Minnesota 1974 State Park Users SURVEY

Technical Report

Minnesota Department of Natural Resources

Bureau of Environmental Planning and Protection

This document was researched and written by staff from the Bureau of Environmental Planning and Protection. Sample design was provided by the Fish and Wildlife Environment Section.

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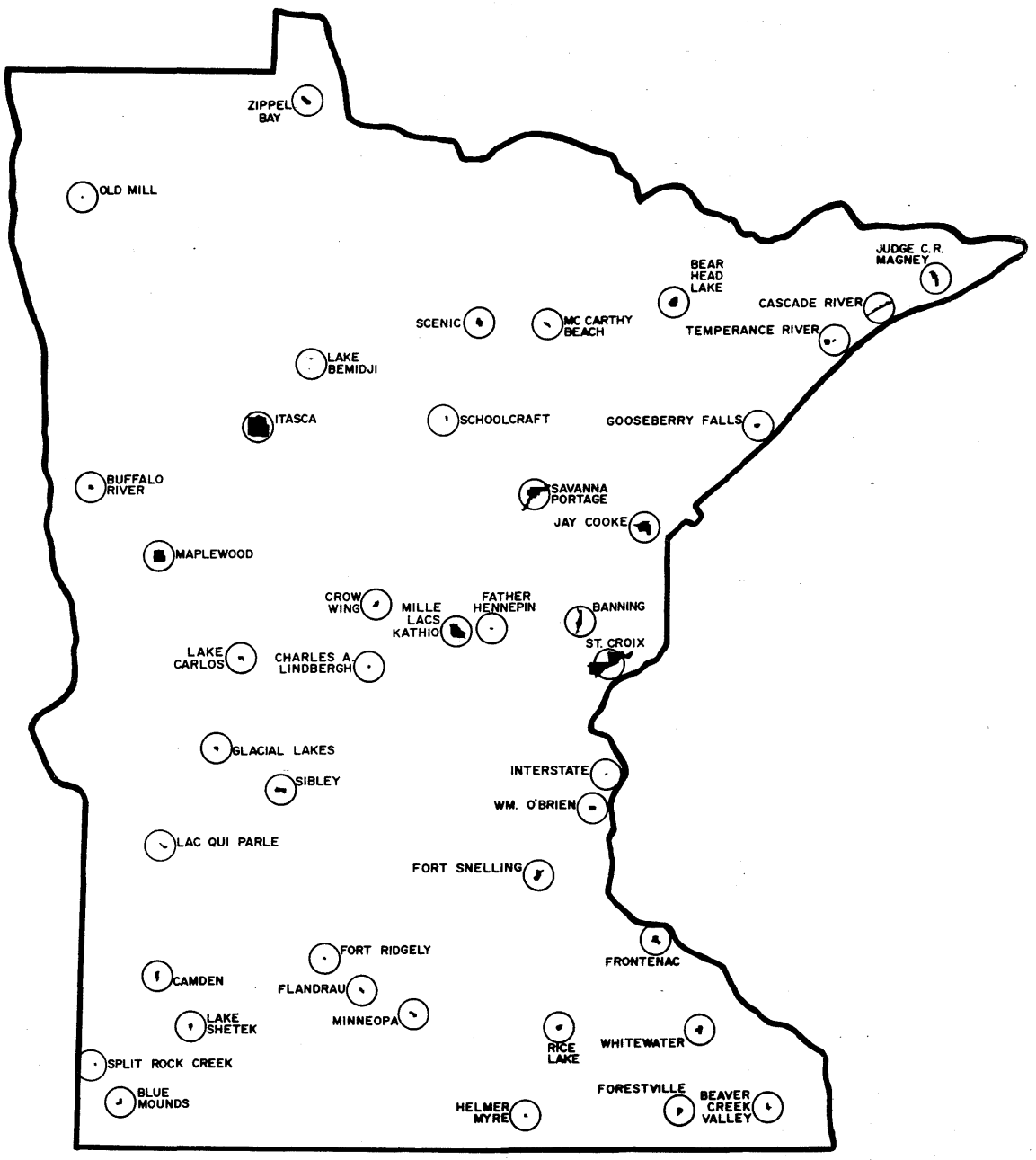
LOCATION OF STATE PARKS SELECTED FOR USERS SURVEY



MINNESOTA DEPARTMENT OF NATURAL RESOURCES

STATE PARK
10 MINUTE SURVEY

PLEASE HELP US SERVE YOU BETTER. By answering the following questions our ability to meet your recreation needs will be increased. BEFORE YOU LEAVE THIS PARK PLEASE ANSWER ALL QUESTIONS AND DEPOSIT THIS FORM IN THE BOX LOCATED AT THE PARK ENTRANCE STATION.

1. Please X those activities which your party participated in during this visit to this park. Also X in the right hand column those activities which you believe need additional facilities.

	CATEGORY	PARTICIPATED	ADDITIONAL FACILITIES	
A.	*Swimming*	A. _____	_____	1
B.	*Boating*	B. _____	_____	2
C.	*Fishing*	C. _____	_____	3
D.	*Canoeing*	D. _____	_____	4
E.	*Water Skiing*	E. _____	_____	5
F.	*Camping*	F. _____	_____	6
G.	*Picknicking*	G. _____	_____	7
H.	*Hiking*	H. _____	_____	8
I.	*Playing outdoor games*	I. _____	_____	9
J.	*Bicycling*	J. _____	_____	10
K.	*Nature Programs & Hikes*	K. _____	_____	11
L.	*Organized Activities--Tours etc.*	L. _____	_____	12
M.	*Visit Historical, Geological, & Cultural Sites*	M. _____	_____	13
N.	*OTHER ACTIVITIES (Please Write In)*			
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	

2. Please rank the following aspects of this park in the order of their importance to you. USE THE NUMBERS 1 (most important) to 5 (least important). USE EACH NUMBER: 1, 2, 3, 4 and 5 ONLY ONCE.

Modern Facilities	_____	14
Primitive Facilities	_____	15
Natural Beauty	_____	16
Historical Sites	_____	17
Close to Home	_____	18

3. Did you feel that this park was overcrowded during this visit? *YES* _____ *NO* _____ 19

4. (Answer question 4 only if you are not camping in the park). HOW MANY HOURS ARE YOU STAYING IN THIS PARK DURING THIS VISIT? *HOURS* _____ 20-2

5. Have you visited this park previously:

THIS YEAR? *YES* _____ *NO* _____ 22

IN THE PAST 5 YEARS? *YES* _____ *NO* _____ 23

(over)

6. Are you renting accommodations outside the park and using the park during the day? YES ____ NO ____ 24

7.(A) Did the gasoline situation alter your plans for this trip? YES ____ NO ____ 25

7.(B) If YES - Did you stay closer to home? YES ____ NO ____ 26

7.(C) If YES - Did you spend more time at 1 location? YES ____ NO ____ 27

8. What is your most important destination for this trip: This Park? YES ____ NO ____ 28

9. IF ANOTHER LOCATION PLEASE INDICATE *PLACE (Nearest Town)* _____ 29-30
STATE _____ 31

10. How many days or hours will this trip take from the time you left home until your return home? *DAYS OR HOURS* _____ 32-33
_____ 34

11. How many people are in your vehicle within these age groups:
(12 or under) _____ 35
(13-18) _____ 36
(19-44) _____ 37
(45-64) _____ 38
(65 or older) _____ 39

12. How would you feel if some State Parks were planned primarily for diverse recreation facilities rather than for protection of the area's natural features?

Approve _____ *Disapprove* _____ *No Opinion* _____ 40

13. Please indicate your home location:

County _____ 41-42 *State* _____ 43-44 *ZIP* _____ 45-49

ANSWER ONLY IF YOU ARE CAMPING IN THIS STATE PARK

1. What type of overnight camping facilities are you using?
(*Tent* A _____
(*Tent Trailer* B _____
(*Travel Trailer* C _____
(*Pickup Camper* D _____ 50
(*Motorhome* E _____
(*Minibus* F _____
(*Other* G _____

2. If camping facilities were at capacity or not available, would you camp at a private campground within 10 miles of this park and visit the park during the day? *YES* _____ *NO* _____ 51

3. How many nights did you camp in this park during this visit? *NIGHTS* _____ 52-53

Do Not Write in This Space: Park Name: Park Code: 58-60
County Code: 54-55 Region Code: 56-57 DATE: _____
MO. DAY YEAR
61-62 63-64 65-66

THANKS FOR YOUR HELP. HAVE AN ENJOYABLE AND SAFE TRIP.
If you forget to return the form, please mail it to: MINNESOTA DEPARTMENT OF NATURAL RESOURCES, BUREAU OF ENVIRONMENTAL PLANNING AND PROTECTION, Centennial Building, St. Paul, Minnesota 55155.

Printed May 22, 1974 67 68

MINNESOTA 1974 STATE PARK USERS SURVEY
TECHNICAL REPORT

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INTRODUCTION

SURVEY OBJECTIVES

The Minnesota 1974 State Park Users Survey was conducted during July and August of 1974, peak use months for the Minnesota State Park System. The survey had two major objectives: (1) Obtain origin-of-visitors data (drawing power data) to help in establishing priorities for funding various units of the State Park System and (2) Obtain other valuable user data (e.g. average party size, length of stay, camping trends, etc.) for use in managing and planning the various units of the system.

SURVEY QUALITY & LIMITATIONS

The 1974 survey was reasonably successful in meeting its objectives. Although the 1974 and the 1970 surveys shared common objectives and were both conducted under significant manpower limitations, major differences do exist between the two surveys. In particular, more time and care were taken in preparing for the 1974 survey, which resulted in significant improvements in questionnaire design, sample design, data manipulation, and survey procedures. Consequently, the 1974 data cannot be validly compared with the 1970 data.

However, the 1974 survey fell short of attaining the uniformity and quality of data obtainable under tighter control and more expensive survey conditions. The quality of data produced by the 1974 survey varies from question to question and from park to park. Accordingly, where appropriate, data limitations are identified in the Analysis and Findings Section of this report.

To determine the reliability of the survey data, confidence intervals were calculated for selected data. As the name implies, confidence intervals provide insight into the relative confidence one can have in the survey data. For example, the survey for a particular park may have shown an estimated 50 percent of its visitors reside out-of-state. When confidence intervals were calculated they showed that the park's TRUE VALUE for the percent of visitors residing out-of-state falls somewhere in the range of 45 percent to 55 percent even though the point estimate is 50 percent. The 90 percent confidence interval indicates that for the hypothetical park, we can be 90 percent confident that the TRUE VALUE falls within the range 45 percent to 55 percent. The 90 percent confidence intervals are used throughout this report, and the terms "confidence interval" and "estimate range" are used interchangeably.

The reader who is interested only in the highlights will find a summary of findings on pages 3 to 4. The reader who chooses to inspect the data for individual parks will be well advised to read the entire Analysis and Findings Section before turning to the individual data printout sheets found in the Minnesota 1974 State Park Users Survey – Data Supplement.

SUMMARY OF FINDINGS

PARK ATTRACTIONS

Analysis of the weekend survey information for park attractions shows that natural beauty was by far the most important attraction in most parks. However, the relative importance of natural beauty varied considerably in relation to other considerations (e.g. proximity to home and modern facilities). Proximity to home was very important for some parks located close to major Minnesota population centers or nearby out-of-state population centers. Modern facilities appear to be quite important for a few of the survey parks. Visitors to certain lake recreation oriented parks were "high" on modern facilities, which may indicate an attachment to a comprehensive complement of water-related facilities (e.g. swimming beaches, boat rentals, etc.).

AVERAGE PARTY SIZE
(No. of persons per vehicle)

For both the weekday and the weekend survey parks, the average party size was approximately 3.8 persons. This compares with the 4.3 factor now being used by the parks (in conjunction with vehicle counts) to make dayuser attendance estimates.

Consideration should be given to utilizing the average party size figure of 3.8 persons in calculating dayuser attendance estimates based on car counts, with a separate average party size factor used for passenger buses.

STATE PARK CAMPERS
(Camper Representation)

Discussions with park managers as well as a consultant's survey of managers regarding the operation of the 1974 State Park Survey indicate that campers were generally over-represented in the survey due to the relatively close control parks have over the entry of campers compared to dayusers and also because campers generally have a more favorable attitude toward surveys. Where camper over-representation was identified as a major problem, a qualifier has been noted in the Evaluation Section of this report.

(Camping Equipment)

A total of 29 weekend survey parks and 19 weekday survey parks provided an adequate number of returns from which camping equipment profiles could be developed. The data indicate that tenting remains the single most popular style of camping, and is particularly favored for weekend camping. For the weekend survey parks an average of 43 percent of the camping parties tented, and the weekday survey showed that the average percentage of camping parties who tented was 37 percent.

(Camping Outside the Park)

The question concerning camping outside the parks was ambiguous, hence no firm conclusions can be drawn on this subject using the 1974 State Park Survey data. Tentative findings suggest that campers at some of the more crowded state parks may accept private campground facilities located near the parks in lieu of additional campsites within the parks. A better designed question should be used in the next state park survey to confirm (or reject) the tentative findings on this important policy issue.

(Camper Turnover)

Length-of-stay information for 41 weekend survey parks shows that the average weekend camper (i.e. entering a park during the period 4 p.m. Friday to 4 p.m. Sunday) spent 2.0 nights in the park. Of the 29 state parks providing both weekday and weekend camper data, only two parks showed a statistically significant difference between the average number of nights camped by weekday vs. weekend campers.

Length-of-stay information also shows that state park campers use different parks to meet different vacation needs. Some parks provide camping opportunities for primarily weekend outings or economical enroute lodging, while other parks attract campers seeking vacation destination areas. The different needs being met by the individual parks within the state park system can be partially identified by using camper turnover information in conjunction with knowledge of Minnesota's transportation network and activity centers including recreation centers.

CROWDING

Five parks were perceived by a relatively high percentage of park visitors as being crowded.

High Weekend Crowding Parks	High Weekday Crowding Parks
Gooseberry Falls	Lake Carlos
Interstate	Sibley
McCarthy Beach	

DAYUSERS: LENGTH OF STAY

For both the weekday and weekend surveys the average dayusers length-of-stay estimates for most parks did not exceed 4 hours.

NATURE PROGRAMS & HIKES

Both weekend and weekday surveys found approximately one-fifth of the visitors participating in nature programs and hikes.

NEW VISITORS

Both weekday and weekend surveys show that, on the average, 50 percent of the visitors had not visited the respective parks in the previous five years. In general, parks most oriented toward new visitors could not be associated with geographic regions. Southwest Minnesota was the only exception; there all state parks showed relatively low use by new visitors.

ORIGIN-OF-VISITORS

Survey data provided estimates of the share of each park's visitors residing in Minnesota within 50 miles of the park (see Table 14). The data reveal a great deal of variability between the parks, with some attracting the bulk of their visitors from within the 50-mile range while others attract most users from more distant locations.

PARK ATTRACTIONS

The 1974 survey included a number of questions which help describe how parks differ in their recreational roles. Question No. 2 was concerned with what factors motivate park users to visit a particular state park. The question instructed the survey participant as follows:

> "Please rank the following aspects of this park in the order of their importance to you."
>
> Modern Facilities _____
> Primitive Facilities _____
> Natural Beauty _____
> Historical Sites _____
> Close to Home _____

The following analysis of weekend survey data is based on the percent of first place responses provided for the attraction categories: Modern facilities, Natural Beauty, and Close to Home. Weekdays are not reported on due to data limitations.

FINDINGS

The weekend survey provided the following findings: (1) Close to Home location was an important drawing power factor for at least five parks: Buffalo River, Fort Snelling, Lac Qui Parle, Split Rock Creek, and Wm. O'Brien, (2) Modern Facilities were an important attraction for at least eight parks: Charles A. Lindbergh, Flandrau and six lake recreation oriented parks (Father Hennepin, Glacial Lakes, Lake Bemidji, Lake Carlos, McCarthy Beach, and Sibley), and (3) Natural Beauty was an important attraction at all of the surveyed parks, but was an especially important attracting force at Northshore Parks (Cascade, Gooseberry Falls, Judge C. R. Magney, and Temperance River), and at Interstate and Savanna Portage State Parks. At these six parks an estimated 72 percent or more of their visitors rank Natural Beauty No. 1 among the attraction categories: Modern Facilities, Primitive Facilities, Natural Beauty, Historical Sites, and Close to Home.

