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1999 Big Lake State Park Visitor Survey

Project Completion Report

Submitted to

**Missouri Department of Natural Resources
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Prepared by

**Dawn K. Fredrickson
C. Randal Vessell Ph.D.**

**Department of Parks, Recreation, & Tourism
School of Natural Resources
University of Missouri-Columbia**

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Executive Summary

The purpose of this study was to describe visitors' socio-demographic characteristics, patterns of use, and satisfaction with park facilities, programs and services at Big Lake State Park (BLSP).

An on-site exit survey of adult visitors to BLSP was conducted September and October 1999. One hundred twenty-three (123) surveys were collected, with an overall response rate of 46%. Results of the survey have a margin of error of plus or minus 9%. The following information summarizes the results of the study.

Socio-demographic Characteristics

- BLSP visitors were comprised almost equally of females (51%) and males (49%), and the average age of the adult visitor to BLSP was 53.
- Almost half (47%) of visitors reported a household income of between \$25,000 and \$50,000, and the largest percentage (43%) reported having completed vocational school or some college.
- The majority (92%) of visitors were Caucasian. Less than 1% were African American, and no visitors reported being of Asian or Hispanic ethnic origin.
- Ten percent (10%) of the visitors reported having a disability.
- Almost two-thirds (61%) of the visitors to BLSP were from Missouri,

but 20% were from Nebraska, 8% were from Iowa, and 7% were from Kansas.

- More than half (58%) of the visitors lived within 50 miles of BLSP.

Use-Patterns

- The majority (89%) of visitors drove less than a day's drive (less than 150 miles) to visit BLSP. Of those driving 150 miles or less, 29% live within 25 miles of BLSP, including one-third of the Nebraska visitors.
- About 84% of BLSP visitors had visited the park before.
- BLSP visitors had visited the park an average of 18 times in the past year.
- Two-thirds of the visitors were staying overnight during their visit.
- Of the visitors staying overnight, 82% stayed in the campgrounds at BLSP, 8% stayed in BLSP's motel, and 3% stayed in the cabins at the park. The average number of nights visitors stayed was 3.8.
- The majority of BLSP visitors visited the park with family and/or friends.
- The most frequent recreation activities in which visitors participated were walking, camping, picnicking, viewing wildlife, fishing, bird watching, and boating.

Satisfaction and Other Measures

- One hundred percent (100%) of BLSP visitors were either satisfied or very satisfied overall.
- Of the ten park features, the swimming pool was given the highest satisfaction rating and the boat launches were given the lowest satisfaction rating.
- Visitors gave higher performance ratings to the following park attributes: being safe and being free of litter and trash.
- Visitors gave lower performance ratings to the following park attributes: clean restrooms and upkeep of park facilities.
- Less than one-third (31%) of visitors to BLSP felt some degree of crowding during their visit. Of those who felt crowded, on the lake was where most felt crowded.
- Visitors who did not feel crowded had a significantly higher overall satisfaction compared to visitors who did feel crowded.
- Less than 30% of the visitors at BLSP did not give park safety an excellent rating.
- Of those visitors responding to the open-ended opportunity to express their safety concerns (52% of those visitors not giving the park an excellent safety rating), a large percentage (25%) commented on dangerous lake traffic. Another 25% commented on what they perceived as a lack of staff or rangers patrolling the park.
- Although 38% of the visitors felt that nothing specific could increase their feeling of safety at BLSP, 20% did indicate that increased lighting at BLSP would increase their feeling of safety.
- Visitors who felt the park was safe were more satisfied overall, gave higher satisfaction ratings to seven of the ten park features, and gave higher performance ratings to all eight of the park attributes as well.
- A little over half (58%) of visitors reported that they would support the proposed reservation system.
- Visitors were equally divided over the proposed “carry in and carry out” trash system, with 50% for and 50% against the proposal.
- Twenty-nine percent (29%) of visitors provided additional comments and suggestions, the majority (42%) of which were positive comments about the park and staff.

Acknowledgements

Conducting and successfully completing a study of this magnitude and complexity could not have been accomplished without the cooperation of many individuals. Almost 2,000 visitors to Missouri State Parks participated in the 1999 Missouri State Parks Visitor Survey. Over 100 visitors to Big Lake State Park voluntarily agreed to provide the information upon which this report is based. It is clear from their input that these visitors care very much for the recreation resources in the Missouri State Park System. Their efforts will provide invaluable input into the planning process and providing for more effective and responsive management of these resources.

