This visitor redistribution can be aided through increased advertising and public awareness of these facilities.

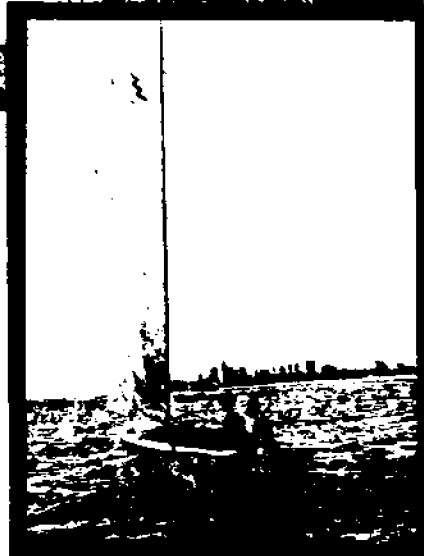
This survey has analyzed the opinions and visitation patterns of people residing in the lakeshore region; people who live close enough so that day use of lakeshore recreational facilities is not unreasonable. With these people, day use could, in fact, be considered the norm. The next phase of research on recreational use of the Indiana lakeshore would be an on-site or mail survey to determine the use patterns, preferences, and reasons for visitation for people who reside out of the region and use the recreational facilities on an overnight basis.

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RECREATIONAL USE
OF LAKE MICHIGAN
IN INDIANA



FORESTRY DEPARTMENT

PURDUE UNIVERSITY

RECREATIONAL USE OF LAKE MICHIGAN IN INDIANA

WE WOULD LIKE TO FIND OUT ABOUT YOUR OUTDOOR RECREATION PARTICIPATION ALONG THE INDIANA SHORE OF LAKE MICHIGAN. PLEASE RESPOND TO THE QUESTIONS BASED ON YOUR OWN EXPERIENCES.

IF YOU HAVE NEVER RECREATED ALONG THE INDIANA LAKESHORE, PLEASE FILL OUT AS MUCH OF THE QUESTIONNAIRE AS POSSIBLE BASED ON WHAT YOU WOULD LIKE TO SEE (WHAT IS IMPORTANT TO YOU) IN A RECREATION FACILITY.

WE WOULD APPRECIATE YOU OR YOUR SPOUSE TAKING A FEW MINUTES TO COMPLETE THIS QUESTIONNAIRE. ALL RESPONSES WILL BE KEPT CONFIDENTIAL.

1. HOW IMPORTANT IS OUTDOOR RECREATION PARTICIPATION TO YOU?
 1. ESSENTIAL
 2. DESIRABLE
 3. DON'T CARE
 4. UNDESIRABLE

2. HAVE YOU EVER PARTICIPATED IN OUTDOOR RECREATION ALONG THE INDIANA SHORE OF LAKE MICHIGAN?
 1. YES
 2. NO (GO TO PART 1)

- 2a. HAVE YOU PARTICIPATED IN OUTDOOR RECREATION ALONG THE INDIANA SHORE OF LAKE MICHIGAN DURING THE PAST YEAR?
 1. YES
 2. NO (GO TO Q. 3)

- 2b. HOW MANY DAYS DURING THE PAST YEAR WOULD YOU SAY YOU'VE PARTICIPATED IN OUTDOOR RECREATION ON THE INDIANA LAKESHORE?
_____ DAYS

3. WHAT ARE YOUR MAIN SOURCES OF INFORMATION ABOUT RECREATIONAL FACILITIES ALONG THE INDIANA LAKESHORE? (CIRCLE 3 MOST IMPORTANT)
 1. TELEVISION ADVERTISEMENTS
 2. RADIO ADVERTISEMENTS
 3. NEWSPAPER ADVERTISEMENTS
 4. NEWSPAPER ARTICLES
 5. STATE HIGHWAY MAP
 6. HIGHWAY INFORMATION CENTER
 7. BROCHURES FROM INDIVIDUAL FACILITIES
 8. WORD OF MOUTH (FRIEND OR RELATIVE)
 9. PRIOR EXPERIENCE
 10. MAGAZINE
 11. WANDER INDIANA BROCHURE
 12. CAMPING DIRECTORY
 13. OTHER _____

4. WHEN YOU VISIT THE LAKESHORE, DO YOU USUALLY GO:
 1. ALONE
 2. WITH FAMILY
 3. WITH FRIENDS
 4. WITH FAMILY AND FRIENDS

