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NATURAL RESOURCES
RESEARCH PROGRAM

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TECHNICAL REPORT R-92-2

SUMMARY OF THE 1989 CAMPGROUND RECEIPT STUDY

by

Terè A. DeMoss

Environmental Laboratory

DEPARTMENT OF THE ARMY

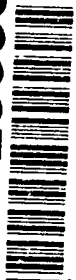
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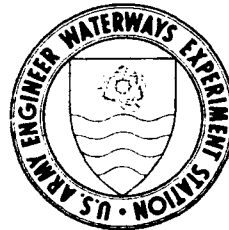
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12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) <p>The Campground Receipt Study (CRS) was established to systematically collect information on visitor characteristics at Corps of Engineers fee campgrounds. This system has proved to be an efficient method of collecting trend data.</p> <p>Since the creation of the CRS there have been a great many changes in the study procedures, data collection form, and study sites. These changes have been described in previous reports. This report describes the 1989 data, the trends in camping use indicated by the CRS data collected from 1983 to 1989, the yearly and daily occupancy rate, and the revenue per site for each campground.</p> <p>The CRS data represent the best available nationwide sample of descriptive characteristics of visitors to Corps campgrounds. The database can be used by all levels within the Corps to examine current use patterns and, with several years of data, to monitor and evaluate changes in visitor characteristics over time.</p>			
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Preface

The work reported herein was conducted as part of the Natural Resources Research Program (NRRP). The NRRP is sponsored by the Headquarters, US Army Corps of Engineers (HQUSACE), and is assigned to the US Army Engineer Waterways Experiment Station (WES) under the purview of the Environmental Laboratory (EL). The NRRP is managed under the Environmental Resources Research and Assistance Programs (ERRAP), Mr. J. L. Decell, Manager. Dr. A. J. Anderson was Assistant Manager, ERRAP, for the NRRP. Technical Monitors during this study were Ms. Judith Rice and Mr. Robert Daniel, HQUSACE. This report presents the results of the 1989 Campground Receipt Study. Camping trends are presented based on time series data collected from a nationally representative sample of Corps-managed campgrounds.

The report was prepared by Ms. Terè A. DeMoss, Resource Analysis Group (RAG), EL. Individuals who contributed technical expertise to this report were Ms. Tracy L. Christian and Mr. Sammy Franco, RAG. Review and comments were provided by Mr. H. Roger Hamilton, Chief, RAG, and Mr. R. Scott Jackson, RAG.

The report was prepared under the general supervision of Mr. Hamilton; Dr. Conrad J. Kirby, Chief, Environmental Resources Division, EL; and Dr. John Harrison, Chief, EL.

At the time of publication of this report, Director of WES was Dr. Robert W. Whalin. Commander and Deputy Director was COL Leonard G. Hassell, EN.

This report should be cited as follows:

DeMoss, Terè A. 1992. Summary of the 1989 Campground Receipt Study. Technical Report R-92-2. Vicksburg, MS: US Army Engineer Waterways Experiment Station.

1 Introduction

Purpose

This is the ninth in a series of reports which summarize the results of the Campground Receipt Study (CRS). The CRS has undergone continual improvement in procedures and in the application of data analysis. Changes in procedures are generally found in the earlier reports (1980-82), while improvements in special data applications tend to be found in the later reports (1982-89). The main purpose of each report, however, is to describe the CRS data so that a database can be established to analyze trends in camping use each year. This summary uses the 1989 data and examines the trends from 1983 through 1989.

Background

In 1978, the Recreation Research and Demonstration System (RRDS) was established under the Natural Resources Research Program of the US Army Corps of Engineers. The RRDS units serve as permanently designated outdoor laboratories at which information on recreation and resource aspects of lake management can be systematically gathered. In constructing a representative sample of sites, Title V¹ economic development and physiographic regions were combined to produce 30 physio-economic regions. Twenty-four units were selected from these regions, representing approximately 5 percent of the then 465 Corps projects. From these 24 units, the 16 projects with fee camping programs agreed to participate in the CRS (Figure 1). The 24 projects were chosen to represent a wide variety of multipurpose reservoirs, locks and dams, and dry lakes. A US Army Engineer Waterways Experiment Station (WES) publication (Hart 1981) contains a detailed explanation of the RRDS units and their selection. Specific criteria for selection are provided below:

¹ Title V, Public Works and Economic Development Act of 1964 (Public Law).

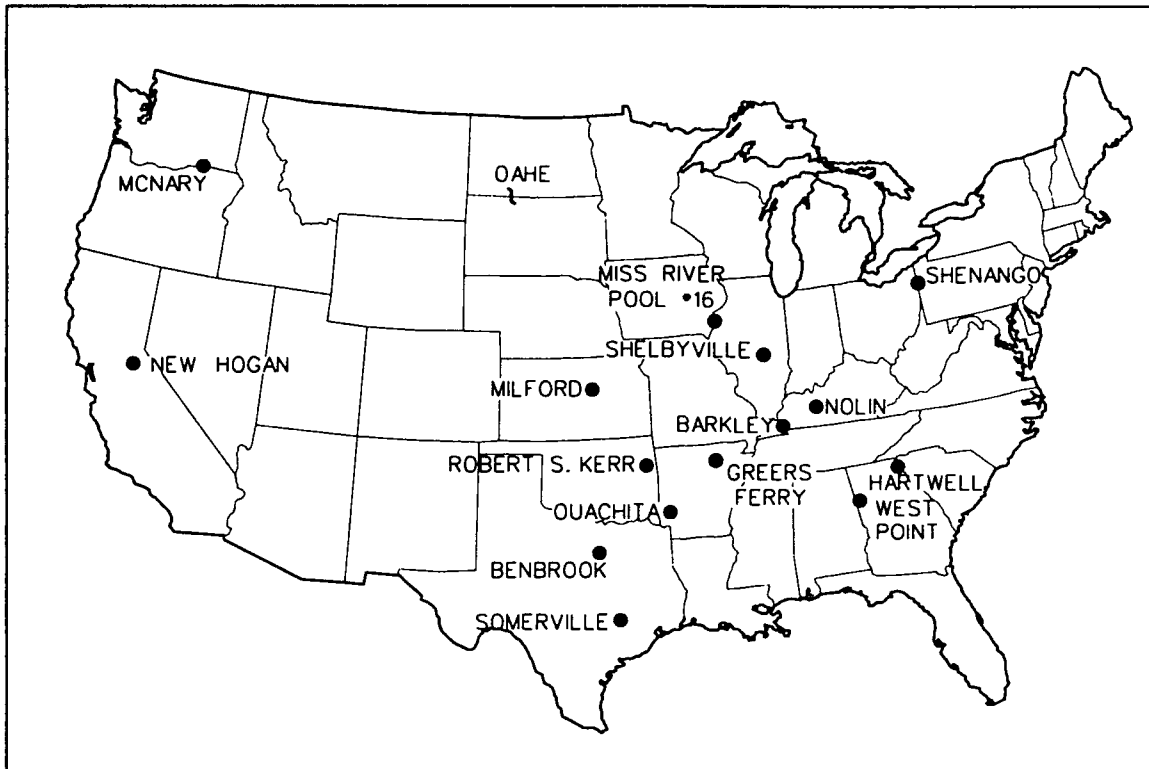


Figure 1. Campground Receipt Study project locations

- a. Full range of activities.
- b. Spectrum of resource characteristics.
- c. Nationwide distribution of units.
- d. Range of conditions at multipurpose projects.
- e. Planning, design, and management tasks.

One of the main uses of the RRDS has been the CRS. Through the CRS, a database has been developed on one of the Corps' most popular activities: camping. Four factors guided the development of the CRS (Curtis and Hansen 1982):

- a. The procedures and instruments developed were to place a minimum burden on project personnel.
- b. The procedures were to have a minimum impact on the recreation visitor when registering at the campground.
- c. The monitoring procedures were intended to be cost-effective and efficient.

d. The data collected were designed to be valid and reliable.

There are two important distinctions concerning the CRS database that require attention. First, the information gathered, as a subset of the CRS, only includes fee campers; therefore, these campers do not describe the "Corps visitor" per se. Second, the analyses are done to illustrate potential uses rather than to provide a definitive portrayal of all possible applications. Users are encouraged to further utilize the database as the management tool for which it was intended.

Study Procedures

Data collection for this study was done by rangers and campground gate attendants as campers registered. Most of the data were collected through observation, so there was minimum impact on the visitor. Data were recorded on Engineer Form 4457-1. A thorough discussion of the development of this form was provided in the 1983 Campground Receipt Study report by Akers-Fritschen (1985). Since 1988, several research and development units have implemented the Automated Use Permit System to register campers and collect CRS data.

After the CRS data were collected and sent to the corresponding District Offices for keypunching, they were forwarded to WES for analysis. For the analysis, a FORTRAN program, the Recreation Analysis Program (RAP), was developed. This program generates two reports. The "Area Report" provided a summary of the CRS data for each recreation area, while the "Site-Specific Data Report" provided most of the same information for each campsite. District offices that participate in the CRS were provided with a copy of the RAP for their own analysis purposes.

For the 1986-89 analysis, data from the RAP output were transferred into the Statistical Analysis System (SAS). SAS is an advanced data manager and statistical software package. The creation of SAS data sets for the CRS provides greater options for examining the data with specific research questions.

Multiyear Procedural Development

Data gathered at the research and demonstration units have undergone three distinct phases of development. Initially, the study focused attention on the campground receipt in terms of defining how and what types of data were to be collected. Forms went through improvements and were finalized during the early part of the study. Comparison of key variables across projects has provided an assessment of campground market behavior in the Corps.

A second stage of development has been the documentation of general results over time, such as reporting on the changes in types of camping equipment. Important trends are highlighted in the report series (e.g., an increase in camping parties with tents and camping parties with powerboats during the years 1981 through 1984) (Lawrence and Fritschen 1986).

The third stage of CRS development has included the use of data for analyses beyond routine summaries and toward specialized management applications. The present report is an extension of previous efforts since it reports on key trends while illustrating management applications. These are aimed at improving the efficiency of project operations, which will provide for a general understanding of the Corps customer who stays overnight at a Corps campground.

2 Data Analysis

1989 CRS Data

The data summarized in this report were collected from the ten projects that participated in the CRS during 1989. The CRS data were analyzed as independent recreation areas and projects, and then for the entire sample of projects. In this section, both the individual project and the entire sample data will be described. The recreation area data can be found in Appendix A.

Data limitations

In 1986 and 1987, the supply of Engineer Form 4457-1 was inadequate to meet the needs of all CRS projects. In 1986, the number of camping permits decreased from 146,087 (1985) to 81,499. In 1987, the number of projects participating decreased to nine projects and the number of permits decreased to 44,531. In 1988, nine projects participated (only seven of the nine in 1987), but the number of permits increased to 114,042. In 1989, ten projects participated with a total of 65,016 permits. Since the lack of forms was not a problem in 1985, Table 1 includes the 1985 data instead of the 1986-87 permit summary. Readers are advised to compare the number of permits issued in 1989 with the number issued in 1985 and 1988 to judge how completely the data in this table represent camping use during that time period.

1989 data

Campers at the CRS recreation areas accounted for 494,947 recreation days¹ of use in 1989 (Table 2). The average occupancy rate ranged from 7.9 at Milford Lake to 49.2 at Lake Ouachita. The average for the

¹ A recreation day is defined as a visit by one individual to the project for recreation purposes during all or any reasonable portion of a 24-hr period.

**Table 1
1989 Camping Permit Summary¹**

Project	Number of Permits, 1985	Number of Permits, 1988	Number of Permits, 1989	Number of Groups, 1989
Lake Barkley	5,939	— ²	4,033	3,954
Greers Ferry Lake	20,210	55,855	14,320	10,406
Hartwell Lake	8,455	— ²	7,130	5,160
Milford Lake	4,408	4,088	3,386	2,894
Mississippi Pool 16	1,873	2,581	2,113	1,645
Lake Oahe	8,086	11,883	2,653	1,898
Lake Ouachita	8,621	7,555	7,842	5,033
Lake Shelbyville	18,405	10,254	13,708	11,238
Shenango River Lake	7,618	7,270	3,655	2,432
West Point Lake	8,876	10,336	6,176	5,012
CRS total	92,491 ³	109,827 ³	65,016	49,672

¹ In 1986 and 1987, the supply of Engineer Form 4457-1 was inadequate to meet the needs of all CRS projects. This was not a problem in 1985. By comparing the number of permits issued for each project to the 1985 record, changes in 1989 data (increases or decreases) can be noted.

² These projects did not report for that particular year.

³ These totals are for the projects reporting in 1989, not the total permits for 1985 or 1988.

**Table 2
1989 Calculated Use Characteristics**

Project	Recreation Days ¹	Occupancy Rate ² Mean	Occupancy Rate ³ Weekends	Occupancy Rate Weekdays
Lake Barkley	40,006	25.6	35.9	21.2
Greers Ferry Lake	88,097	17.4	23.5	15.2
Hartwell Lake	59,437	11.5	19.5	7.9
Milford Lake	22,677	7.9	14.2	5.3
Mississippi Pool 16	10,209	26.4	45.4	18.6
Lake Oahe	13,067	21.1	32.8	16.0
Lake Ouachita	77,252	49.2	65.8	42.4
Lake Shelbyville	102,978	26.1	47.7	17.7
Shenango River Lake	29,388	16.5	26.1	12.3
West Point Lake	51,836	10.5	16.6	7.9
CRS total (mean)	494,947	19.8	29.8	15.3

¹ Recreation days of use is calculated by multiplying the number in the group times the length of stay for each fee receipt. The individual recreation days were then added to produce a project total. Any receipts which had the number in group or length of stay missing were deleted from the calculations. Therefore, this measure of use may be conservative.

² The occupancy rate is calculated by dividing the number of permits by (the number of nights multiplied by the number of sites) for the entire project.

³ The weekend is represented by Friday night and Saturday night. Otherwise it is counted as a weekday.

entire CRS in 1989 was an occupancy rate of 19.8 with a rate of 15.3 on the weekdays and 29.8 on the weekends.

The average length of stay ranged from 2.2 to 3.6 nights (Table 3). The average for the entire CRS in 1989 was 2.9 nights. The size of the camping parties in 1989 averaged 3.4 persons, ranging from 2.4 at Mississippi Pool 16 to 4.0 at Ouachita and Shenango River Lakes. Nationwide, 77.0 percent of the parties had previously visited the project. This variable tends to show a broad range in variation between projects as evidenced by the value of 84.5 percent at Lake Shelbyville to 42.4 percent at Lake Oahe. Also, 91.3 percent of the camping parties at CRS projects indicated that the project was the primary destination for their trip. However at Lake Shelbyville, 97.6 percent of the camping parties reported the project as the primary destination for their trip. At the individual projects, the lowest percentage of Golden Age passports was found at Hartwell Lake (13.7 percent), the highest at Mississippi Pool 16 (45.3 percent).

Project	Mean Length of Stay Nights	Mean Number in Group	Percent Prior Visits ¹	Percent Primary Destination ¹	Percent Golden Age Passport
Lake Barkley	3.2	3.0	78.3	93.4	27.1
Greers Ferry Lake	2.7	3.4	81.5	91.8	23.8
Hartwell Lake	3.0	3.8	77.3	88.9	13.7
Milford Lake	2.2	3.6	64.3	87.6	18.7
Mississippi Pool 16	2.7	2.4	68.4	93.4	45.3
Lake Oahe	2.4	3.0	42.4	56.7	25.7
Lake Ouachita	3.6	4.0	67.7	87.9	19.7
Lake Shelbyville	2.8	3.3	84.5	97.6	17.7
Shenango River Lake	3.2	4.0	84.0	93.8	19.0
West Point Lake	3.0	3.4	78.3	93.1	26.0
CRS total (mean)	2.9	3.4	77.0	91.3	22.7

¹ Percent of camping parties.

For the cumulative 1989 data, an analysis of the type of vehicle, or vehicles, used by camping parties in Table 4 indicates that more parties used trucks (50.7 percent) than cars (32.9 percent). The highest percentage of truck use was at Milford Lake (58.1 percent), while the lowest percentage of car use was at Mississippi Pool 16 (39.4 percent). Relatively few of the camping groups arrived in vans (14.2 percent), motor homes (16.7 percent), or via other modes of transportation (1.1 percent). The exceptions were Mississippi Pool 16 and Lake Oahe, where 41.2 percent and 25.7 percent of the camping parties, respectively, reported using motor homes.

**Table 4
1989 Distribution of Vehicle Types (Percent of Camping Groups)¹**

Project	Car	Truck	Van	Motor Home	Other ²
Lake Barkley	32.9	57.3	10.6	21.0	1.9
Greers Ferry Lake	25.1	56.5	10.1	15.8	1.1
Hartwell Lake	37.9	51.3	13.1	12.9	0.4
Milford Lake	32.7	58.1	13.5	16.9	0.2
Mississippi Pool 16	36.8	39.4	13.4	41.2	1.1
Lake Oahe	18.9	40.0	11.7	25.7	0.3
Lake Ouachita	33.4	55.1	15.3	14.5	3.6
Lake Shelbyville	38.0	44.2	19.8	17.8	0.6
Shenango River Lake	46.4	43.0	15.2	17.5	0.3
West Point Lake	29.5	53.9	13.8	7.1	0.4
CRS total (mean)	32.9	50.7	14.2	16.7	1.1

¹ These categories are not mutually exclusive. Camping groups could bring with them multiple types of camping equipment, which may account for nationwide totals that exceed 100%.

² The "Other" category includes any mode of transportation that is not listed. This may include such things as motorcycles, bicycles, etc.

During 1989, as shown in Table 5, the most popular type of camping equipment at the CRS projects was a tent (34.3 percent nationwide). At Lake Ouachita, 45.4 percent of the camping parties used at least one tent. It must be noted that the equipment categories are not mutually exclusive; therefore, tents may not necessarily be the principal means of camping for those groups that reported using them. Overall, the nationwide averages

**Table 5
1989 Distribution of Camping Equipment and Powerboats
(Percent of Camping Groups)¹**

Project	Tent	Pop-up Trailer	Pickup Camper	Travel Trailer	Powerboat
Lake Barkley	24.6	7.7	9.1	36.8	48.8
Greers Ferry Lake	35.9	9.8	4.7	28.8	17.7
Hartwell Lake	38.0	12.5	2.0	22.4	26.0
Milford Lake	34.9	5.8	7.3	32.5	39.9
Mississippi Pool 16	7.1	5.2	3.6	40.7	14.0
Lake Oahe	24.4	7.2	12.4	23.9	35.6
Lake Ouachita	45.4	10.9	4.0	28.1	44.1
Lake Shelbyville	39.3	12.4	5.6	24.4	36.9
Shenango River Lake	31.2	11.2	6.1	24.9	33.9
West Point Lake	26.8	7.1	3.9	26.3	44.1
CRS total (mean)	34.3	10.1	5.3	28.2	33.2

¹ These categories are not mutually exclusive. Camping groups could bring multiple types of camping equipment, which accounts for nationwide totals that exceed 100%.

of other types of camping equipment included travel trailers (28.2 percent), pickup campers (5.3 percent), and pop-up trailers (10.1 percent). In terms of other recreation equipment, about one-third (33.2 percent) of all camping parties brought a powerboat to CRS projects.

Trend Analysis

One of the primary purposes of the CRS was to create a database that would enable the prediction of trends in recreational use. Each year of data collection improves the predictability of a trend analysis. A comparison of the CRS databases for the years 1983 through 1989 is presented in Figures 2-15. Where no bars appear on the bar charts, data were not available or were missing. For example, Mississippi Pool 16 did not participate in the CRS until 1984. Because of the lack of adequate forms in the 1986-87 data, Greers Ferry Lake and Lake Oahe were not included in the 1987 analysis. Likewise, Lake Berkley and Lake Hartwell did not participate in the 1988 study. Therefore, the figures will also reflect this lack of information in all charts.

Across these ten projects, mean party size has not changed dramatically since 1983 (Figure 2). For Shenango Lake, the averages continued to decrease from 4.1 in 1983 to 3.6 in 1986 but returned to 4.0 in 1989. Mississippi Pool 16 reported some of the smallest party sizes, with a steady decrease from 2.7 in 1983 to 2.3 in 1988. Mean length of stay (Figure 3) exhibits greater variation than mean group size. The averages ranged from a low of 1.7 nights for 1984 at Milford Lake to a high of 4.5 during 1986 at Lake Shelbyville.

From 1983 to 1989, there was a general increase in the percentage of campers with prior visits to the project and with the project as their primary destination (Figures 4 and 5). For Mississippi Pool 16 the percent of campers with primary destination increased from 77.1 in 1985 to 93.4 in 1989.

Golden Age passport use tended to be highly variable between projects, yet fairly stable within projects with a few exceptions (Figure 6). Percentages ranged from 49.3 percent for Shenango Lake in 1985 to 8.7 percent for Greers Ferry Lake in 1986 (the 0.0 and 3.0 reported at Mississippi Pool 16 in 1986-87 tended to be low for this project and may be due to lack of reporting Golden Age). Mississippi Pool 16 and Shenango Lake (1985) displayed relatively high percentages.

Parties with cars provided consistent patterns over the 7-year period (Figure 7). Each project showed a decrease in the use of cars. Lake Hartwell had the largest variation with a range of from 61.4 to 29.4 percent. Parties with trucks (Figure 8) exhibited a different pattern of increases and decreases. The use of trucks tended to slightly "outpace" cars for