ANALYSIS

Because of weekday survey data quality problems (that is wide confidence intervals) the analysis of attractions is limited to the weekend survey. For the same reason the reader is advised not to use without qualification Question No. 2 data shown on the computer printout sheets found in the Minnesota 1974 State Park Users Survey – Data Supplement. By contrast, the estimate ranges shown in Tables 1, 2, and 3 do provide a basis for certain conclusions and hypothesis. These are addressed in the following discussion.

(Close to Home)

Comparison of the estimates found in Table 1 show that for some parks, proximity is an important factor in drawing clientele. For example, the weekend survey data found in Table 1 show that an estimated one-fifth or more of the visitors to Buffalo River, Fort Snelling, Lac Qui Parle, Split Rock Creek, and Wm. O'Brien State Parks considered those parks' close-to-home location to be their most important attraction. At the same time, the estimates shown in Table 1 indicate that of the 22 parks providing useable data, proximity to home was typically not a dominant attraction.

It appears that only a few parks attract a large share of their clientele due to the parks' convenient location. Two of the parks which do appear to operate that way (Buffalo River and Split Rock Creek) also draw a substantial share of their visitors from border states. In light of these findings, it seems likely that much of those parks' out-of-state visitation may be made up of local out-of-state visitors rather than out-of-state tourists.

(Modern Facilities)

The data shown in Table 2 indicate the estimated percent of a park's visitors who consider modern facilities to be the park's No. 1 attraction. Because "Modern Facilities" was not defined in the questionnaire, the visitors interpretation of "Modern Facilities" could conceivably range from modern restrooms in campgrounds to swimming beaches, boat liveries, and museums. Keeping these qualifications in mind, it is noted that a relatively high percent of visitors to lake recreation oriented parks (Father Hennepin, Glacial Lakes, Lake Bemidji, Lake Carlos, McCarthy Beach, and Sibley) considered modern facilities the No. 1 attraction category. The emphasis upon modern facilities in these parks does not imply that natural beauty is unimportant, but rather that modern facilities are also important. These parks perhaps supply some clientele with an experience resembling that available at Northern Minnesota resorts; that is natural beauty, a complement of water activitiy facilities (e.g. good beaches and boats), and camping opportunities.

(Natural Beauty)

The data found in Table 3 indicate that natural beauty is an important factor attracting visitors to all of the surveyed parks. However, the data also show that the relative influence of natural beauty as an attraction force does span a wide range. Northshore Parks represent one end

of the range. Among Northshore Parks, an estimated 70 percent or more of their visitors would cast their "votes" for natural beauty as the park's No. 1 attraction. At the other end of the range natural beauty remains an important attraction factor, but it shares influence with a park's facilities and/or a park's proximity to its visitors' place of residence. Buffalo River, Flandrau, Fort Snelling, Lac Qui Parle, McCarthy Beach, and Split Rock Creek are examples of such parks, where an estimated 55 percent or less of their visitors consider natural beauty the park's No. 1 attraction. This does not necessarily mean that these parks are lacking in natural beauty. However, it does indicate that natural beauty plus other factors operate together as more nearly equal influences in attracting visitors to these parks. As a case in point, McCarthy Beach State Park is located on an attractive lake in a beautiful pine setting. Yet natural beauty is not the park's only major attraction. Natural beauty draws people to the park, but so does the area's excellent beach and swimming facilities, and the park's close proximity to the cities of Chisholm and Hibbing.

TABLE 1.

ESTIMATED PERCENT OF A PARK'S VISITORS CONSIDERING "CLOSE-TO-HOME" AS THE PARK'S NO. 1 ATTRACTION
(22 Weekend Survey Parks)

Park Name	Estimate Range* (Percent)
Banning	N.A.
Beaver Creek Valley	N.A.
Bear Head Lake	N.A.
Blue Mounds	16 to 40
Buffalo River	24 to 50
Camden	14 to 28
Charles A. Lindbergh	N.A.
Cascade	N.A.
Crow Wing	N.A.
Forestville	7 to 13
Father Hennepin	12 to 20
Flandrau	14 to 28
Frontenac	4 to 24
Fort Ridgely	N.A.
Fort Snelling	27 to 39
Gooseberry Falls	N.A.
Glacial Lakes	12 to 44
Helmer Myre	N.A.
Itasca	0 to 6
Interstate	N.A.
Jay Cooke	8
Judge C. R. Magney	N.A.
Lake Bemidji	N.A.
Lake Carlos	6 to 14
Lac Qui Parle	33 to 53
Lake Shetek	11 to 33
Maplewood	11 to 23
McCarthy Beach	13 to 27
Minneopa	6 to 12
Mille Lacs Kathio	N.A.
Old Mill	14 to 40
Rice Lake	N.A.
Scenic	N.A.
Schoolcraft	N.A.
Sibley	N.A.
Savanna Portage	N.A.
Split Rock Creek	39 to 59
St. Croix	12
Temperance River	N.A.
Wm. O'Brien	21 to 33
Whitewater	6 to 28
Zippel Bay	N.A.

N.A. — Not Available. The park did not meet the "cutoff" criteria of having at least 6 weekend survey periods with at least 1 party indicating the Close-to-Home factor as the No. 1 attraction.

* 90% Confidence Interval

TABLE 2.

ESTIMATED PERCENT OF A PARK'S VISITORS CONSIDERING "MODERN FACILITIES" AS THE PARK'S NO. 1 ATTRACTION
(34 Weekend Survey Parks)

Park Name	Estimate Range* (Percent)
Banning	N.A.
Beaver Creek Valley	N.A.
Bear Head Lake	8 to 18
Blue Mounds	N.A.
Buffalo River	13 to 21
Camden	12 to 22
Charles A. Lindbergh	22 to 38
Cascade	8 to 22
Crow Wing	15 to 31
Forestville	3 to 11
Father Hennepin	22 to 32
Flandrau	19 to 33
Frontenac	14 to 20
Fort Ridgely	9 to 25
Fort Snelling	8
Gooseberry Falls	7 to 13
Glacial Lakes	19 to 29
Helmer Myre	13 to 41
Itasca	7
Interstate	9 to 13
Jay Cooke	14 to 28
Judge C. R. Magney	5 to 19
Lake Bemidji	25 to 39
Lake Carlos	20 to 32
Lac Qui Parle	6 to 16
Lake Shetek	10 to 24
Maplewood	7 to 11
McCarthy Beach	22 to 32
Minneopa	6 to 12
Mille Lacs Kathio	11 to 23
Old Mill	8 to 22
Rice Lake	N.A.
Scenic	16 to 46
Schoolcraft	N.A.
Sibley	19 to 33
Savanna Portage	N.A.
Split Rock Creek	N.A.
St. Croix	7 to 15
Temperance River	N.A.
Wm. O'Brien	6 to 14
Whitewater	7 to 26
Zippel Bay	4 to 20

N.A. — Not Available. The park did not meet the "cutoff" criteria of having at least 6 weekend survey periods with at least 1 party indicating the modern facilities factor as the No. 1 attraction.

* 90% Confidence Interval

TABLE 3.

ESTIMATED PERCENT OF A PARK'S VISITORS CONSIDERING "NATURAL BEAUTY" AS THE PARK'S NO. 1 ATTRACTION

(42 Weekend Survey Parks)

Park Name	Estimate Range* (Percent)
Banning	65 to 87
Beaver Creek Valley	60 to 82
Bear Head Lake	51 to 85
Blue Mounds	44 to 72
Buffalo River	32 to 52
Camden	50 to 66
Charles A. Lindbergh	42 to 66
Cascade	73 to 93
Crow Wing	54 to 74
Forestville	66 to 78
Father Hennepin	45 to 59
Flandrau	40 to 54
Frontenac	59 to 75
Fort Ridgely	44 to 64
Fort Snelling	42 to 50
Gooseberry Falls	77 to 87
Glacial Lakes	32 to 64
Helmer Myre	44 to 70
Itasca	67 to 95
Interstate	72 to 80
Jay Cooke	58 to 76
Judge C. R. Magney	73 to 93
Lake Bemidji	53 to 67
Lake Carlos	48 to 70
Lac Qui Parle	34 to 46
Lake Shetek	45 to 77
Maplewood	62 to 76
McCarthy Beach	43 to 53
Minneopa	64 to 84
Mille Lacs Kathio	57 to 73
Old Mill	39 to 57
Rice Lake	48 to 70
Scenic	46 to 80
Schoolcraft	67 to 85
Sibley	45 to 63
Savanna Portage	79 to 95
Split Rock Creek	30 to 50
St. Croix	63 to 79
Temperance River	80 to 94
Wm. O'Brien	52 to 68
Whitewater	53 to 73
Zippel Bay	63 to 81

* 90% Confidence Interval

AVERAGE PARTY SIZE

Dayuser attendance estimates for the Minnesota State Park System are made by multiplying the number of vehicles entering the parks by 4.3 (the assumed average party size). In order to test the applicability of the 4.3 value, question No. 11 of the 1974 State Park Users Survey asked: "How many people are in your vehicle?"

FINDINGS

The approximate average party size for the weekday survey (31 parks) and the weekend survey (42 parks) was 3.8 persons.

ANALYSIS

Average party size values for the surveyed parks are shown in Figures 1 and 2. The average values were 3.85 for the weekend survey and 3.82 for the weekday survey.

Statistical tests were made (i.e. confidence intervals were calculated) to see whether or not the 3.82 and 3.85 values were precise. The calculations for the weekend survey's 42 parks showed an average estimate range of 3.4 to 4.3 persons per party. The average estimate range for the weekday survey's 31 parks was 3.3 to 4.4 persons per party. A mid value of 3.8 persons would appear to be an appropriate value to use in estimating attendance rather than either extreme of 3.3 or 4.4. Survey data were also analyzed to determine if system-wide attendance estimates could be materially improved by using separate party size factors for sets of parks grouped by attendance levels (high, medium, low) or by using separate party size factors for the Department's six administrative regions. Analysis showed no correlation between attendance levels and average party size. The analysis also showed only slight differences in the average party size among the six administrative regions.

FIGURE 1.

AVERAGE SIZE OF WEEKDAY PARTY

(31 Parks)

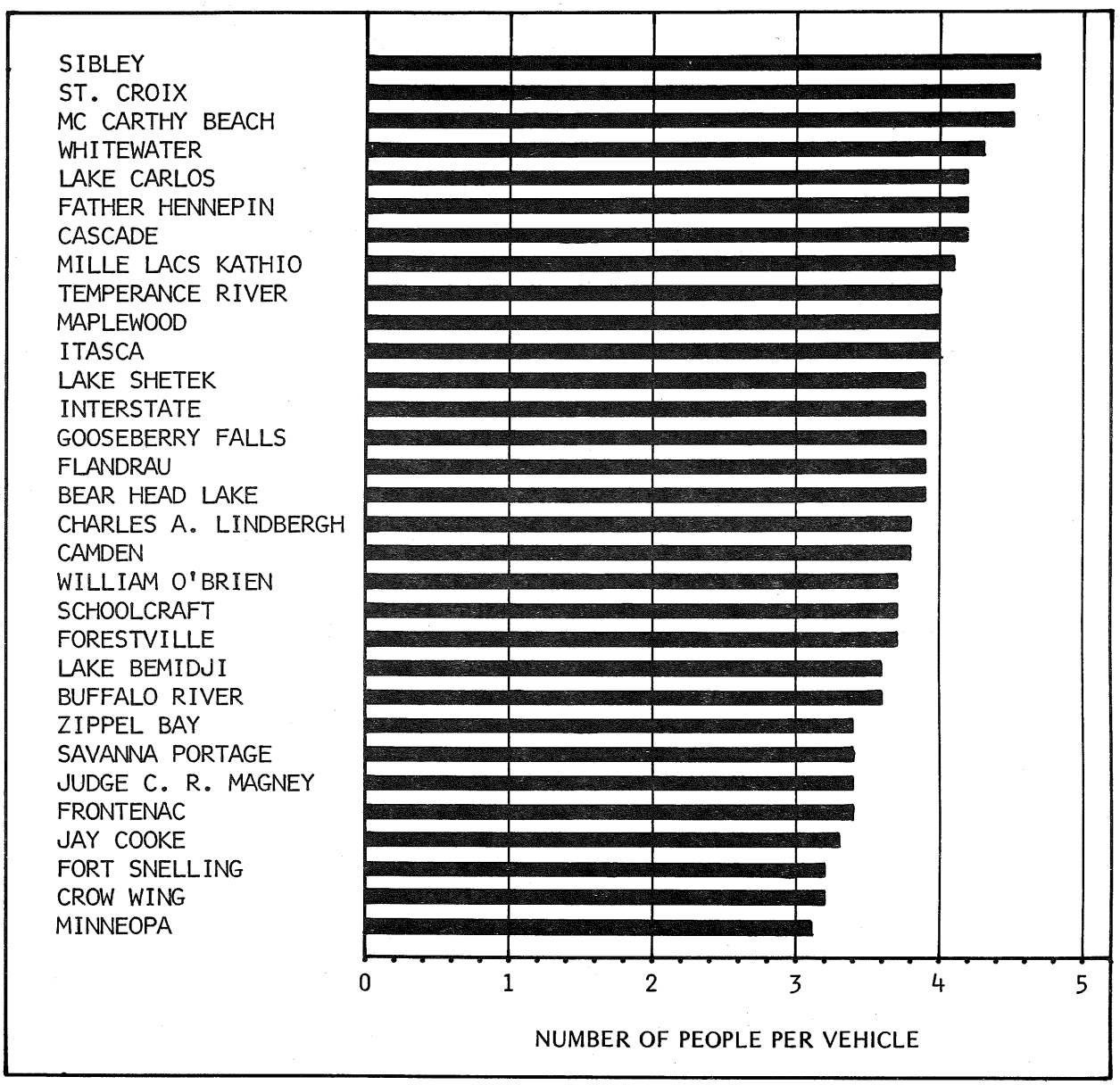
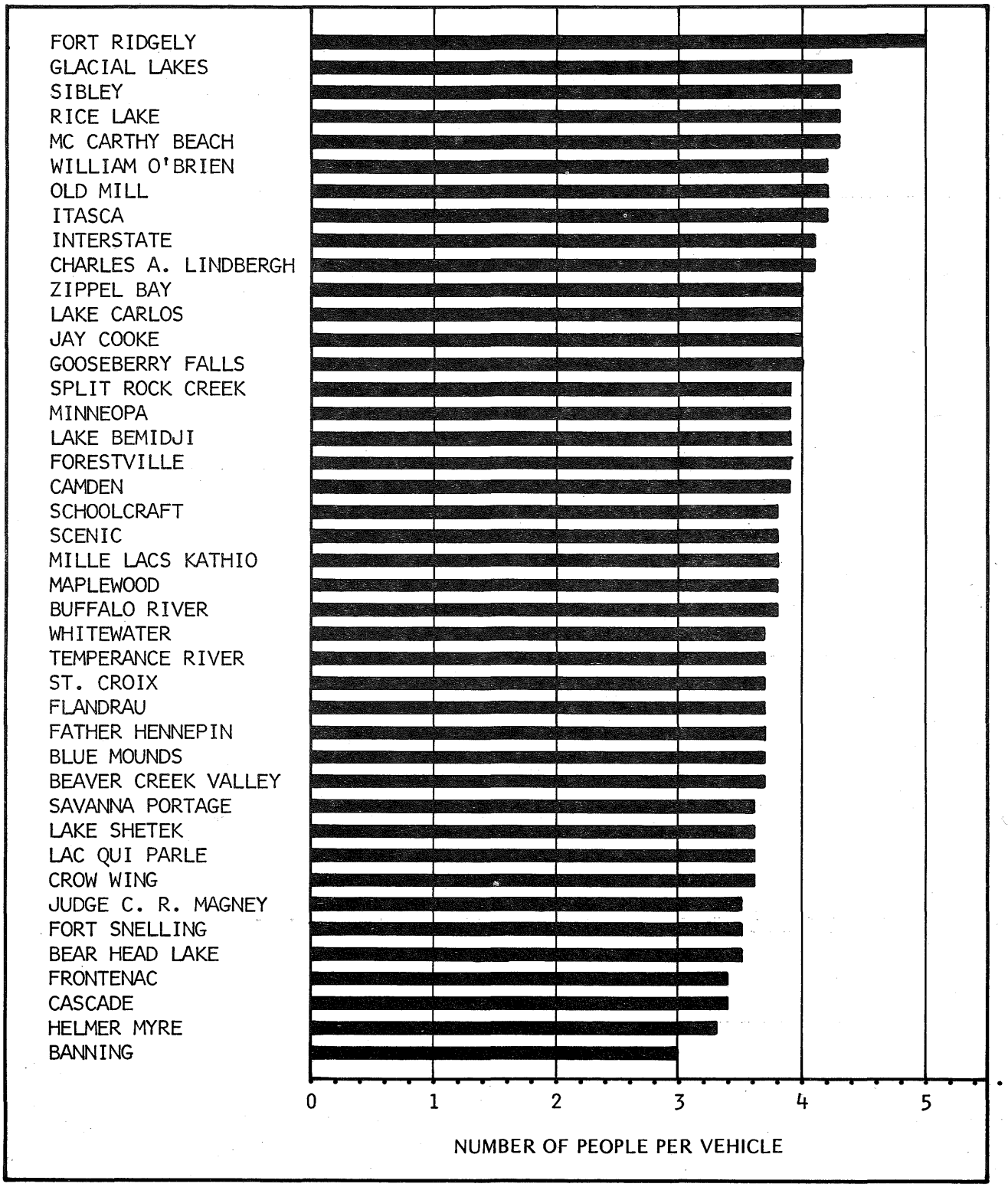


FIGURE 2.