Many other individuals provided assistance during the 1999 Missouri State Parks Visitor Survey, without whom the study would not have been a success. The following expressions of gratitude are in acknowledgement of their contributions. Special acknowledgement goes to the staff at Big Lake State Park for their willingness to accommodate the survey crew during the study period, and also for their assistance during sampling. Many thanks also go to the students at the University of Missouri who assisted in computer data entry of the questionnaires. They are: Amy Mahon, Chis Thoele, and Laura Marsch.

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Introduction

NEED FOR RECREATION RESEARCH

In 1939, 15 years after Missouri obtained its first state park, 70,000 visitors were recorded visiting Missouri's state parks (Masek, 1974). Today, the increase in demand for outdoor recreation experiences has given rise to over 16 million visitors who, each year, visit the 80 parks and historic sites in Missouri's state park system (Holst & Simms, 1996). Along with this increase in demand for outdoor recreation experiences are other highly significant changes in outdoor recreation. Some of these changes include a change in the nature of vacations with a trend toward shorter, more frequent excursions; an increasing diversity of participation patterns across groups; an increase in more passive activities appropriate for an aging population; an increased concern for the health of the environment; and a realization of the positive contributions the physical environment has on the quality of one's life (Driver, Dustin, Baltic, Elsner, & Peterson, 1996; Tarrant, Bright, Smith, & Cordell, 1999).

Societal factors responsible for these changes in the way Americans recreate in the outdoors include an aging population; a perceived decline in leisure time and a faster pace of life; geographically uneven population growth; increasing immigration; changes in family structures, particularly an increase in single-parent families; increasing levels of education; a growth in minority populations; and an increasing focus on quality "lifestyle management" (Driver et al., 1996;

Tarrant et al, 1999). These factors and their subsequent changes in outdoor recreation participation have important implications for recreation resource managers, who are now faced with recreation resource concerns that are "...people issues and not resource issues alone (McLellan & Siehl, 1988)." This growing social complexity combined with the changes it has created in outdoor recreation participation have given rise to the need for research exploring why and how people recreate in the outdoors as well as how these individuals evaluate the various aspects of their outdoor recreation experiences.

STUDY PURPOSE

Visitor satisfaction tends to be a primary goal of natural resource recreation managers (Peine, Jones, English, & Wallace, 1999) and has been defined as the principal measure of quality in outdoor recreation (Manning, 1986). Visitor satisfaction, however, can be difficult to define because individual visitors are unique. Each visitor may have different characteristics, cultural values, preferences, attitudes, and experiences that influence their perceptions of quality and satisfaction (Manning, 1986).

Because of these differences in visitors, a general "overall satisfaction" question alone could not adequately evaluate the quality of visitors' experiences when they visit Missouri's state parks and historic sites. For this reason, it is necessary to gather additional information about visitor satisfaction through questions regarding: a) visitors'

socio-demographic characteristics; b) visitors' satisfaction with programs, services and facilities; c) visitors' perceptions of safety; and d) visitors' perceptions of crowding. Thus, the purpose of this study is to gain information, through these and other questions, about the use patterns, socio-demographic characteristics, and satisfaction with park programs, facilities, and services, of visitors to ten of Missouri's state parks.

This report examines the results of the visitor survey conducted at Big Lake State Park (BLSP), one of the ten parks included in the 1999 Missouri State Parks Visitor Survey. Objectives specific to this report include:

1. Describing the use patterns of visitors to BLSP during September and October 1999.
2. Describing the socio-demographic characteristics of visitors to BLSP.
3. Determining if there are differences in select groups' ratings of park attributes, satisfaction with park features, overall satisfaction, and perceptions of crowding.
4. Determining any differences in select characteristics of visitors who rated park safety high and those who did not.
5. Gaining information about selected park-specific issues.

STUDY AREA

Located in Holt County in the extreme northwest corner of Missouri, Big Lake State Park lies along side the oxbow Big Lake, providing a wonderful recreational opportunity for fishermen. In the path of a major migratory flyway and near Squaw Creek National Wildlife Refuge, Big Lake is also a paradise for birdwatchers. The park also provides many other amenities for recreationists, including a campground, picnic areas and playground, a swimming pool, rental cabins, a motel, and a restaurant and park store.