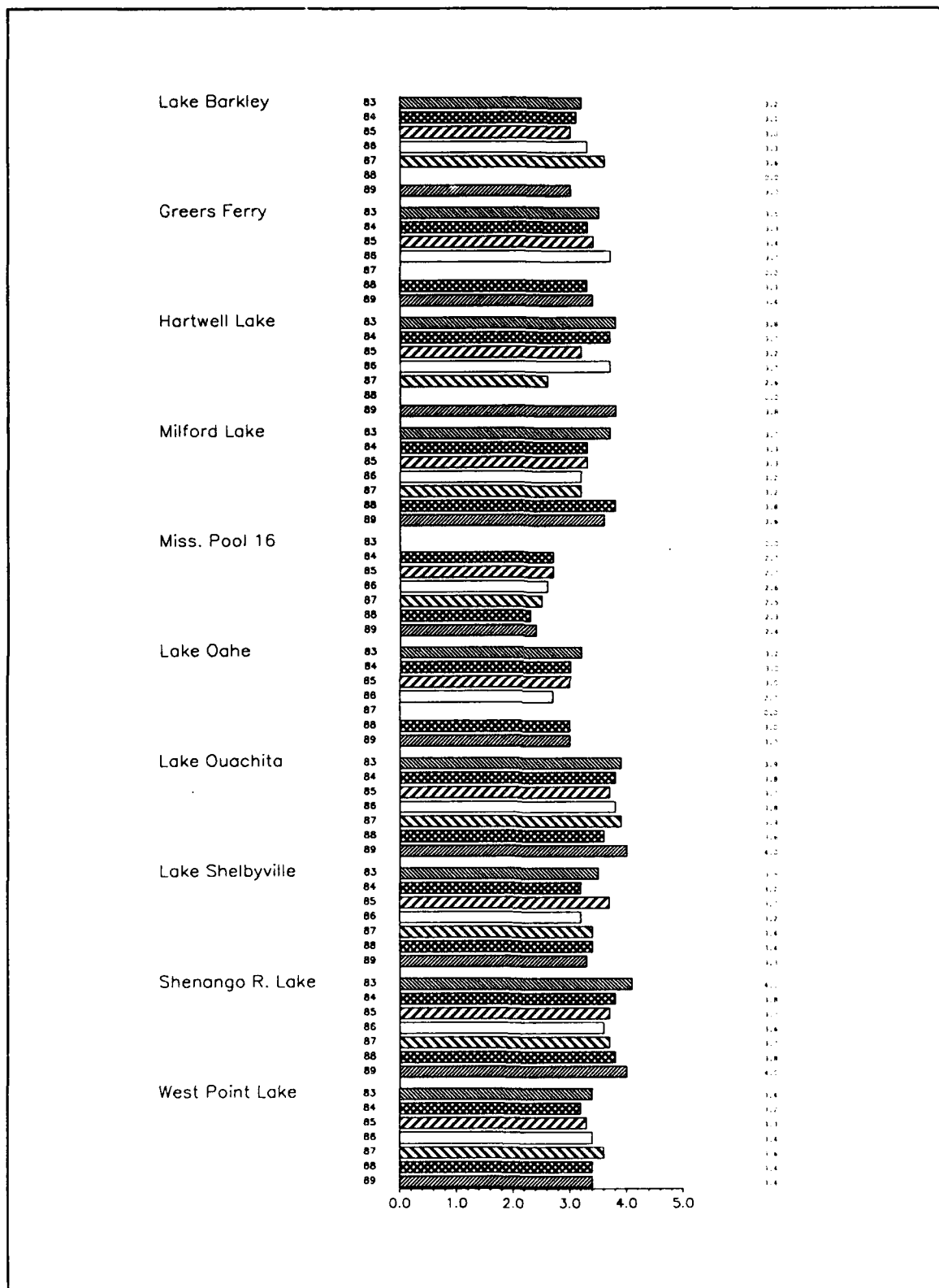


Figure 2. Mean number in party, 1983-89

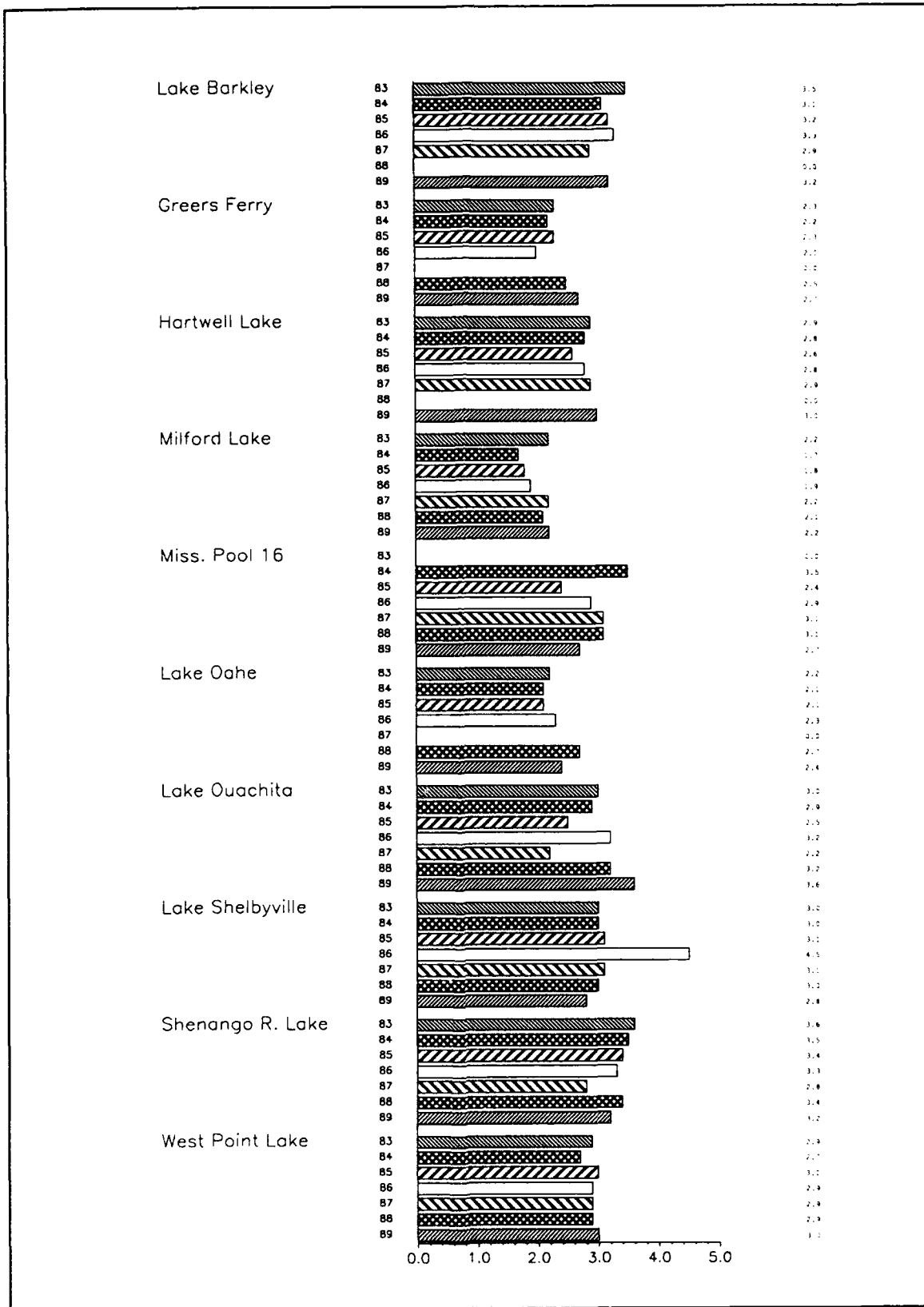


Figure 3. Mean length of stay (in days), 1983-89

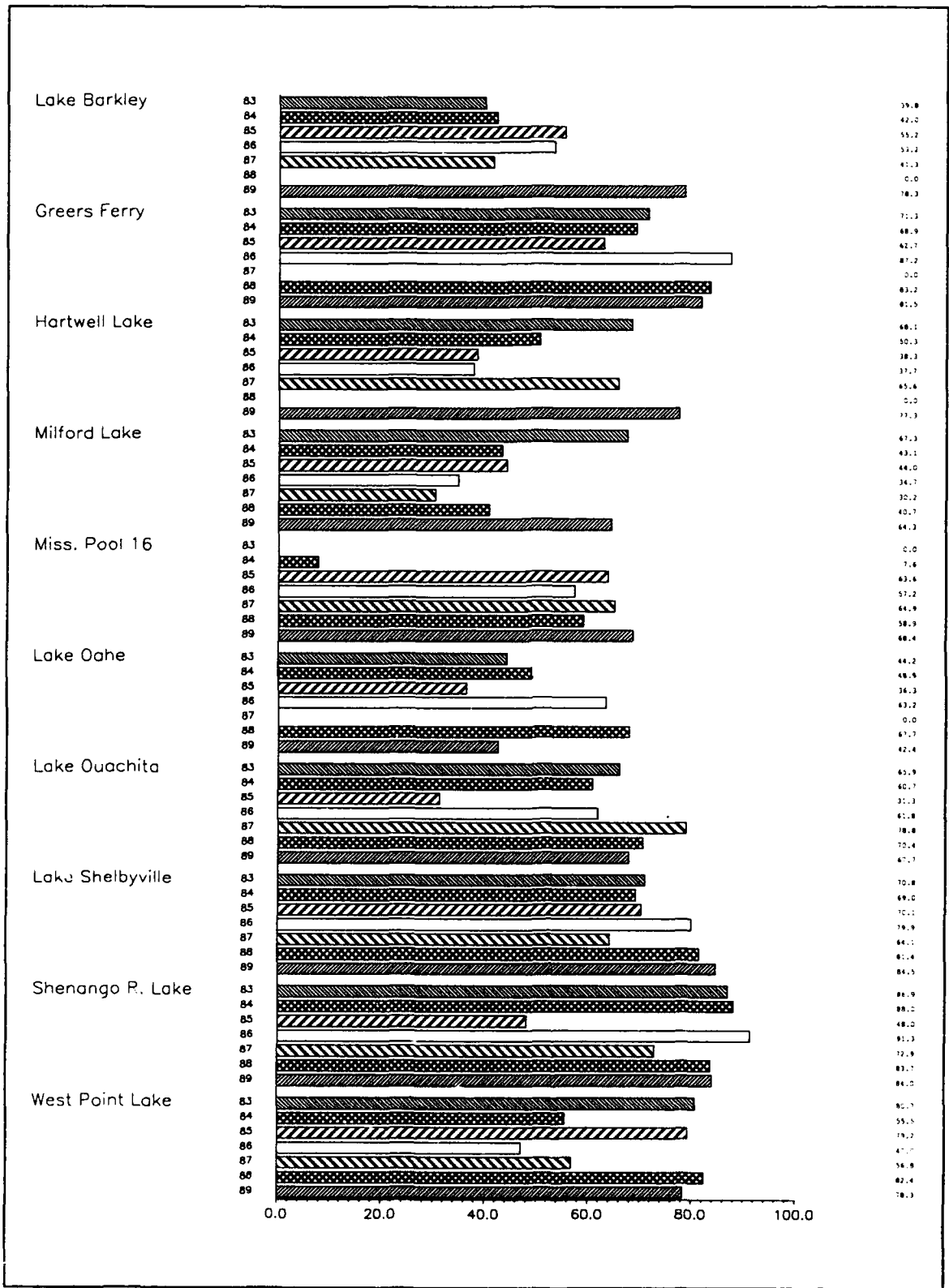


Figure 4. Percent of camping parties with prior visits to the project, 1983-89

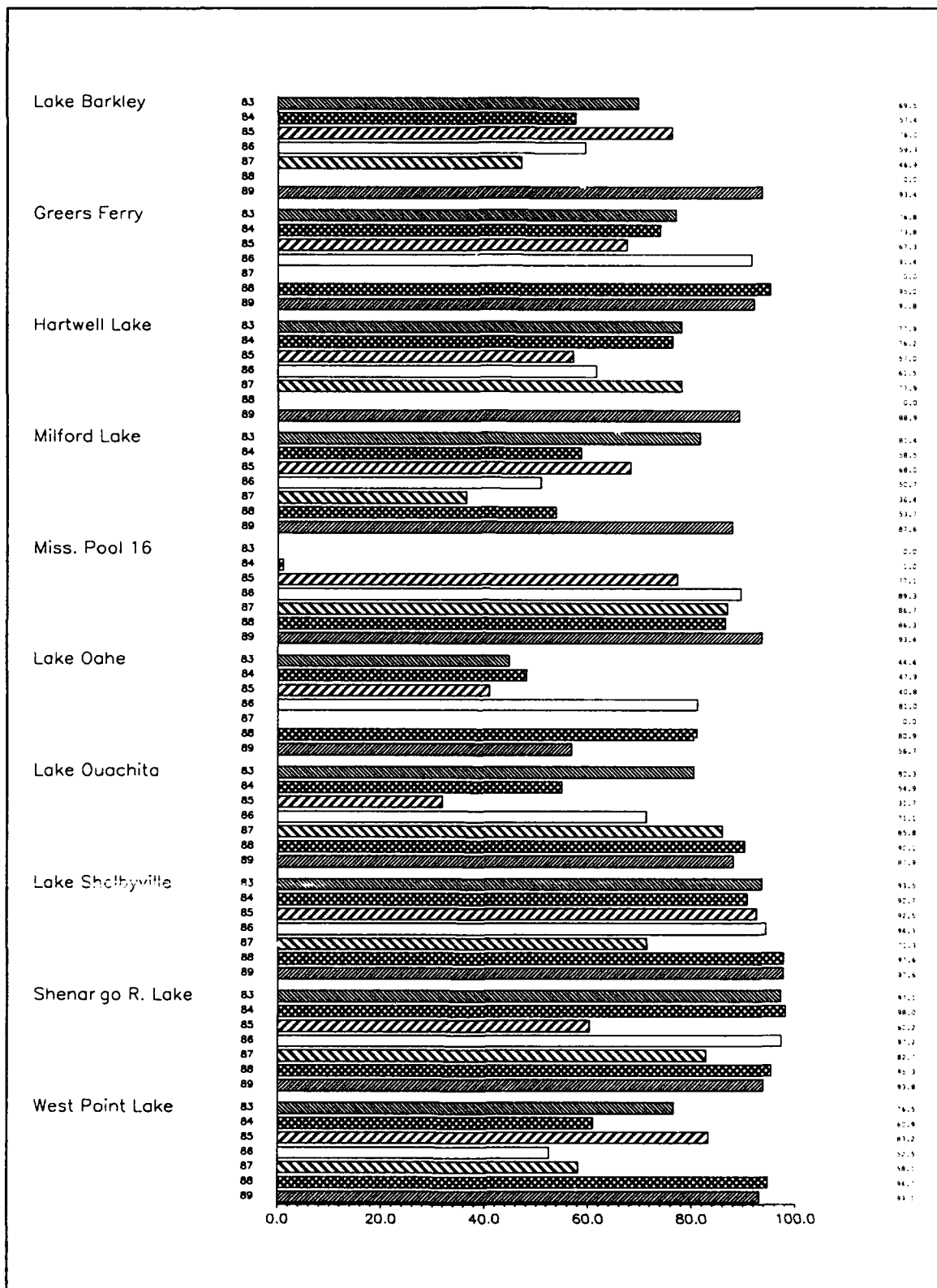


Figure 5. Percent of camping parties having the project as their primary destination, 1983-89