AVERAGE SIZE OF WEEKEND PARTY

(42 Parks)



STATE PARK CAMPERS

In order to better understand how campers use the various parks, and place demands on the parks' facilities, the following three questions were addressed specifically to campers:

1. "What type of overnight camping facilities are you using?"

   Tent _____
   Tent Trailer _____
   Travel Trailer _____
   Pickup Camper _____
   Motorhome _____
   Minibus _____
   Other _____

Objective: Identify changes in the relative popularity of various camping equipment options and relate to parks' future facility needs (e.g. primitive sites vs. modern sites).

2. "If camping facilities were at capacity or not available, would you camp at a private campground within 10 miles of this park and visit the park during the day?"

Objective: Determine whether or not state park campground area requirements could be reduced at some state parks without diminishing dayuse of the parks by campers.

3. "How many nights did you camp in this park during this visit?"

Objective: Use camper length-of-stay (turnover data) to help project attendance levels associated with crowding problems. (Note: Such projections also require improved attendance estimates, dayuse turnover data, and measurement of intensive use areas.)

Objective: Use camper length-of-stay data to help delineate how campers view/use the various state parks. Destination Park? Enroute Overnight-Stop Park? Weekend Park?

FINDINGS

With approximately two-fifths of the campers tenting, TENTING REMAINS THE SINGLE MOST POPULAR FORM OF CAMPING.

Campers at the more crowded state parks may accept private campground facilities located near the park in lieu of additional park campsites.

THE AVERAGE CAMPER ARRIVING AT THE PARK DURING THE WEEKEND SPENT 2.0 NIGHTS IN THE PARK.

STATE PARK CAMPERS USE DIFFERENT PARKS TO MEET DIFFERENT NEEDS; camping at some parks for weekend outings or economical enroute lodging; and selecting parks offering lake recreation facilities (e.g. beaches, boat rentals, etc.) as their vacation destinations. Banning, Blue Mounds, and Helmer Myre State Parks are examples of the first type of park, while Lake Bemidji and Lake Carlos are examples of the second type.

TABLE 4.

PARKS PROVIDING USEABLE WEEKDAY AND/OR WEEKEND DATA FOR CAMPER QUESTION NO. 1

(Type of Overnight Camping Equipment)

Park Name	Weekday Survey	Weekend Survey
Bear Head Lake	X	X*
Camden		X
Cascade	X*	X*
Charles A. Lindbergh		X
Father Hennepin		X**
Flandrau		X*
Forestville	X	X*
Frontenac		X*
Gooseberry Falls	X**	X**
Helmer Myre		X
Interstate	X	X**
Itasca	X**	X**
Jay Cooke	X*	X**
Judge C. R. Magney		X
Lake Bemidji	X**	X**
Lake Carlos	X**	X**
Lake Shetek	X	X
McCarthy Beach	X**	X**
Maplewood		X*
Mille Lacs Kathio	X	X
St. Croix	X	X**
Savanna Portage		X*
Scenic		X
Schoolcraft	X	X
Sibley	X	X*
Temperance River	X	X*
Whitewater	X	X*
Wm. O'Brien	X	X**
Zippel Bay	X	X
	19 Parks	29 Parks

*Estimated 50 or more camper returns supplied.

**Estimated 75 or more camper returns supplied.

ANALYSIS

(Camping Equipment)

Camper Question No. 1 asked: "What type of overnight camping facilities are you using?" Seven equipment categories were provided: Tent, Tent Trailer, Travel Trailer, Pickup Camper, Motorhome, Minibus, and Other. In order to improve the quality of the estimates, data were analyzed for only those state parks receiving 30 or more useable camper survey forms (see Table 4); and the seven equipment categories were regrouped into three categories: Tents, Trailers, and Other (i.e. travel trailer, pickup camper, motorhome, minibus, and other).

The weekend survey parks (see Table 4, page 11) provided the following camping equipment profile:

TABLE 5.

EQUIPMENT PROFILE FOR WEEKEND CAMPERS

(29 Parks)

Tents	43%
Trailers	24%
Other	33%
Total	100%

Among these 29 state parks, 19 also had a relatively large number of weekday user returns making possible a comparison of weekend and weekday camping equipment profiles.

TABLE 6.

COMPARISON OF EQUIPMENT PROFILES FOR WEEKEND AND WEEKDAY CAMPERS
(19 Parks)

	Weekend	Weekday
Tents	44%	37%
Trailers	22%	27%
Other	34%	36%
Total	100%	100%

The data show that approximately two-fifths of the total weekday and weekend campers tent. Also more than three-fifths of the parks' weekend as well as weekday camping parties have relatively modest camping equipment investments (tents or trailers).

(Camping Outside the Park)

The objective of camping parties Question No. 2 was to determine how responsive state park campers would be to a policy emphasizing camping outside of rather than within the boundaries of the state parks.

The Question asked: "If camping facilities were at capacity or not available, would you camp at a private campground within 10 miles of this park and visit the park during the day?" As worded the question was ambiguous, implying rather than making explicit that the camping facilities being full or not available refers only to the park's camping facilities, not all facilities located close to the park. Because the question lacked precision, definitive conclusions cannot be drawn.

At a number of state parks a high proportion of respondents did respond by answering "yes". Given the high "yes" response levels of the 15 parks shown in Table 7, it would appear that a policy emphasizing camping outside park boundaries may be acceptable to a sizeable share of campers at some state parks.

TABLE 7

PARKS WITH A HIGH[1] "YES" RESPONSE TO CAMPER QUESTION NO. 2

Park Name	Weekend Survey	Weekday Survey
Cascade	X	
Charles A. Lindbergh	X	
Gooseberry Falls	X	X
Interstate	X	
Itasca	X	X
Jay Cooke	X	X
Lake Carlos		X
Lake Shetek	X	X
St. Croix	X	X
Savanna Portage		X
Sibley	X	
Temperance River	X	
Whitewater	X	X
Wm. O'Brien		X
Zippel Bay	X	
	12 Parks	9 Parks

[1]Shows only state parks with 30 or more camping party returns and where 45 percent or more of such respondents answered yes.

(Camper Turnover Information)

The Minnesota 1974 State Park Users Survey determined for the 41 weekend camper survey parks, that weekend campers stayed in a park 2.0 nights on the average. However, it is also noted in Table 8 that of the 29 state parks providing length-of-stay data (no. of nights in the park) for both weekday and weekend surveys, most parks have weekday and weekend estimate ranges which overlap, making it difficult to identify significant differences between the weekday and weekend length-of-stay averages for the entire set of 29 parks.

Larger samples (more sample periods) are needed to narrow the estimate ranges shown in Table 8 thereby producing more useful information for the management of individual state parks.

(Park Role Information)

The camper length-of-stay data supplied by the 1974 survey was relatively satisfactory in illustrating the different roles played by state parks.

In order to use Camper Question No. 3 data in evaluating park roles, two steps were taken: (1) Both the lower and upper limit values of the Table 8 estimate ranges (no. of nights in parks) were graphed to see how the values were distributed and (2) Using the graphed distributions, appropriate "cutoff values" were selected to classify a park as to its length-of-stay pattern. Three types of camping parks were identified by this classification procedure: long-stay destination camping parks, short-stay camping parks, and very short-stay camping parks. Analysis of the data showed that some surveyed parks appear to be very short-stay camping parks, providing economical lodging in a pleasant setting for tourists on weekend outings or enroute to their primary vacation destination areas, while other parks were long-stay destination camping parks. Because differences in length-of-stay patterns influence the parks' carrying capacities as well as their programming alternatives, identification of such differences can be a useful management tool. A brief analysis of very short stay and long stay destination camping parks follows.

TABLE 8.
CAMPERS LENGTH-OF-STAY
(No. of Nights in Park)

Park Name	Weekday Survey Length-of-Stay Estimate Range*	Weekend Survey Length-of-Stay Estimate Range*
Banning		1.1 to 1.5 SS
Bear Head Lake	2.5 to 4.5	1.8 to 2.4
Beaver Creek Valley		1.5 to 2.1 SS
Blue Mounds		.9 to 1.5 SS
Buffalo River	1.1 to 1.7 SS	1.6 to 4.0
Camden	1.5 to 2.5	1.4 to 2.0 SS
Cascade	1.6 to 2.0 SS	1.2 to 3.8
Charles A. Lindbergh	1.1 to 1.7 SS	1.4 to 1.8 SS
Crow Wing	1.0 to 1.6 SS	1.2 to 1.8 SS
Father Hennepin	1.3 to 2.7	2.2 to 3.6
Flandrau	1.1 to 2.3	1.6 to 2.8
Forestville	1.6 to 4.4	1.3 to 1.7 SS
Frontenac	1.7 to 2.9	1.3 to 1.7 SS
Fort Ridgely		1.3 to 2.3
Glacial Lakes		1.4 to 2.6
Gooseberry	1.6 to 2.4	1.7 to 2.1 SS
Helmer Myre		1.0 to 1.6 SS
Interstate	1.3 to 3.1	1.7 to 2.5
Itasca	2.2 to 3.4	1.1 to 3.7
Jay Cooke	1.4 to 1.8 SS	1.6 to 2.0 SS
Judge C. R. Magney	1.3 to 2.1 SS	1.2 to 2.0 SS
Lac Qui Parle		1.2 to 2.0 SS
Lake Bemidji	3.4 to 4.8 LS	3.7 to 4.9 LS
Lake Carlos	3.5 to 5.3 LS	3.1 to 4.7 LS
Lake Shetek	1.6 to 2.8	1.6 to 2.6
McCarthy Beach	2.8 to 4.2 LS	2.6 to 3.6
Maplewood	1.3 to 3.1	1.4 to 2.0 SS
Mille Lacs Kathio	1.9 to 2.7	1.6 to 2.2
Minneopa		1.0 to 2.0 SS
Old Mill		1.1 to 1.7 SS
Rice Lake		1.5 to 1.9 SS
St. Croix	1.7 to 2.5	1.5 to 2.5
Savanna Portage	2.0 to 2.8	1.6 to 2.0 SS
Scenic		2.4 to 3.8
Schoolcraft	1.1 to 1.7 SS	1.4 to 2.2
Sibley	3.2 to 6.6 LS	2.3 to 3.7
Split Rock Creek		1.2 to 1.8 SS
Temperance River	2.2 to 3.2	1.2 to 2.0 SS
Whitewater	2.1 to 4.3	1.7 to 2.1 SS
William O'Brien	2.1 to 3.1	1.9 to 2.3
Zippel Bay	2.3 to 3.7	1.6 to 2.8
	29 Weekday Parks	41 Weekend Parks

LS = Long Stay (lower limit of Estimate Range is not lower than 2.7 nights)

SS = Short Stay (upper limit of Estimate Range does not exceed 2.1 nights); Very Short Stay (upper limit of Estimate Range does not exceed 1.8 nights)

NOTE: Weekend Campers are surveyed campers who entered the park between 4 p.m. Friday and 4 p.m. Sunday.

* 90% Confidence Interval

Table 8 data indicate that short-stay camping is the most characteristic camping style for Minnesota's State Parks. Those state parks experiencing the shortest stays are shown in Table 9, page 17.

Considering only the weekend survey (which has a sizeable number of parks represented in the very short stay category), it is noted that the location of the very short stay camper parks (see Figure 3, page 14) is not concentrated in any particular part of the state. All parts of the state are represented except the northeast. On the other hand, each of these nine parks (with the possible exception of Forestville) is located very close to major travel routes. It is also noted that none of the nine parks are located in the heart of a vacation-destination area, although several parks (i.e. Crow Wing, Charles Lindbergh, Banning and Frontenac) are located at the edge of vacation-destination areas. Based upon these considerations, it is recommended that state parks located "on" or very close to major travel routes and exhibiting short-stay camping patterns should be considered for special programming as non-destination parks. Such parks host campers because they are convenient, attractive,

FIGURE 3.

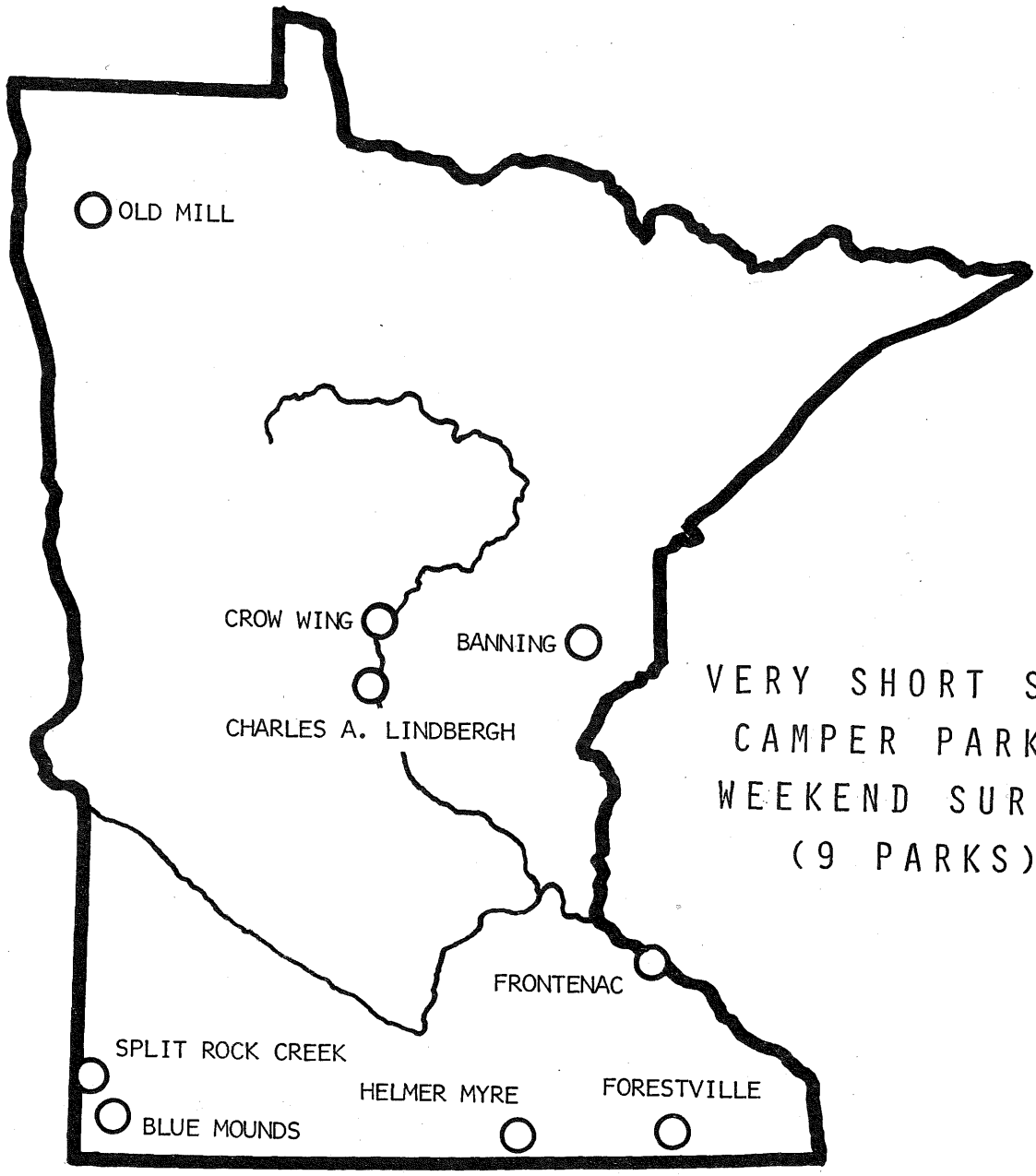

OLD MILL
CROW WING
BANNING
CHARLES A. LINDBERGH
FRONTENAC
SPLIT ROCK CREEK
HELMER MYRE
FORESTVILLE
BLUE MOUNDS
VERY SHORT STAY
CAMPER PARKS:
WEEKEND SURVEY
(9 PARKS)

FIGURE 4.