5. WHEN YOU VISIT THE LAKESHORE FOR OUTDOOR RECREATION WHICH OF THE FOLLOWING DO YOU USE FOR TRANSPORTATION? (CIRCLE ALL THAT APPLY)
- | | |
|------------------------------------------------------|--------------------|
| 1. AUTOMOBILE, TRUCK OR VAN NOT USED FOR CAMPING | 6. BUS |
| 2. AUTOMOBILE, TRUCK OR VAN PULLING CAMPING TRAILER | 7. SHIP/BOAT/CANOE |
| 3. AUTOMOBILE, TRUCK OR VAN PULLING A BOAT TRAILER | 8. MOTORCYCLE |
| 4. CAMPING VEHICLE (MOTORHOME, VAN CONVERSION, ETC.) | 9. BICYCLE |
| 5. TRAIN | 10. OTHER _____ |
6. HOW ACCESSIBLE ARE INDIANA LAKESHORE RECREATIONAL FACILITIES TO YOU?
1. EASY TO FIND (BY DIRECTIONAL SIGNS/MARKERS), EASY TO GET TO (NO TRAFFIC/CROWDS)
 2. EASY TO FIND, HARD TO GET TO
 3. HARD TO FIND, EASY TO GET TO
 4. HARD TO FIND, HARD TO GET TO
7. WHEN DO YOU USUALLY VISIT THE LAKESHORE?
1. DURING THE WEEK
 2. ON THE WEEKEND
8. HOW LONG DO YOU USUALLY STAY WHEN YOU VISIT THE LAKESHORE?
1. DAY USE ONLY
 2. 1-2 NIGHTS
 3. MORE THAN 2 NIGHTS
9. WHAT TYPE OF ACCOMODATION(S) DO YOU USE WHEN YOU PARTICIPATE IN OUTDOOR RECREATION ALONG THE LAKESHORE?
- | | |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. NONE - I ONLY STAY FOR THE DAY | 6. OTHER RENTED ACCOMMODATIONS
(CABIN, COTTAGE, CONDO,
GUEST HOME, ETC.) |
| 2. HOTEL/MOTEL | 7. FRIEND OR RELATIVE'S HOME |
| 3. BED AND BREAKFAST | 8. RENTED RECREATIONAL VEHICLE |
| 4. SECOND HOME | 9. PERSONAL RECREATION VEHICLE
(INCLUDING TRAILERS, POP-UPS,
ETC.) |
| 4a. HOW FAR (IN MILES) IS
YOUR SECOND HOME FROM THE
LAKESHORE? _____ MI | 10. TENT |
| 4b. HOW MANY DAYS PER YEAR DO
YOU USUALLY USE YOU
SECOND HOME? _____ DAYS | 11. BOAT |
| 5. TIME SHARE CONDO | 12. OTHER _____ |
10. DO YOU PREFER TO RETURN TO THE SAME PLACES ALONG THE LAKESHORE, OR DO YOU LIKE TO TRY NEW FACILITIES?
1. RETURN TO FAMILIAR PLACE
 2. TRY NEW PLACES

11. DURING THE PAST 12 MONTHS DID YOU PARTICIPATE IN ANY OF THE FOLLOWING ACTIVITIES ALONG THE LAKE MICHIGAN LAKESHORE IN INDIANA? (CIRCLE ALL THAT APPLY)

1. HUNTING
2. ORV OPERATION
3. FISHING
4. SWIMMING
5. SAILING
6. MOTORIZED BOATING
7. NON-MOTORIZED BOATING
8. WATERSKIING
9. HIKING
10. BOARD SAILING
11. BIRD WATCHING
12. OTHER _____

12. HERE'S A LIST OF REASONS WHY PEOPLE DON'T DO ACTIVITIES AS OFTEN AS THEY WOULD LIKE. WHICH, IF ANY, OF THESE ARE REASONS THAT KEPT YOU FROM RECREATING ALONG THE INDIANA LAKESHORE MORE OFTEN DURING THE PAST 12 MONTHS? (CIRCLE ALL THAT APPLY).