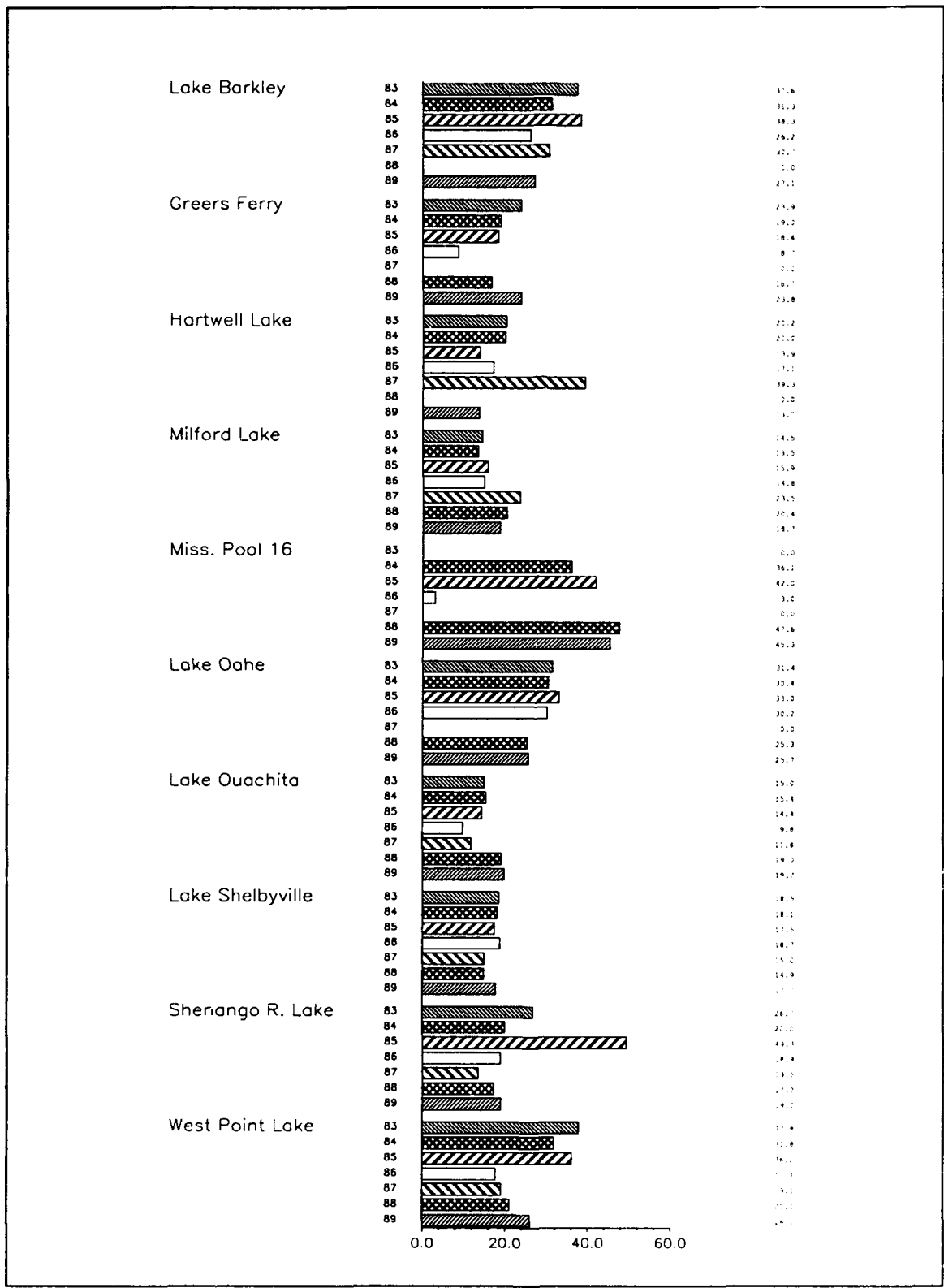


Figure 6. Percent of camping parties using Golden Age passports, 1983-89



Figure 7. Percent of camping parties with cars, 1983-89

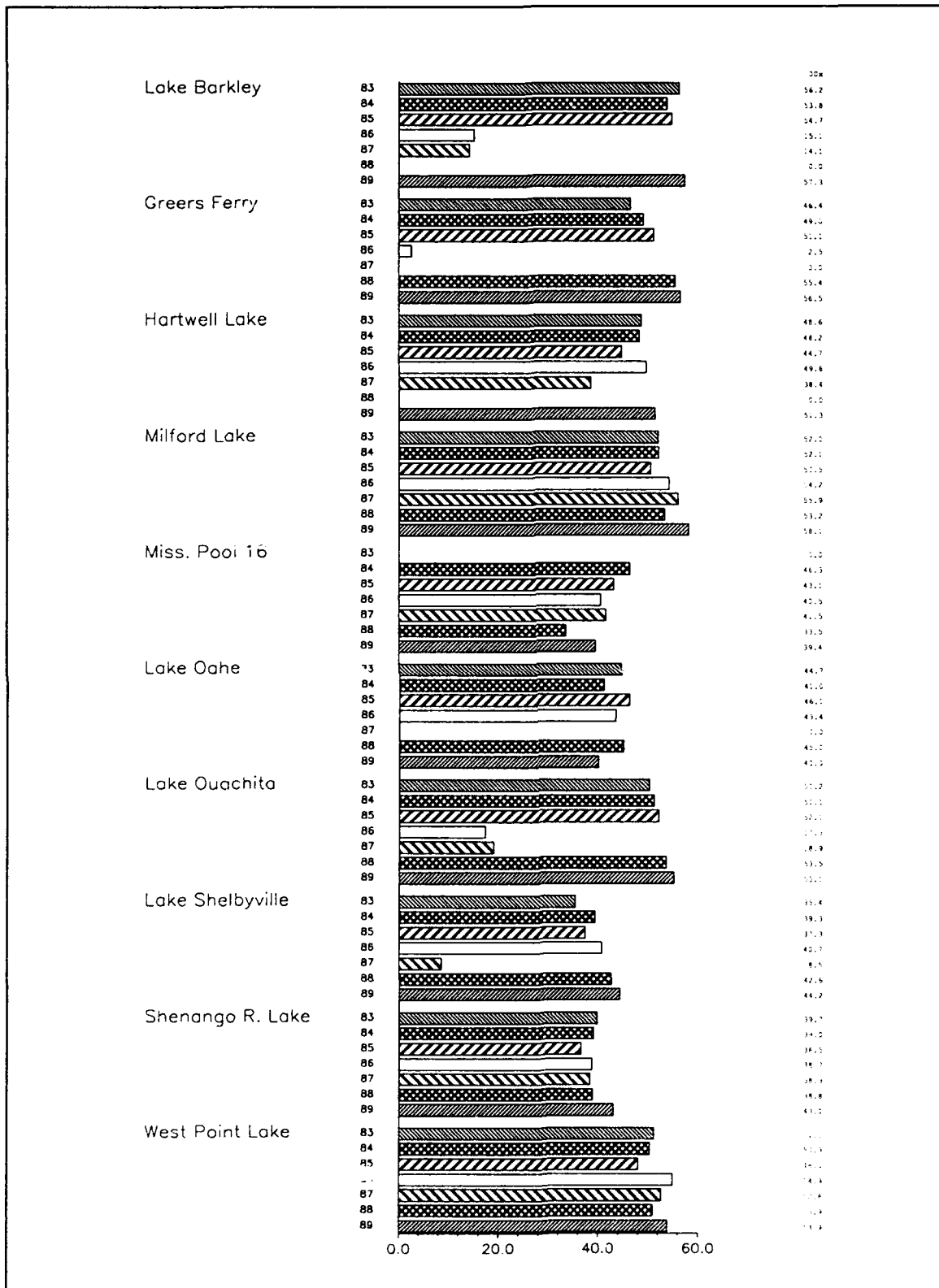


Figure 8. Percent of camping parties with trucks, 1983-89

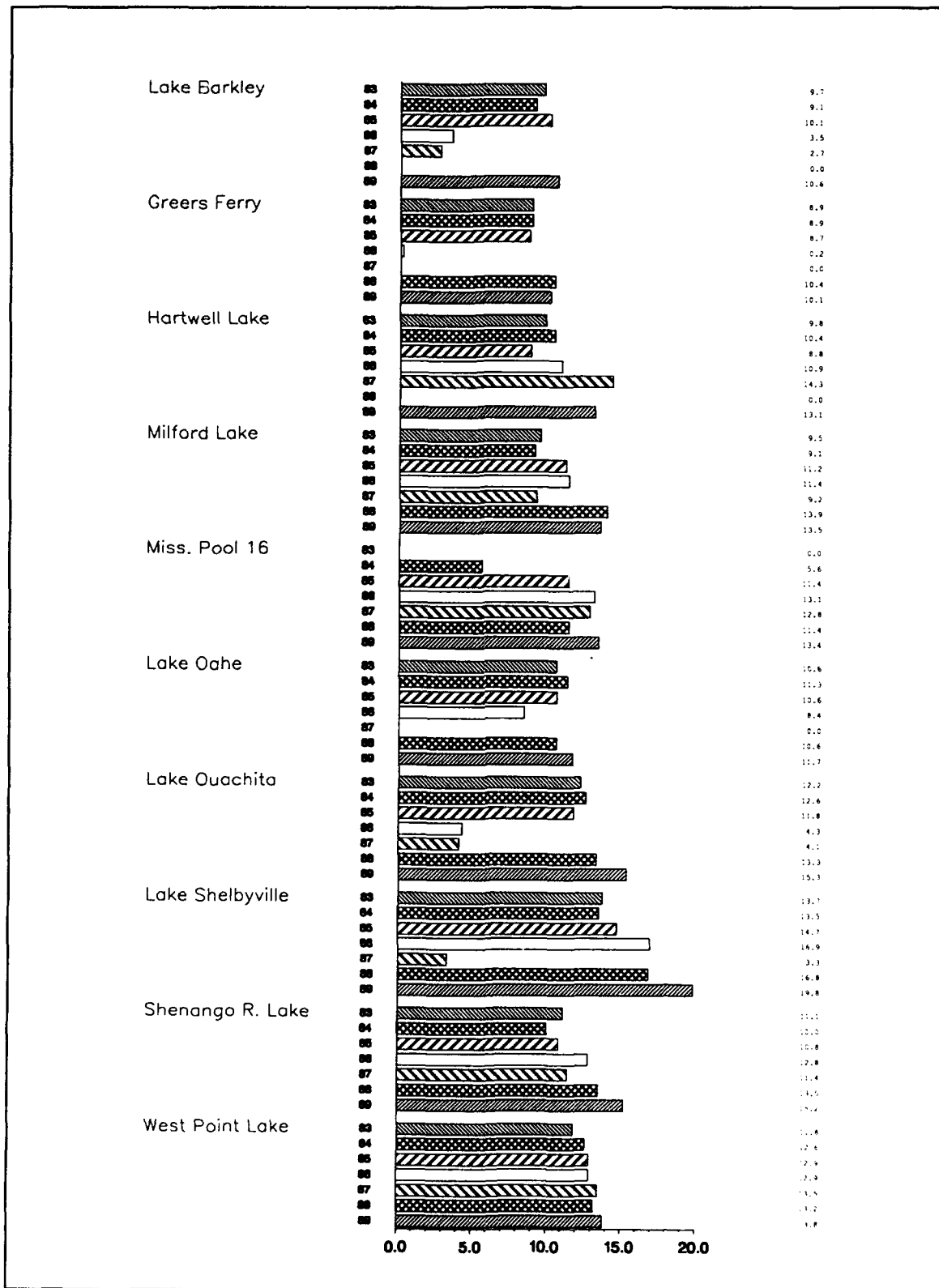


Figure 9. Percent of camping parties with vans, 1983-89

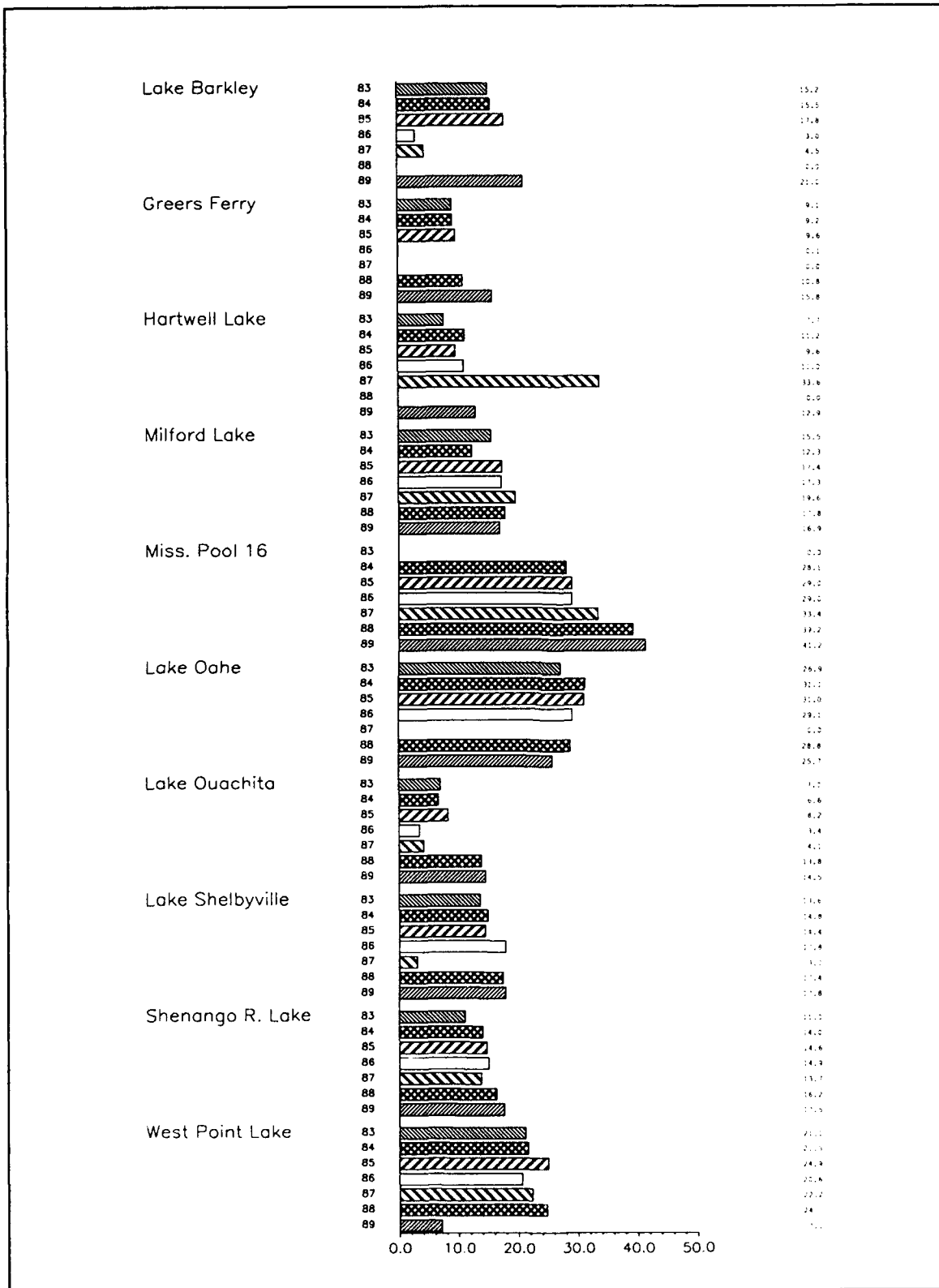


Figure 10. Percent of camping parties with motor homes, 1983-89

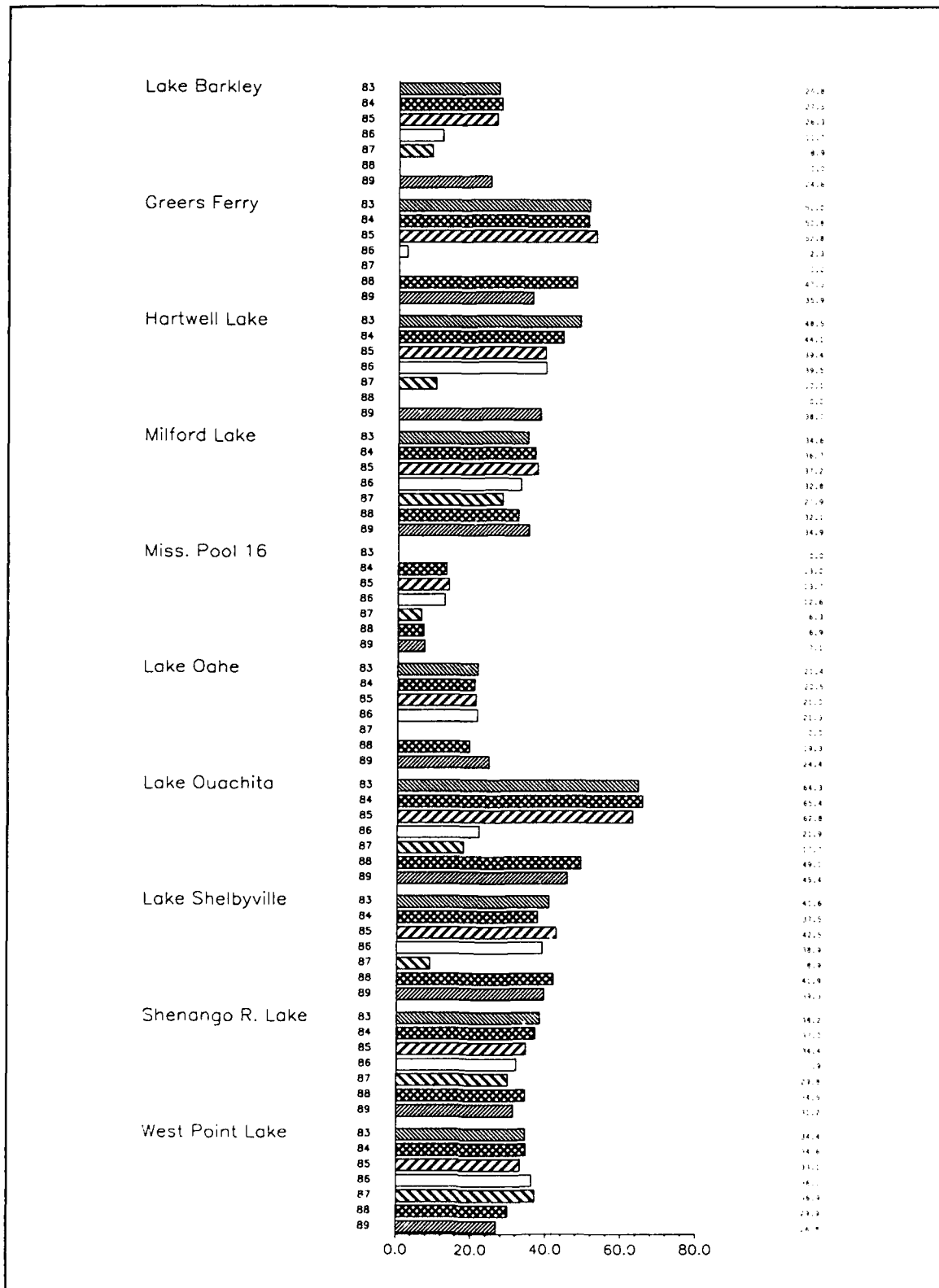


Figure 11. Percent of camping parties with tents, 1983-89

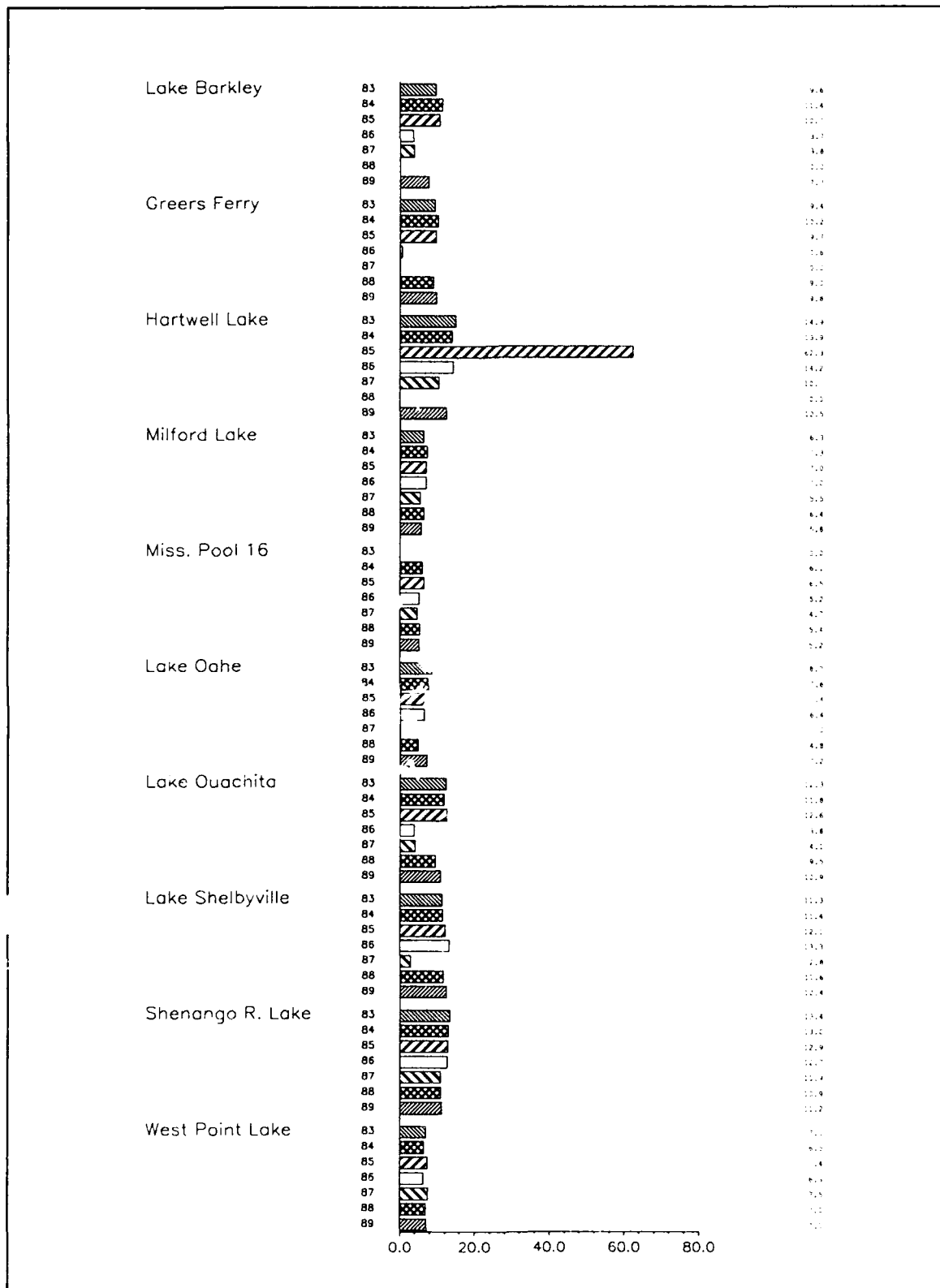


Figure 12. Percent of camping parties with pop-up trailers, 1983-89

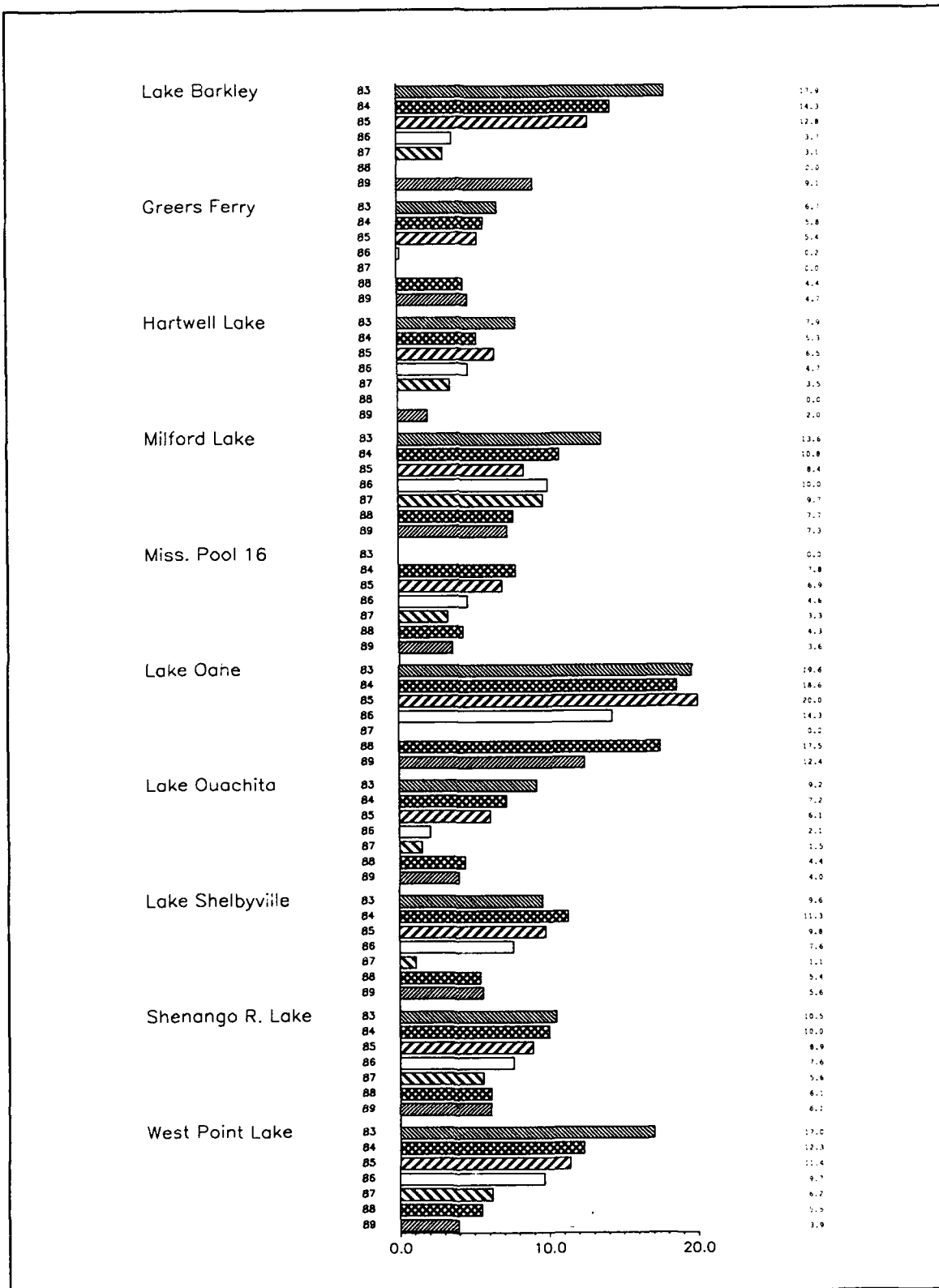


Figure 13. Percent of camping parties with pickup campers, 1983-89

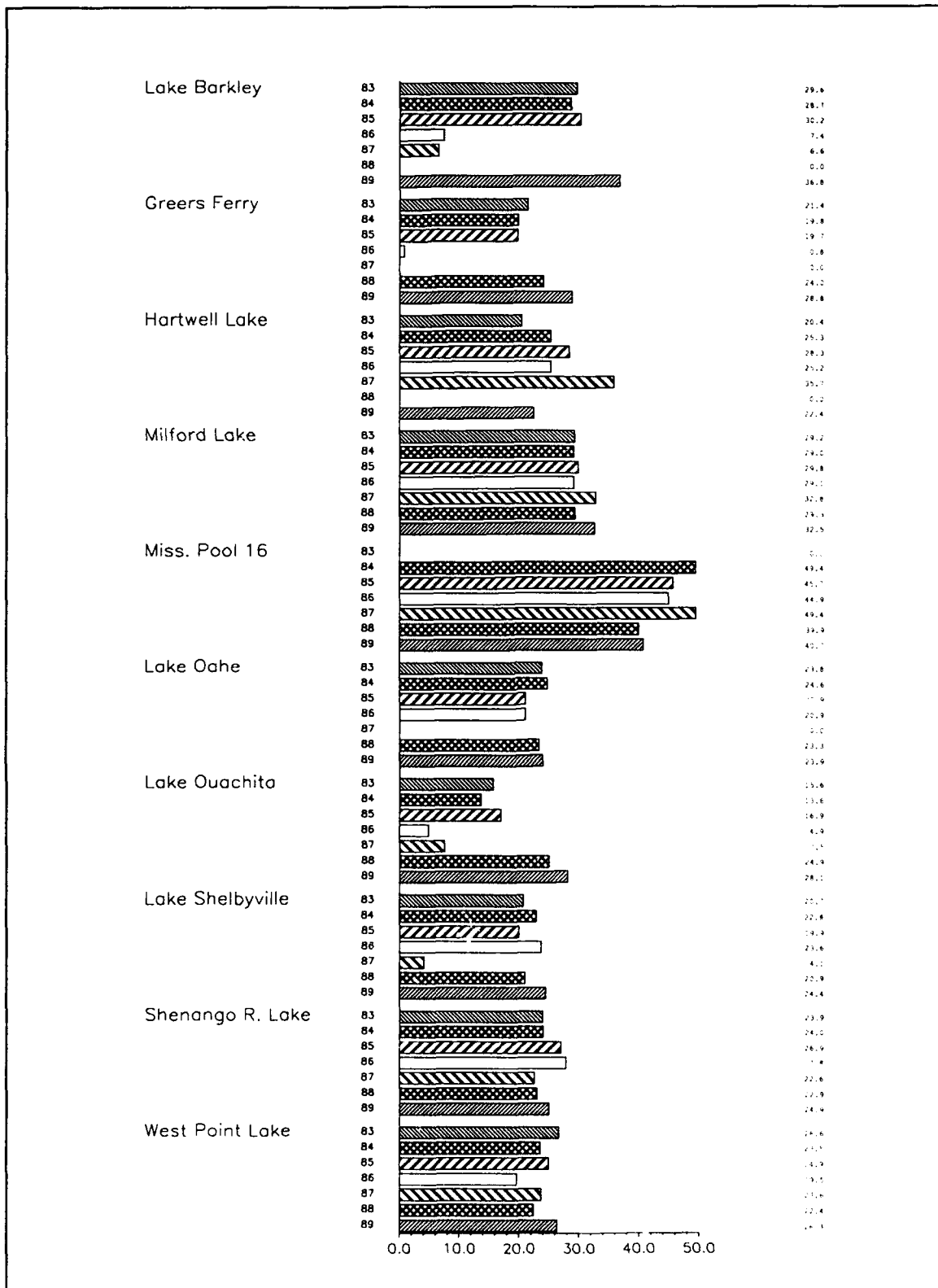


Figure 14. Percent of camping parties with travel trailers, 1983-89

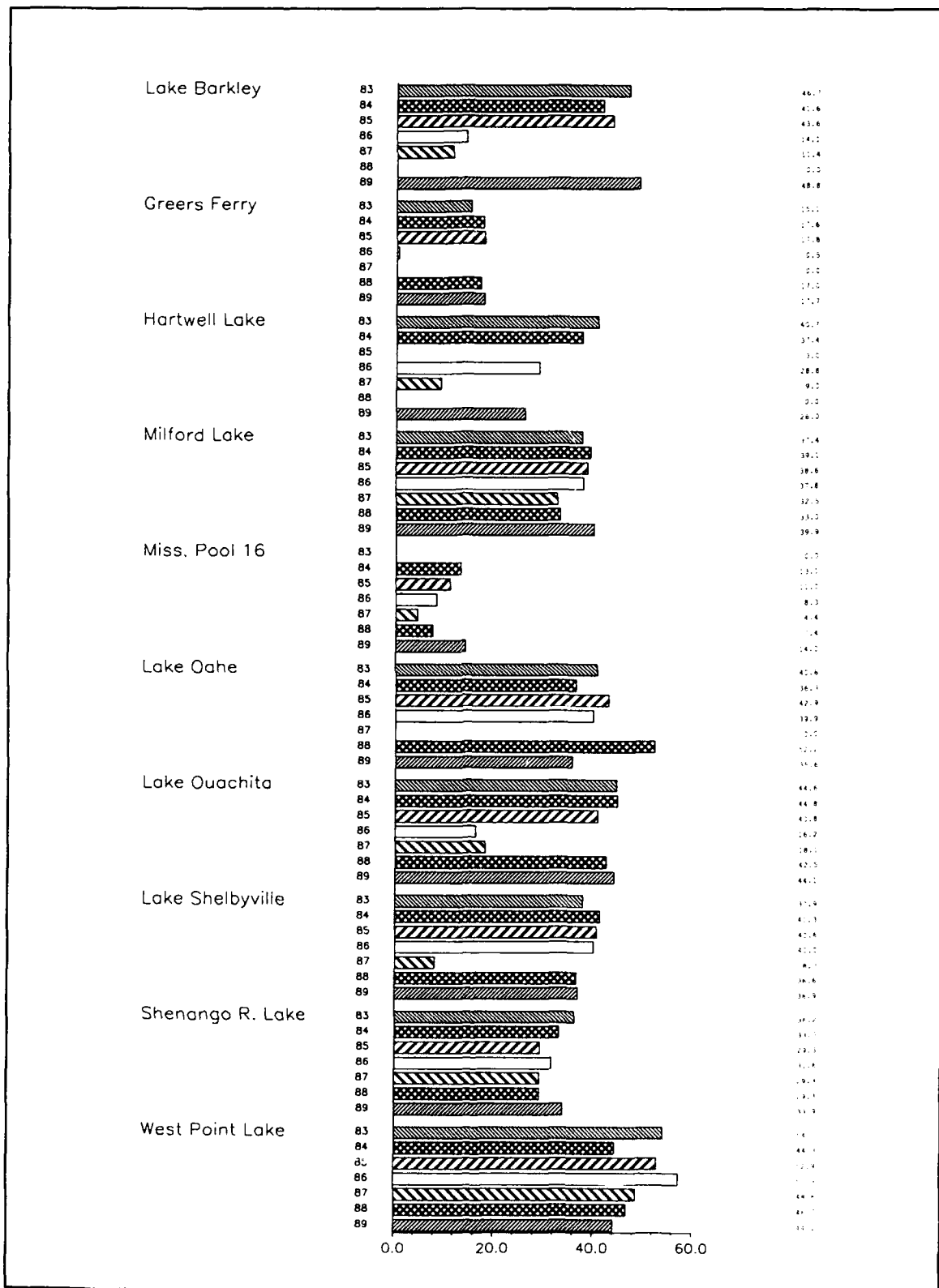


Figure 15. Percent of camping parties with powerboats, 1983-89

nearly every bar chart (except for Shenango Lake) when Figures 7 and 8 are compared.

Figure 9 shows a slight increase in the use of vans by camping parties except at Mississippi Pool 16 and Hartwell Lake. Mississippi Pool 16 showed an increase from 5.6 to 13.4 in 1989. Hartwell Lake decreased only 1.3 percent; however, there has been a continual increase since 1983 (9.8 to 14.3 percent in 1987).

Motor home use exhibited considerable variability across projects as can be seen in Figure 10. The highest use occurred at Mississippi Pool 16, where, in 1989, 41.2 percent of the camping parties used a motor home. Overall, the use of motor homes as camping vehicles was small compared to other types of camping equipment.

In Figure 11, showing parties with tents, a stable pattern within projects was clearly evident. However, the pattern among projects displayed considerable variability. For example, the lowest use occurred at Greers Ferry Lake, with about 2.3 percent of the camping parties using tents, whereas the highest occurrence was 65.4 percent for parties at Lake Ouachita.

The use of pop-up trailers tended to be fairly stable across and within projects (Figure 12). Few patterns are discernible with respect to this type of camping equipment. This was in contrast to camping parties with pickup campers (Figure 13). The use of this type of camping equipment was very low for projects such as Hartwell Lake (2.0 percent), while pickup campers are more popular at Lake Oahe, with a high of 20.0 percent of the camping parties using them.

In contrast to the previous figure, Mississippi Pool 16 shows the overall highest use of travel trailers with percentages ranging from 39.9 to 49.4 (Figure 14). Most projects report the use of this equipment to be at about 25 percent.

Except for the 1986-87 data record, the use of powerboats tended to be relatively uniform across projects, except Hartwell Lake which had a steady decrease from 40.7 to 26.0 percent (Figure 15). Powerboat use by camping parties was the highest usage at Barkley, Oahe, Ouachita, and West Point Lakes.

Potential Uses of the CRS Database

Analysis of visitor origin

In Figures 16 through 25, an analysis was performed using ZIP Codes to reveal the origin of camping parties to CRS projects. The figures show how projects differ in relation to their ability to draw visitors from different parts of the country. Figure 24 illustrates that Shenango Lake, on the western border of Pennsylvania, received visitors from the upper east coast, parts of the Midwest, and the west coast, Texas, and Florida. The majority of these users, however, were from just two states: Pennsylvania and Ohio. In contrast, Lake Oahe (Figure 21), which is located in North and South Dakota, received visitors from almost all states. In addition, the majority of those users were from a five-state region rather than a two-state region.

Occupancy rates

Additional uses of the CRS include an examination of occupancy rates. Occupancy rates are a key indicator of economic viability in the hotel-motel industry. They were also used successfully to reveal a decline of 19 percent in average daily occupancy rates for nationwide camping during the 1978 fuel shortage (LaPage and Cormier 1979).

Occupancy rates were examined by year and month and on a daily basis (Figure 26 and Appendix B). In Figure 26 a calendar was used to show how camping is distributed throughout the month. The month of July was picked since the months of June, July, and August are usually the months of highest usage. There was flooding the last two weeks in June and the first two weeks in July. Figure 26 shows a low occupancy rate for the first two weeks of July followed by an increase to "normal" rates the last two weeks of the month. A special event such as flooding will decrease the monthly estimate of occupancy rate but the calendar shows the true length of this event. This type of analysis will hopefully be useful and help managers evaluate utilization patterns at campgrounds in order to improve efficiency.

Fee paid per site

In Table 6, the average fee revenue generated per campsite was calculated for each project. This statistic was calculated by taking the total fee revenue generated at each project and dividing that amount by the total number of campsites at each project. Lake Ouachita had the highest revenue per site at \$555.67 and Milford Lake was the lowest at \$117.00. This information can be used to show on an average how much revenue each site is contributing to the project and compare efficiency of fees collected at different projects.