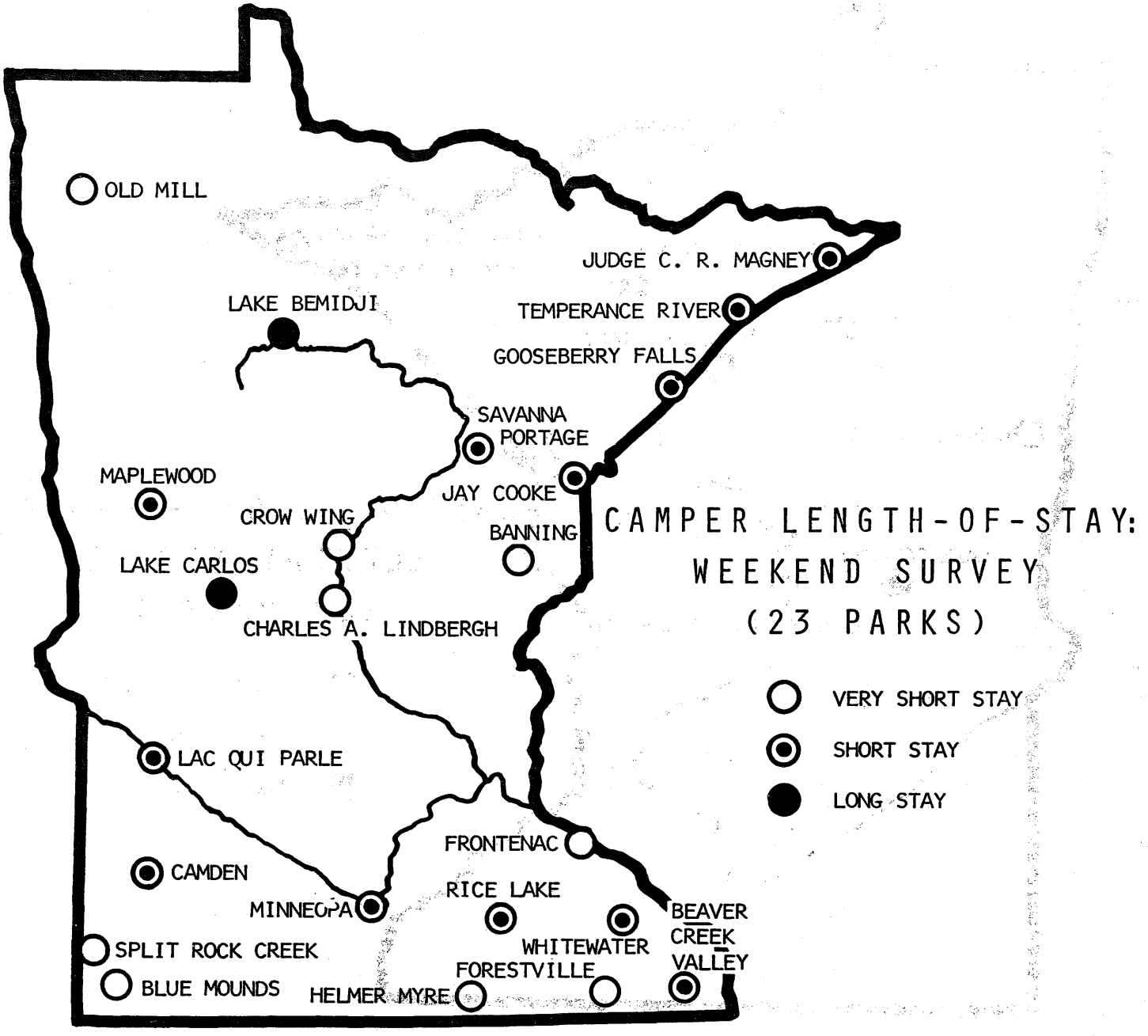

OLD MILL
JUDGE C. R. MAGNEY
LAKE BEMIDJI
TEMPERANCE RIVER
GOOSEBERRY FALLS
SAVANNA PORTAGE
MAPLEWOOD
JAY COOKE
CROW WING
BANNING
LAKE CARLOS
CHARLES A. LINDBERGH
CAMPER LENGTH-OF-STAY:
WEEKEND SURVEY
(23 PARKS)
VERY SHORT STAY
SHORT STAY
LONG STAY
LAC QUI PARLE
FRONTENAC
CAMDEN
RICE LAKE
MINNEOPA
BEAVER CREEK VALLEY
WHITEWATER
SPLIT ROCK CREEK
FORESTVILLE
BLUE MOUNDS
HELMER MYRE

FIGURE 5.

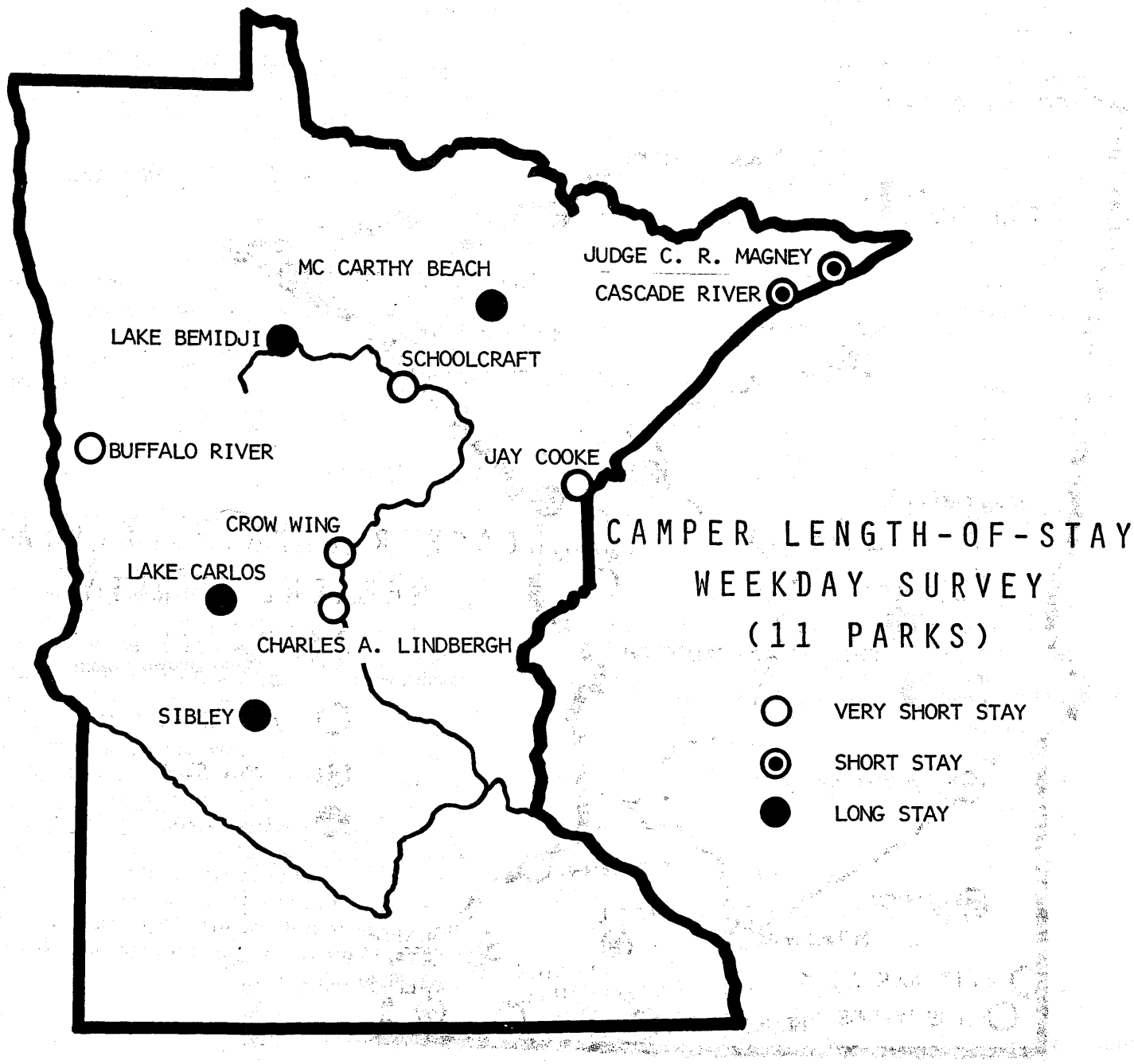

MC CARTHY BEACH
JUDGE C. R. MAGNEY
CASCADE RIVER
LAKE BEMIDJI
SCHOOLCRAFT
BUFFALO RIVER
JAY COOKE
CROW WING
LAKE CARLOS
CHARLES A. LINDBERGH
SIBLEY
CAMPER LENGTH-OF-STAY:
WEEKDAY SURVEY
(11 PARKS)
VERY SHORT STAY
SHORT STAY
LONG STAY

TABLE 9.

VERY SHORT-STAY CAMPING PARKS
(Avg. No. of Nights in Park)

Park Name	Weekday Survey Length-of-Stay Estimate Range*	Weekend Survey Length-of-Stay Estimate Range*
Banning	NIS	1.1 to 1.5
Blue Mounds	NIS	.9 to 1.5
Buffalo River	1.1 to 1.7	XX
Charles A. Lindbergh	1.1 to 1.7	1.4 to 1.8
Crow Wing	1.0 to 1.6	1.2 to 1.8
Forestville	XX	1.3 to 1.7
Frontenac	XX	1.3 to 1.7
Helmer Myre	NIS	1.0 to 1.6
Jay Cooke	1.4 to 1.8	XX
Old Mill	NIS	1.1 to 1.7
Schoolcraft	1.1 to 1.7	XX
Split Rock Creek	NIS	1.2 to 1.8
	5 Parks	9 Parks

XX – Upper limit of estimate range exceeds 1.8 nights.

NIS – Not In Survey. The park was dropped from the published survey's findings because of general data limitations, or because the park's data was inadequate for the purpose of this analysis.

* 90% Confidence Interval

and economical overnite stops rather than major vacation destination sites. The programming of such parks should be tailored accordingly.

In contrast to short-stay camping parks which are the rule in Minnesota, some of Minnesota's state parks tend to draw primarily a long-stay camping crowd. Both weekday and weekend survey data (shown in Table 10) suggest that Minnesota's long-stay state park campers are attracted to lake-site parks offering family water recreation activities (e.g. boating, fishing, swimming, etc.)

TABLE 10.

LONG-STAY CAMPING PARKS
(Avg. No. of Nights in Park)

Park Name	Weekday Survey Length-of-Stay Estimate Range*	Weekend Survey Length-of-Stay Estimate Range*
Lake Bemidji	3.4 to 4.8	3.7 to 4.9
Lake Carlos	3.5 to 5.3	3.1 to 4.7
McCarthy Beach	2.8 to 4.2	XX
Sibley	3.2 to 6.6	XX
	4 Parks	2 Parks

XX – Lower limit of estimate range is below 2.7 nights.

* 90% Confidence Interval

CROWDING AT STATE PARKS

Question No. 3 of the Minnesota 1974 State Park Users Survey, asked: "Did you feel that this park was overcrowded during this visit?" Forty-two parks supplied weekend survey data.

FINDINGS

Gooseberry Falls, Interstate, and McCarthy Beach State Parks were identified by the survey as high crowding parks during weekends. Lake Carlos and Sibley State Parks were identified as high crowding parks during weekdays.

ANALYSIS

In order to determine whether or not crowding was limited to a few parks or common to many, the surveys' crowding responses were graphed (see Figure 6). The distribution of crowding values (percent of survey respondents indicating crowding) for the weekday and weekend surveys was used to set the high, medium, and low crowding ranges used in the following analysis.

(Weekend Analysis)

The analysis of crowding during weekends used the following crowding "classes". A park with 7 percent or less of its respondents indicating crowding was categorized as a low crowding facility. A crowding value in the 8 percent to 18 percent range was classed as medium, while those parks having more than 18 percent of their respondents indicating crowding were classed as high on the crowding scale. Using these crowding ranges: 21 parks were classified as low, 14 as medium, and 7 as high.

It is emphasized that crowding estimates from the 42 weekend survey parks were not equally precise. Statistical tests showed relatively precise crowding estimates for only five parks (Father Hennepin, Gooseberry Falls, McCarthy Beach, Interstate, and St. Croix). At Gooseberry Falls, an estimated 20 percent to 28 percent of the weekend survey visitors felt the park was overcrowded; McCarthy Beach, 16 percent to 28 percent; Interstate, 16 percent to 26 percent; St. Croix, 15 percent to 21 percent; and Father Hennepin, 12 percent to 16 percent.