SCOPE OF STUDY

The population of the visitor study at BLSP consisted of visitors who were 18 years of age or older (adults), and who visited BLSP during the study period of September and October 1999.

Methodology

SAMPLING PROCEDURES

A 95% confidence interval was chosen with a plus or minus 5% margin of error. Based upon 1998 visitation data for September and October at BLSP, it was estimated that approximately 53,000 visitors would visit BLSP during the period between September 1 and October 31, 1999 (DNR, 1998).

Therefore, with a 95% confidence interval and a plus or minus 5% margin of error, a sample size of 397 visitors was required (Folz, 1996). A random sample of adult visitors (18 years of age and older) who visited BLSP during the study period were the respondents for this study.

To ensure that visitors leaving BLSP during various times of the day would have equal opportunity for being surveyed, three time slots were chosen for surveying. The three time slots were as follows: Time Slot 1 = 8:00 a.m. - 12:00 p.m., Time Slot 2 = 12:00 p.m. - 4:00 p.m., and Time Slot 3 = 4:00 p.m. - 8 p.m. A time slot was randomly chosen and assigned to the first of the scheduled survey dates. Thereafter, time slots were assigned in ranking order based upon the first time slot.

QUESTIONNAIRE

The questionnaire used in this study was based on the questionnaire developed by Fink (1997) for the Meramec State Park Visitor Survey. A copy of the questionnaire for this study is provided in Appendix A.

SELECTION OF SUBJECTS

The survey of visitors at BLSP was administered on-site, to eliminate the non-response bias of a mail-back survey. An exit survey of visitors leaving the park was conducted through a sample of every vehicle exiting the park.

DATA COLLECTION

The surveyor wore a state park t-shirt and was stationed near the entrance to the park. At the survey station, two "Visitor Survey" signs facing opposite directions were used to inform visitors of the survey. During the selected time slot, the surveyor stopped every vehicle and asked every visitor who was 18 years of age and older to voluntarily complete the questionnaire, unless he or she had previously filled one out.



Visitor Survey Sign Used at Big Lake State Park

To increase participation rates, respondents were given the opportunity to enter their name and address into a drawing for a prize package and were assured that their responses to the survey questions were anonymous and would not be attached to their prize entry form.

Willing participants were then given a pencil and a clipboard with the questionnaire and prize entry form attached. Once respondents were finished, the surveyor collected the completed forms, clipboards, and pencils. Survey protocol is given in Appendix B and a copy of the prize entry form is provided in Appendix C.

An observation survey was also conducted to obtain additional information about: date, day, time slot, and weather conditions of the survey day; the number of adults and children in each vehicle; and the number of individuals asked to fill out the questionnaire, whether they were respondents, non-respondents, or had already participated in the survey. This number was used to calculate response rate, by dividing the number of surveys collected by the number of adult visitors asked to complete a questionnaire. A copy of the observation survey form is provided in Appendix D.

DATA ANALYSIS

The data obtained for the BLSP study was analyzed with the Statistical Packages for the Social Sciences (SPSS) (SPSS, 1996).

Frequency distributions and percentages of responses to the survey questions and the observation data were determined. The responses to the open-ended questions were listed as well as grouped into categories for frequency and percentage calculations. The number of surveys completed by weekday versus weekend and by time slot was also determined.

Comparisons using independent sample t-tests for each group were also made to

determine any statistically significant differences ($p < .05$) in the following selected groups' satisfaction with park features (question 6), ratings of park attributes (question 7), overall satisfaction (question 13), and perceptions of crowding (question 14). The selected groups include:

1. First time visitors versus repeat visitors (question 1).
2. Overnight visitors versus day-users (question 3). Overnight visitors include those visitors who either camped in the campground at Big Lake, stayed in the motel at Big Lake, or stayed in the rental cabins at the park. Day-users include both day-users and the overnight visitors who did not stay overnight in BLSP.
3. Weekend visitors versus weekday visitors. Weekend visitors were surveyed on Saturday and Sunday, weekday visitors were surveyed Monday through Friday.