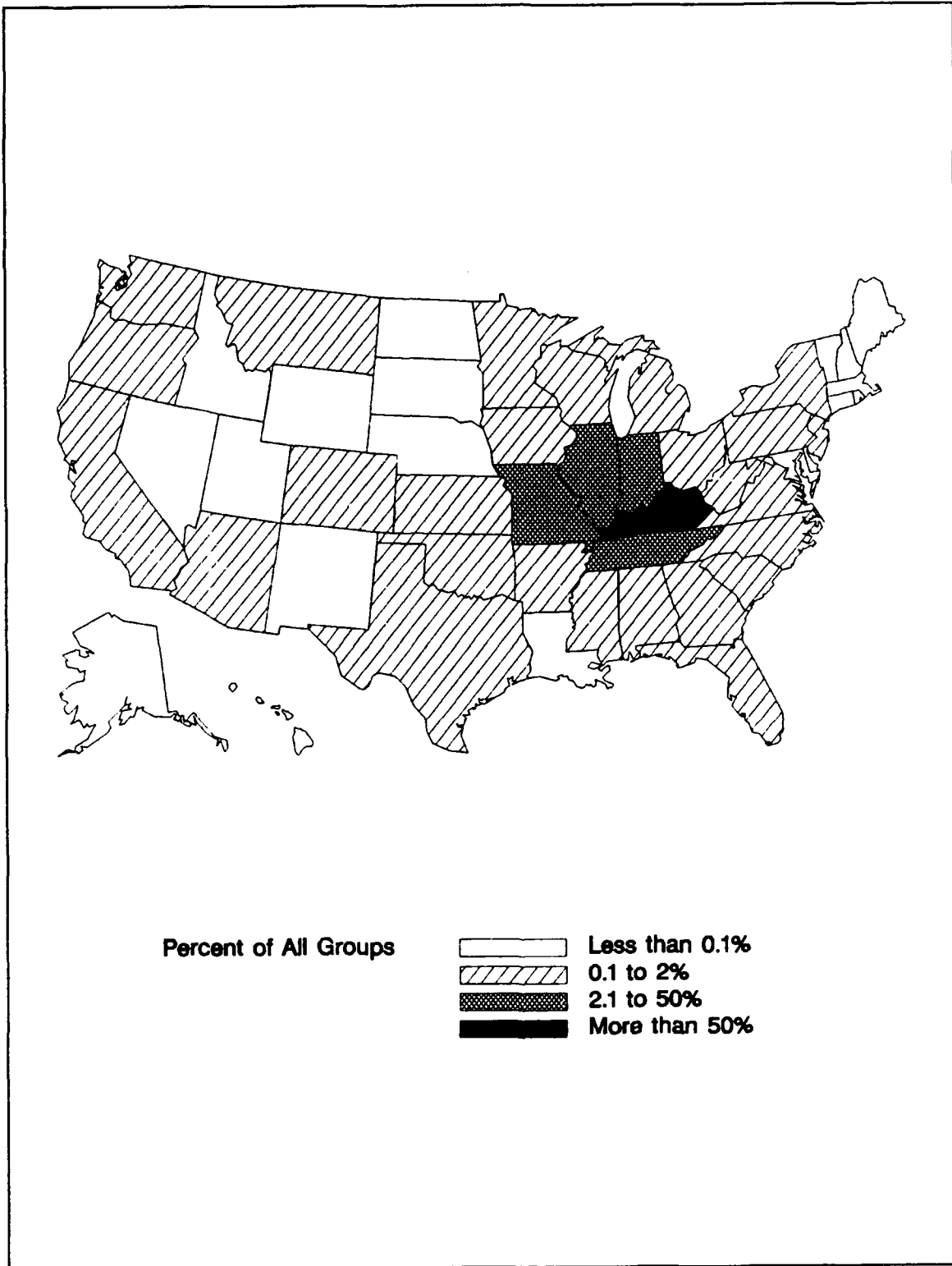


Figure 16. Percent of camping groups by state for Lake Barkley, 1989

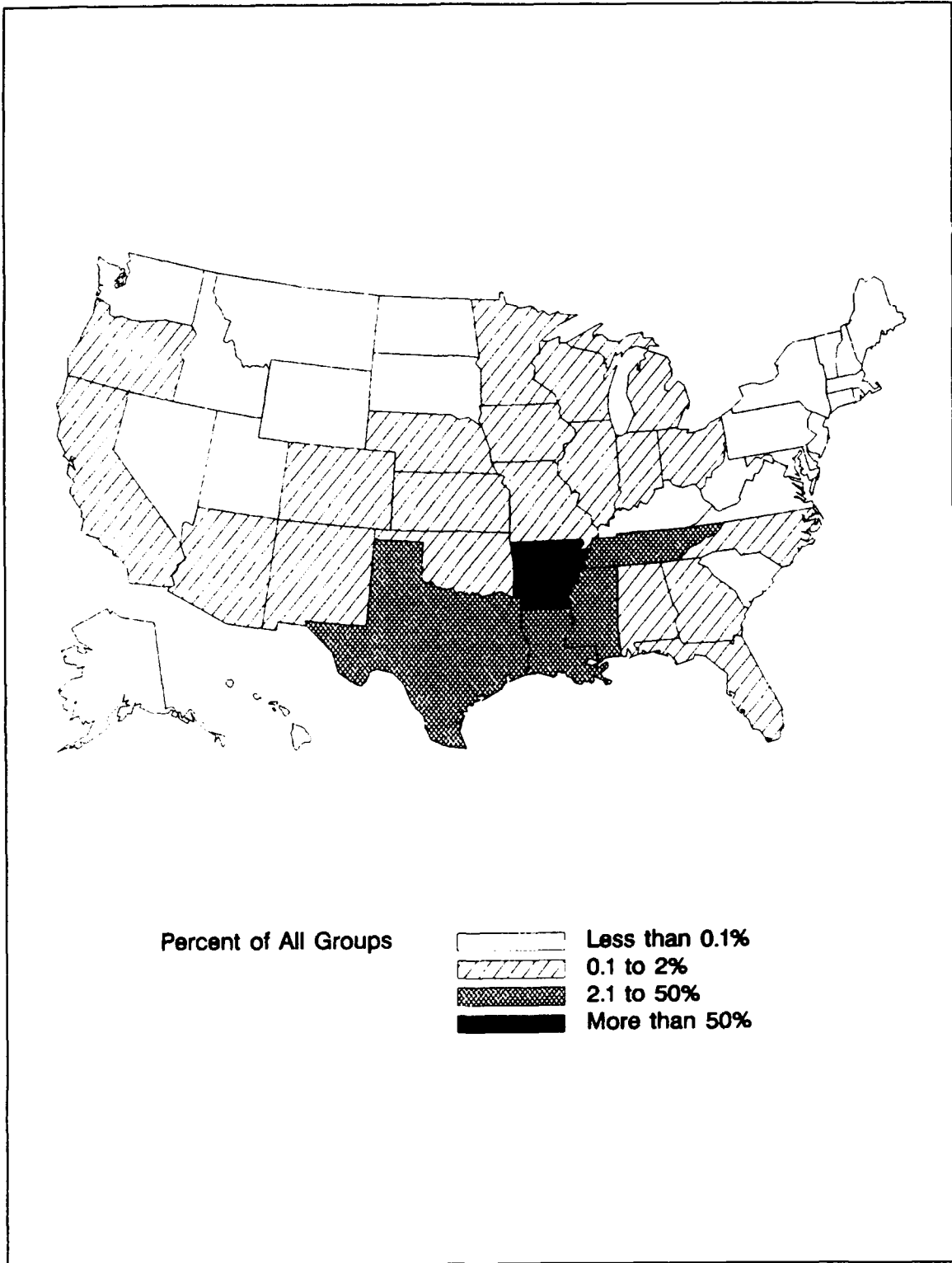


Figure 17. Percent of camping groups by state for Greers Ferry Lake, 1989

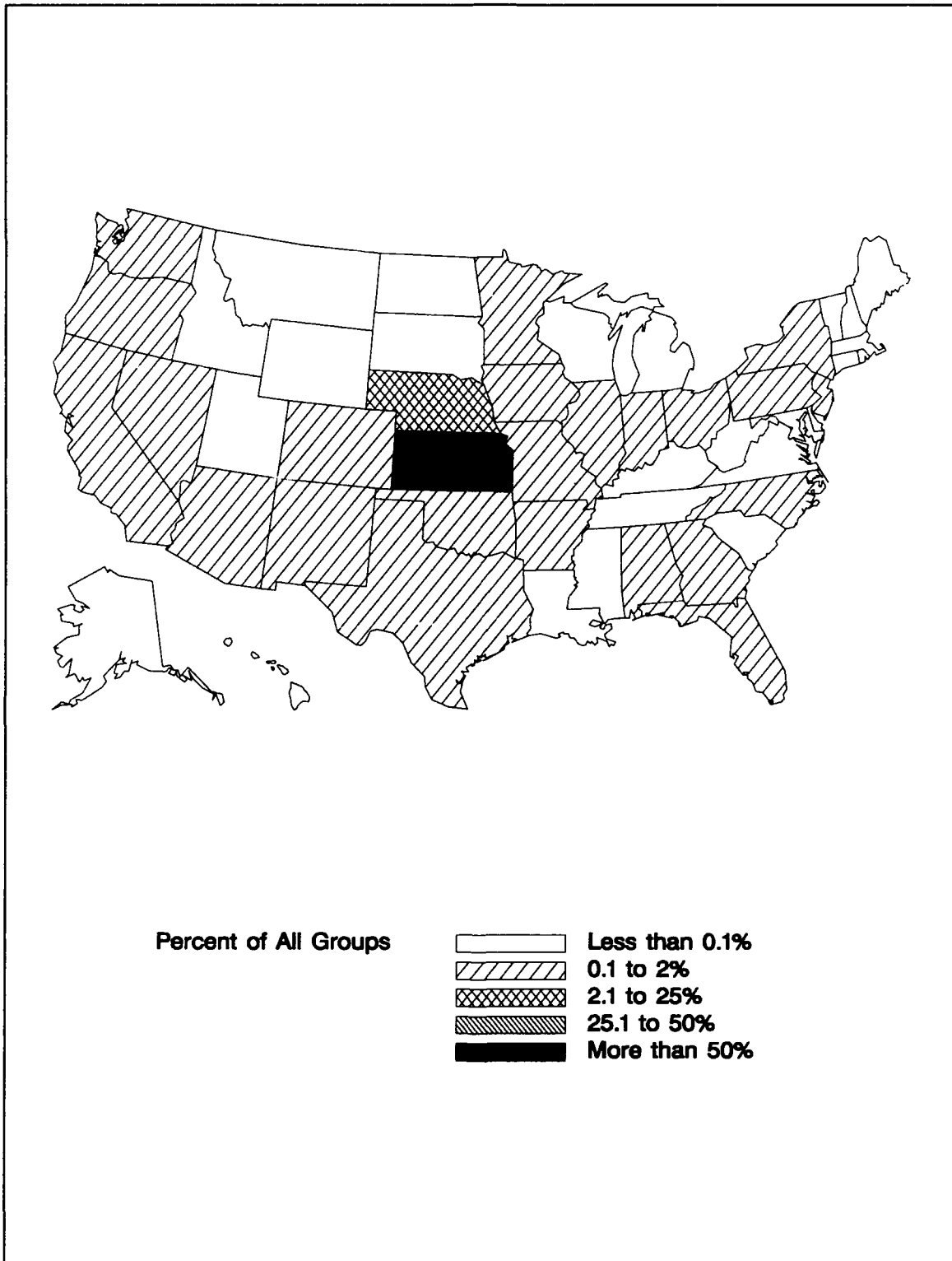


Figure 19. Percent of camping groups by state for Milford Lake, 1989

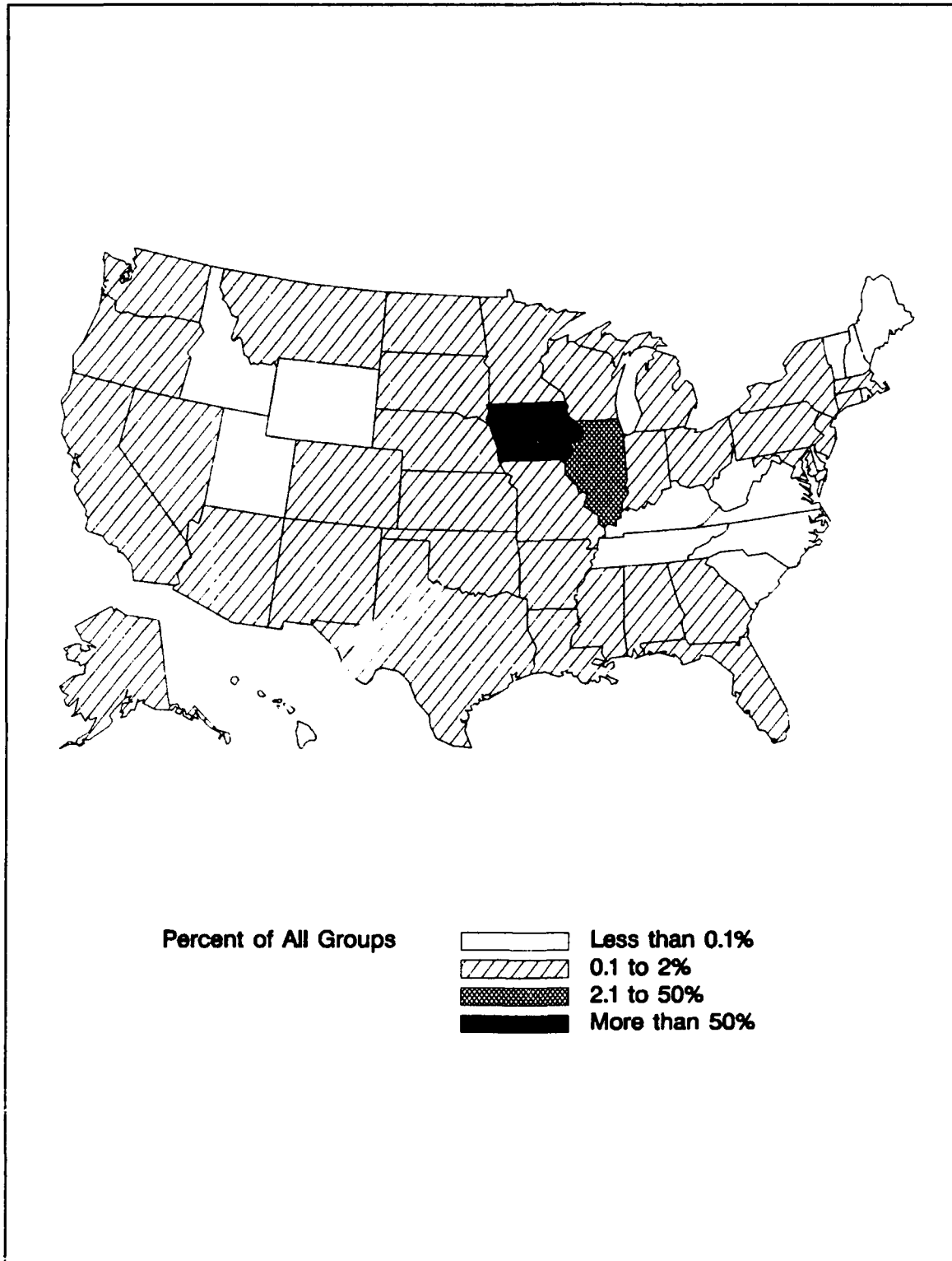


Figure 20. Percent of camping groups by state for Mississippi Pool 16, 1989

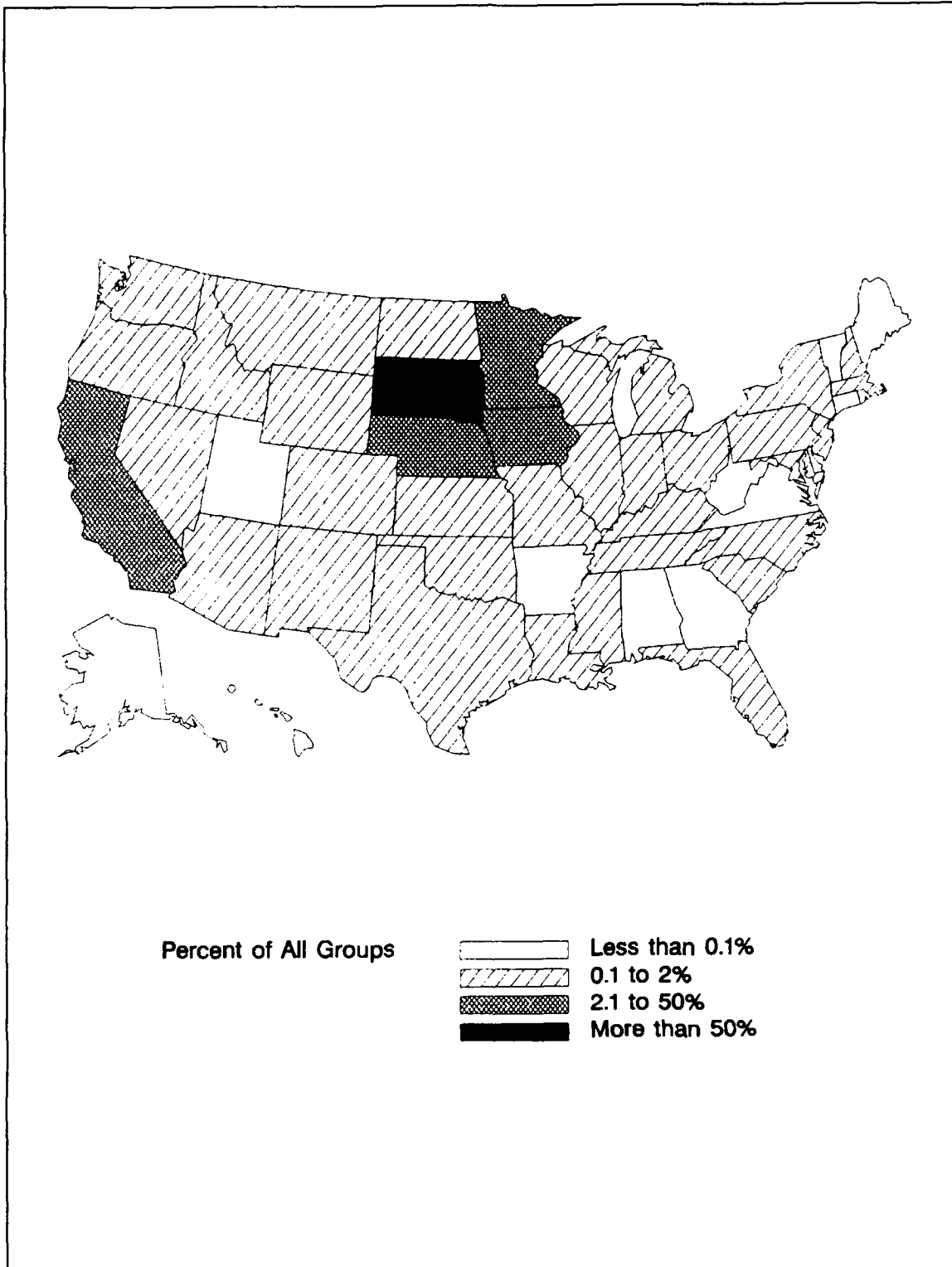


Figure 21. Percent of camping groups by state for Lake Oahe, 1989

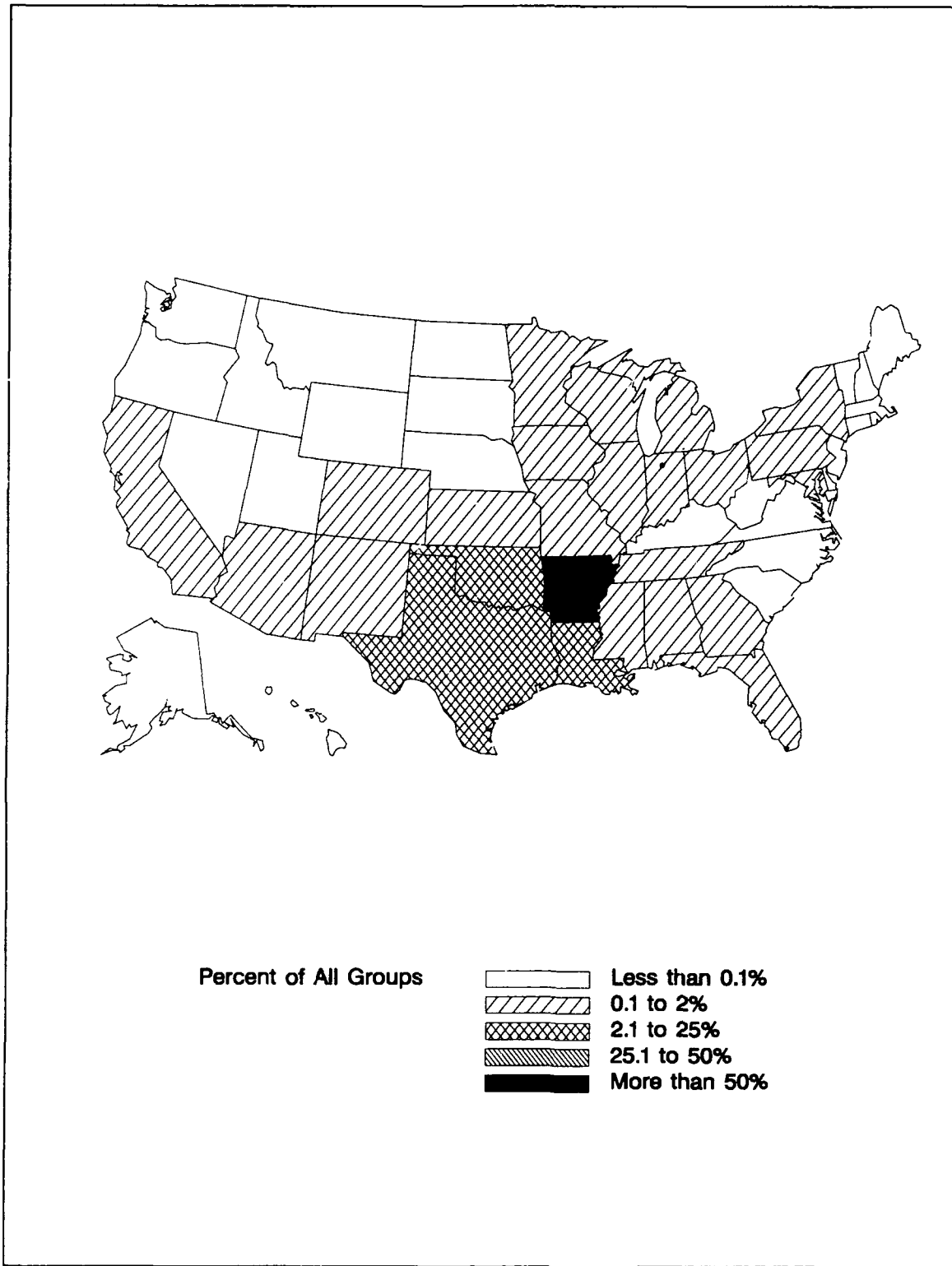


Figure 22. Percent of camping groups by state for Lake Ouachita, 1989

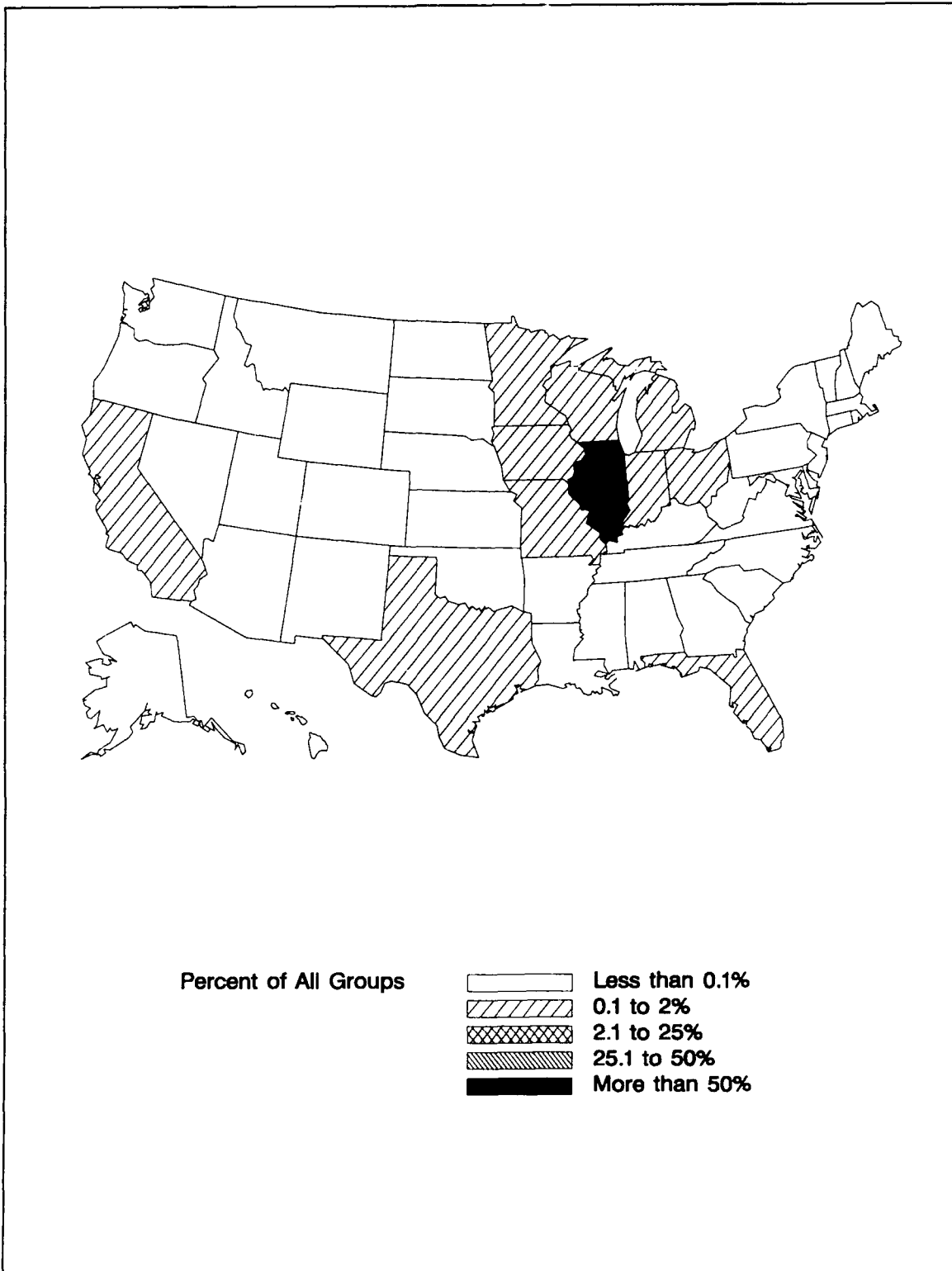


Figure 23. Percent of camping groups by state for Lake Shelbyville, 1989

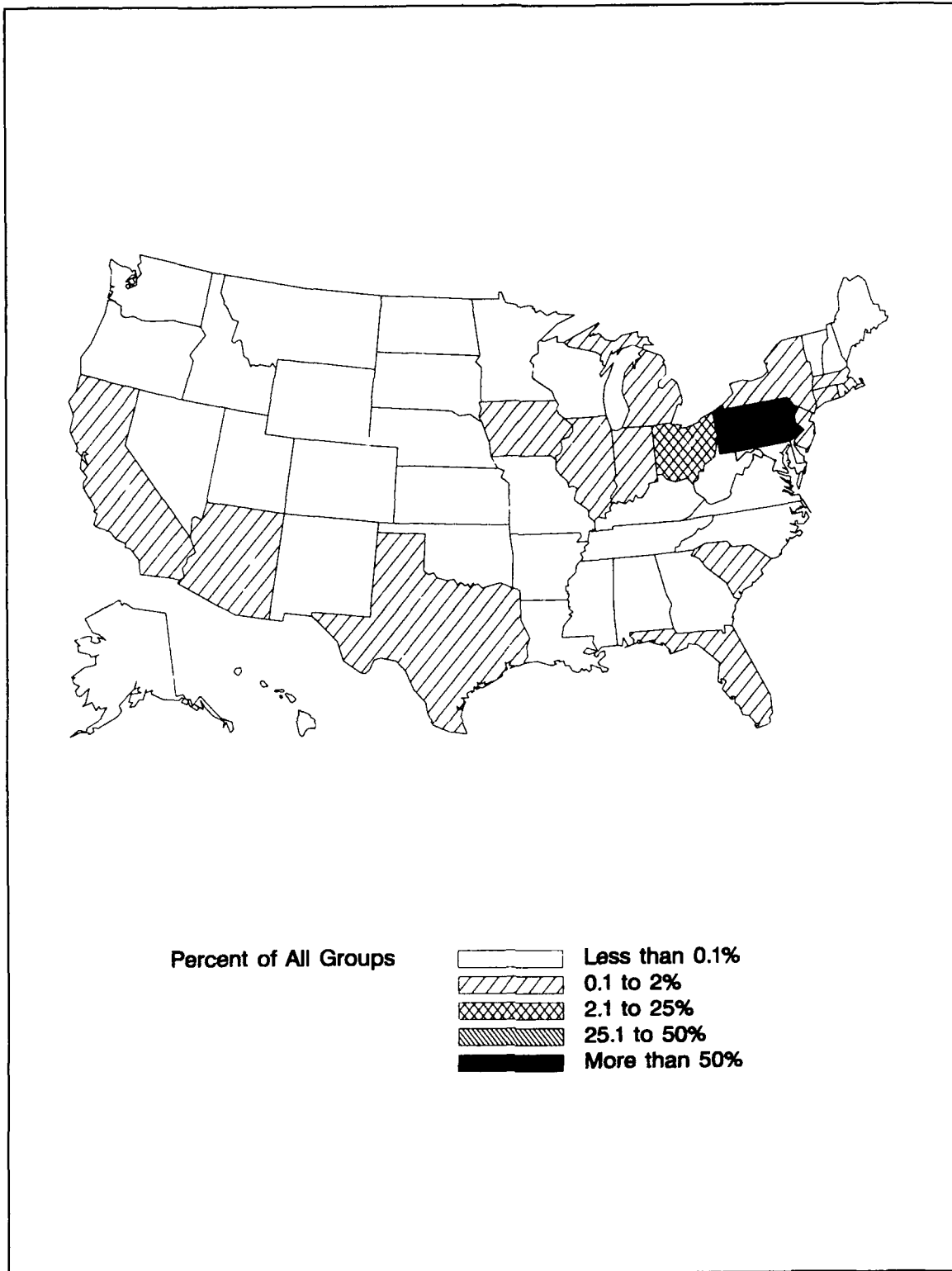


Figure 24. Percent of camping groups by state for Shenango River Lake, 1989

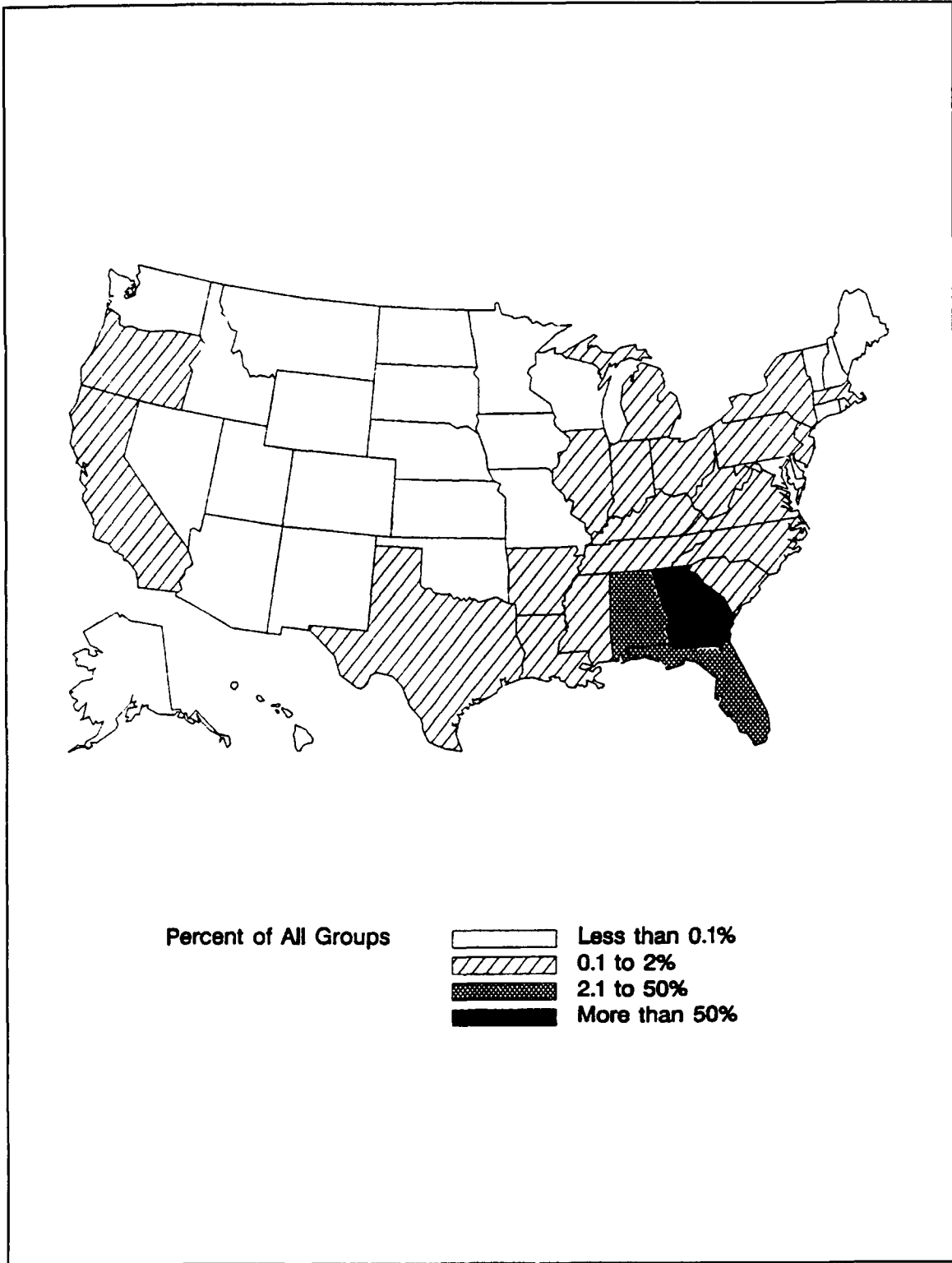


Figure 25. Percent of camping groups by state for West Point Lake, 1989

S	M	T	W	T	F	S
						1 44.80
2 24.89	3 19.00	4 5.88	5 3.62	6 2.71	7 1.81	8 1.36
9 0.90	10 0.90	11 1.81	12 1.36	13 1.81	14 3.62	15 8.14
16 22.17	17 42.08	18 41.18	19 39.82	20 46.15	21 69.68	22 75.11
23 27.15	24 27.15	25 32.58	26 35.75	27 43.89	28 83.71	29 80.09
30 4.52	31 7.69					
Occupancy Rate ¹ for Month					22.4	
Occupancy Rate for Weekend during Month					39.0	
Occupancy Rate for Weekday during Month					15.3	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Figure 26. Site occupancy for Lake Shelbyville, Coon Creek, July 1989

Project	Fee Paid per Site ¹
Lake Barkley	404.40
Greers Ferry Lake	207.83
Hartwell Lake	140.20
Milford Lake	117.00
Mississippi Pool 16	242.50
Lake Oahe	163.00
Lake Ouachita	555.67
Lake Shelbyville	339.83
Shenango River Lake	164.00
West Point Lake	227.60
¹ Fee was the total fee collected at each project divided by the number of sites at each project.	