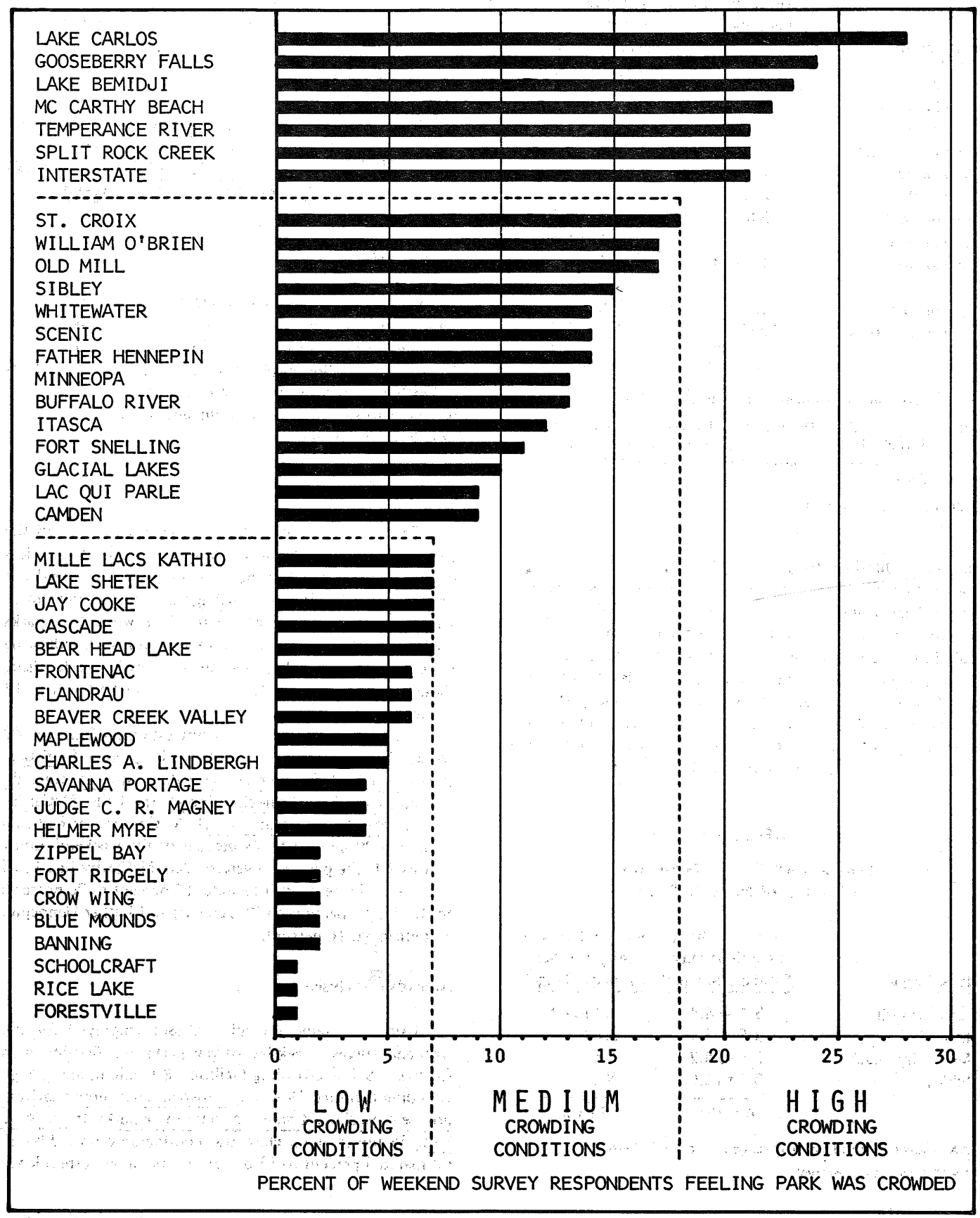
(Weekday Analysis)

Using the same crowding classes employed for the weekend survey, weekday survey parks are distributed as follows: 19 low crowding facilities, 8 medium, and 4 high crowding facilities. However, statistical tests show relatively precise crowding estimates for only three parks. Itasca State Park, in the medium class, was considered crowded by an estimated 9 percent to 13 percent of its survey respondents;

FIGURE 6.

WEEKEND CROWDING CONDITIONS

(42 Parks)



Lake Carlos, 18 percent to 28 percent; and Sibley, 17 percent to 27 percent. It is noted that these three parks also showed relatively high weekend crowding estimates.

DAYUSERS LENGTH-OF-STAY

In order to obtain information on the average amount of time spent per state park visit by dayusers (in contrast to campers), Question No. 4 of the survey asked:

"(Answer Question 4 only if you are not camping in the park).

HOW MANY HOURS ARE YOU STAYING IN THIS PARK DURING THIS VISIT?"

FINDINGS

Data from both the weekday and weekend surveys show that for the vast majority of surveyed parks the average number of hours spent per visit by dayusers did not exceed 4 hours.

TABLE 11.

DAYUSERS LENGTH-OF-STAY*
(Weekend Survey)

Park Name	Short Visit[1]	Long Visit[2]
Buffalo River		X
Camden		X
Father Hennepin	X	
Flandrau		X
Fort Ridgely		X
Fort Snelling		X
Itasca		X
Judge C. R. Magney	X	
Lac Qui Parle		X
Lake Bemidji		X
McCarthy Beach		X
Old Mill		X
Savanna Portage	X	
Scenic	X	
Schoolcraft	X	
Sibley		X
Wm. O'Brien		X
Zippel Bay	X	
	6 Parks	12 Parks

[1]Short Stay = Upper limit of estimate range does not exceed 2.2 hours.

[2]Long Stay = Lower limit of estimate range equals or exceeds 2.7 hours.

ANALYSIS

Because of the limited number of sampling hours in the survey, findings cannot be reported with decimal point precision. However, survey data do show that for most state parks the average time spent by dayusers does not exceed 4 hours.

NATURE PROGRAMS AND HIKES

State parks provide areas and facilities to accommodate many recreational activities, including nature programs and hikes, which the Department of Natural Resources has expanded and promoted since 1972. Item No. 1 of the survey read: "Please 'X' those activities which your party participated in during this visit to the Park". The findings for the category "Nature Programs & Hikes" are reported here, recognizing that the category is too broad to be used in an item by item evaluation of the state park system's programming efforts, including: conducted hikes, fireside lectures, and pamphlets, etc. The data can more properly be used as an indicator of park visitors' participation in nature oriented learning experiences. Data is provided for the weekend survey (42 parks) and for the weekday survey (31 parks).

FINDINGS

Both the weekend as well as the weekday survey showed approximately one-fifth of the respondents participating in nature programs and hikes. Participation varied considerably among the surveyed parks, reflecting differences in staff and facility availability. It is noted that all parks in the high participation category had the services of one or more naturalists.

ANALYSIS
(Weekend Analysis)

The 42 weekend survey parks were divided into three classes by plotting their respective percent participation values shown in Figure 7. A park with 12 percent or less of the respondents participating in nature programs and hikes was categorized as "low". A participation rate in the 13 percent thru 23 percent range was classified as "medium", while a value exceeding 23 percent was placed in the "high" participation class. Utilizing these participation categories, 12 parks were classified as having low participation rates, 17 parks as medium, and 13 parks as having high participation rates. It is noted that all parks in the high participation class had the services of one or more naturalists. Also, parks in this class generally contained nature trails and/or a visitor center while only two parks in the low participation class had a naturalist available, and only two had nature

FIGURE 7.

PERCENT OF WEEKEND VISITORS PARTICIPATING IN NATURE PROGRAMS

(42 Parks)

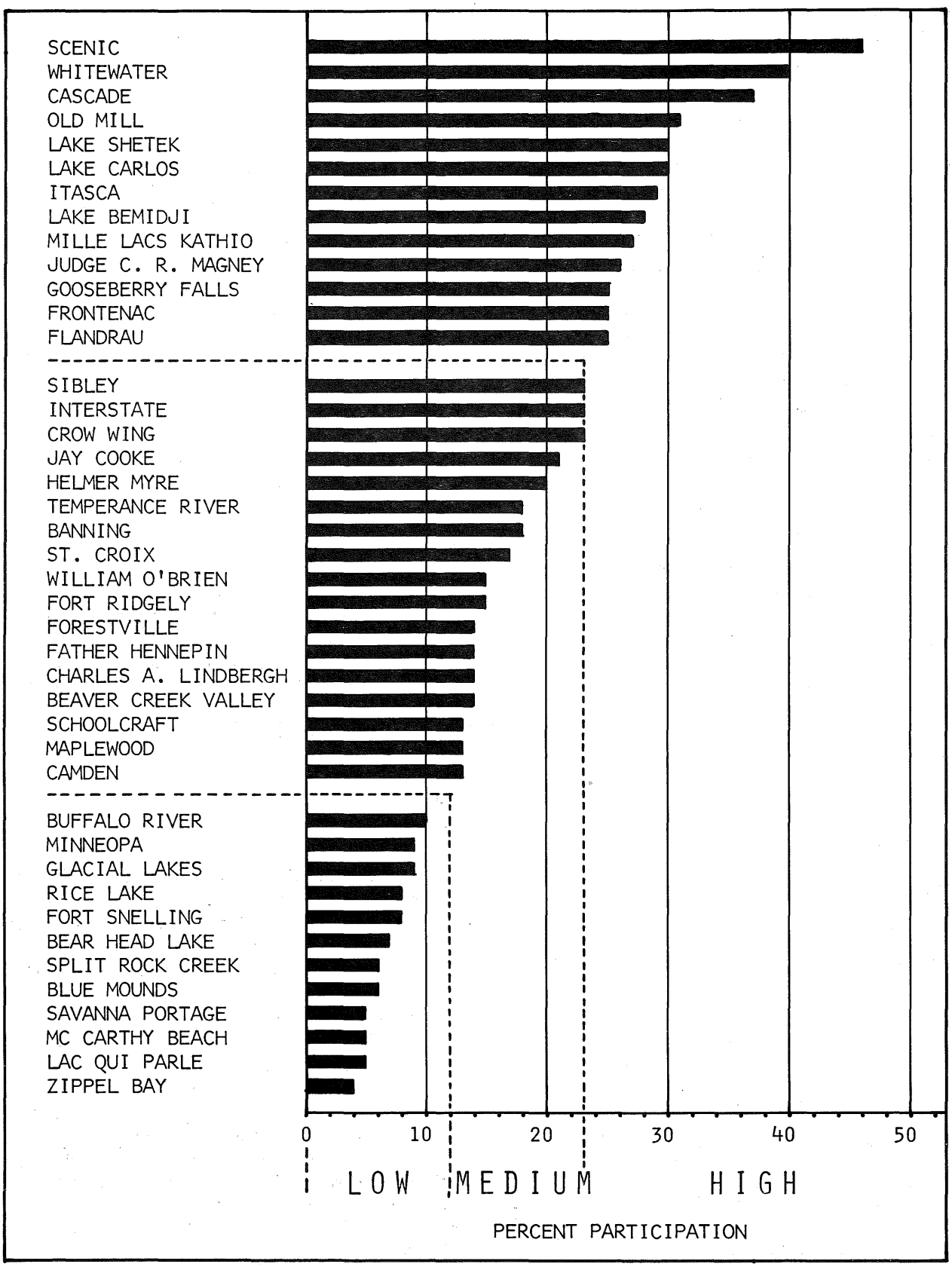


TABLE 12.

PARTICIPATION IN NATURE PROGRAMS RELATED TO FACILITIES/STAFFING

(42 Weekend Survey Parks)

PARTICIPATION LEVEL	PARKS	FACILITIES/STAFFING			
		M	N	NT	VC
HIGH (greater than 23%)	Scenic		X	X	
	Whitewater		X	X	X
	Cascade		X	X	X
	Old Mill		X		
	Lake Shetek		X		
	Lake Carlos		X	X	
	Itasca		X	X	X
	Lake Bemidji		X		X
	Mille Lacs Kathio		X	X	X
	Judge C. R. Magney		X		
	Gooseberry Falls		X	X	
	Frontenac		X		
	Flandrau		X		
MEDIUM (13% to 23%)	Sibley		X	X	X
	Interstate	X	X		
	Crow Wing		X		X
	Jay Cooke		X		
	Helmer Myre				
	Temperance River		X	X	
	Banning			X	
	St. Croix		X	X	
	William O'Brien		X	X	
	Fort Ridgely	X			
	Forestville				
	Father Hennepin				
	Charles A. Lindbergh	X			
	Beaver Creek Valley			X	
	Schoolcraft		X		X
	Maplewood				
	Camden			X	
LOW (12% or less)	Buffalo River		X		X
	Minneopa				
	Glacial Lakes				
	Rice Lake			X	
	Fort Snelling		X		X
	Bear Head Lake				
	Split Rock Creek				
	Blue Mounds				
	Savanna Portage				
	McCarthy Beach				
	Lac Qui Parle				
	Zippel Bay			X	

M = Museum
N = One or more Naturalists
NT = Nature Trail
VC = Visitor Center

FIGURE 8.

PERCENT OF WEEKDAY VISITORS PARTICIPATING IN NATURE PROGRAMS

(31 Parks)

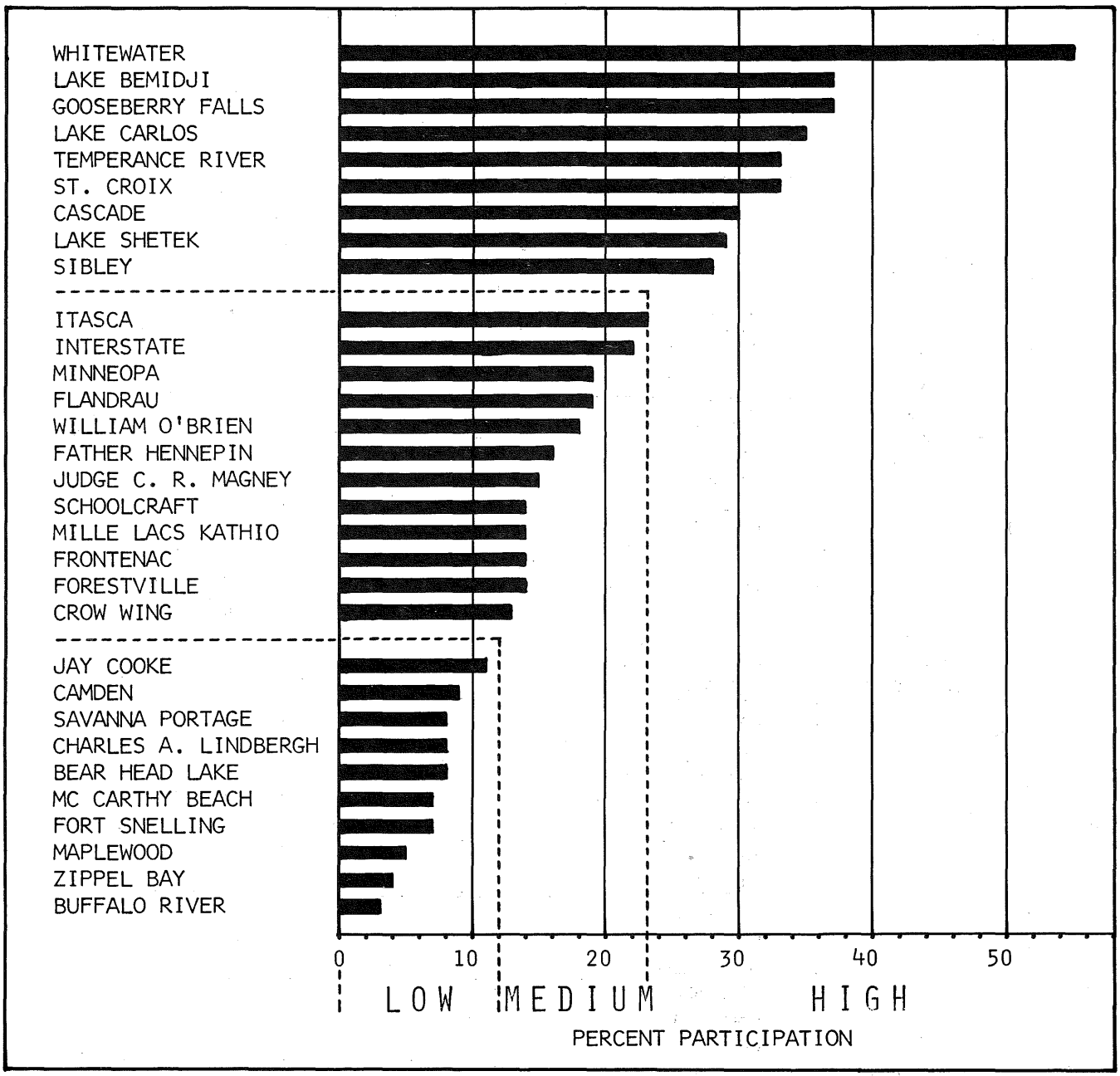


TABLE 13.