Other comparisons were made using independent sample t-tests to determine any statistically significant differences in visitors who rated the park as excellent on being safe versus visitors who rated the park as good, fair, or poor on being safe, for the following categories:

1. First time versus repeat visitors.
2. Overnight visitors versus day-users.
3. Weekend versus weekday visitors.

Differences between visitors who rated the park as excellent on being safe versus those who did not were also

compared on the following questions: differences in socio-demographic characteristics, perceptions of crowding, measures of satisfaction with park features, measures of performance of park attributes, and overall satisfaction. Chi-square tests were conducted comparing responses between select groups regarding support for a reservation system and support for a “carry in and carry out” trash system. The selected groups include:

1. First time versus repeat visitors.
2. Overnight visitors versus day-users.
3. Weekend versus weekday visitors.

Additional comparisons include:

1. Multiple linear regression analyses to determine which of the satisfaction variables and which of the performance variables most accounted for variation in overall satisfaction.
2. An independent sample t-test comparing overall satisfaction between visitors who felt some degree of crowding and those who were not at all crowded during their visit.

Results

This section describes the results of the Big Lake State Park Visitor Survey. For the percentages of responses to each survey question, see Appendix E. The number of individuals responding to each question is represented as "n=."

SURVEYS COLLECTED & RESPONSE RATES

A total of 123 surveys were collected at BLSP during the time period of September and October 1999. Table 1 shows surveys collected by time slot. Of the 123 surveys collected, 92 (74.8%) were collected on weekends (Saturday and Sunday) and 31 (25.2%) were collected on weekdays (Monday through Friday). The overall response rate was 46.4%. This lower response rate is due in part to the inability of the surveyor to pull over every vehicle as they exited the park. BLSP has three roads converging into the one main exit, each road from a different direction. Often the surveyor would be sampling a vehicle exiting from one of the three roads and would be unable to pull over other vehicles exiting at the same time from the other two roads.

SAMPLING ERROR

With a sample size of 123 and a confidence interval of 95%, the margin of error increases from plus or minus 5% to plus or minus 9%. For this study, there is a 95% certainty that the true results of the study fall within plus or minus 9% of the findings. For example, from the results that 51.3% of the visitors to BLSP during the study period were female, it can be stated that between 42.3% and 60.3% of the BLSP visitors were female.

SOCIO-DEMOGRAPHIC CHARACTERISTICS

Age

The average age of adult visitors to BLSP was 53.4. When grouped into four age categories, 10.4 % of the adult visitors were between the ages of 18-34, 41.8% were between the ages of 35-54, 21.7% were between the ages of 55-64, and 26.1% were 65 or over.

Gender

Visitors to BLSP were almost equally male and female. Female visitors comprised 51.3% of all visitors, and male visitors comprised 48.7% of all visitors.

Table 1. Surveys Collected by Time Slot

Time Slot	Frequency	Percent
1. 8 a.m. - 12 p.m.	44	35.8%
2. 12 p.m. - 4 p.m.	44	35.8%
3. 4 p.m. - 8 p.m.	35	28.5%
Total	123	100.0%

Education

The majority (43%) of visitors to BLSP indicated they had completed vocational school or some college. Another 42% indicated having completed grade or high school, while 15% indicated having completed a four-year college degree or post-graduate education.

Income

The largest percentage (46.5%) of visitors to BLSP reported they had an annual household income of between \$25,000 and \$50,000. The second largest percentage (20.2%) of visitors had an income of over \$75,000. Less than 20% (17.5%) of visitors had an income of less than \$25,000, and about 16% (15.8%) had a household income between \$50,001 and \$75,000.

Ethnic Origin

Figure 1 indicates the ethnic origin of BLSP visitors. The vast majority (91.5%) of visitors was Caucasian. Almost 1% (0.9%) of visitors were African American, and 6.8% of visitors reported being of Native American

descent. There were no visitors who reported being Asian or Hispanic, and less than one percent (0.9%) of visitors reported being of an “other” ethnic origin.

Visitors with Disabilities

Ten percent (10.3%) of the visitors to BLSP reported having some type of disability that substantially limited one or more life activities or that required special accommodations. Most of the disabilities reported were mobility-impairing disabilities, but other disabilities include heart problems and stroke.

Residence

Almost two-thirds (61.1%) of BLSP visitors were from Missouri, with more than one-third (38.9%) of the visitors coming from other states including Nebraska (20.4%), Iowa (8.0%), and Kansas (7.1%). Over half (58%) of the visitors to BLSP lived within 50 miles of the park. Figure 2 shows the residence of visitors by zip code.