3 Conclusions and Recommendations

Conclusions

The recent availability of computer technology at the field level has dramatically changed the possibilities regarding data entry and retrieval for analysis and reporting of campground information. The development of the Automated Use Permit System (AUPS) (Fritschen 1988) was an advancement in the direction of computer-aided management information systems. AUPS allows campground attendants to use microcomputers to register campers and collect and track camping fees. It was designed to incorporate the data requirements of the CRS so that any Corps project utilizing AUPS can collect CRS data. CRS-related questions are displayed by AUPS while campers register according to whether a program "switch" was set. This capability eliminates the need for keypunching and error checking and provides some on-site data analysis capability.

Currently, field-level personnel can use dBASE software to generate reports on variables such as site occupancy, average length of stay, ZIP Codes, average group size, and number of Golden Age and Access permit holders. AUPS provides data that managers can review to resolve problems in a timely manner or to improve the efficiency of operating and maintaining campgrounds. The data can be useful to planners when evaluating future recreation area designs, as well as rehabilitation projects. For example, District planners can compare key variables like site occupancy across projects and recreation areas, since the data has been gathered using the same methods.

The applications illustrated in this report are merely examples for managers to use to identify additional applications. The transition from paper forms to the AUPS will enhance future management applications of the data.

Recommendations

The data in the CRS and the AUPS have reached the point where project managers and District personnel can make decisions rapidly in response to on-the-ground changes in the use of Corps areas. This AUPS/CRS combined system has been shown to improve overall efficiency and can address current problems by giving resource managers better information in order to manage in a constantly changing environment. It is recommended that the CRS effort continue and that researchers and managers search for common ground in devising strategies to better serve the Corps visitor based on current information.

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Appendix A 1989 CRS Data Summaries for Individual Recreation Areas

Contents	
Project	Table
Lake Barkley	A1
Greers Ferry Lake	A2
Hartwell Lake	A3
Milford Lake	A4
Mississippi Pool 16	A5
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Lake Ouachita	A7
Lake Shelbyville	A8
Shenango River Lake	A9
West Point Lake	A10

**Table A1
Lake Barkley 1989 CRS Data**

	Boyd's Landing	Canal	Devils Elbow	Eureka	Hurricane Creek	Total
Summary Statistics						
Total Permits ¹	201	2,274	271	294	993	4,033
Total Groups ¹	187	2,268	242	264	993	3,954
Recreation Days ^{1,2}	1,430	25,661	1,539	2,534	8,842	40,006
Nights Spent	2.5	3.4	2.1	2.5	3.3	3.2
Party Size	3.1	2.9	3.1	3.6	2.9	3.0
Occupancy Rate ³						
Total	19.9	42.9	15.3	17.9	31.9	25.6
Weekend	28.1	52.6	25.3	31.2	42.2	35.9
Weekdays	16.4	38.9	11.1	12.3	27.6	21.2
Total Fees ¹	\$3,901	\$61,099	\$3,603	\$6,301	\$27,216	\$102,120
Average Fee Paid per Site ⁴	\$279	\$719	\$190	\$300	\$534	\$404
User Characteristics						
Prior Visits	99.5	75.7	65.3	73.5	84.8	78.3
Primary Destination	99.5	92.6	93.8	95.8	93.4	93.4
Golden Age	0.0	47.2	0.0	0.0	0.0	27.1
Golden Access	0.0	1.8	0.0	0.0	0.0	1.0
Vehicle Equipment						
Car	50.8	31.3	30.2	43.2	31.0	32.9
Truck	39.0	59.7	45.9	66.3	55.6	57.3
Van	14.4	9.9	13.2	10.6	10.8	10.6
Motor home	2.7	23.4	12.8	6.4	24.9	21.0
Camping Equipment						
Tent	59.4	10.0	65.7	63.3	30.9	24.6
Pop-up trailer	5.3	8.2	2.9	13.3	6.5	7.7
Pickup camper	11.2	7.5	11.6	15.2	10.1	9.1
Travel trailer	11.8	51.9	2.1	6.4	23.5	36.8
Recreational Equipment						
Powerboat	48.1	43.7	60.3	49.6	57.5	48.8
Sailboat	0.0	5.2	0.0	1.1	0.5	3.2

¹ These totals are reported as sums (all others are the percent of all users).

² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum.

³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites).

⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.

**Table A2
Greers Ferry Lake 1989 CRS Data**

	Cherokee Park	Choctaw	Cove Creek	Dam Site Park	Devils Fork	Heber Springs	Hill Creek Park
Summary Statistics							
Total Permits ¹	351	2,870	52	1,049	2,031	64	552
Total Groups ¹	303	2,141	39	833	1,537	43	434
Recreation Days ^{1,2}	2,221	17,624	291	6,266	12,753	372	3,450
Nights Spent	1.9	2.4	2.2	2.1	2.6	2.5	2.3
Party Size	3.8	3.6	3.5	3.7	3.5	3.3	3.6
Occupancy Rate ³							
Total	7.9	15.2	2.7	3.0	29.3	0.4	16.2
Weekend	16.3	22.9	4.1	5.8	49.2	0.6	22.7
Weekdays	4.4	11.6	2.2	1.9	20.9	0.3	14.6
Total Fees ¹	\$2,769	\$29,844	\$557	\$13,967	\$25,406	\$810	\$5,535
Average Fee Paid per Site ⁴	\$84	\$204	\$9	\$52	\$462	\$6	\$135
User Characteristics							
Prior Visits	78.5	68.6	66.7	96.4	84.5	95.3	80.4
Primary Destination	91.4	78.9	89.7	98.9	97.0	100.0	96.3
Golden Age	4.3	26.8	5.1	14.9	12.9	4.7	10.4
Golden Access	0.7	3.6	0.0	1.4	4.5	7.0	3.7
Vehicle Equipment							
Car	41.6	24.4	25.6	31.0	26.9	27.9	22.8
Truck	57.8	55.7	53.8	49.2	59.0	58.1	63.1
Van	11.6	8.5	17.9	11.2	9.9	11.6	6.9
Motor home	3.0	20.5	5.1	9.6	12.4	9.3	10.6
Camping Equipment							
Tent	73.3	28.1	51.3	50.2	43.8	53.5	50.5
Pop-up trailer	8.3	7.0	2.6	10.3	7.3	11.6	14.1
Pickup camper	3.6	4.0	0.0	3.2	6.4	2.3	7.8
Travel trailer	8.3	35.1	33.3	21.0	23.3	18.6	13.6
Recreational Equipment							
Powerboat	29.4	14.4	35.9	3.4	42.3	20.9	31.3
Sailboat	6.3	0.5	0.0	0.2	1.4	0.0	0.5

(Continued)

¹ These totals are reported as sums (all others are the percent of all users).

² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum.

³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites).

⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.

Table A2 (Concluded)

	J. F. Kennedy	Narrows	Old Hwy 25	Shiloh	Sugar Loaf	Total
Summary Statistics						
Total Permits ¹	4,211	1,797	621	261	461	14,320
Total Groups ¹	2,793	1,228	511	184	360	10,406
Recreation Days ^{1,2}	24,349	10,543	5,148	1,946	3,134	88,097
Nights Spent	3.4	3.1	2.4	2.6	2.3	2.7
Party Size	2.7	2.9	4.3	4.9	4.0	3.4
Occupancy Rate ³						
Total	75.9	43.1	6.6	3.4	5.7	17.5
Weekend	84.4	49.2	9.5	6.1	10.9	23.5
Weekdays	71.9	43.1	5.4	2.2	3.5	15.2
Total Fees ¹	\$65,737	\$29,203	\$9,917	\$2,974	\$5,112	\$191,828
Average Fee Paid per Site ⁴	\$876	\$487	\$99	\$26	\$54	\$208
User Characteristics						
Prior Visits	90.1	66.9	93.3	95.7	75.3	81.5
Primary Destination	98.4	80.6	99.4	100.0	96.9	91.8
Golden Age	38.6	27.5	6.5	9.8	13.1	23.8
Golden Access	4.0	3.4	3.3	2.2	1.1	3.4
Vehicle Equipment						
Car	19.8	23.9	25.8	34.2	36.7	25.1
Truck	58.3	50.7	62.0	50.5	60.0	56.5
Van	9.9	14.4	7.2	10.3	11.1	10.1
Motor home	18.8	21.7	4.9	9.8	9.4	15.8
Camping Equipment						
Tent	26.6	24.0	48.9	43.5	53.6	35.9
Pop-up trailer	12.1	11.2	9.4	12.5	8.9	9.8
Pickup camper	5.3	3.7	2.7	6.5	2.5	4.7
Travel trailer	33.6	31.5	33.5	21.2	19.2	28.8
Recreational Equipment						
Powerboat	1.3	27.2	13.5	16.8	38.6	17.7
Sailboat	0.2	4.0	0.2	3.3	13.3	1.6
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.						

**Table A3
Hartwell Lake 1989 CRS Data**

	Coneross Park	Crescent	Milltown	Oconee Point	Paynes Creek	River GA
Summary Statistics						
Total Permits ¹	1,527	36	380	760	167	5
Total Groups ¹	1,048	35	219	561	134	3
Recreation Days ^{1,2}	16,815	541	2,978	5,741	1,130	48
Nights Spent	3.6	1.5	3.5	2.4	2.5	4.3
Party Size	4.5	8.5	3.8	4.2	3.4	3.7
Occupancy Rate ³						
Total	28.4	0.9	12.2	16.7	2.8	1.4
Weekend	44.9	1.3	24.2	34.0	5.8	3.0
Weekdays	20.6	0.7	6.7	9.1	1.6	0.8
Total Fees ¹	\$31,105	\$795	\$3,618	\$6,590	\$2,456	\$63
Average Fee Paid per Site ⁴	\$293	\$16	\$71	\$105	\$32	\$4
User Characteristics						
Prior Visits	51.2	17.1	91.3	87.2	70.1	100.0
Primary Destination	67.6	11.4	95.0	97.3	93.3	100.0
Golden Age	15.4	0.0	0.5	0.0	7.5	0.0
Golden Access	0.9	0.0	0.5	0.2	3.0	33.3
Vehicle Equipment						
Car	34.1	54.3	31.1	45.3	23.1	33.3
Truck	53.1	51.4	62.6	56.5	46.3	66.7
Van	13.7	20.0	15.1	13.0	11.9	0.0
Motor home	11.2	0.0	4.6	2.5	12.7	33.3
Camping Equipment						
Tent	33.9	80.0	68.0	74.7	41.3	33.3
Pop-up trailer	14.1	11.4	8.7	8.7	16.4	0.0
Pickup camper	2.4	5.7	1.4	1.4	4.5	0.0
Travel trailer	28.6	0.0	8.2	3.9	16.4	33.3
Recreational Equipment						
Powerboat	28.7	14.3	44.7	46.9	20.9	33.3
Sailboat	1.0	11.4	1.4	6.8	2.2	0.0
(Continued)						
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.						

Table A3 (Concluded)

	Springfield	Transient Group	Twin Lake	Watsadlers	Total
Summary Statistics					
Total Permits ¹	178	10	2,925	1,142	4,130
Total Groups ¹	142	8	2,167	843	5,160
Recreation Days ^{1,2}	1,508	33	23,294	7,349	59,437
Nights Spent	2.9	1.6	2.9	3.1	3.0
Party Size	3.9	4.1	3.6	2.9	3.8
Occupancy Rate ³					
Total	5.7	0.5	22.2	23.6	11.4
Weekend	11.5	1.3	35.9	33.1	19.5
Weekdays	3.3	0.2	16.5	19.7	7.9
Total Fees ¹	\$3,407	\$340	\$47,339	\$18,001	\$113,714
Average Fee Paid per Site ⁴	\$43	\$21	\$464	\$353	\$140
User Characteristics					
Prior Visits	64.8	25.0	89.9	73.3	77.3
Primary Destination	95.1	37.5	95.8	92.4	88.9
Golden Age	15.5	0.0	14.1	24.6	13.7
Golden Access	4.9	0.0	1.8	5.6	2.1
Vehicle Equipment					
Car	14.4	12.5	39.4	36.5	37.9
Truck	53.5	25.0	46.3	56.2	51.3
Van	9.2	12.5	13.5	11.6	13.1
Motor home	21.8	0.0	15.3	17.1	12.9
Camping Equipment					
Tent	22.5	12.5	34.6	20.3	38.0
Pop-up trailer	16.2	0.0	14.0	8.9	12.5
Pickup camper	0.7	12.5	2.0	1.9	2.0
Travel trailer	42.3	0.0	20.6	34.0	22.4
Recreational Equipment					
Powerboat	33.1	0.0	20.6	18.0	26.0
Sailboat	12.0	0.0	1.9	4.6	3.0
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.					

**Table A4
Milford Lake 1989 CRS Data**

	Curtis Creek	Farnum Creek	Rolling Hills	School Creek	Timber Creek	Total
Summary Statistics						
Total Permits ¹	1,286	494	1,335	202	69	3,386
Total Groups ¹	1,112	403	1,124	193	67	2,894
Recreation Days ^{1,2}	7,999	4,644	7,208	1,657	569	22,677
Nights Spent	2.1	2.4	2.0	3.0	2.5	2.2
Party Size	3.4	5.0	3.5	2.9	3.7	3.6
Occupancy Rate ³						
Total	2.1	8.5	26.4	1.4	1.2	7.9
Weekend	2.2	15.5	49.2	1.9	2.3	14.2
Weekdays	2.1	5.5	16.9	1.2	0.7	5.3
Total Fees ¹	\$16,115	\$6,552	\$14,970	\$1,553	\$685	\$39,873
Average Fee Paid per Site ⁴	\$201	\$83	\$258	\$35	\$8	\$117
User Characteristics						
Prior Visits	81.7	54.3	55.2	39.9	58.1	64.3
Primary Destination	87.6	90.8	90.7	96.9	58.1	89.2
Golden Age	18.7	26.8	20.0	25.4	22.6	20.9
Golden Access	1.3	1.2	2.0	0.0	0.0	1.5
Vehicle Equipment						
Car	35.3	36.2	30.4	20.2	41.9	32.7
Truck	65.4	51.6	51.5	66.8	61.3	58.1
Van	12.1	15.9	15.4	6.2	12.9	13.5
Motor home	15.6	21.1	17.2	16.6	6.5	16.9
Camping Equipment						
Tent	34.1	27.5	37.4	37.8	43.5	34.9
Pop-up trailer	3.9	4.7	7.9	4.1	12.9	5.8
Pickup camper	6.3	7.4	6.0	17.1	16.1	7.3
Travel trailer	37.8	34.7	28.0	28.0	19.4	32.5
Recreational Equipment						
Powerboat	55.1	42.2	22.5	50.8	32.3	39.9
Sailboat	0.0	0.0	0.0	0.0	0.0	0.0
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.						

**Table A5
Mississippi Pool 16 1989 CRS Data**

	Clarks Ferry	Shady Creek	Total
Summary Statistics			
Total Permits ¹	744	1,369	2,113
Total Groups ¹	610	1,035	1,645
Recreation Days ^{1,2}	3,632	6,577	10,209
Nights Spent	2.6	2.7	2.7
Party Size	2.4	2.5	2.4
Occupancy Rate ³			
Total	24.0	28.9	26.5
Weekend	39.8	50.9	45.4
Weekdays	17.5	19.6	18.6
Total Fees ¹	\$8,324	\$15,888	\$24,212
Average Fee Paid per Site ⁴	\$185	\$300	\$243
User Characteristics			
Prior Visits	80.2	61.4	68.4
Primary Destination	98.4	90.5	93.4
Golden Age	53.6	40.5	45.3
Golden Access	6.6	7.2	7.0
Vehicle Equipment			
Car	37.2	36.6	36.8
Truck	37.7	40.4	39.4
Van	13.0	13.6	13.4
Motor home	43.1	40.0	41.2
Camping Equipment			
Tent	8.4	6.4	7.1
Pop-up trailer	3.6	6.1	5.2
Pickup camper	2.1	4.4	3.6
Travel trailer	41.1	40.5	40.7
Recreational Equipment			
Powerboat	7.5	17.9	14.0
Sailboat	0.0	0.3	0.2
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.			

**Table A6
Oahe Lake 1989 CRS Data**

	Downstream North	Downstream South	Total
Summary Statistics			
Total Permits ¹	1,654	999	2,653
Total Groups ¹	1,136	762	1,898
Recreation Days ^{1,2}	7,946	5,121	13,067
Nights Spent	2.5	2.2	2.4
Party Size	2.9	3.0	3.0
Occupancy Rate ³			
Total	15.6	26.6	21.1
Weekend	20.8	44.8	32.8
Weekdays	13.4	18.6	16.0
Total Fees ¹	\$16,877	\$9,926	\$26,803
Average Fee Paid per Site ⁴	\$105	\$221	\$163
User Characteristics			
Prior Visits	57.3	20.1	42.4
Primary Destination	72.1	33.9	56.7
Golden Age	27.7	22.6	25.7
Golden Access	2.6	0.3	1.6
Vehicle Equipment			
Car	15.6	23.9	18.9
Truck	45.0	32.5	40.0
Van	8.1	17.2	11.7
Motor home	29.1	20.5	25.7
Camping Equipment			
Tent	18.8	31.2	24.4
Pop-up trailer	5.9	9.1	7.2
Pickup camper	13.4	11.0	12.4
Travel trailer	24.4	23.2	23.9
Recreational Equipment			
Powerboat	46.2	19.7	35.6
Sailboat	1.5	0.3	1.0
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.			

**Table A7
Ouachita Lake 1989 CRS Data**

	Brady Mountain	Crystal Springs	Denby Point	Total
Summary Statistics				
Total Permits ¹	3,483	1,813	2,546	7,842
Total Groups ¹	2,321	1,066	1,646	5,033
Recreation Days ^{1,2}	38,063	15,453	23,736	77,252
Nights Spent	3.3	3.6	4.1	3.6
Party Size	4.2	4.1	3.6	4.0
Occupancy Rate ³				
Total	60.9	30.1	56.5	49.2
Weekend	82.1	41.3	73.9	65.8
Weekdays	52.2	25.4	49.4	42.3
Total Fees ¹	\$52,261	\$26,534	\$40,340	\$119,135
Average Fee Paid per Site ⁴	\$706	\$359	\$602	\$556
User Characteristics				
Prior Visits	69.9	59.8	69.6	67.7
Primary Destination	92.7	76.2	88.8	87.9
Golden Age	13.2	15.4	31.7	19.7
Golden Access	0.7	0.5	1.6	0.9
Vehicle Equipment				
Car	34.9	33.9	31.0	33.4
Truck	51.2	58.4	58.5	55.1
Van	15.0	15.9	15.4	15.3
Motor home	12.0	11.2	20.0	14.5
Camping Equipment				
Tent	54.7	48.2	30.4	45.4
Pop-up trailer	11.8	10.1	10.2	10.9
Pickup camper	2.9	3.7	5.7	4.0
Travel trailer	21.4	27.5	37.8	29.1
Recreational Equipment				
Powerboat	40.9	41.8	50.1	44.1
Sailboat	6.4	4.7	11.0	7.6
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area				

**Table A8
Shelbyville Lake 1989 CRS Data**

	Coon Creek	Forest Woods	Lithia Springs	Lone Point	Opposum Creek	Whitley Creek	Total
Summary Statistics							
Total Permits ¹	4,339	3,241	3,600	948	734	846	13,708
Total Groups ¹	3,458	2,605	2,906	850	638	781	11,238
Recreation Days ^{1,2}	33,327	22,105	25,627	8,531	5,983	7,405	102,978
Nights Spent	2.8	3.1	2.8	2.6	2.6	2.4	2.8
Party Size	3.4	2.8	3.2	3.8	3.8	4.0	3.3
Occupancy Rate ³							
Total	22.4	41.4	28.1	23.5	17.9	23.5	26.1
Weekend	39.0	63.6	43.2	49.0	40.3	50.9	47.7
Weekdays	15.3	32.1	21.8	13.9	9.6	13.4	17.7
Total Fees ¹	\$72,055	\$61,900	\$74,250	\$13,228	\$9,896	\$7,896	\$239,224
Average Fee Paid per Site ⁴	\$326	\$755	\$604	\$138	\$122	\$94	\$340
User Characteristics							
Prior Visits	85.5	97.2	76.0	71.3	74.6	91.8	84.5
Primary Destination	97.8	98.7	97.8	95.5	92.3	98.5	97.6
Golden Age	12.1	35.7	14.6	10.8	16.8	2.2	17.7
Golden Access	1.6	2.1	2.0	1.8	2.5	0.6	1.8
Vehicle Equipment							
Car	39.1	32.7	37.6	39.1	41.2	48.7	38.0
Truck	44.2	50.2	38.3	43.9	44.0	46.6	44.2
Van	19.8	19.7	20.3	19.2	17.9	19.7	19.8
Motor home	15.2	25.1	19.0	16.0	15.5	3.8	17.8
Camping Equipment							
Tent	42.3	16.3	43.0	45.9	43.7	78.9	39.3
Pop-up trailer	15.7	9.2	13.5	11.3	7.1	9.9	12.4
Pickup camper	5.5	6.5	5.2	6.6	3.9	4.4	5.6
Travel trailer	22.0	42.8	16.6	20.0	27.7	4.7	24.4
Recreational Equipment							
Powerboat	35.1	41.6	34.9	38.6	26.0	43.4	36.9
Sailboat	6.3	8.1	3.0	6.0	5.5	3.7	5.6

¹ These totals are reported as sums (all others are the percent of all users).

² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum.

³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites).

⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.

**Table A9
Shenango 1989 CRS Data**

	Shenango Rec Area	Total
Summary Statistics		
Total Permits ¹	3,655	3,655
Total Groups ¹	2,432	2,432
Recreation Days ^{1,2}	29,388	29,388
Nights Spent	3.2	3.2
Party Size	4.0	4.0
Occupancy Rate ³		
Total	16.5	16.5
Weekend	26.1	26.1
Weekdays	12.3	12.3
Total Fees ¹	\$54,107	\$54,107
Average Fee Paid per Site ⁴	\$164	\$164
User Characteristics		
Prior Visits	84.0	84.0
Primary Destination	93.8	93.8
Golden Age	19.0	19.0
Golden Access	4.2	4.2
Vehicle Equipment		
Car	46.4	46.4
Truck	43.0	43.0
Van	15.2	15.2
Motor home	17.5	17.5
Camping Equipment		
Tent	31.2	31.2
Pop-up trailer	11.2	11.2
Pickup camper	6.1	6.1
Travel trailer	24.9	24.9
Recreational Equipment		
Powerboat	33.9	33.9
Sailboat	35.7	35.7
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.		

**Table A10
West Point Lake 1989 CRS Data**

	Amity Park	Holiday Park	R. Shaefer Heard	State Line Park	White Tail Ridge	Total
Summary Statistics						
Total Permits ¹	993	2,437	1,527	645	574	6,176
Total Groups ¹	800	1,898	1,251	546	517	5,012
Recreation Days ^{1,2}	7,664	20,255	11,268	6,181	6,468	51,836
Nights Spent	3.0	3.3	2.7	2.8	3.2	3.0
Party Size	3.3	3.3	3.4	3.9	3.4	3.4
Occupancy Rate ³						
Total	7.4	12.8	12.7	5.8	13.6	10.5
Weekend	11.4	19.3	19.7	10.4	21.9	16.5
Weekdays	5.7	10.0	9.8	3.9	10.1	7.9
Total Fees ¹	\$18,088	\$46,387	\$25,737	\$10,635	\$14,219	\$115,066
Average Fee Paid per Site ⁴	\$188	\$320	\$299	\$86	\$245	\$228
User Characteristics						
Prior Visits	77.7	92.5	62.9	79.1	63.8	78.3
Primary Destination	97.0	97.2	82.4	95.1	96.1	93.1
Golden Age	27.1	24.8	30.4	17.0	27.1	26.0
Golden Access	4.7	5.1	4.5	5.7	3.1	4.7
Vehicle Equipment						
Car	27.5	27.9	31.1	30.4	33.5	29.5
Truck	52.7	55.2	50.4	55.1	57.8	53.9
Van	12.9	13.3	14.6	14.8	14.1	13.8
Motor home	7.2	7.2	9.4	1.5	6.6	7.1
Camping Equipment						
Tent	20.3	29.0	22.9	37.9	26.9	26.8
Pop-up trailer	7.5	6.1	7.0	7.0	10.3	7.1
Pickup camper	3.1	4.3	3.0	6.8	2.1	3.9
Travel trailer	30.3	21.5	32.7	17.0	31.7	26.3
Recreational Equipment						
Powerboat	35.2	60.1	24.8	51.6	37.9	44.1
Sailboat	1.0	0.2	0.5	0.0	0.0	0.3
¹ These totals are reported as sums (all others are the percent of all users). ² Recreation area averages were weighted by the total number of permits for each area to compute project averages. The total was a sum. ³ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of sites). ⁴ The Average Fee Paid per site was the total fee collected at each area divided by the number of sites at that area.						