1. NO PLACES TO DO ACTIVITIES
2. PLACES POORLY MAINTAINED
3. PLACES TOO CROWDED
4. PLACES HAVE POLLUTION PROBLEMS
5. PLACES HAVE PERSONAL SAFETY PROBLEMS
6. NOT ENOUGH MONEY
7. NOT ENOUGH TIME
8. INADEQUATE TRANSPORTATION
9. TOO FAR TO TRAVEL
10. INADEQUATE INFORMATION ON PLACES TO GO
11. PERSONAL HEALTH
12. DON'T HAVE PEOPLE TO GO WITH
13. SOME OTHER REASON: _____

13. DURING THE PAST YEAR, HAVE YOU STOPPED GOING TO THE INDIANA LAKESHORE FOR ANY REASON? (CIRCLE ALL THAT APPLY)

1. NO PLACES TO DO ACTIVITIES
2. PLACES POORLY MAINTAINED
3. PLACES TOO CROWDED
4. PLACES HAVE POLLUTION PROBLEMS
5. PLACES HAVE PERSONAL SAFETY PROBLEMS
6. NOT ENOUGH MONEY
7. NOT ENOUGH TIME
8. INADEQUATE TRANSPORTATION
9. TOO FAR TO TRAVEL
10. INADEQUATE INFORMATION ON PLACES TO GO
11. PERSONAL HEALTH
12. DON'T HAVE PEOPLE TO GO WITH
13. SOME OTHER REASON: _____

PART I - FACILITY FEATURE IMPORTANCE

LISTED BELOW ARE SEVERAL FEATURES OR ATTRIBUTES OF RECREATIONAL FACILITIES ALONG THE LAKESHORE. PLEASE RANK EACH ATTRIBUTE IN TERMS OF HOW IMPORTANT THE PRESENCE IS TO YOU IN A RECREATIONAL FACILITY. CIRCLE ONE NUMBER FOR EACH ITEM USING THE RATING SCALE BELOW. PLEASE CONSIDER EACH FEATURE CAREFULLY AND TRY TO SPREAD OUT YOUR RESPONSES. REMEMBER, SOME ITEMS WILL BE MORE IMPORTANT TO YOU THAN OTHERS.

		NOT IMPORTANT			VERY IMPORTANT	
		1	2	3	4	5
14.	1. COMMERCIAL MARINA	1	2	3	4	5
	2. PUBLIC MARINA	1	2	3	4	5
	3. YACHT OR BOAT CLUB	1	2	3	4	5
	4. BOAT LAUNCH RAMP	1	2	3	4	5
	5. BAIT & TACKLE SHOP	1	2	3	4	5
	6. BOAT RENTAL FACILITIES	1	2	3	4	5
	7. ATHLETIC FACILITIES (BALL FIELDS, TENNIS COURTS, ETC.)	1	2	3	4	5
	8. PLAYGROUND EQUIPMENT	1	2	3	4	5
	9. PICNIC FACILITIES (TABLES, GRILLS, ETC.)	1	2	3	4	5
	10. AMPLE PARKING	1	2	3	4	5
	11. ACCESSIBLE BY PUBLIC TRANSPORTATION	1	2	3	4	5
	12. FOOD CONCESSION	1	2	3	4	5
	13. BEACH AREA	1	2	3	4	5
	14. LIFEGUARDS	1	2	3	4	5
	15. VARIETY OF PLANTS/TREES	1	2	3	4	5
	16. AMOUNT OF WILDLIFE	1	2	3	4	5
	17. NUMBER OF OTHER USERS (CROWDEDNESS)	1	2	3	4	5
	18. OPPORTUNITY FOR DOING OTHER ACTIVITIES	1	2	3	4	5
	19. VARIETY OF ENVIRONMENTS	1	2	3	4	5
	20. CLEANLINESS/GOOD MAINTENANCE	1	2	3	4	5
	21. CLOSE TO HOME	1	2	3	4	5
	22. AMOUNT OF INFORMATION AVAILABLE ON AREA	1	2	3	4	5
	23. ENFORCEMENT OF RULES & REGULATIONS	1	2	3	4	5
	24. SCENIC VIEWS	1	2	3	4	5
	25. FEELING OF SAFETY	1	2	3	4	5
	26. AVAILABILITY OF STAFF	1	2	3	4	5
	27. QUIET	1	2	3	4	5
	28. EDUCATIONAL	1	2	3	4	5
	29. BICYCLE TRAILS	1	2	3	4	5
	30. CROSS-COUNTRY SKIING AREAS	1	2	3	4	5