PARTICIPATION IN NATURE PROGRAMS RELATED TO FACILITIES/STAFFING

(31 Weekday Survey Parks)

PARTICIPATION LEVEL	PARKS	FACILITIES/STAFFING			
		M	N	NT	VC
HIGH (greater than 23%)	Whitewater		X	X	X
	Lake Bemidji		X		X
	Gooseberry Falls		X	X	
	Lake Carlos		X	X	
	Temperance River		X	X	
	St. Croix		X	X	
	Cascade		X	X	X
	Lake Shetek		X		
	Sibley		X	X	
MEDIUM (13% to 23%)	Itasca		X	X	X
	Interstate	X	X		
	Minneopa				
	Flandrau		X		
	William O'Brien		X	X	
	Father Hennepin				
	Judge C. R. Magney		X		
	Schoolcraft		X		X
	Mille Lacs Kathio		X	X	X
	Frontenac		X		
	Forestville				
	Crow Wing		X		X
LOW (12% or less)	Jay Cooke		X		
	Camden			X	
	Savanna Portage				
	Charles A. Lindbergh	X			
	Bear Head Lake				
	McCarthy Beach				
	Fort Snelling		X		X
	Maplewood				
	Zippel Bay			X	
	Buffalo River		X		X

M = Museum
N = One or more Naturalists
NT = Nature Trail
VC = Visitor Center

trails available. Table 12 with accompanying key, allows the reader to relate facilities and staffing to participation levels.

(Weekday Analysis)

The participation classes and class ranges used for the weekend survey were also employed in classifying the 31 weekday survey parks. Ten parks were classed as having low nature program participation, 12 as medium, and 9 as high (see Figure 8). Paralleling the weekend survey findings, all state parks occuring in the high category had the services of one or more naturalists and generally had a nature trail or visitor center. Only three state parks in the low participation class had the services of one or more naturalists, and only two had nature trails. Table 13 with accompanying key, allows the reader to relate facilities and staffing to participation levels.

NEW VISITORS

To help determine who are using Minnesota's state parks, survey Question No. 5 asked: "Have you visited this park previously (in the past 5 years)?" Information was obtained from 42 parks for the weekend survey and from 31 parks for the weekday survey.

FINDINGS

The 1974 weekday and weekend surveys show that: (1) on the average, 50 percent of the visitors had not visited the survey parks in the previous 5 years, (2) The percent of visitors who were new varied much between the parks, and (3) Generally, parks oriented toward new visitors could not be correlated with simple geographic areas (e.g. Northwest Minnesota, Southeast Minnesota, etc.). The one exception was Southwest Minnesota, where most of that area's parks showed relatively little attraction for new visitors.

ANALYSIS

Using the class ranges shown in Figure 9, page 25, the survey parks were identified as high, medium, or low with respect to the percent of their business made up of new visitors. The survey showed a wide range of "new business" proportions. For the weekend survey, Cascade State Park (located on the Northshore) was highest with 80 percent of its surveyed users being "newcomers"; while Camden and Minneopa, located in Southwest Minnesota, tied for last with 16 percent. A similarly wide range of values was supplied by the weekday survey, where Northeastern Minnesota's Schoolcraft State Park was highest with an 82 percent proportion and Minneopa was again last, with 16 percent.

Inspection of the weekend survey data illustrated in Figure 10, page 26, shows that no simple correlation exists between a park's regional location (e.g. Northern Minnesota) and the proportion of park's visitors who are newcomers. While it is true that most of the ten top ranked "new visitor" parks are located in Northern Minnesota, the top ten also include Frontenac, Whitewater, and Helmer Myre, which are located in Southeast Minnesota. Looking beyond the top class (with respect to new business orientation) it is also noted that Northern Minnesota parks such as McCarthy Beach and Jay Cooke rank quite low in attracting new clientele, even though these parks are located near major tourist travel routes or in resort destination areas. The ordering of parks (Figure 10) does not suggest that one all-important factor influences a state park's relative orientation to "new visitors". Rather, many factors appear to be involved (e.g. number of people in the immediate area of a park, a park's proximity to major tourist travel routes, a park's proximity to tourist destination areas, and the availability of alternative recreational facilities near a park). Apparently these factors operate together in such a way as to provide a diversity of "new visitor" profiles in virtually every section of the state. The one exception is Southwest Minnesota, where most of the area's surveyed parks (i.e. Lake Shetek, Flandrau, Fort Ridgely, Minneopa, and Camden,) occur in the low category (35 percent or less of their weekday and weekend clientele were new visitors).

FIGURE 9.

NEW VISITORS AS PERCENT OF
TOTAL WEEKDAY VISITORS
(31 Parks)

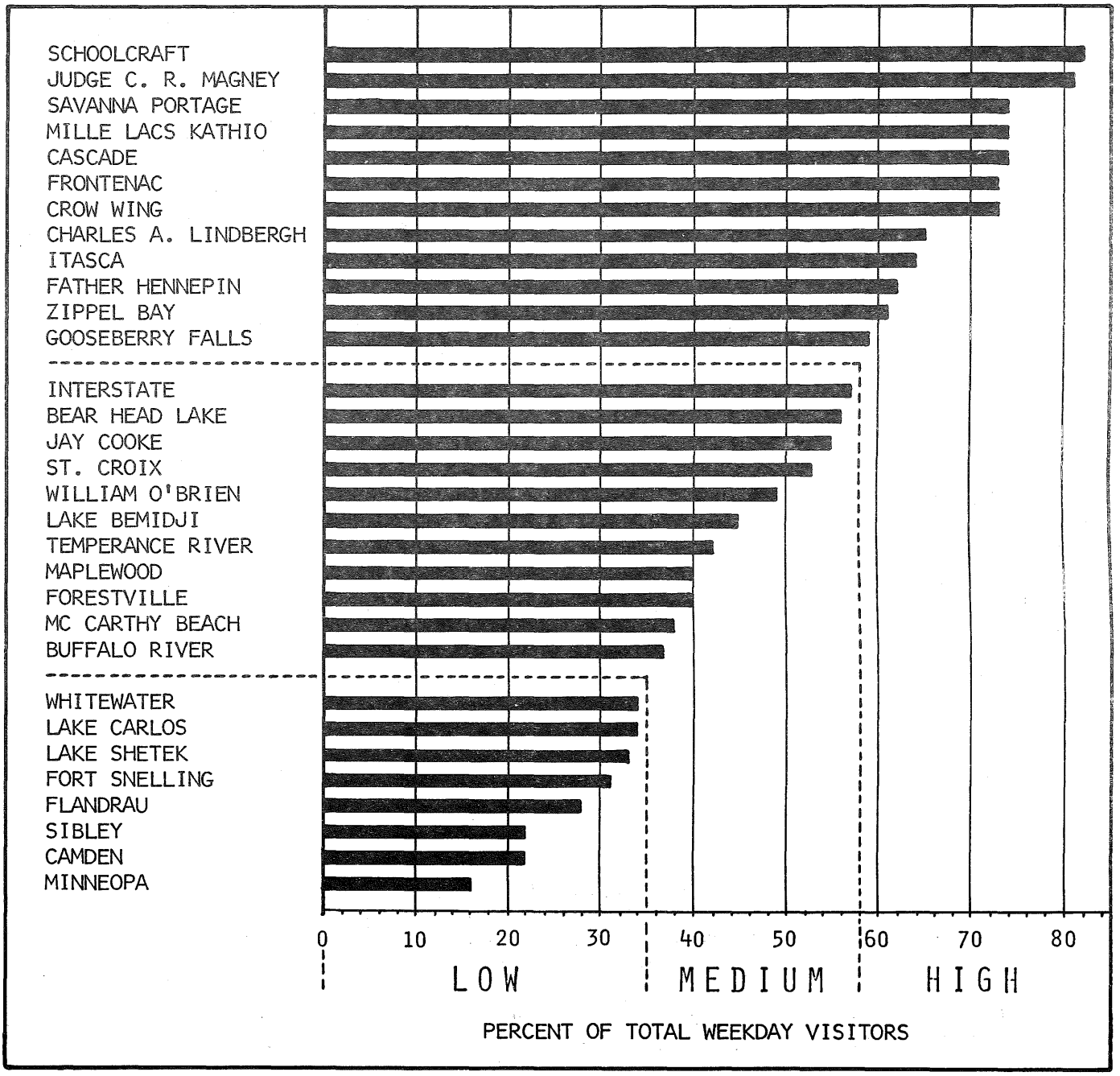
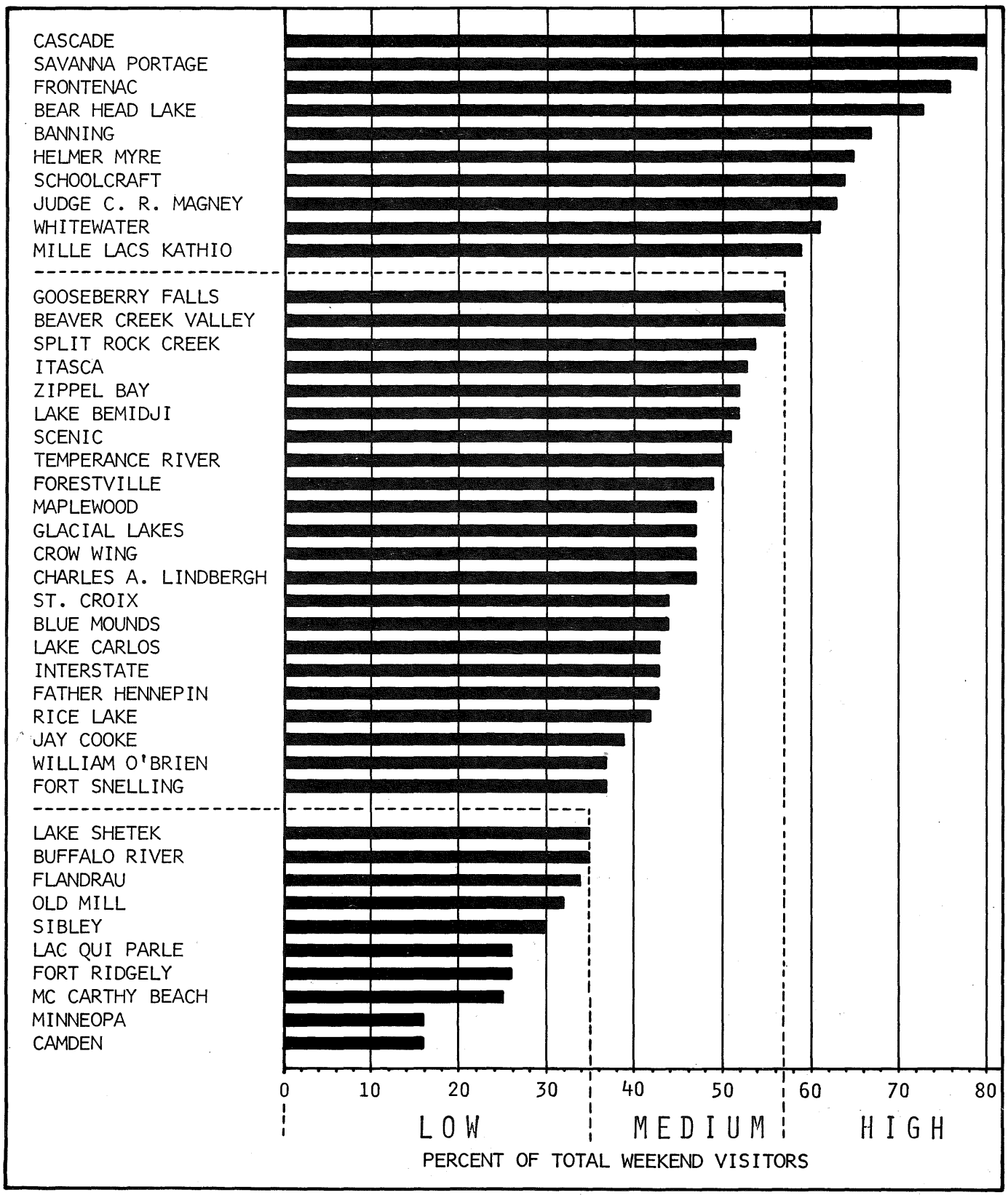


FIGURE 10.

NEW VISITORS AS PERCENT OF TOTAL WEEKEND VISITORS

(42 Parks)



ORIGIN OF VISITORS

One of the objectives of the Minnesota 1974 State Park Users Survey was to determine the origin of visitors for individual parks in order to help assess their individual drawing power potentials. Justification for this concern is provided by the Minnesota Outdoor Recreation Act of 1975 which emphasized as criteria for a park's establishment both its resource quality and its potential to serve more than just a local clientele. The following excerpts from the 1975 Act reflect its concern with who will be served.

> "No unit shall be authorized as a natural state park unless its proposed location substantially satisfies the following criteria:". . .
>
> > "Contains natural resources sufficiently diverse and interesting to attract people from throughout the state;". . .
>
> "No unit shall be authorized as a recreational state park unless its proposed location substantially satisfies the following criteria:". . .
>
> > "Contains natural or artificial resources which provide outstanding outdoor recreational opportunities that will attract visitors from beyond the local area;". . .

It should be emphasized that the Act's criteria for visitor attraction do not pertain to all units of the State Administered Outdoor Recreation System. They do not pertain to the following units: (1) State Scientific and Natural Areas, (2) State Wilderness Areas, and (3) Outdoor Recreation Sub-Areas of State Forests. For these types of units resource quality is the primary consideration. However, Natural and Recreational State Parks have two primary considerations, resource quality plus the potential to serve more than a local clientele.

The implicit rationale for adding a visitor attraction criteria to just parks (Natural State Parks and Recreational State Parks) is that without significant regional or statewide attendance the typically larger per acre acquisition and development expenditures associated with parks could not be justified.

The origin-of-visitors data provided by the Minnesota 1974 State Park Users Survey provides one tool for approximating the extent to which an individual state park serves a local, regional, or statewide clientele and thereby provides local, regional, or statewide benefits. Such data will be used by DNR's Parks & Recreation staff to assist them in their efforts to reevaluate and classify existing parks as required by the Minnesota Outdoor Recreation Act of 1975. Also, since origin-of-visitors data collected for new parks and underdeveloped parks may not wholly reflect such parks' potential clientele, such data will need to be supplemented. This can be partially done by obtaining Highway Department data on recreation travel patterns as well as data on the distribution of Minnesota's population.

TABLE 14.

NUMBER OF MINNESOTA VISITORS RESIDING WITHIN 50 MILES OF PARK AS A PERCENT OF ALL VISITORS TO THE PARK
(40 Weekend Survey Parks)

Park Name	Percent	Estimate Range* (Percent)
Banning	20%	18 to 22%
Beaver Creek Valley	44	40 to 48
Blue Mound	47	45 to 49
Buffalo River	35	32 to 38
Camden	81	77 to 85
Cascade	1	NA
Charles A. Lindbergh	22	21 to 23
Crow Wing	27	25 to 29
Father Hennepin	21	18 to 24
Flandrau	52	49 to 55
Forestville	60	55 to 65
Fort Ridgley	62	54 to 70
Fort Snelling	94	93 to 95
Frontenac	34	31 to 37
Glacial Lakes	63	61 to 65
Gooseberry Falls	1	NA
Helmer Myre	41	36 to 46
Interstate	64	60 to 68
Itasca	5	3 to 7
Jay Cooke	26	24 to 28
Judge C. R. Magney	1	NA
Lac Qui Parle	70	64 to 76
Lake Bemidji	11	10 to 12
Lake Carlos	16	15 to 17
Lake Shetek	35	32 to 38
Maplewood	42	38 to 46
Mille Lacs Kathio	27	24 to 30
Minneopa	48	43 to 53
Old Mill	54	50 to 58
Rice Lake	74	70 to 78
St. Croix	11	10 to 12
Savanna Portage	5	4 to 6
Scenic	6	5 to 7
Schoolcraft	20	19 to 21
Sibley	58	54 to 62
Split Rock Creek	61	55 to 67
Temperance River	1	NA
Whitewater	20	18 to 22
William O'Brien	86	83 to 89
Zippel Bay	9	8 to 10

N.A. – Not Applicable
* 90% Confidence Interval

TABLE 15.