**Appendix B
1989 CRS Calendar Data
for Individual Project Areas
for the Month of July**

Contents			
Project	Area	RMS Area #	Table
Barkley	Eureka	104	B1
	Canal	105	B2
	Boyds Landing	108	B3
	Hurricane Creek	124	B4
	Devils Elbow	134	B5
Greers Ferry	Dam Site Park	001	B6
	Old Hwy 25	002	B7
	Heber Springs	003	B8
	Cherokee Park	004	B9
	Shiloh	006	B10
	Narrows	007	B11
	Devils Fork	008	B12
	Hill Creek Park	009	B13
	Sugar Loaf	011	B14
	Choctaw	014	B15
	Kennedy	038	B16
Hartwell	Watsadlers	005	B17
	Crescent	007	B18
	Transient Group	017	B19
	Milltown	027	B20
	Paynes Creek	038	B21
	Oconee Point	066	B22
	Twin Lakes	068	B23
	Coneross Park	070	B24
Milford	Curtis Creek	003	B25
	Farnum Creek	004	B26
	Rolling Hills	008	B27
	School Creek	009	B28
	Timber Creek	010	B29
Mississippi Pool 16	Clark's Ferry	001	B30
	Shady Creek	003	B31
Oahe	Downstream South	001	B32
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Ouachita	Denby Point	011	B34
	Crystal Springs	014	B35
	Brady Mountain	015	B36
Shelbyville	Opposum Creek	001	B37
	Coon Creek	002	B38
	Lone Point	003	B39
	Lithia Springs	016	B40
	Forest Woods	018	B41
	Whitley Creek	019	B42
Shenango	Shenango Rec	002	B43
West Point	R. Shafer Heard	001	B44
	Holiday Park	031	B45
	State Line Park	036	B46
	Amity Park	040	B47
	White Tail Ridge	045	B48

Table B1 Lake Barkley, Eureka, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 90.48
2 47.62	3 47.62	4 23.81	5 14.29	6 9.52	7 14.29	8 33.33
9 14.29	10 14.29	11 14.29	12 14.29	13 14.29	14 28.57	15 38.10
16 9.52	17 4.76	18 9.52	19 23.81	20 19.05	21 52.38	22 71.43
23 42.86	24 9.52	25 4.76	26 9.52	27 14.29	28 33.33	29 38.10
30 14.29	31 9.52					
Occupancy Rate for Month					25.35	
Occupancy Rate for Weekend during Month					44.44	
Occupancy Rate for Weekday during Month					17.53	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B2 Lake Barkley, Canal, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 60.50
2 63.53	3 57.65	4 32.94	5 44.71	6 48.24	7 61.18	8 55.29
9 47.06	10 44.71	11 42.35	12 47.06	13 50.59	14 68.24	15 70.59
16 48.24	17 58.82	18 57.65	19 55.29	20 51.76	21 60.00	22 54.12
23 40.00	24 40.00	25 49.41	26 45.88	27 47.06	28 57.65	29 54.12
30 31.76	31 31.76					
Occupancy Rate for Month					25.60	
Occupancy Rate for Weekend during Month					35.89	
Occupancy Rate for Weekday during Month					21.18	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B3						
Lake Barkley, Boyds Landing, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 50.00
2 50.00	3 64.29	4 42.86	5 21.43	6 14.29	7 42.86	8 28.57
9	10	11 14.29	12 21.43	13 28.57	14 35.71	15 50.00
16 21.43	17 28.57	18 50.00	19 21.43	20 7.14	21 7.14	22 14.29
23 7.14	24 7.14	25 7.14	26	27	28 7.14	29 7.14
30 7.14	31 7.14					
Occupancy Rate for Month					21.43	
Occupancy Rate for Weekend during Month					26.98	
Occupancy Rate for Weekday during Month					19.16	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B4						
Lake Barkley, Hurricane Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 74.51
2 72.55	3 60.78	4 39.22	5 41.18	6 50.98	7 66.67	8 66.67
9 35.29	10 35.29	11 45.10	12 39.22	13 39.22	14 49.02	15 56.86
16 39.22	17 33.33	18 29.41	19 35.29	20 21.57	21 25.49	22 25.49
23 21.57	24 31.37	25 35.29	26 41.18	27 33.33	28 43.14	29 54.90
30 25.49	31 19.61					
Occupancy Rate for Month					41.56	
Occupancy Rate for Weekend during Month					51.42	
Occupancy Rate for Weekday during Month					37.52	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B5
Lake Barkley, Devils Elbow, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 57.89
2 57.89	3 52.63	4 15.79	5 31.58	6 15.79	7 26.32	8 10.53
9 21.05	10 15.79	11 15.79	12 31.58	13 26.32	14 31.58	15 47.37
16 15.79	17 15.79	18 5.26	19 5.26	20 15.79	21 15.79	22 31.58
23 5.26	24 10.53	25 10.53	26 5.26	27 5.26	28 10.53	29 10.53
30 5.26	31					
Occupancy Rate for Month					20.20	
Occupancy Rate for Weekend during Month					26.90	
Occupancy Rate for Weekday during Month					17.46	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

**Table B6
Greers Ferry Lake, Dam Site Park, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 0.74
2 1.12	3 1.12	4 0.37	5 0.37	6 0.37	7 1.49	8 1.49
9 0.37	10	11 0.37	12	13 10.78	14 23.79	15 29.37
16 7.06	17 7.43	18 4.09	19 2.60	20 14.13	21 30.11	22 55.39
23 24.54	24 23.05	25 21.19	26 15.99	27 14.87	28 23.42	29 34.20
30 8.92	31 2.97					
Occupancy Rate for Month					11.67	
Occupancy Rate for Weekend during Month					22.22	
Occupancy Rate for Weekday during Month					7.35	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

Table B7						
Greers Ferry Lake, Old Hwy 25, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 100.00
2 87.00	3 87.00	4 33.00	5 10.00	6 7.00	7 7.00	8 2.00
9 1.00	10 2.00	11 19.00	12 27.00	13 34.00	14 65.00	15 69.00
16 26.00	17 21.00	18 21.00	19 30.00	20 36.00	21 66.00	22 73.00
23 32.00	24 15.00	25 8.00	26 5.00	27 5.00	28 3.00	29 3.00
30 2.00	31 1.00					
Occupancy Rate for Month					28.94	
Occupancy Rate for Weekend during Month					43.11	
Occupancy Rate for Weekday during Month					23.14	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B8						
Greers Ferry Lake, Heber Springs, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7 0.70	8 0.70
9 0.70	10 0.70	11 0.70	12 2.82	13	14	15
16	17	18	19	20	21	22 0.70
23	24	25	26	27	28	29
30	31					
Occupancy Rate for Month					0.23	
Occupancy Rate for Weekend during Month					0.16	
Occupancy Rate for Weekday during Month					0.26	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B9
Greers Ferry Lake, Cherokee Park, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 69.70
2 60.61	3 48.48	4 21.21	5 18.18	6 18.18	7 18.18	8 30.30
9 12.12	10 3.03	11 3.03	12 9.09	13 6.06	14 9.09	15 6.06
16 3.03	17 9.09	18 9.09	19 12.12	20 9.09	21 24.24	22 39.39
23 6.06	24 9.09	25 12.12	26 9.09	27 12.12	28 36.36	29 27.27
30	31					
Occupancy Rate for Month					17.79	
Occupancy Rate for Weekend during Month					28.96	
Occupancy Rate for Weekday during Month					13.22	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B10
Greers Ferry Lake, Shiloh, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 1.54
2 0.86	3 0.86	4 0.86	5 7.76	6 20.69	7 22.41	8 43.97
9 22.41	10 18.97	11 6.03	12 2.59	13 1.72	14 0.86	15 0.86
16	17	18	19	20	21	22
23	24 5.17	25 6.03	26 12.07	27 14.66	28 31.90	29 42.24
30 15.52	31 8.62					
Occupancy Rate for Month					9.29	
Occupancy Rate for Weekend during Month					15.90	
Occupancy Rate for Weekday during Month					6.58	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B11
Greers Ferry Lake, Narrows, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 118.33
2 108.33	3 106.67	4 28.33	5 25.00	6 26.67	7 56.67	8 55.00
9 20.00	10 18.33	11 20.00	12 16.67	13 23.33	14 51.67	15 56.67
16 18.33	17 21.67	18 10.00	19 15.00	20 35.00	21 73.33	22 58.33
23 25.00	24 20.00	25 18.33	26 20.00	27 26.67	28 35.00	29 48.33
30 23.33	31 16.67					
Occupancy Rate for Month					38.60	
Occupancy Rate for Weekend during Month					61.48	
Occupancy Rate for Weekday during Month					29.24	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B12
Greers Ferry Lake, Devils Fork, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 54.55
2 56.36	3 36.36	4 16.36	5 36.36	6 43.64	7 61.82	8 83.64
9 29.09	10 25.45	11 29.09	12 30.91	13 38.18	14 60.00	15 81.82
16 34.55	17 36.36	18 34.55	19 27.27	20 29.09	21 72.73	22 61.82
23 20.00	24 30.91	25 25.45	26 29.09	27 32.73	28 74.55	29 85.45
30 30.91	31 23.64					
Occupancy Rate for Month					42.99	
Occupancy Rate for Weekend during Month					70.71	
Occupancy Rate for Weekday during Month					31.65	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B13
Greers Ferry Lake, Hill Creek Park, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 75.61
2 80.49	3 63.41	4 24.39	5 17.07	6 21.95	7 26.83	8 31.71
9 12.20	10 14.63	11 7.32	12 4.88	13 7.32	14 12.20	15 31.71
16 17.07	17 9.76	18 14.63	19 12.20	20 14.63	21 14.63	22 17.07
23 7.32	24 9.76	25 7.32	26 12.20	27 14.63	28 31.71	29 29.27
30 2.44	31 4.88					
Occupancy Rate for Month					21.01	
Occupancy Rate for Weekend during Month					30.08	
Occupancy Rate for Weekday during Month					17.29	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B14
Greers Ferry Lake, Sugar Loaf, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 11.58
2 11.58	3 10.53	4 4.21	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31 6.32					
Occupancy Rate for Month					1.43	
Occupancy Rate for Weekend during Month					1.29	
Occupancy Rate for Weekday during Month					1.48	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B15
Greers Ferry Lake, Choctaw, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 106.85
2 93.84	3 82.88	4 33.56	5 24.66	6 19.86	7 19.86	8 22.60
9 6.85	10 10.27	11 14.38	12 10.96	13 13.01	14 26.71	15 23.29
16 13.70	17 10.27	18 10.96	19 13.01	20 13.70	21 27.40	22 29.45
23 9.59	24 2.74	25 4.79	26 8.90	27 10.96	28 25.34	29 36.30
30 8.22	31 5.48					
Occupancy Rate for Month					23.88	
Occupancy Rate for Weekend during Month					35.31	
Occupancy Rate for Weekday during Month					19.21	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B16
Greers Ferry Lake, Kennedy, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 74.67
2 69.33	3 69.33	4 50.67	5 52.00	6 60.00	7 69.33	8 66.67
9 62.67	10 61.33	11 65.33	12 66.67	13 66.67	14 65.33	15 73.33
16 61.33	17 65.33	18 57.33	19 48.00	20 46.67	21 64.00	22 72.00
23 56.30	24 57.33	25 53.33	26 56.00	27 69.33	28 68.00	29 70.67
30 50.67	31 49.33					
Occupancy Rate for Month					61.89	
Occupancy Rate for Weekend during Month					69.33	
Occupancy Rate for Weekday during Month					58.85	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B17
Hartwell Lake, Watsadlers, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 100.00
2 103.92	3 88.24	4 66.67	5 52.94	6 41.18	7 72.55	8 82.35
9 27.45	10 29.41	11 29.41	12 47.06	13 56.86	14 70.59	15 74.51
16 39.22	17 37.25	18 43.14	19 45.10	20 52.94	21 58.82	22 60.78
23 19.61	24 9.80	25 3.92	26	27	28 49.02	29 94.12
30 50.98	31 13.14					
Occupancy Rate for Month					50.03	
Occupancy Rate for Weekend during Month					73.64	
Occupancy Rate for Weekday during Month					40.37	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

**Table B18
Hartwell Lake, Crescent, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 40.82
2 36.73	3 14.29	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate for Month					2.96	
Occupancy Rate for Weekend during Month					4.54	
Occupancy Rate for Weekday during Month					2.32	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

Table B19						
Hartwell Lake, Transient Group, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14 6.25	15 6.25
16	17	18	19	20	21	22
23	24	25	26	27	28	29 12.50
30	31					
Occupancy Rate for Month					0.81	
Occupancy Rate for Weekend during Month					2.78	
Occupancy Rate for Weekday during Month					0.00	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B20						
Hartwell Lake, Milltown, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 98.04
2 64.71	3 50.98	4 17.65	5 9.80	6 11.76	7 15.69	8 17.65
9	10	11 3.92	12 3.92	13	14 13.73	15 17.65
16	17	18 1.96	19 1.96	20 3.92	21 3.92	22 5.88
23 1.96	24	25 1.96	26 1.96	27 1.96	28 13.73	29 19.61
30 1.96	31					
Occupancy Rate for Month					12.46	
Occupancy Rate for Weekend during Month					22.88	
Occupancy Rate for Weekday during Month					8.20	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B21 Hartwell Lake, Paynes Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 5.26
2 3.95	3 3.95	4 2.63	5 1.32	6 1.32	7 1.32	8
9	10	11	12	13	14 25.00	15 26.32
16 2.63	17	18	19	20	21 1.32	22 1.32
23	24 5.26	25 5.26	26 5.26	27 14.47	28 28.95	29 27.63
30 5.26	31 2.63					
Occupancy Rate for Month					5.52	
Occupancy Rate for Weekend during Month					13.01	
Occupancy Rate for Weekday during Month					2.45	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B22 Hartwell Lake, Oconee Point, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 125.40
2 88.89	3 58.73	4 34.92	5 25.40	6 25.40	7 31.75	8 52.38
9 4.76	10 3.17	11 3.17	12 6.35	13 9.52	14 34.92	15 38.10
16 7.94	17 4.76	18 4.76	19 1.59	20 6.35	21 17.46	22 26.98
23 1.59	24 1.59	25 1.59	26 1.59	27 9.52	28 39.68	29 57.14
30 6.35	31 4.76					
Occupancy Rate for Month					23.76	
Occupancy Rate for Weekend during Month					47.09	
Occupancy Rate for Weekday during Month					14.21	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B23 Hartwell Lake, Twin Lakes, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 98.04
2 100.98	3 73.53	4 74.51	5 55.88	6 62.75	7 79.41	8 82.35
9 20.59	10 18.63	11 17.65	12 22.55	13 27.45	14 35.29	15 43.14
16 19.61	17 20.59	18 24.51	19 18.63	20 24.51	21 20.59	22 17.65
23 0.98	24 12.75	25 21.57	26 33.33	27 44.12	28 74.51	29 85.29
30 25.49	31 20.59					
Occupancy Rate for Month					41.21	
Occupancy Rate for Weekend during Month					59.59	
Occupancy Rate for Weekday during Month					33.69	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B24 Hartwell Lake, Coneross Park, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 100.94
2 84.91	3 64.15	4 39.62	5 41.51	6 45.28	7 43.40	8 38.68
9 15.09	10 18.87	11 15.09	12 16.04	13 16.98	14 34.91	15 35.85
16 8.49	17 9.43	18 12.26	19 12.26	20 19.81	21 30.19	22 35.85
23 14.15	24 16.04	25 16.98	26 22.64	27 25.47	28 50.94	29 54.72
30 15.09	31 3.77					
Occupancy Rate for Month					30.95	
Occupancy Rate for Weekend during Month					47.27	
Occupancy Rate for Weekday during Month					24.27	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B25 Milford Lake, Curtis Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 90.00
2 73.75	3 55.00	4 16.25	5 3.75	6 8.75	7 30.00	8 41.25
9 6.25	10 10.00	11 7.50	12 6.25	13 10.00	14 33.75	15 40.00
16 8.75	17 7.50	18 6.25	19 8.75	20 15.00	21 52.50	22 57.50
23 11.25	24 1.25	25	26	27	28 11.25	29 33.75
30 2.5	31 7.50					
Occupancy Rate ¹ for Month					21.17	
Occupancy Rate for Weekend during Month					43.33	
Occupancy Rate for Weekday during Month					12.10	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B26 Milford Lake, Farnum Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 59.49
2 53.16	3 37.97	4 13.92	5 7.59	6 2.53	7 11.39	8 18.99
9 6.33	10 7.59	11 8.86	12 8.86	13 2.53	14 8.86	15 10.13
16 8.86	17 2.53	18 5.06	19	20 1.27	21 8.86	22 11.39
23 5.06	24	25 1.27	26	27 1.27	28 20.25	29 24.05
30 2.53	31 1.27					
Occupancy Rate ¹ for Month					11.35	
Occupancy Rate for Weekend during Month					19.27	
Occupancy Rate for Weekday during Month					8.11	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B27						
Milford Lake, Rolling Hills, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 170.69
2 125.86	3 115.52	4 34.48	5 18.97	6 13.79	7 15.52	8 18.97
9 8.62	10 12.07	11 13.79	12 15.52	13 1.72	14 32.76	15 63.79
16 17.24	17 10.34	18 13.79	19 10.34	20 15.52	21 34.48	22 86.21
23 15.52	24 10.34	25 13.79	26 6.90	27 13.79	28 48.28	29 79.31
30 20.69	31 25.86					
Occupancy Rate ¹ for Month					34.98	
Occupancy Rate for Weekend during Month					61.11	
Occupancy Rate for Weekday during Month					24.29	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites):						

Table B28						
Milford Lake, School Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 54.55
2 31.82	3 29.55	4 11.36	5 6.82	6 4.55	7 6.82	8 6.82
9 6.82	10 6.82	11 6.82	12 6.82	13 4.55	14 22.73	15 22.73
16	17	18	19	20	21 6.82	22 11.36
23 6.82	24 6.82	25 6.82	26 6.82	27 6.82	28 9.09	29 9.09
30 6.82	31 6.82					
Occupancy Rate ¹ for Month					10.12	
Occupancy Rate for Weekend during Month					16.67	
Occupancy Rate for Weekday during Month					7.44	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites):						

**Table B29
Milford Lake, Timber Creek, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 6.98
2 8.14	3 3.49	4 2.33	5 1.16	6	7 1.16	8 1.16
9	10	11	12	13	14 1.16	15 1.16
16	17	18	19	20	21 3.49	22 3.49
23	24 1.16	25 1.16	26	27	28 6.98	29 6.98
30 1.16	31					
Occupancy Rate ¹ for Month					1.65	
Occupancy Rate for Weekend during Month					3.62	
Occupancy Rate for Weekday during Month					0.85	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B30
Mississippi Pool 16, Clark's Ferry, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1
2	3 13.21	4 3.77	5 1.89	6	7 30.19	8 26.42
9 18.87	10 35.85	11 16.98	12 16.98	13 33.96	14 52.83	15 49.06
16 18.87	17 13.21	18 13.21	19 13.21	20 26.42	21 41.51	22 47.17
23 13.21	24 7.55	25 18.87	26 22.64	27 43.40	28 58.49	29 54.72
30	31					
Occupancy Rate for Month					26.31	
Occupancy Rate for Weekend during Month					47.16	
Occupancy Rate for Weekday during Month					17.78	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B31
Mississippi Pool 16, Shady Creek, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 40.00
2 46.67	3 37.78	4 20.00	5 26.67	6 31.11	7 53.33	8 51.11
9 37.78	10 37.78	11 42.22	12 44.44	13 51.11	14 77.78	15 88.89
16 42.22	17 40.00	18 42.22	19 40.00	20 31.11	21 66.67	22 77.78
23 28.89	24 20.00	25 4.44	26	27	28	29
30	31					
Occupancy Rate for Month					29.58	
Occupancy Rate for Weekend during Month					42.98	
Occupancy Rate for Weekday during Month					24.10	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B32
Oahe Lake, Downstream South, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 102.22
2 97.78	3 88.89	4 60.00	5 20.00	6 28.89	7 33.33	8 33.33
9 4.44	10 6.67	11 15.56	12 13.33	13 6.67	14 6.67	15 24.44
16 20.00	17 31.11	18 35.56	19 31.11	20 22.22	21 71.11	22 71.11
23 15.56	24 24.44	25 15.56	26 13.33	27 26.67	28 48.89	29 60.00
30 11.11	31 13.33					
Occupancy Rate for Month					33.98	
Occupancy Rate for Weekend during Month					50.12	
Occupancy Rate for Weekday during Month					27.37	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

**Table B33
Oahe Lake, Downstream North, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 3.11
2 2.48	3 31.06	4 22.98	5 33.54	6 33.54	7 31.68	8 30.43
9 26.09	10 6.83	11 4.35	12 18.63	13 25.47	14 36.65	15 49.69
16 26.09	17 4.97	18 2.48	19 1.86	20 19.25	21 56.52	22 67.70
23 21.12	24 6.83	25 4.35	26 14.91	27 9.94	28 7.45	29 2.48
30 1.24	31					
Occupancy Rate for Month					19.48	
Occupancy Rate for Weekend during Month					31.75	
Occupancy Rate for Weekday during Month					14.46	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

Table B34						
Ouachita Lake, Denby Point, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 102.99
2 101.49	3 89.55	4 70.15	5 58.21	6 67.16	7 79.10	8 71.64
9 56.72	10 55.22	11 68.66	12 68.66	13 79.10	14 95.52	15 82.09
16 61.19	17 49.25	18 52.24	19 49.25	20 58.21	21 73.13	22 83.58
23 52.24	24 46.27	25 49.25	26 49.25	27 58.21	28 94.03	29 97.01
30 40.30	31 37.31					
Occupancy Rate for Month					67.65	
Occupancy Rate for Weekend during Month					86.57	
Occupancy Rate for Weekday during Month					59.91	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B35						
Ouachita Lake, Crystal Springs, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 106.76
2 104.05	3 93.24	4 44.59	5 45.95	6 70.27	7 77.03	8 83.78
9 50.00	10 48.65	11 60.81	12 64.86	13 77.02	14 83.78	15 81.08
16 63.51	17 52.70	18 52.70	19 48.65	20 52.70	21 89.19	22 91.89
23 45.95	24 44.59	25 48.65	26 52.70	27 70.27	28 101.35	29 94.59
30 37.84	31 40.54					
Occupancy Rate for Month					67.09	
Occupancy Rate for Weekend during Month					89.94	
Occupancy Rate for Weekday during Month					57.74	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B36
Ouachita Lake, Brady Mountain, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 108.11
2 108.11	3 104.05	4 70.27	5 64.86	6 78.38	7 105.41	8 105.41
9 79.73	10 83.78	11 86.49	12 90.54	13 94.59	14 104.05	15 90.54
16 60.81	17 62.16	18 52.70	19 58.11	20 79.73	21 102.70	22 98.65
23 67.57	24 70.27	25 86.49	26 100.00	27 100.00	28 104.05	29 97.30
30 56.76	31 63.51					
Occupancy Rate for Month					85.00	
Occupancy Rate for Weekend during Month					101.80	
Occupancy Rate for Weekday during Month					78.13	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B37
Shelbyville Lake, Opposum Creek, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 82.72
2 49.38	3 29.63	4 9.88	5 9.88	6 11.11	7 32.10	8 38.27
9 7.41	10 4.94	11 4.94	12 7.41	13 9.88	14 28.40	15 45.68
16 9.88	17 14.81	18 16.05	19 12.35	20 11.11	21 29.63	22 33.33
23 12.35	24 9.88	25 12.35	26 7.41	27 7.41	28 4.94	29
30	31					
Occupancy Rate for Month					17.81	
Occupancy Rate for Weekend during Month					32.78	
Occupancy Rate for Weekday during Month					11.73	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B38
Shelbyville Lake, Coon Creek, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 44.80
2 24.89	3 19.00	4 5.88	5 3.62	6 2.71	7 1.81	8 1.36
9 0.90	10 0.90	11 1.81	12 1.36	13 1.81	14 3.62	15 8.14
16 22.17	17 42.08	18 41.18	19 39.82	20 46.15	21 69.68	22 75.11
23 27.15	24 27.15	25 32.58	26 35.75	27 43.89	28 83.71	29 80.09
30 4.52	31 7.69					
Occupancy Rate for Month					33.14	
Occupancy Rate for Weekend during Month					56.66	
Occupancy Rate for Weekday during Month					23.06	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B39
Shelbyville Lake, Lone Point, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 83.33
2 55.21	3 38.54	4 13.54	5 12.50	6 16.67	7 23.96	8 29.17
9 6.25	10 4.17	11 2.08	12 3.12	13 8.33	14 29.17	15 51.04
16 12.50	17 9.38	18 12.50	19 9.38	20 17.71	21 25.00	22 27.08
23 10.42	24 11.46	25 10.42	26 10.42	27 15.63	28 40.63	29 45.83
30	31					
Occupancy Rate for Month					20.50	
Occupancy Rate for Weekend during Month					39.47	
Occupancy Rate for Weekday during Month					12.74	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B40
Shelbyville Lake, Lithia Springs, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 94.31
2 85.37	3 68.29	4 52.85	5 43.90	6 61.79	7 97.56	8 96.75
9 48.78	10 56.91	11 52.03	12 52.85	13 63.41	14 94.31	15 96.75
16 44.72	17 46.34	18 49.59	19 56.91	20 58.54	21 83.74	22 88.62
23 48.78	24 55.28	25 60.16	26 39.84	27 24.39	28 9.76	29 5.69
30	31					
Occupancy Rate for Month					56.07	
Occupancy Rate for Weekend during Month					74.16	
Occupancy Rate for Weekday during Month					48.67	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

**Table B41
Shelbyville Lake, Forest Woods, Occupancy Rates,¹ July 1989**

S	M	T	W	T	F	S
						1 96.34
2 87.80	3 65.85	4 37.80	5 37.80	6 62.20	7 93.90	8 98.78
9 39.02	10 47.56	11 48.78	12 51.22	13 70.73	14 101.22	15 87.80
16 32.93	17 39.02	18 40.24	19 43.90	20 47.56	21 69.51	22 73.83
23 40.24	24 37.80	25 53.66	26 56.10	27 59.76	28 85.37	29 69.51
30 3.66	31 1.22					
Occupancy Rate for Month					57.55	
Occupancy Rate for Weekend during Month					86.59	
Occupancy Rate for Weekday during Month					45.68	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B42 Shelbyville Lake, Whitley Creek, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 80.95
2 65.48	3 58.33	4 21.43	5 9.52	6 16.67	7 41.67	8 44.05
9 7.14	10 8.33	11 9.52	12 16.67	13 19.05	14 69.05	15 77.38
16 14.29	17 15.48	18 14.29	19 5.95	20 16.67	21 44.05	22 52.38
23 14.29	24 11.90	25 10.71	26 10.71	27 19.05	28 13.10	29 13.10
30	31					
Occupancy Rate for Month					25.84	
Occupancy Rate for Weekend during Month					48.41	
Occupancy Rate for Weekday during Month					16.61	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B43 Shenango Lake, Shenango Rec Area, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 0.61
2 0.30	3	4	5	6	7	8
9 0.30	10 0.30	11	12	13	14	15
16	17 0.30	18 0.30	19 0.61	20	21 29.39	22 40.91
23 25.45	24 24.55	25 23.33	26 29.70	27 34.55	28 16.97	29 11.82
30 4.24	31 1.82					
Occupancy Rate for Month					7.92	
Occupancy Rate for Weekend during Month					9.97	
Occupancy Rate for Weekday during Month					6.94	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B44
West Point Lake, R. Shaefer Heard, Occupancy Rates,¹
July 1989

S	M	T	W	T	F	S
						1 74.42
2 52.33	3 43.02	4 19.77	5 10.47	6 9.30	7 8.14	8 2.33
9 1.16	10 1.16	11 1.16	12 1.16	13 1.16	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate ¹ for Month					7.28	
Occupancy Rate for Weekend during Month					9.43	
Occupancy Rate for Weekday during Month					6.40	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B45
West Point Lake, Holiday Park, Occupancy Rates,¹
July 1989

S	M	T	W	T	F	S
						1 60.00
2 46.90	3 35.86	4 18.62	5 8.97	6 8.28	7 6.21	8 3.45
9 2.07	10 1.38	11 1.38	12 0.69	13 0.69	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate for Month					6.27	
Occupancy Rate for Weekend during Month					7.74	
Occupancy Rate for Weekday during Month					5.67	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Table B46
West Point Lake, State Line Park, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 34.96
2 24.39	3 18.70	4 8.13	5 0.81	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate for Month					2.81	
Occupancy Rate for Weekend during Month					3.88	
Occupancy Rate for Weekday during Month					2.37	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

Table B47
West Point Lake, Amity Park, Occupancy Rates,¹ July 1989

S	M	T	W	T	F	S
						1 71.87
2 60.42	3 48.96	4 29.17	5 14.58	6 10.42	7 9.38	8 4.17
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate for Month					8.03	
Occupancy Rate for Weekend during Month					9.49	
Occupancy Rate for Weekday during Month					7.43	

¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).

Table B48						
West Point Lake, White Tail Ridge, Occupancy Rates,¹ July 1989						
S	M	T	W	T	F	S
						1 74.14
2 68.97	3 62.07	4 44.83	5 24.14	6 15.52	7 12.07	8 10.34
9 3.45	10 1.72	11 1.72	12 1.72	13 1.72	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
Occupancy Rate ¹ for Month					10.40	
Occupancy Rate for Weekend during Month					10.73	
Occupancy Rate for Weekday during Month					10.27	
¹ The Occupancy Rate was calculated by the number of nights paid divided by (the number of calendar nights multiplied by the number of campsites).						