PART II - THE DUNES

THE FOLLOWING QUESTIONS ARE ABOUT THE INDIANA DUNES NATIONAL LAKESHORE AND THE INDIANA DUNES STATE PARK. PLEASE ANSWER THEM BASED ON YOUR EXPERIENCES AT THESE FACILITIES

- | | <u>INDIANA DUNES
NATIONAL LAKESHORE</u> | <u>INDIANA DUNES
STATE PARK</u> |
|-------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| 15. HAVE YOU BEEN HERE BEFORE? | 1. YES 2. NO | 1. YES 2. NO |
| IF YOU HAVE <u>NOT</u> VISITED EITHER PARK, GO TO PART III. | | |

- | | <u>INDIANA DUNES
NATIONAL LAKESHORE</u> | <u>INDIANA DUNES
STATE PARK</u> |
|--------------------------------------------------------------------|---------------------------------------------|-------------------------------------|
| 16. HOW MANY TIMES HAVE YOU VISITED THE FACILITY IN THE PAST YEAR? | _____ DAYS | _____ DAYS |
| 17. APPROXIMATELY HOW FAR IS THE PARK FROM YOUR HOME? | _____ MI. | _____ MI. |

FOR THE FOLLOWING QUESTION, PLEASE RATE THE PARK ATTRIBUTES FOR EACH FACILITY BASED ON HOW IMPORTANT ITS PRESENCE IS TO YOU. USE THE FOLLOWING SCALE TO INDICATE YOUR RATING:

- | | |
|-------------------------|-----------------------|
| 1. NOT AT ALL IMPORTANT | 4. SLIGHTLY IMPORTANT |
| 2. SLIGHTLY UNIMPORTANT | 5. VERY IMPORTANT |
| 3. UNSURE | NA NOT APPLICABLE |

18. PARK ATTRIBUTES:

- | | | |
|----------------------------------------------------|-------|-------|
| 1. CLEAN | _____ | _____ |
| 2. NOT CROWDED | _____ | _____ |
| 3. CAMPGROUND | _____ | _____ |
| 4. VISITOR/NATURE CENTER | _____ | _____ |
| 5. NATURALIST SERVICE (EG. PROGRAMS, GUIDED HIKES) | _____ | _____ |
| 6. LIFEGUARDS ON DUTY | _____ | _____ |
| 7. PICNIC AREAS | _____ | _____ |
| 8. HIKING TRAILS | _____ | _____ |
| 9. BICYCLE TRAILS | _____ | _____ |
| 10. ENFORCEMENT OF RULES | _____ | _____ |
| 11. HORSE TRAIL | _____ | _____ |
| 12. VARIETY OF ENVIRONMENTS | _____ | _____ |
| 13. SCENIC VIEWS | _____ | _____ |
| 14. QUIETNESS | _____ | _____ |
| 15. ACCESSIBLE BY PUBLIC TRANSPORTATION | _____ | _____ |
| 16. AMPLE PARKING | _____ | _____ |
| 17. CROSS-COUNTRY SKI RENTAL | _____ | _____ |
| 18. PLAYGROUND EQUIPMENT | _____ | _____ |

- | | | |
|--------------------------------------------------------------------|-----------------|-----------------|
| 19. WOULD YOU RECOMMEND TO YOUR FRIENDS THAT THEY VISIT THE DUNES? | 1. YES 2. NO | 1. YES 2. NO |
|--------------------------------------------------------------------|-----------------|-----------------|

	<u>National Lakeshore</u>	<u>State Park</u>
20. WHAT DO YOU LIKE MOST ABOUT THE PARKS?	_____	_____
	_____	_____
21. WHAT DO YOU LIKE LEAST ABOUT THE PARKS	_____	_____
	_____	_____

PART III - OTHER FACILITIES

WE WOULD ALSO LIKE TO KNOW ABOUT YOUR RECREATION PARTICIPATION AT OTHER PLACES ALONG THE LAKESHORE. FOR EACH OF THE AREAS LISTED BELOW, PLEASE INDICATE THE FOLLOWING:

- (1) TOTAL NUMBER OF DAYS YOU RECREATED AT EACH PLACE IN THE PAST YEAR
 (2) APPROXIMATE DISTANCE (IN MILES) THE FACILITY IS FROM YOUR RESIDENCE
 (3) GROUP STRUCTURE - THAT IS, WHETHER YOU USUALLY RECREATE BY YOURSELF (1), WITH YOUR FAMILY (2), WITH FRIENDS (3), OR WITH BOTH FAMILY AND FRIENDS (4). (PLEASE ENTER NUMBER)