ORIGIN-OF-VISITORS PROFILES FOR MINNESOTA STATE PARKS

(40 Weekend Survey Parks)

Park Name	MINNESOTA RESIDENTS 50 Mile Radius Visitors (Percent)	MINNESOTA RESIDENTS Other Visitors (Percent)	OUT-OF-STATE RESIDENTS 50 Mile Radius Visitors* (Percent)	OUT-OF-STATE RESIDENTS Other Visitors (Percent)	Total Visitors** (Percent)
Banning	20	80			100
Beaver Creek Valley	44	29	IA 6, W 13	8	100
Blue Mound	47	21	IA 5, D 11	15	99
Buffalo River	35	7	D 53	5	100
Camden	81	11	D 4, IA 2	2	100
Cascade		64		37	101
Charles A. Lindbergh	22	59		20	101
Crow Wing	27	57		17	101
Father Hennepin	21	69		9	99
Flandrau	52	35		14	101
Forestville	60	31	IA 8	2	101
Fort Ridgely	62	36		4	102
Fort Snelling	94	4		2	100
Frontenac	34	51	W 4	13	102
Glacial Lakes	63	25		12	100
Gooseberry Falls	1	72	W 7	20	100
Helmer Myre	41	19	IA 8	32	100
Interstate	64	24	W 8	5	101
Itasca	5	62		33	100
Jay Cooke	26	63	W 1	11	101
Judge C. R. Magney	1	75		24	100
Lac Qui Parle	70	23	D 4	4	101
Lake Bemidji	11	45		44	100
Lake Carlos	16	71		15	102
Lake Shetek	35	28	D 6, IA 25	4	98
Maplewood	42	27	D 23	8	100
Mille Lacs Kathio	27	64		9	100
Minneopa	48	34		18	100
Old Mill	54	19	D 25	4	102
Rice Lake	74	20		6	100
St. Croix	11	87	W 1	2	101
Savanna Portage	5	91		4	100
Scenic	6	88		7	101
Schoolcraft	20	64		18	102
Sibley	58	31		11	100
Split Rock Creek	61	17	D 5, IA 5	13	101
Temperance River		82		18	100
Whitewater	20	67	W 1	14	102
William O'Brien	86	7	W 3	5	101
Zippel Bay	9	62		32	103

LEGEND: IA = Iowa Residents
D = North and South Dakota Residents
W = Wisconsin Residents

*Column shows Estimated Maximum percent of the state park's visitors living near the park but in a neighboring state. Estimates were made only for parks located within 50 miles of another state. Out-of-State origin data was not analyzed by county so exact estimates of the percent of park visitors who reside out-of-state but within 50 miles of the park are not available.

**The rows may not add to exactly 100% due to rounding.

"LOCAL" AND "NON-LOCAL" MINNESOTA RESIDENT VISITORS

Survey respondents typically identified their county of residence but not their Zip Codes on the returned questionnaires. Therefore, the analysis of a park's Minnesota resident visitors had to be based entirely on county level data. In order to determine what percent of a park's Minnesota visitors were local residents (i.e. residing in Minnesota within 50 miles of the park) the following steps were taken:

1) A circle with a 50 mile radius was traced around each state park on a Minnesota Official Highway Map.
2) A county totally or nearly totally included within the 50 mile radius circle (i.e. contained the county's population centers) was coded as a "50 mile radius" county for that park. The coding identified each person from that county who filled out a questionnaire as a "local visitor" to that particular park.
3) A county split by the 50 mile radius circle was determined to be "local" or "non-local" by the following procedures:
   A) If 70 percent or more of a county's 1970 population resided inside the 50 mile radius circle, that county was coded as a "50 mile radius" county for that park. Visitors from throughout that county were then identified as "local" visitors to that particular park.
   B) If less than 70 percent of a county's 1970 population resided within the 50 mile radius circle, that county was coded as an "other Minnesota" county for that park. Visitors from throughout that county were then identified as "non-local" visitors for that particular park.
   C) Determination of the percentage of a county's population contained inside the 50 mile radius circle was arrived at by:
      (1) drawing a 50 mile radius circle around each park on 1970 Census of Population Maps,
      (2) summing the townships' populations contained within the 50 mile radius circle, and then
      (3) comparing the total township population contained inside the circle with the total county population.

Table 16 lists each of the survey parks and the related counties which met the criteria for a "local" county (i.e. 70 percent or more of its population within the 50 mile radius circle). These county groupings were used to calculate the percent of visitors residing within 50 miles of the survey parks (Tables 14 and 15).

Two survey state parks, Bear Head Lake and McCarthy Beach, were not analyzed with respect to the origin of visitors due to criteria limitations. For these two parks the 50 mile radius criteria does not adequately reflect the parks' "local" or "non-local" character. In the case of Bear Head Lake State Park no county within 50 miles of the park met the criteria that 70 percent or more of the county's population must be within the 50 mile radius to be considered a "local" county. For McCarthy Beach State Park only Itasca County met the criteria of having 70 percent of its population within the 50 mile radius. However, McCarthy Beach is generally known to draw a substantial share of its visitors from the St. Louis County cities of Hibbing, Chisholm, etc. which are located within 50 miles of McCarthy Beach. Using the 50 mile radius survey data to describe the "local" orientation of these two parks would have resulted in misleading conclusions.

TABLE 16.

COUNTIES WITHIN A 50-MILE RADIUS OF THE 42 SURVEY STATE PARKS

Park Name	Counties Within A 50-Mile Radius
Banning	Aitkin, Carlton, Isanti, Kanabec, Pine
Bear Head Lake	1
Beaver Creek Valley	Fillmore, Houston, Olmsted, Winona
Blue Mound	Murray, Nobles, Pipestone, Rock
Buffalo River	Becker, Clay, Mahnomen, Norman, Wilkin
Camden	Chippewa, Lac Qui Parle, Lincoln, Lyon, Murray, Pipestone, Redwood, Yellow Medicine
Cascade	Cook
Charles A. Lindbergh	Benton, Crow Wing, Mille Lacs, Morrison, Stearns, Todd
Crow Wing	Benton, Crow Wing, Morrison, Stearns, Todd, Wadena
Father Hennepin	Aitkin, Benton, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine
Flandrau	Blue Earth, Brown, Cottonwood, LeSueur, Martin, McLeod, Nicollet, Redwood, Renville, Sibley, Watonwan
Forestville	Dodge, Fillmore, Houston, Mower, Olmsted, Winona
Fort Ridgely	Blue Earth, Brown, Cottonwood, Kandiyohi, McLeod, Nicollet, Redwood, Renville, Sibley, Watonwan
Fort Snelling	Anoka, Carver, Chisago, Dakota, Goodhue, Hennepin, LeSueur, Ramsey, Rice, Scott, Washington, Wright
Frontenac	Dakota, Dodge, Goodhue, Olmsted, Ramsey, Rice, Wabasha, Washington, Winona
Glacial Lakes	Big Stone, Chippewa, Douglas, Grant, Kandiyohi, Pope, Stevens, Swift
Gooseberry Falls	Lake
Helmer Myre	Dodge, Faribault, Freeborn, Mower, Olmsted, Steele, Waseca
Interstate	Anoka, Chisago, Hennepin, Isanti, Kanabec, Ramsey, Washington
Itasca	Becker, Beltrami, Clearwater, Hubbard, Mahnomen
Jay Cooke	Carlton, St. Louis
Judge C. R. Magney	Cook
Lac Qui Parle	Chippewa, Kandiyohi, Lac Qui Parle, Lyon, Stevens, Swift, Yellow Medicine
Lake Bemidji	Beltrami, Clearwater, Hubbard
Lake Carlos	Douglas, Grant, Morrison, Ottertail, Pope, Stevens, Todd, Wadena
Lake Shetek	Cottonwood, Jackson, Lincoln, Lyon, Murray, Nobles, Pipestone, Redwood, Rock
McCarthy Beach	(Itasca)[2]
Maplewood	Becker, Clay, Grant, Ottertail, Wilkin
Mille Lacs Kathio	Aitkin, Benton, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine, Sherburne
Minneopa	Brown, Blue Earth, Faribault, LeSueur, Martin, Nicollet, Sibley, Steele, Waseca, Watonwan
Old Mill	Kittson, Marshall, Pennington, Polk, Red Lake
Rice Lake	Blue Earth, Dodge, Freeborn, Goodhue, LeSueur, Mower, Olmsted, Rice, Steele, Wabasha, Waseca
St. Croix	Carlton, Chisago, Isanti, Kanabec, Pine
Savanna Portage	Aitkin, Carlton, Itasca
Scenic	Itasca
Schoolcraft	Cass, Itasca
Sibley	Chippewa, Douglas, Kandiyohi, McLeod, Meeker, Pope, Renville, Stearns, Stevens, Swift
Split Rock Creek	Lincoln, Lyon, Murray, Nobles, Pipestone, Rock
Temperance River	Cook
Whitewater	Dodge, Fillmore, Goodhue, Houston, Olmsted, Wabasha, Winona
William O'Brien	Anoka, Chisago, Dakota, Hennepin, Isanti, Ramsey, Washington
Zippel Bay	Lake of the Woods

[1] No county met the criteria of having 70 percent of its population within a 50 mile radius of the park (Bear Head Lake), and the park was not included in the analysis (see text for a detailed discussion).

[2] McCarthy Beach State Park was not included in the analysis due to a unique limitation of the "local" criteria (see text for a detailed discussion).

NOTE: Underlined county denotes county location of park.

QUESTIONNAIRE DESIGN

The Minnesota 1974 State Park Users Survey Questionnaire was the product of the joint efforts of the Department of Natural Resources' Parks and Recreation staff and Bureau of Environmental Planning and Protection staff. The questionnaire was pretested at William O'Brien State Park during April, 1974. In evaluating the questionnaire, Dr. Michael Chubb of Michigan State University, found:

> "The questionnaire design was greatly improved compared to the 1970 questionnaire."

However, he also found:

> "There were still some problems in layout and wording of the questions."

Specifically, Dr. Chubb recommended that data from the following questions not be analyzed due to language ambiquities.

QUESTION NO. 6 (Renting Accommodations, etc.)
QUESTION NO. 9 (Destination, other than Park)
QUESTION NO. 10 (Travel Time)
QUESTION NO. 12 (Park Planning)

These recommendations were acted upon and no analysis was made of the data obtained from those questions.

Dr. Chubb also recommended rejecting data from Question No. 2 (Ranking of Park Attractions) and Camping Section Question No. 2 (Camping outside the Park's boundaries). While we agree with Dr. Chubb's criticisms of these questions, we did not eliminate the data from this report. Instead the data and very tentative "findings" are discussed in a way which we believe recognizes the limitations without barring the data from useful analysis. QUESTION NO. 2 and CAMPING SECTION QUESTION NO. 2 are discussed below.

QUESTION NO. 2 (Park Attractions)

Dr. Chubb was concerned with this question because: (1) The categories Modern Facilities and Primitive Facilities were not defined, and (2) the ranking instructions did not accommodate a survey respondent who might wish to rank two or more categories at the same level.

These limitations are acknowledged and will be corrected in future surveys. However, in our opinion they do not preclude a limited analysis of the data. While it is true that some parties gave the same ranking to more than one category, this was very much the exception rather than the rule. In addition, this situation was exceptionally rare for the first place rankings which are the only responses analyzed in this report.

Concerning the facilities definition problem, it should be noted that "Modern Facilities" was the only facilities category frequently ranked by respondents. Consequently, the park attractions analysis focuses on only 3 categories: Natural Beauty, Close to Home, and Modern Facilities. The Modern Facilities category can best be interpreted as facilities in general and should not be limited to any specific type of facility. The type of facility with which the responding parties were concerned can only be inferred based upon one's knowledge of the particular park.

CAMPER QUESTION NO. 2 (Camping outside a park's boundaries):

This question was aimed at determining whether or not a significant share of the campers at some parks would be willing to camp outside the park, using private facilities, and then visit the park during the day. The wording employed in the 1974 Survey was ambiguous and prevents establishing firm conclusions. This limitation is noted in the analysis on page 12.

SAMPLING AND DATA DEVELOPMENT

SELECTION OF SAMPLING PERIODS

The findings in this study pertain only to the weekday and weekend surveys conducted during July and August of 1974. At the beginning of the Minnesota 1974 State Park Users Survey, 30-minute sampling periods were chosen from a randomly selected group of 2-hour intervals, selected out of a set of all the possible 2-hour intervals between 11 A.M. and 6 P.M. during the survey period of Memorial Day thru Labor Day. Three different surveys were to be conducted, each with its own set of 2-hour intervals and associated 30-minute sampling periods. The three surveys are: (1) Weekend Survey, (2) Weekday Survey, and (3) Holiday Survey which together cover the period Memorial Day thru Labor Day. Due to time and financial constraints the Holiday Survey data was collected but not computerized or analyzed.

Park users were sampled during the first 30 minutes of each randomly selected 2-hour period (i.e. given the questionnaire and verbal instructions) as they entered the survey parks. After several weeks of surveying, several park managers wrote or called indicating that for their respective parks survey coverage was not adequate to handle busy evening hours when – at certain parks – large numbers of campers would be arriving. Given this "feedback", the preliminary judgment of the parks staff in St. Paul regarding survey coverage was amended. Survey coverage was expanded on July 1 to the time period from 11 A.M. to 9 P.M. At the same time a decision was made to change from the 2-hour to a 1-hour selection interval and to reduce the

survey scope to the summer months of July and August. These modifications resulted in the randomly selected weekday and weekend surveys dates and starting times shown below which are the basis for all data analyzed in this study.

SURVEY SAMPLING SCHEDULE

Weekday Survey		Weekend Survey	
July 1	2 p.m.	July 6	2 p.m.
8	7	13	1
14	4	14	2
14	8	19	8
16	12 Noon	20	12 Noon
31	6	21	11 a.m.
		21	12 Noon
		26	5
		28	12 Noon
August 1	3 p.m.	August 3	3 p.m.
5	1	3	4
8	12 Noon	9	4
12	5	9	7
14	3	10	11 a.m.
23	3	11	2
27	5	16	6
30	11 a.m.	17	1
		23	6
		25	12 Noon
No. of Sample Periods = 14		No. of Sample Periods = 19	

For both the weekday and weekend survey sampling schedules, questionnaires were handed out for only 30 minutes after the starting times (e.g. 2:00 P.M. to 2:30 P.M., 12 Noon to 12:30 P.M. etc.).

DISTRIBUTING AND CODING QUESTIONNAIRES

During the weekend and weekday survey the questionnaires for each park were coded in St. Paul at DNR Headquarters in order to reduce the participating park managers workload and to help assure that each questionnaire could be identified as to (1) the park where it was distributed, (2) the date it was distributed, and (3) the hour it was distributed.

The precoded forms were then mailed to the participating parks in time for the park managers to receive a set of prepared forms in advance of the survey periods (i.e. the 30 minute questionnaire hand-out periods). With the exception of Fort Snelling State Park, no significant problems were encountered in using the mails to supply the participating parks with questionnaires.

ESTIMATING THE NUMBER OF QUESTIONNAIRES TO BE HANDED OUT DURING A 30-MINUTE SURVEY PERIOD

It was necessary for the St. Paul staff to prepare and precode a sufficient number of questionnaires for each participating park for each survey period, so all parties entering a survey park during a 30-minute sampling period would be included in the survey. In order to meet this requirement the number of precoded questionnaires needed for distribution at a particular park for a particular sampling period was estimated on the basis of: (1) year ago today attendance estimates, in conjunction with (2) park managers' estimates of the proportion of total visitors coming into their respective parks during various time periods. This information was then converted into THE ANTICIPATED NUMBER OF PARTIES LIKELY TO BE CONTACTED DURING EACH SAMPLING PERIOD.

ESTIMATING THE NUMBER OF QUESTIONNAIRES NEEDED – HYPOTHETICAL EXAMPLE

1. The randomly selected date and time for distribution is for a given July weekday between 2:00 and 2:30 p.m.
2. Last year's July attendance data for that day indicated there were 40 camping parties and 300 dayuser parties at the park.
3. The park manager estimates that for a typical July weekday 10 percent of the dayusers and 5 percent of the campers arrive between 2:00 and 2:30 p.m.
4. Year ago-to-date attendance figures were then multiplied by the park managers estimates thereby determining the number of forms to be distributed – 32.

$$(40)\ (.05) + (300)\ (.10) = 32.$$

This method of estimating questionnaire requirements proved to be successful, since participating parks were, with rare exception, adequately supplied with precoded forms.