Appendix C

1989 CRS Data Formulas

for Individual Variables

Contents

The Data Formulas Used in the 1989 CRS Report

The Data Formulas Used in the 1989 CRS Report¹

Number of permits	Sum of all permits (including renewals)
Number of renewals	Sum of all renewal permits
Number of groups	(Number of permits) - (Number of renewals)
Recreation days	Sum of [Each permit (the number in party) * (Nights paid)]
Mean length of stay	$\frac{\text{Sum of nights paid (including renewals)}}{\text{Number of groups}}$
Mean number in group	$\frac{\text{Sum of number in party (no renewals)}}{\text{Number of groups}}$
Percent of prior visits	$\frac{\text{Number of permits, prior visits = yes (no renewals)}}{\text{Number of groups}} * 100$
Percent of primary destination	$\frac{\text{Number of permits, primary destination = yes (no renewals)}}{\text{Number of groups}} * 100$
Percent Golden Age passport	$\frac{\text{Number of permits, golden age = yes (no renewals)}}{\text{Number of groups}} * 100$
Percent use: Vehicle/camping/ recreational equipment	$\frac{\text{Number of parties using equipment}^2 \text{ (no renewals)}}{\text{Number of groups}} * 100$
Occupancy Rate	$\frac{\text{Sum of nights paid (including renewals)}}{(\text{Number of calendar nights}) * (\text{total sites})}$
Average Fee Paid	$\frac{\text{Sum of total fee paid (including renewals)}}{(\text{Number of sites})}$

¹ The variable names used in this report = the variable names from the ENG Form 4457.

² Represents all vehicle/camping/recreational equipment reported from car, #37, through powerboat, #49.

Appendix D Addendum to the 1988 CRS Report, Replacement Graphs

The following bar charts¹ (Figures 2-14) replace those erroneously printed in the 1988 CRS Report.

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¹ The set of graphs follows the 1989 format of horizontal bar charts instead of returning to the 1988 format.

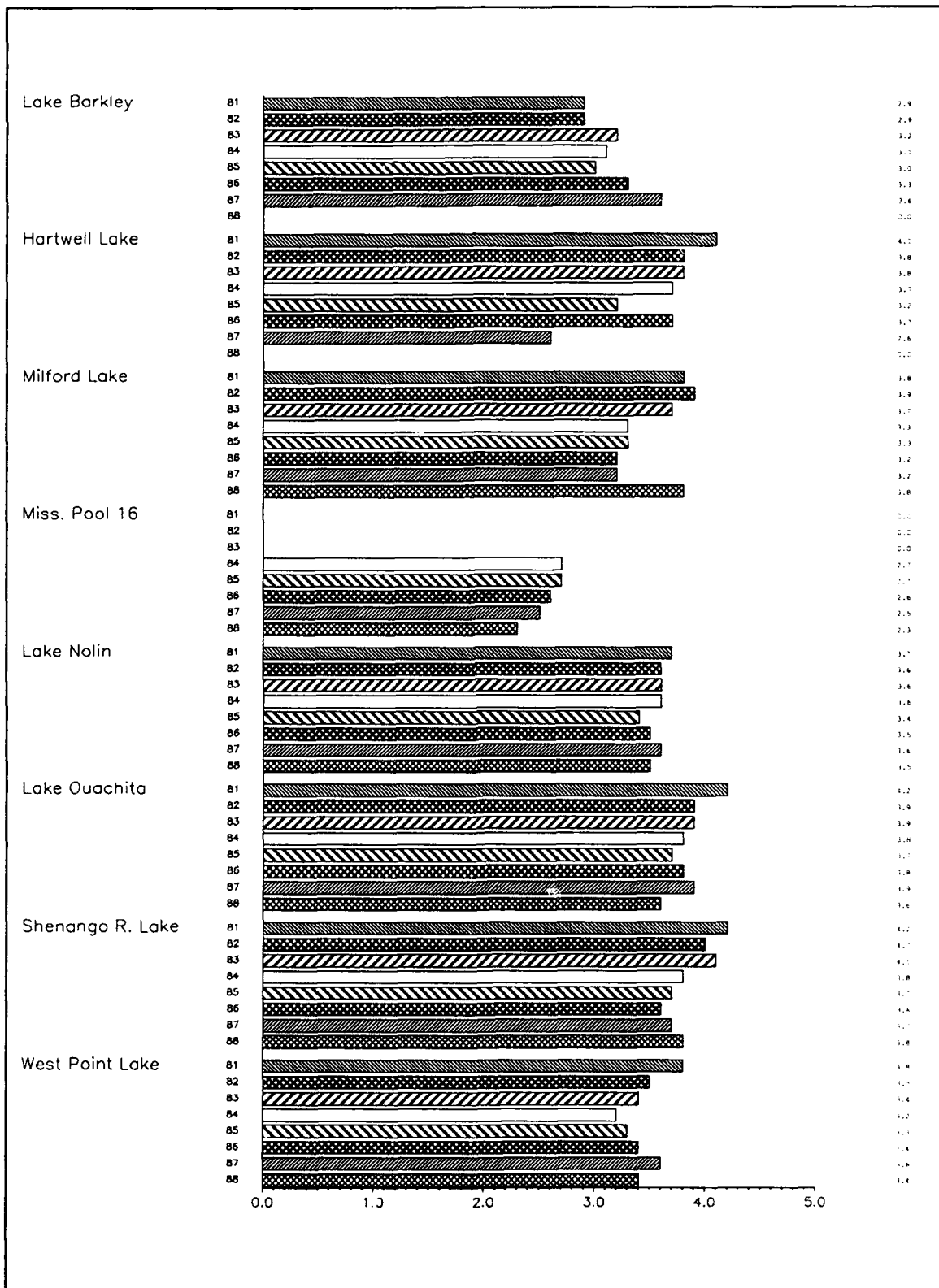


Figure 2. Mean number in party, 1981-88

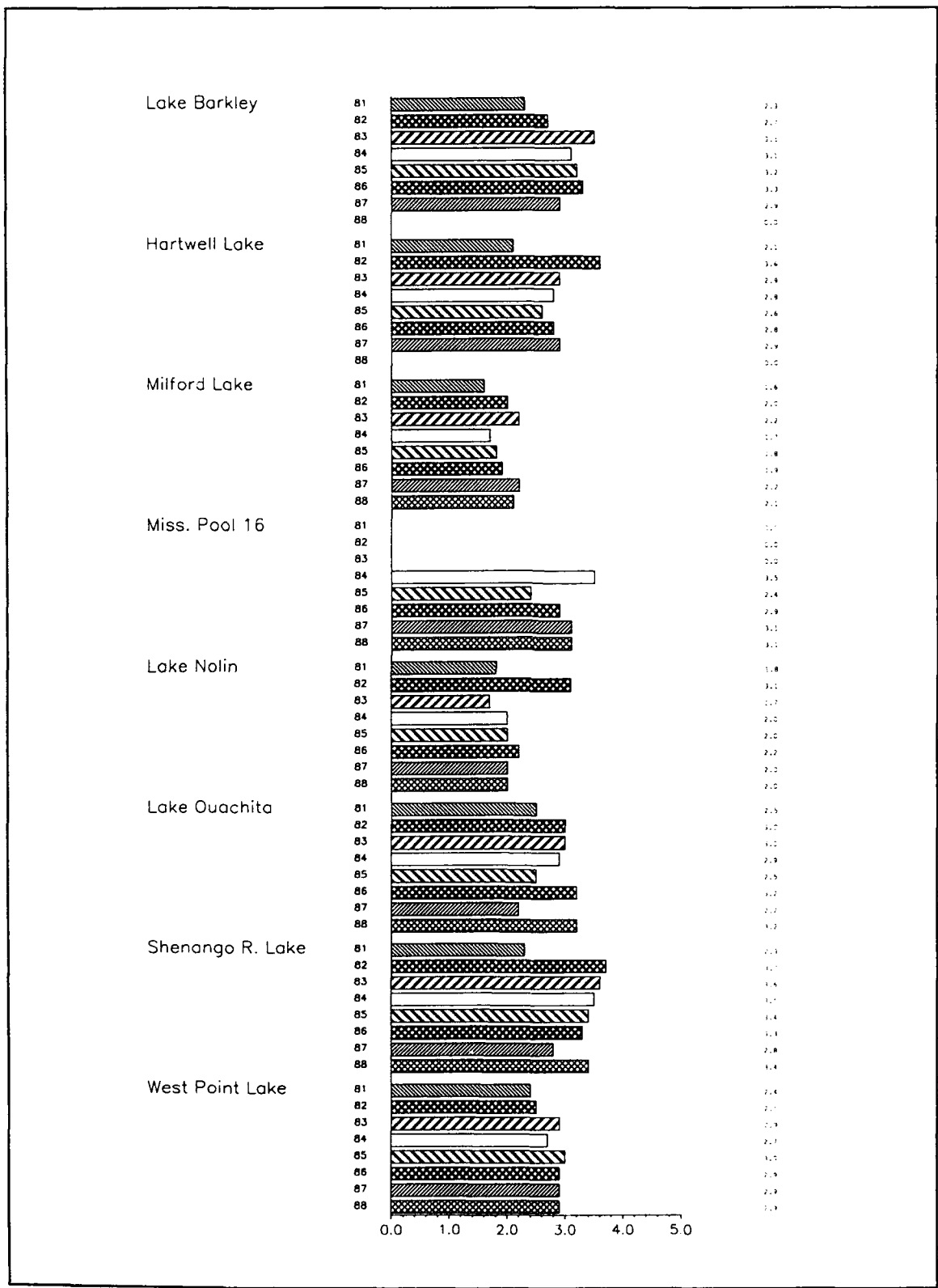


Figure 3. Mean length of stay (in days), 1981-88

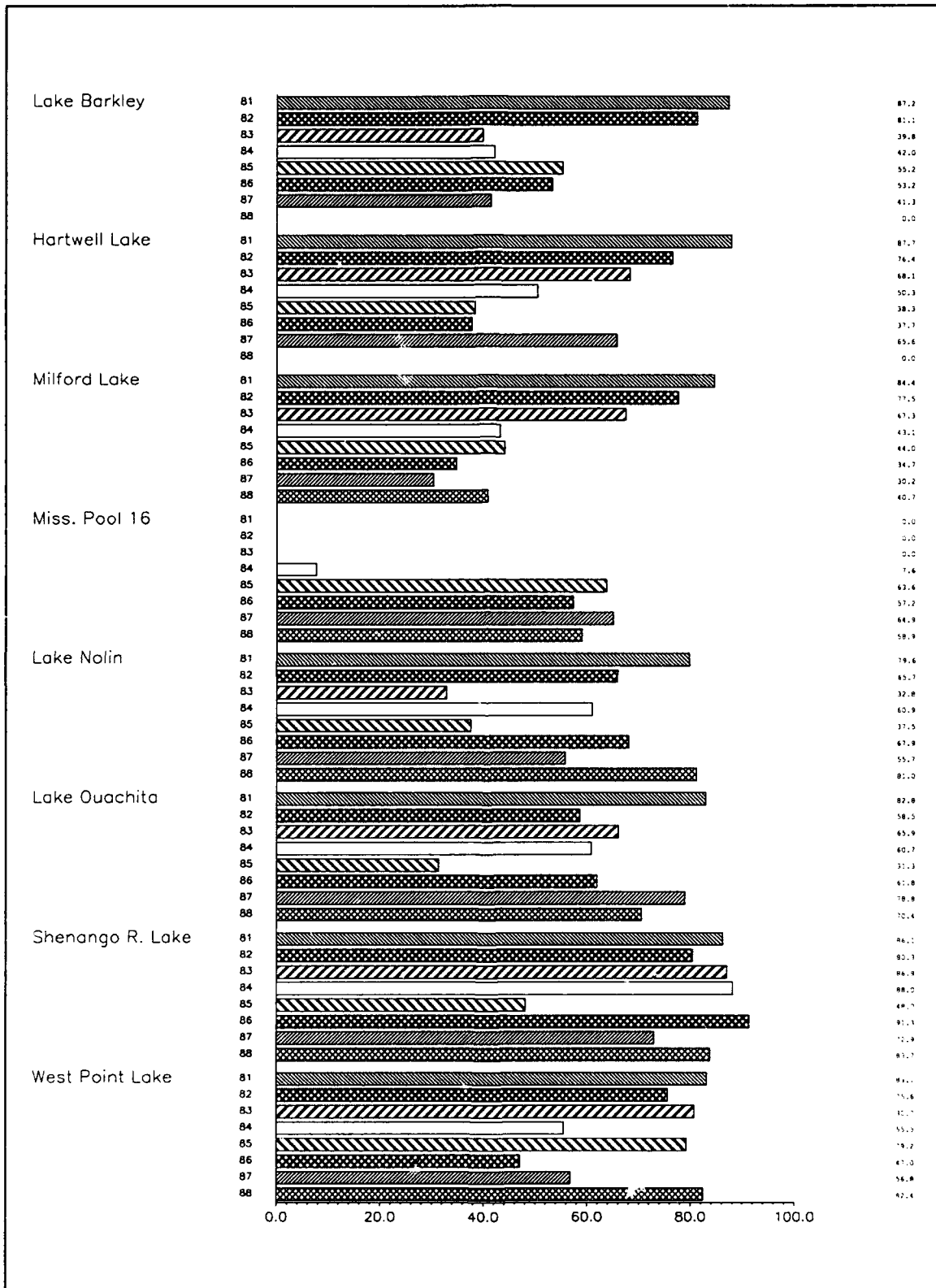


Figure 4. Percent of camping parties with prior visits to the project, 1981-88

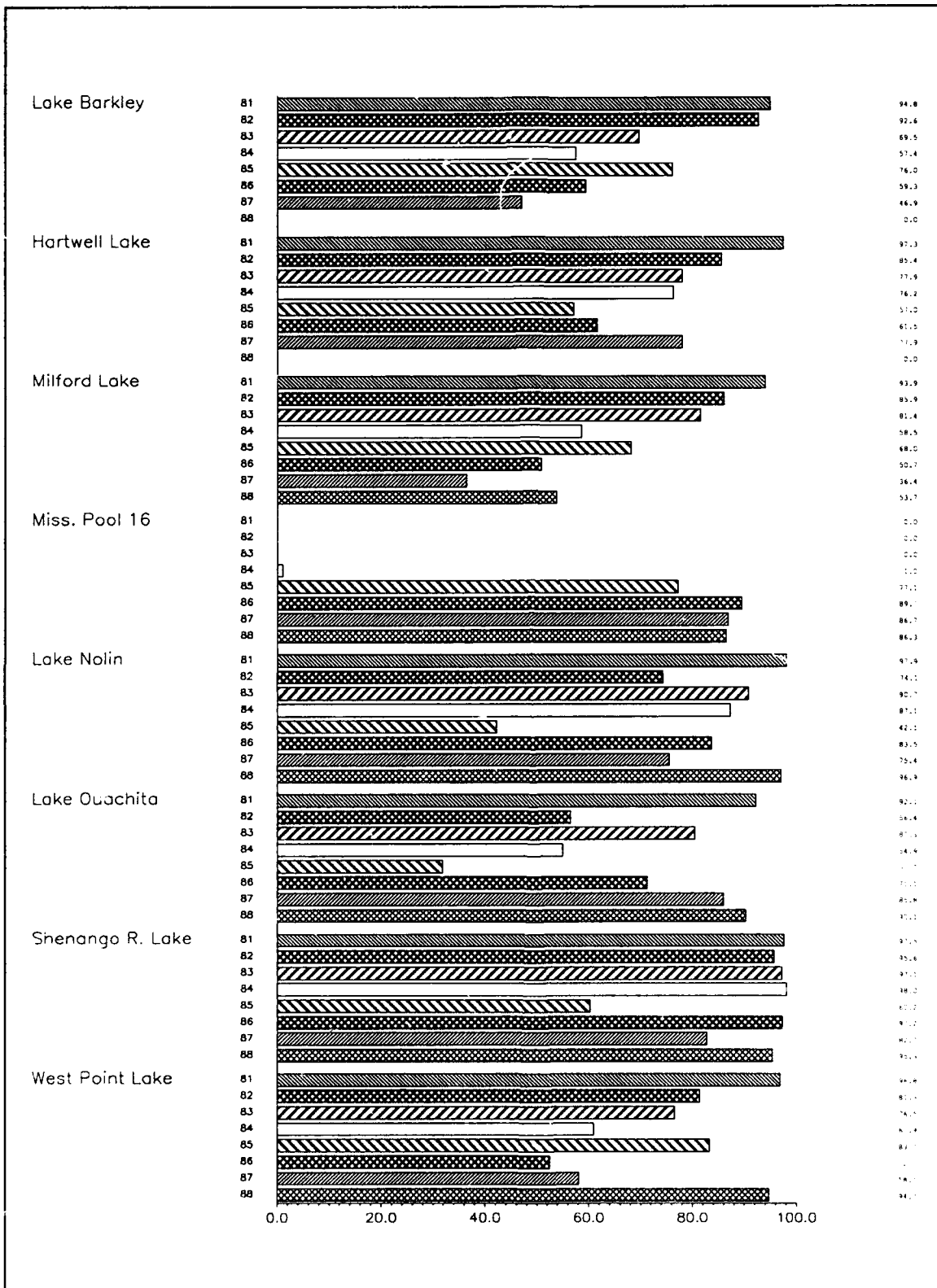


Figure 5. Percent of camping parties having the project as their primary destination, 1981-88