	(1) TOTAL NUMBER OF DAYS	(2) DISTANCE FROM RESIDENCE (MI)	(3) GROUP STRUCTURE
22. 1. MARQUETTE PARK	_____	_____	_____
2. MILLER BEACH	_____	_____	_____
3. WHITING PARK	_____	_____	_____
4. INDIANA HARBOR	_____	_____	_____
5. GARY HARBOR	_____	_____	_____
6. JERSE PARK	_____	_____	_____
7. BURNS DITCH	_____	_____	_____
8. DUNE ACRES	_____	_____	_____
9. BEVERLY SHORES	_____	_____	_____
10. OTHER _____	_____	_____	_____

PART IV - BACKGROUND INFORMATION

WE WOULD ALSO LIKE TO GET SOME INFORMATION ABOUT YOU AND YOUR FAMILY. THIS INFORMATION IS VERY IMPORTANT TO THE SUCCESS OF THE STUDY AND WILL BE KEPT CONFIDENTIAL. YOUR COOPERATION IS GREATLY APPRECIATED.

23. PLEASE INDICATE YOUR SEX: 1. MALE
2. FEMALE
24. WHAT IS YOUR PRESENT AGE? _____ YEARS
25. WHAT IS YOUR CURRENT MARITAL STATUS? 1. SINGLE
2. MARRIED
3. DIVORCED/SEPARATED/WIDOWED
26. HOW MANY PEOPLE (INCLUDING YOURSELF) ARE IN YOUR HOUSEHOLD? _____ PERSONS
27. PLEASE LIST THE AGES OF ALL PEOPLE IN YOUR HOUSEHOLD OTHER THAN YOURSELF:
- _____

28. WHAT IS YOUR ETHNIC BACKGROUND?

- | | |
|--------------------|----------------|
| 1. WHITE | 4. ASIAN |
| 2. BLACK | 5. HISPANIC |
| 3. AMERICAN INDIAN | 6. OTHER _____ |

29. PLEASE CIRCLE THE NUMBER THAT BEST REPRESENTS THE HIGHEST LEVEL OF EDUCATION THAT YOU HAVE COMPLETED:

- | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|-------------|----|----|----|---------|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | + |
| GRADE SCHOOL | | | | | | | | HIGH SCHOOL | | | | COLLEGE | | | | | | |

30. HOW WOULD YOU DESCRIBE YOUR AREA OF RESIDENCE?

1. URBAN
2. SUBURBAN
3. RURAL

31. WHICH POPULATION CATEGORY BEST DESCRIBES THE COMMUNITY IN WHICH YOU LIVE?

1. 500,000 OR MORE
2. 50,000 TO 500,000
3. 10,000 TO 50,000
4. 2,000 TO 10,000
5. LESS THAN 2,000

32. COMPARED TO TWO YEARS AGO, THAT IS, 1983, WOULD YOU SAY YOU SPENT MORE TIME, LESS TIME, OR ABOUT THE SAME AMOUNT OF TIME THIS PARTICIPATING IN OUTDOOR RECREATION ACTIVITIES?

1. MORE TIME
 2. LESS TIME
 3. SAME AMOUNT OF TIME
 4. DON'T KNOW
- WHY? _____

33. THINKING AHEAD TWO YEARS, THAT IS, 1987, WOULD YOU SAY YOU WILL SPEND MORE TIME, LESS TIME, OR ABOUT THE SAME AMOUNT OF TIME PARTICIPATING IN OUTDOOR RECREATION ACTIVITIES?

1. MORE TIME
 2. LESS TIME
 3. SAME AMOUNT OF TIME
 4. DON'T KNOW
- WHY? _____

34. WHAT WAS YOUR TOTAL FAMILY INCOME LAST YEAR BEFORE TAXES?

- | | |
|------------------|---------------------|
| 1. UNDER 3000 | 8. 13,000-14,999 |
| 2. 3000-4999 | 9. 15,000-17,499 |
| 3. 5000-5999 | 10. 17,500-19,999 |
| 4. 6000-7499 | 11. 20,000-24,999 |
| 5. 7500-9999 | 12. 25,000-29,999 |
| 6. 10,000-11,999 | 13. 30,000-49,999 |
| 7. 12,000-12,999 | 14. 50,000 AND OVER |

COMMENTS: _____

THANK YOU VERY MUCH!