PROCESSING COMPLETED QUESTIONNAIRES AND QUESTIONNAIRE COUNTS

Each participating park manager received written instructions to send back to St. Paul the completed questionnaires, batched by sampling period, along with a notation showing: (1) the number of questionnaires handed out and (2) the number of completed questionnaires returned.

EDITING

Upon the return of the completed questionnaires to St. Paul, one individual prepared the questionnaires for key punching and data processing. Incomplete questionnaires providing very little useable data were thrown out. Also,

where completed questionnaires appeared to have been "mass-produced" they were discarded. Obvious inconsistencies in answers were also investigated to determine whether or not data from a questionnaire were to be keypunched as part of the survey data bank.

WEIGHTING DATA

A strict record was kept of the number of questionnaires handed out during each sampling period. With these records it was possible to compensate for differences in response rates between sampling periods and thereby arrive at overall survey values representative of a park's total use.

The need for weighting data and the basic methods used can best be demonstrated by use of a hypothetical example. For the purposes of this example only one "yes-no" question will be examined. It will be assumed that the questionnaires were handed out during only two 30-minute sampling periods. A review of the one question revealed the following:

QUESTION: "Have you visited this park previously in the past 5 years?" Yes _____ No _____

	Sampling Periods No. 1	No. 2	Total
No. of Questionnaires handed out	100	50	150
No. of Questionnaires returned	20	40	60
Response Rate	20%	80%	40%
Answers indicated on returned questionnaires:			
Yes	15 (75%)	10 (25%)	25 (42%)*
No	5 (25%)	30 (75%)	35 (58%)*
Total	20 (100%)	40 (100%)	60 (100%)

*rounded to the nearest percent

The unweighted data for this hypothetical example show that although the overall response rate was 40 percent there was a great deal of variability between the two sampling periods (20 percent vs. 80 percent). This variability is important since the overall values are really just a total of the two distinct and separate sampling periods. Thus, overall, a majority of the respondents (58 percent) indicated that they had not visited the park previously in the past 5 years, even though 75 percent of those in the sampling period (No. 1) with the greater amount of traffic had been in the park previously. This situation results from simply adding the two separate sampling periods without first putting them on an equal footing. To provide an equal or uniform basis for comparing and then summing the two distinct sampling periods, weighting procedures are necessary. An appropriate weighting method for this information is to adjust (weight) the total responses for the individual sampling periods until their response rates are equal. This adjustment in no way affects the internal relationships of the separate sampling periods but does provide a more equitable means for adding them into overall values. Continuing with the same hypothetical example, the procedures for weighting the data are illustrated below:

Weighting Data:

		Sampling Periods No. 1	No. 2	Total
No. of Questionnaires handed out		100	50	150
No. of Questionnaires returned	(4x20)	= 80	40	120
Response Rate	(4x20%)	= 80%	80%	80%
Answers indicated on returned questionnaires:				
Yes	(4x15) = 60	(75%)	10 (25%)	70 (58%)*
No	(4 x 5) = 20	(25%)	30 (75%)	50 (42%)*
Total	80	(100%)	40 (100%)	120 (100%)

*rounded to the nearest percent

The weighted data for this hypothetical example show that sampling period No. 1 data was adjusted to the higher response rate (80 percent) of sampling period No. 2. This adjustment (weighting) was accomplished by simply multiplying the data for sampling period No. 1 by 4. The weight of 4 was obtained by comparing the sampling periods unweighted response rates (80%/20% = 4). It should be noted that the weighting has not influenced the internal relationships for sampling period No. 1. It still shows that 75 percent of the respondents have visited the park in the previous five years. However, because the individual samples have been placed on an equal footing, the overall values will differ from those for the unweighted data. NOW THE TOTAL OVERALL DATA INDICATE THAT A MAJORITY OF THE RESPONDENTS (58 percent) HAVE VISITED THE PARK PREVIOUSLY IN THE LAST FIVE YEARS. This conclusion is consistent with the finding that a vast majority (75 percent) of those in the sampling period (No. 1) with the greater amount of traffic had been in the park previously. These overall survey values are also more representative of a park's total use since the variability between sampling period response rates has been held constant or equalized by weighting the data. The overall weighted data is thus a much more reliable set of information upon which to base conclusions and is not susceptible to creating erroneous relationships. (See Dr. Chubb's comments on this procedure on pages 35-36.) The difference between the two approaches is summarized below for the hypothetical example.

PERCENT OF RESPONDENTS WHO HAD VISITED PARK IN LAST 5 YEARS

Weighted Data	No. 1	No. 2	Total
Yes Responses	75%	25%	58%
Unweighted Data			
Yes Responses	75%	25%	42%

Although the conclusions drawn from the overall weighted data are opposite those for the unweighted information, they are more equitable and less misleading since the variability between sampling periods has been neutralized.

Returning to the Minnesota 1974 State Park Users Survey, it should be noted that the three questions designed specifically for campers were not compatible with the weighting procedures described above since visitor volume figures (i.e. the number of questionnaires handed out) did not distinguish between campers and non-campers. To compensate for this lack of detailed data, daily state park records on the number of campers entering the individual parks were used in conjunction with the managers' estimates of the percent of campers entering their parks during the sampling periods. This information was then used to develop camper weights for individual sampling periods following procedures similar to those applied to survey questions for all parties as described above.

DR. MICHAEL CHUBB'S EVALUATION OF THE SURVEY

In order to obtain an independent evaluation and assessment of the Minnesota 1974 State Park Users Survey, Dr. Michael Chubb of Michigan State University was contracted as a consultant. Recommendations in his final report, MINNESOTA 1974 STATE PARK SURVEY: AN EVALUATION OF ITS RELIABILITY AND UTILITY, have been considered throughout the analysis process. In an attempt to assure proper use of the 1974 survey data, highlights of the Chubb report are provided as they appear in his report. (Persons interested in reviewing the entire Chubb report can obtain a loan copy by writing to: Bureau of Environmental Planning and Protection, Minnesota Department of Natural Resources, Centennial Office Building, St. Paul, Minnesota 55155).

QUESTIONNAIRE DESIGN

"To sum up, the questionnaire was much better than the one used in 1970 and should have given reasonably reliable data for at least 8 of the 19 questions asked... In our opinion, the least reliable data may have been secured for the facilities part of Question 1, for Questions 2, 6, and 12, and for Camper Question 2."

SAMPLE DESIGN

"Developing a satisfactory sampling technique for a state park user study of this kind is a very difficult proposition due to:

(1) The wide range and, to some extent, unknown size of the populations being sampled;
(2) the fact that the populations differ so widely in terms of behavioral patterns which affect sampling procedures;
(3) the basically high variance of some of the data sought especially when analysis on a geographic basis is intended;
(4) the wide range of understanding, enthusiasm, and competence of the personnel who actually implement the sampling plan in the field; and,
(5) the detailed types of analysis which are desired (such as data for individual small parks, separate information for weekdays and weekend days, or tabulations for various origins or groups of origins) which increase the problems with variance.

The 1970 Minnesota State Park Survey had an unsatisfactory sample design because the managers were allowed to pick the sample days and "randomly" select the users who received the questionnaire. The 1974 study used an approach which was much more acceptable from the statistical point of view...

We would favor a systematic sample of user parties rather than a random sample of hours as used in the 1974 study. However, a systematic sampling of users requires tight entrance station control and counting of vehicles. Since many Minnesota state parks have neither good access control nor vehicle counters, a systematic sample of this nature is not currently feasible. The random sample of hours stratified by weekdays and weekend days appears to be a reasonable solution under the circumstances. We are not convinced that the number of sample hours drawn was adequate (14 hours from a possible 435 weekday hours, for example). There appears to be too many seasonal and weather condition variations affecting recreation behavior to depend on a 3.3% sample of hours. Some park managers felt the limited number of hours (or at least, the times selected) resulted in bias because a too large proportion occurred during periods of bad weather.

In addition, the hours selected were limited to the period 11 a.m. to 9 p.m. based on the argument that the majority of users entered during this period. We believe that this may have resulted in some bias in the case of some classes of users, for example, fishermen."

DATA PROCESSING AND ANALYSIS

"The data processing component of the study appears to have been carried out with appropriate expertise and care.

(1) Editing and Coding – The questionnaire editing and coding procedures outlined in a four-page summary dated December 19, 1974 were generally satisfactory but we did not have an opportunity to review the actual questionnaires. Allegations by a park manager that editing was used to favor desired results appears highly improbable and should be laid to rest by a review of selected questionnaires by Division of Parks and Recreation personnel. It is much more probable that "editing" was performed at some parks by making sure a substantial number of questionnaires were completed by users with "good" attitudes and activity patterns or by disposing of selected questionnaires which did not have the "right" type of responses on them.
(2) Weighting (Expansion) of Data – We understand there has been some discussion concerning the necessity of weighting the data in proportion to the attendance. Weighting would be unnecessary if we could be sure that each user group entering a park during all of the specified time periods had an equal chance of being represented in the data obtained. Such is not the case

even though care was taken to use many short sampling periods and spread them randomly through the weekdays and weekend days. We know that there were a number of situations which made it much more likely that groups entering at certain times would be represented in the data. The main factors contributing to that situation were:

(1) fluctuations in the frequency with which entering groups received questionnaires during the sample periods (park personnel who were busy or less conscientious tended to "catch" and hand questionnaires to a smaller percentage of the user groups which already had permits, for example);
(2) fluctuations in response rates (rates tended to be considerably lower during periods of high use which would result in under representation of users who entered during such times compared to users who came at other times unless weighting is used); and,
(3) differences between the estimates of camper to dayuser ratios and actually recorded ratios (also resulting in under or over representation). The proportional significance of the various groups completing questionnaires can only be represented by proportional adjustment of the data in the manner used in the data analysis.

If a perfect probability sample of sufficient users could be drawn, handed questionnaires and shown to have responded in an unbiased manner, the weighting would not be required. This ideal is virtually impossible to achieve in complex field studies such as the 1974 survey . . .

We believe that weighting procedures such as those used in analysis of the 1974 data will continue to be necessary until all user groups can be accurately counted and sufficient trained staff are available to carry out precise distribution and retrieval of questionnaires . . .*

At the moment, we cannot recall a state park user study that used an adjustment system. In some cases, tight gate control, accurate counting systems, well trained and conscientious staff and good sampling plans may have made adjustment unnecessary. However, we suspect that in most cases, the investigators were not sophisticated enough to realize they had a problem, or if they did recognize their difficulty, they had no reliable user counts on which to base adjustment."

*underlining added by editors

SUMMARY AND CONCLUSIONS

"The following summary and conclusions are based on examination of the survey printouts, the responses to the park manager questionnaire, discussions with DNR staff in St. Paul, experience with the 1970 park user study and experience with park user studies in other states and nations.

Weighting all the evidence available to us, and taking into consideration the nature and magnitude of the problems involved, we have reached the following conclusions regarding the 1974 study.

(1) Comparison to 1970 Study – The 1974 study is much better than the 1970 study in every respect but particularly in the sampling plan and data analysis. No attempt should be made to compare data from the two studies because the 1970 questionnaire was full of ambiguities and the sampling plan was so unsatisfactory. There is no doubt that the 1974 study data is much more reliable.

(2) Reliability of the 1974 Study – As we indicated in the introductory section, the reliability of a survey such as this depends on all of its component parts. It is not possible to investigate these parts in detail and reach a precise quantitative assessment of the relative effect of each on the reliability of the overall study results. Rather, one must obtain an impression of the relative quality of each component and use these impressions together with such statistical evidence as is available to see how close the survey came to the theoretically perfect study.

We concluded that the 1974 survey data are reasonably reliable considering the nature of the study and the conditions under which it was carried out. However, data for individual parks or values for specific variables should be rejected where there are strong indications that one or more components of the study were inadequate. For example, if the total number of returns was small, or a large number of sample periods were missed, or attendance estimates are suspect, or the confidence intervals are generally large, then serious consideration should be given to rejecting the data from that park for a particular period."

REGIONAL SUPERVISORS' AND PARK MANAGERS' EVALUATION OF INDIVIDUAL PARK DATA

During the summer of 1975 when the user survey results became available, St. Paul DNR survey staff met with regional supervisors and park managers to discuss and evaluate the survey data. The following information relates to this discussion and evaluation process.

During August and September of 1975, six regional meetings (i.e. at Brainerd, Bemidji, New Ulm, Savanna Portage, Split Rock Lighthouse, and Rochester) were held with park managers and regional supervisors. At these meetings each participant was asked to independently estimate selected values (e.g. percent of total parties camping, percent of parties residing out-of-state, and percent of Minnesota parties residing beyond a 50 mile radius from the park) for each of the parks in his region with which he was familiar. With this information it was possible to compare the consistency of the managers' independent estimates and also identify any discrepancies between their collective estimates and the Minnesota 1974 State Park Users Survey values. When the participants' estimates were quite consistent with each other but differed a great deal from the survey values, efforts were made to uncover the reason for the discrepancies. Situations of this type might indicate limitations in the survey values. (These situations are highlighted below.) There were, however, other situations when the regional personnel estimates varied a great deal and did not provide a collective basis to seriously challenge the survey values. In most cases the survey values and the park managers' and/or regional supervisor's estimates were rather close.

The following listing highlights only potential survey data problems identified during the discussions and evaluations with regional supervisors and park managers. Such information is provided to the reader to help assure that the survey data will be used with appropriate caution based on known or probable limitations. Since weekday survey data were provided for relatively few parks, the following comments apply only to weekend data. Weekday data may or may not have the same limitations.

APPARENT DATA LIMITATIONS[1]

Park Name	Survey Estimate For Percent of Total Parties Camping
Beaver Creek Valley	may be high
Cascade	probably high by as much as 40 points
Charles A. Lindbergh	probably high by 10 to 15 points
Father Hennepin	probably high by 25 to 30 points
Forestville	may be high
Frontenac	probably low by as much as 10 points
Gooseberry Falls	probably high by as much as 20 points
Judge C. R. Magney	probably high by as much as 20 points
Lac Qui Parle	may be low
Schoolcraft	probably high
Sibley	may be high by as much as 20 points
Split Rock Creek	may be high by as much as 10 points
St. Croix	may be high by as much as 10 points
Temperance River	probably high by as much as 45 points

	Survey Estimate for Origin-of-Visitors	
Park Name	Percent of Minnesota Visitors Residing Beyond 50 miles of Park as a Percent of All Visitors to the Park	Percent of Visitors From Out-of-State
Banning	may be high	*
Bear Head Lake	probably high[2]	*
Camden	may be low by as much as 10 points	*
Flandrau	may be high by 10 to 15 points	*
Judge C. R. Magney	*	may be low by 10 to 15 points
Lake Shetek	may be high by as much as 10 points	*
McCarthy Beach	probably high[2]	*
Whitewater	3	3

[1]These qualitative comparisons of apparent data limitations are based on insight gained during regional meetings with park managers and regional supervisors, consistency and strength of voiced opinions, communications with field personnel, and survey staff judgment.

[2]This data limitation for Bear Head Lake and McCarthy Beach is the result of a unique peculiarity of the criteria used to determine the number of visitors residing beyond a 50 mile radius of a park. See Page 29 for a more detailed discussion of this problem. Bear Head Lake and McCarthy Beach survey data were not used in the analysis for origin-of-visitors.

[3]Whitewater was closed for five weeks during 1974 due to a flood. This effected at least two major weekend periods in July, so that the survey results are primarily August results. This situation introduces data limitations in the survey values to the extent that August is not representative of the July-August survey period.

*No major data limitations. The character of the origin-of-visitors data (i.e. within 50 miles radius, beyond 50 mile radius, out-of-state visitors) is such that the three components must add to 100 percent. Thus if one value is too high, one or both of the other components must necessarily be understated. Since only two of the three components are identified here, the offsetting difference could occur in the component not listed or it could be split between two components in such a way as to represent no major limitation in utilizing the survey value.

NOTE: Points refer to percentage point differences in contrast to percentage differences, e.g. the difference between 10 percent and 8 percent is 2 percentage points.