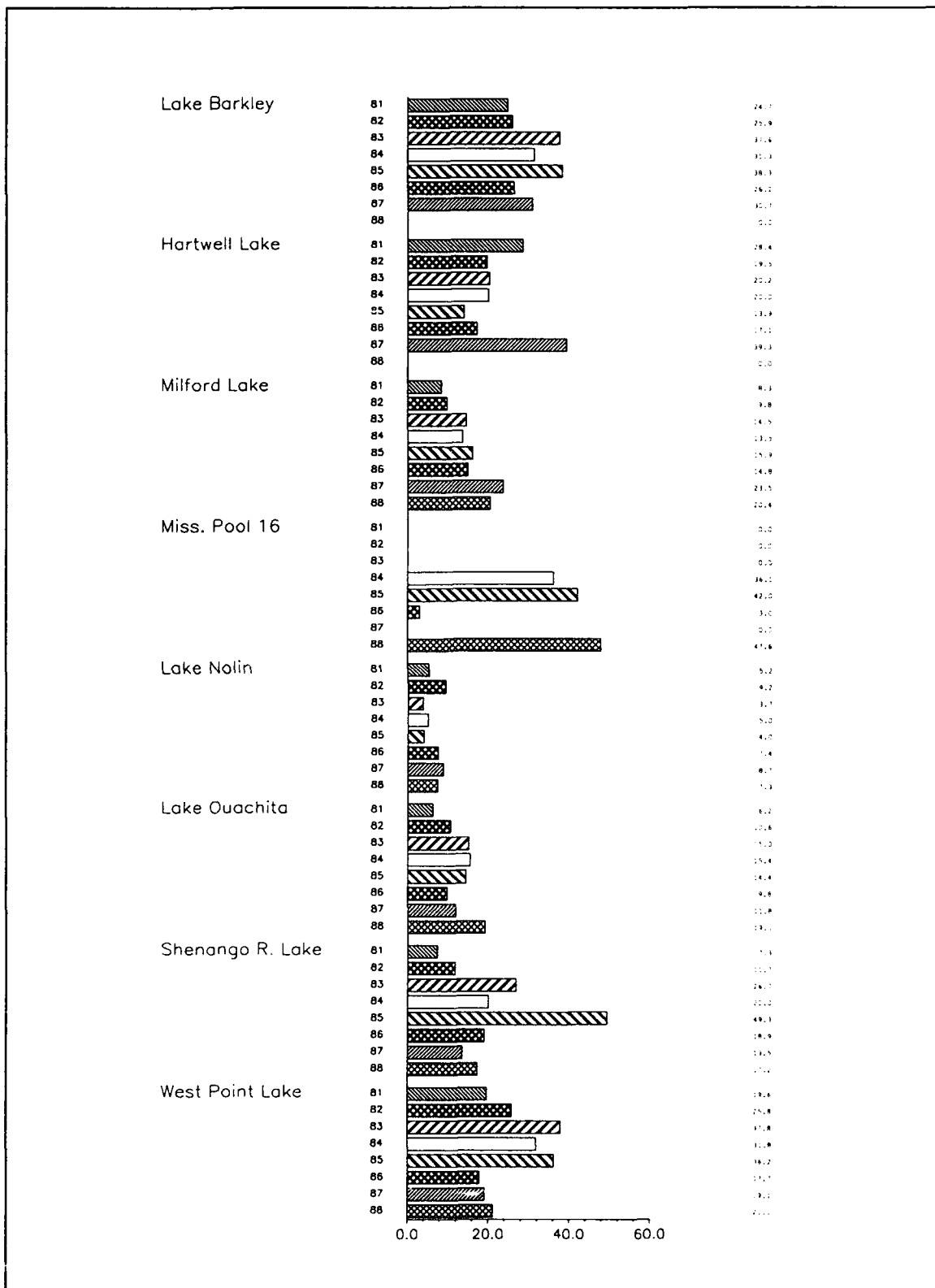


Figure 6. Percent of camping parties using Golden Age passports, 1981-88

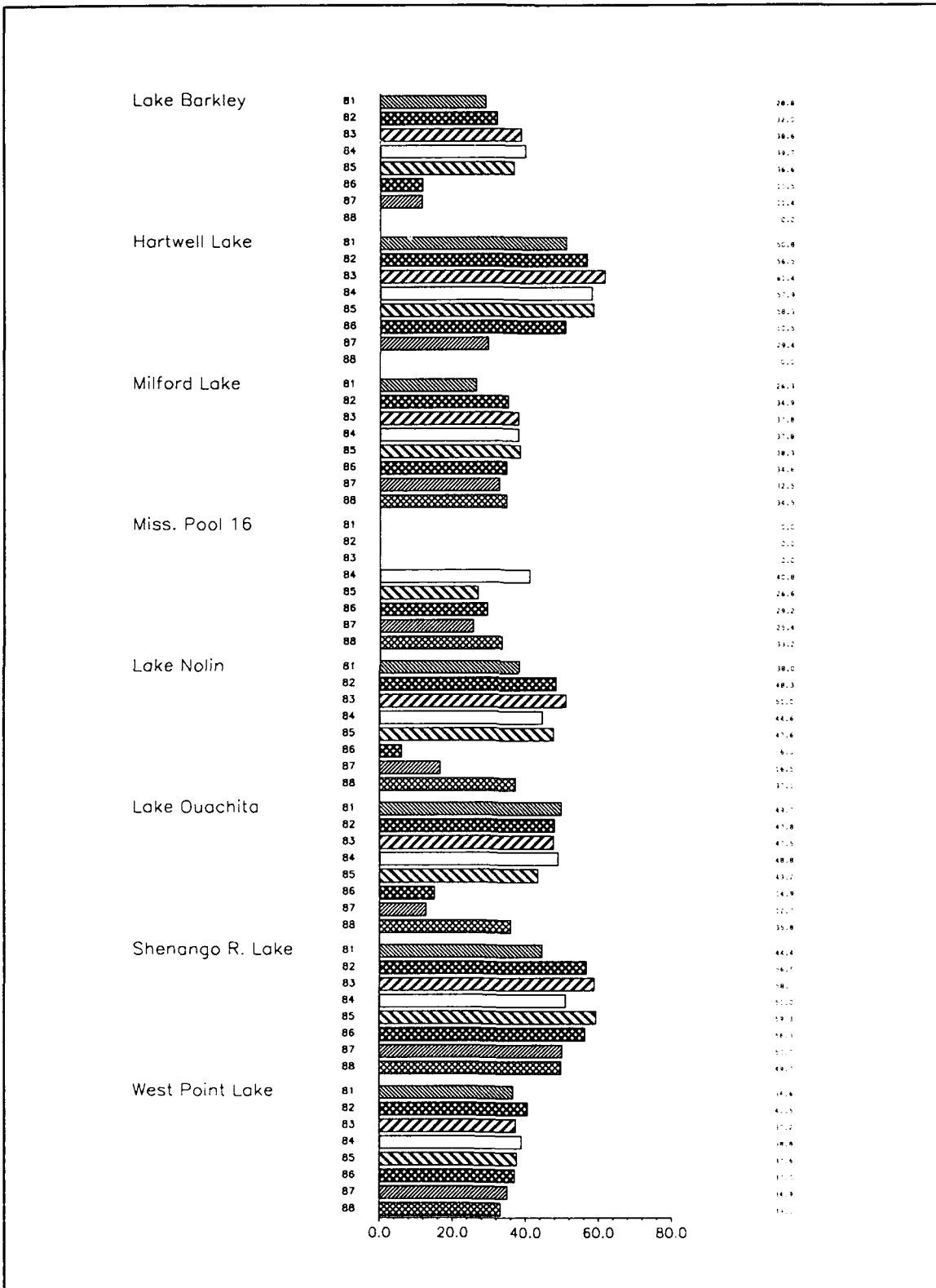


Figure 7. Percent of camping parties with cars, 1981-88

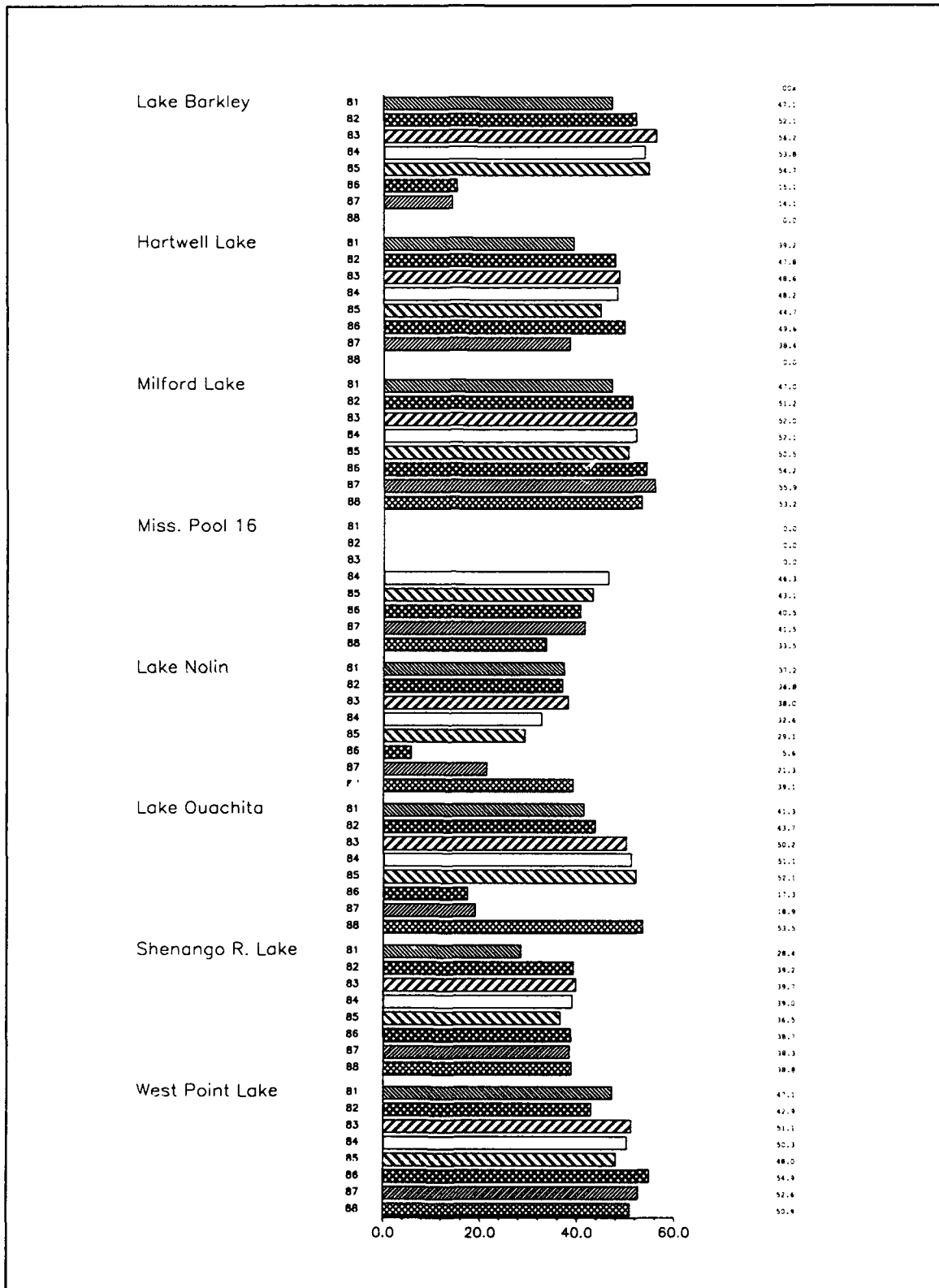


Figure 8. Percent of camping parties with trucks, 1981-88

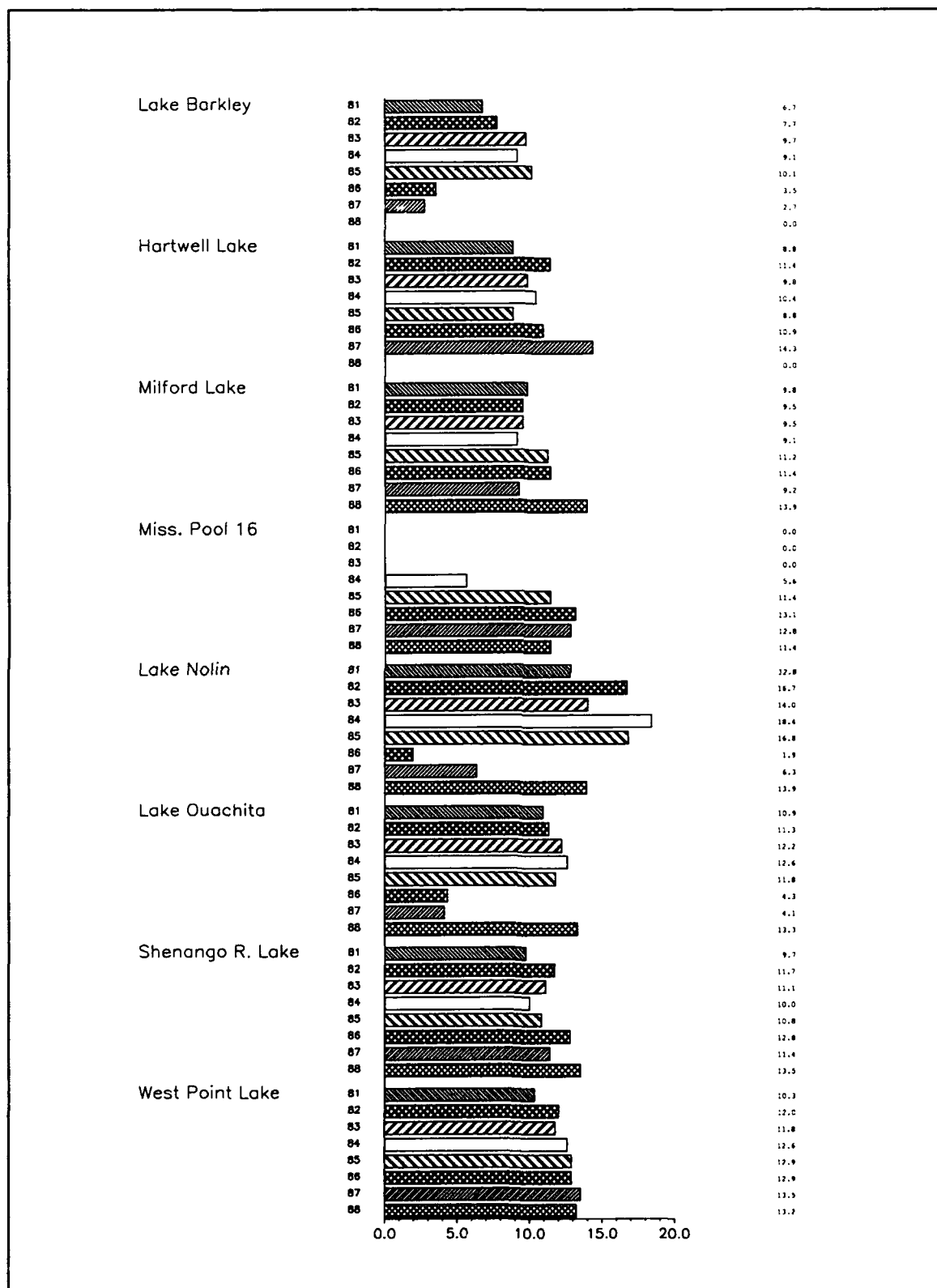


Figure 9. Percent of camping parties with vans, 1981-88

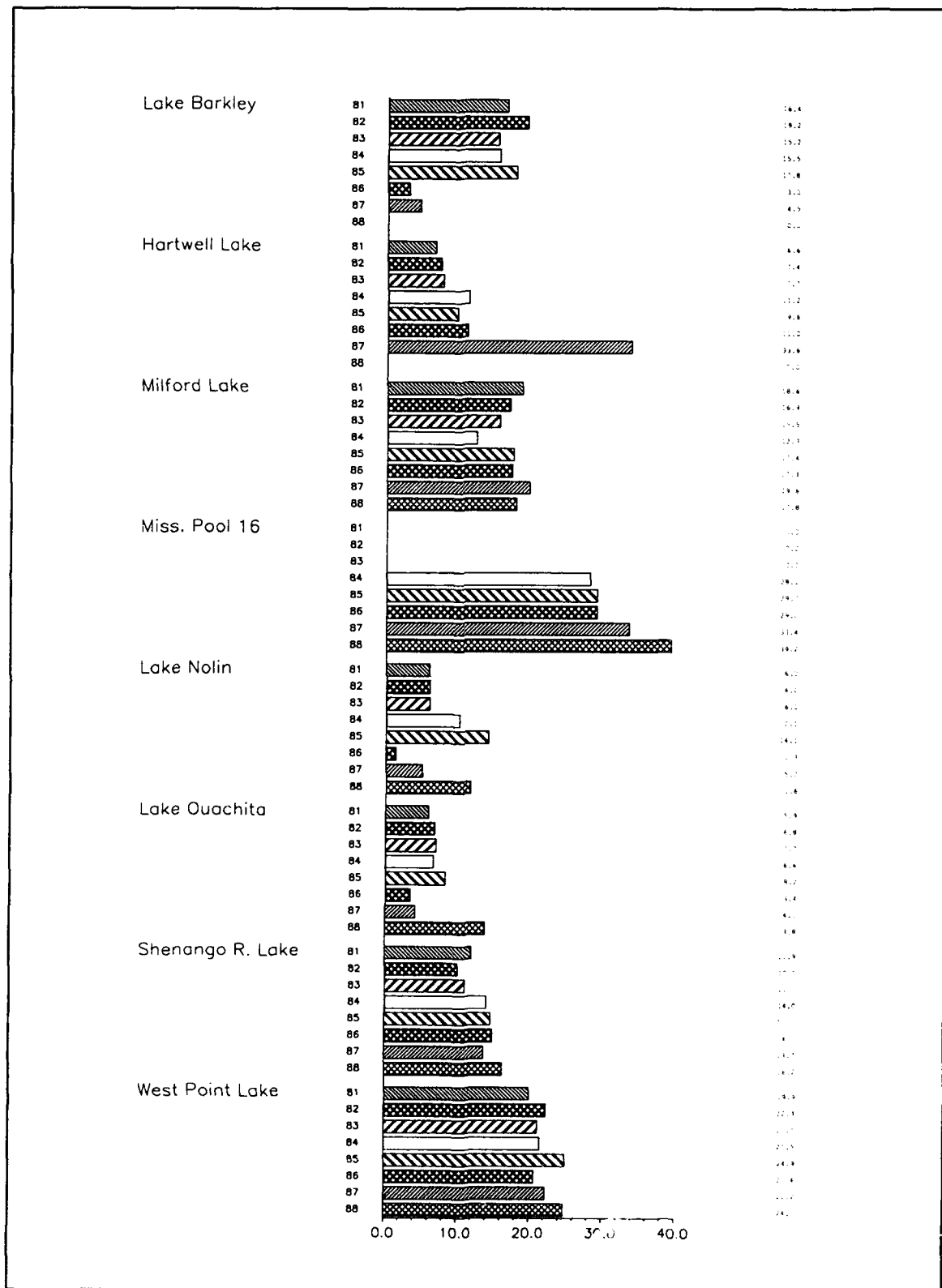


Figure 10. Percent of camping parties with motor homes, 1981-88

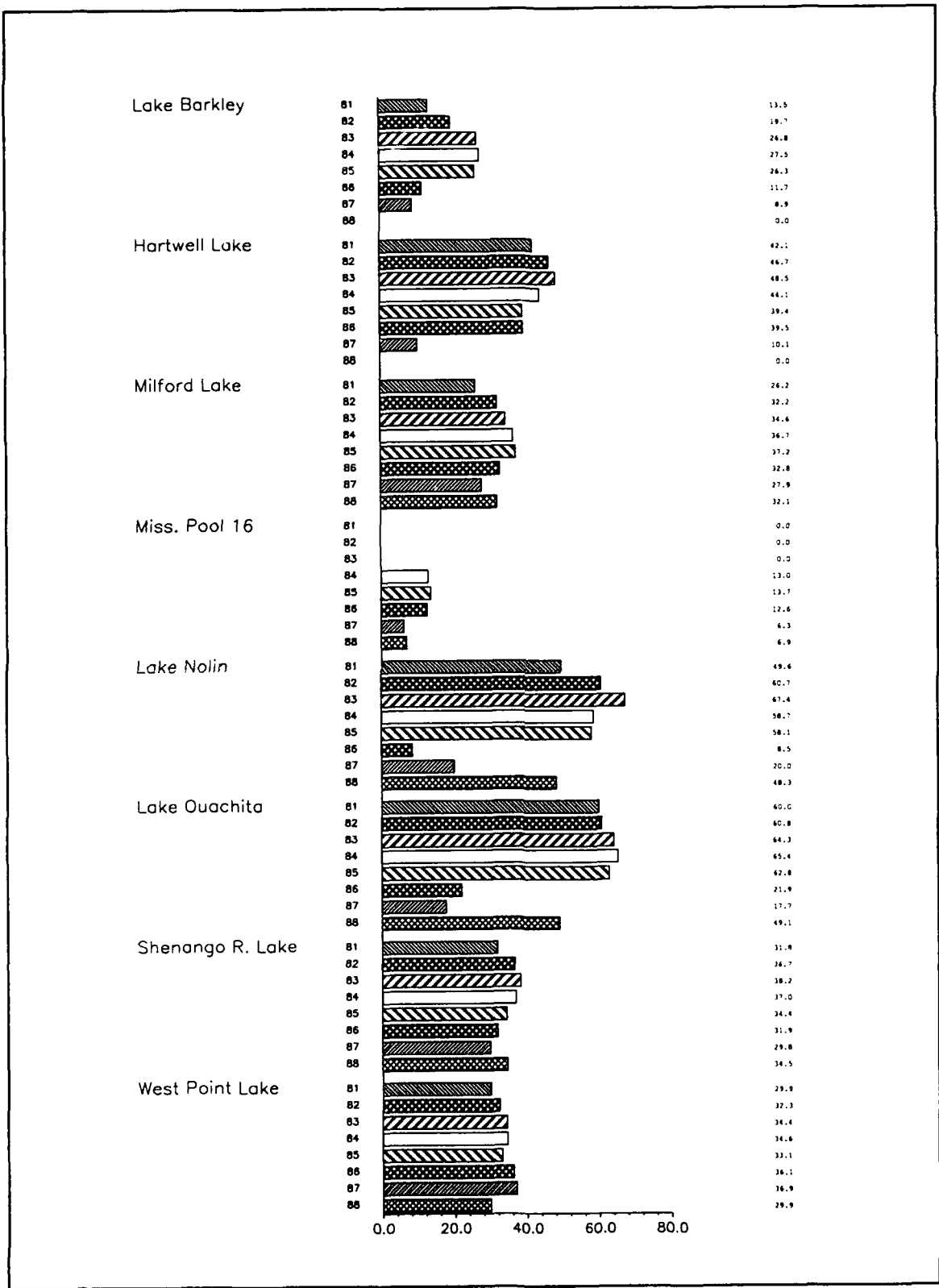


Figure 11. Percent of camping parties with tents, 1981-88

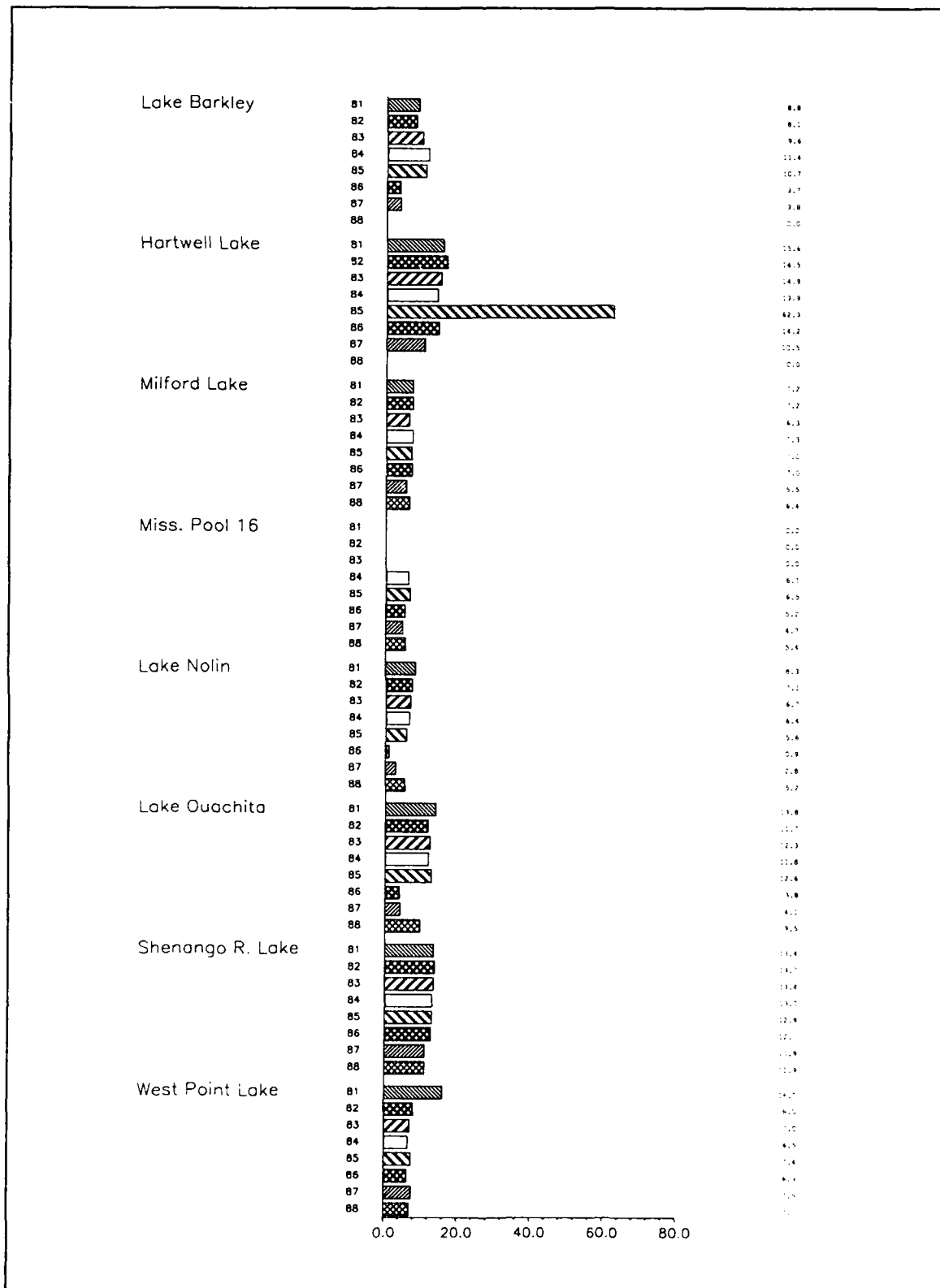


Figure 12. Percent of camping parties with pop-up trailers, 1981-88

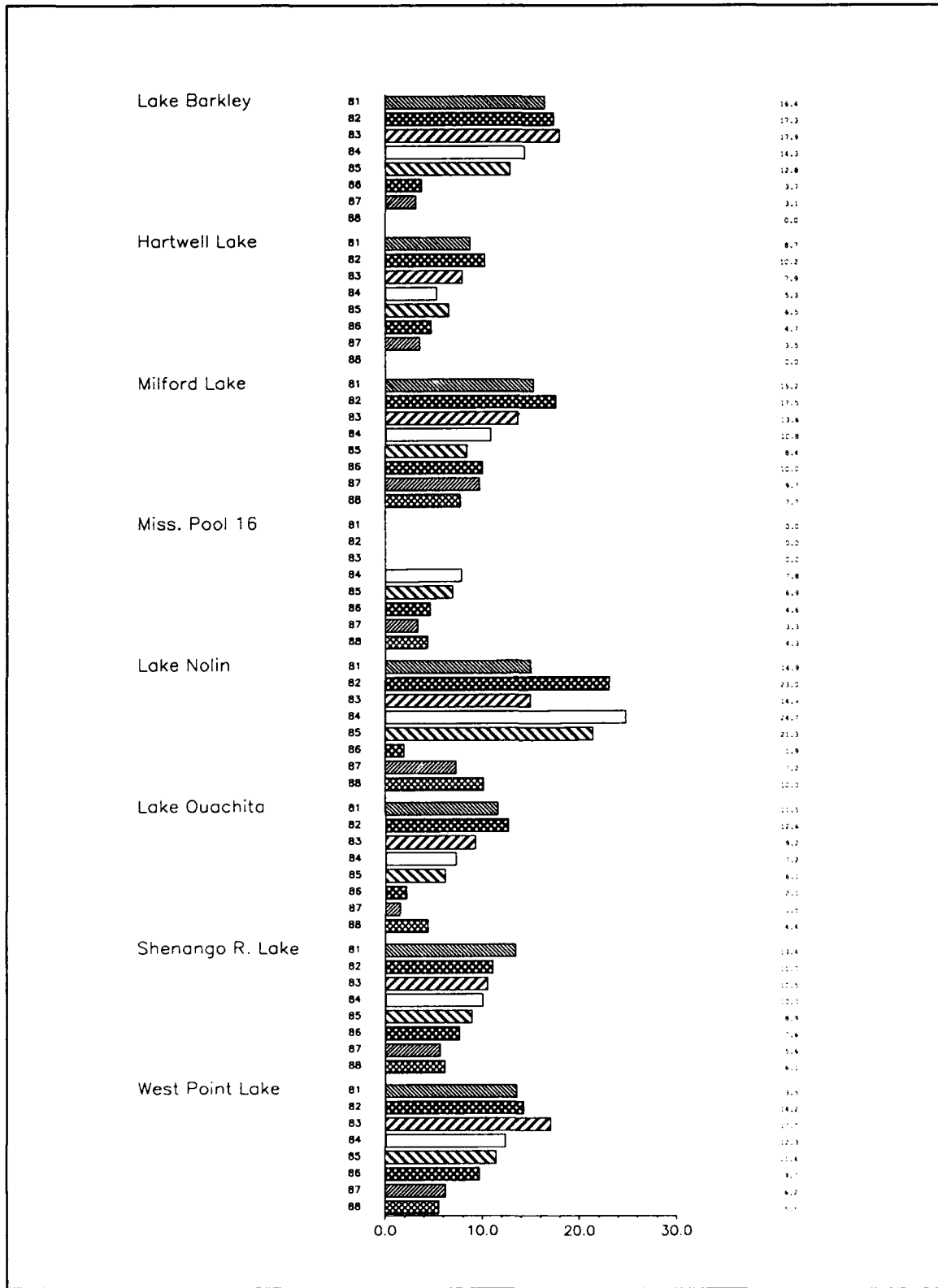


Figure 13. Percent of camping parties with pickup campers, 1981-88

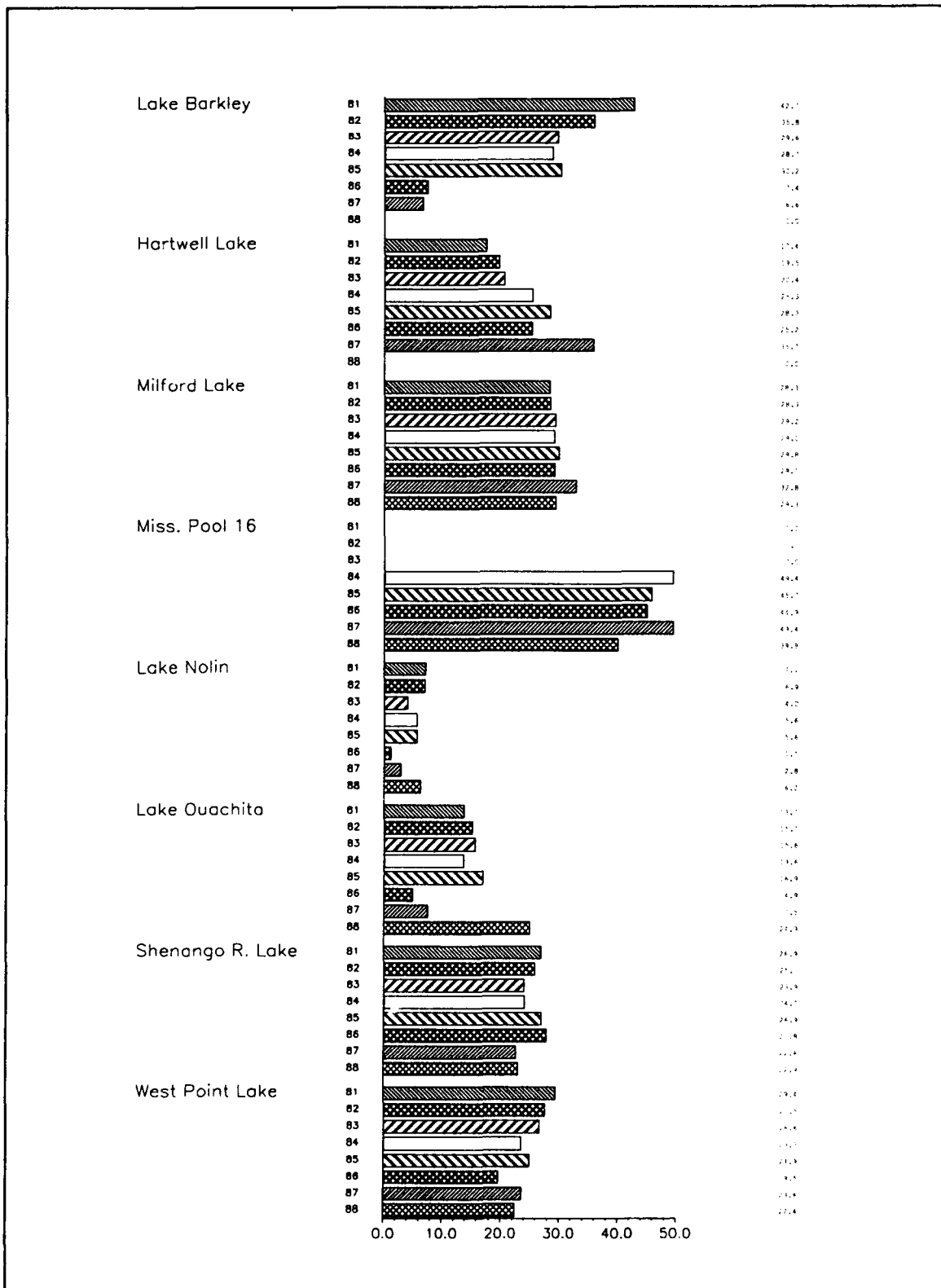


Figure 14. Percent of camping parties with travel trailers, 1981-88

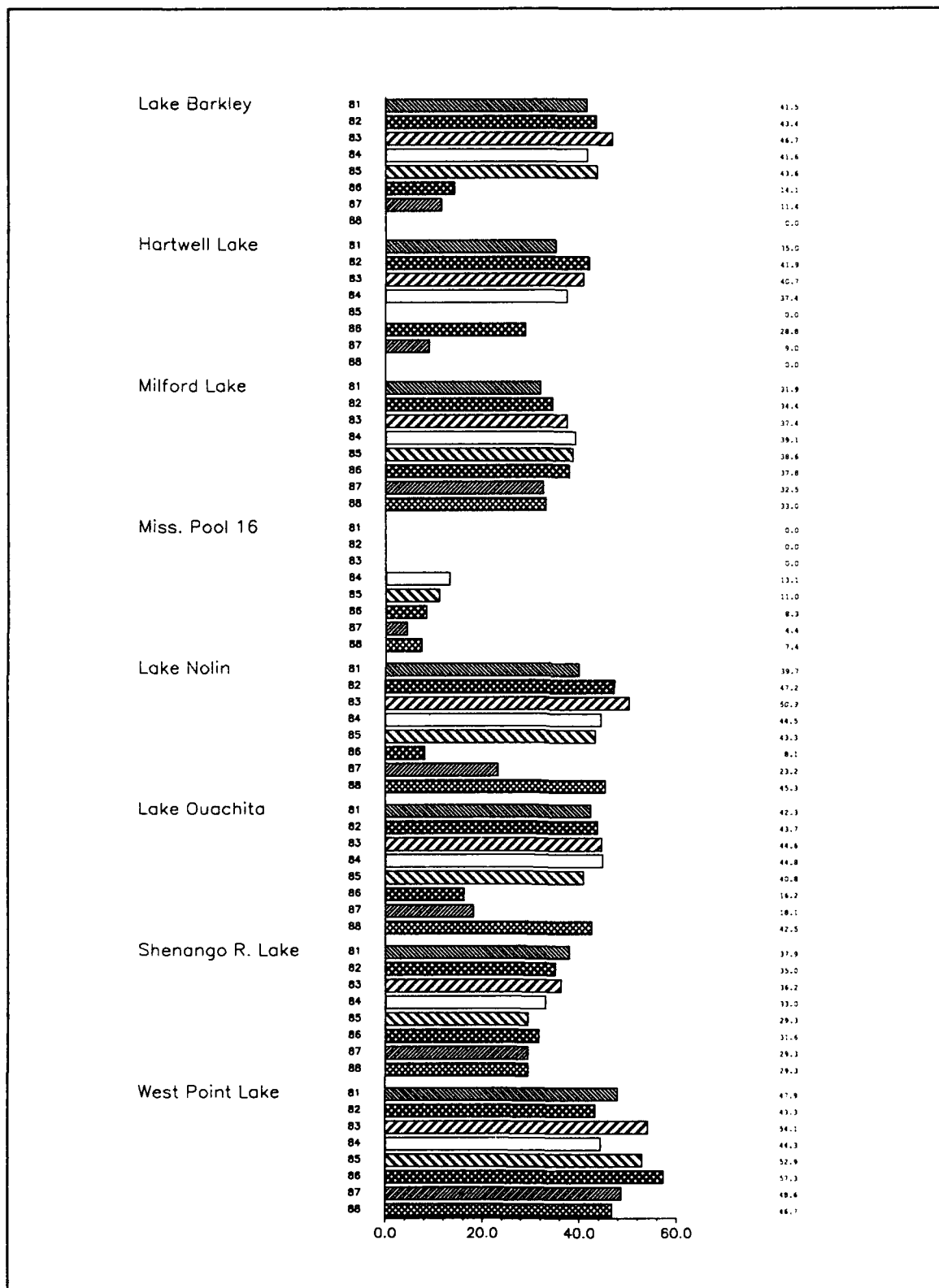


Figure 15. Percent of camping parties with powerboats, 1981-88