Figure 1. Ethnic Origin of BLSP visitors.

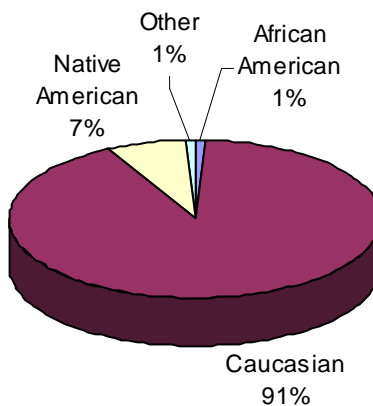
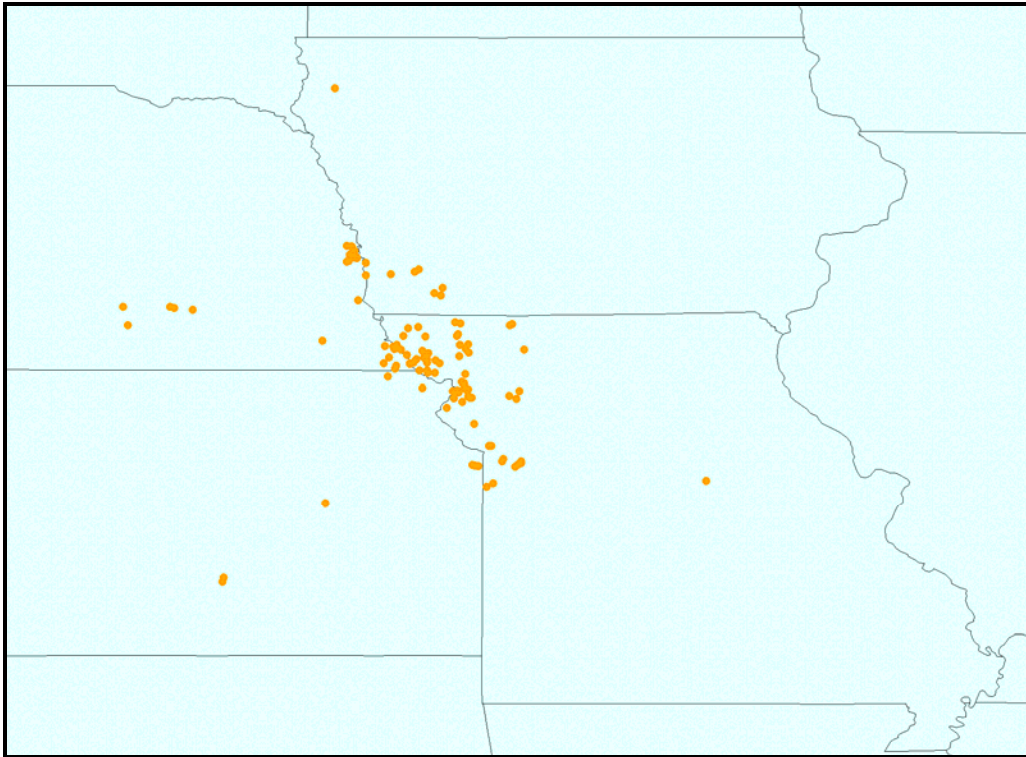


Figure 2. Residence of BLSP Visitors by Zip Code**USE PATTERNS*****Trip Characteristics***

The majority (88.5%) of visitors to BLSP traveled less than a day's drive to visit the park (a day's drive is defined as 150 miles or less, not exceeding 300 miles round trip), including 88.9% of the Iowa visitors, 78.5% of the Nebraska visitors, and 62.5% of the Kansas visitors. Of those traveling less than a day's drive, 29% lived within 25 miles of the park, including 30.4% of the Nebraska visitors. Within Missouri, 15.0% came from the St. Joseph region, 8.8% came from the Kansas City region, and 15.9% lived in the immediate vicinity (10 miles or less from BLSP), including visitors from Mound City, Craig, Bigelow, and Fortescue.

Half (53.1%) of visitors either drove cars, vans, jeeps, or sport utility vehicles. Over one-third (39.7%) drove pickup trucks. Four percent (4%) of visitors drove motorcycles, and almost 2% (1.8%) drove RVs. Eleven percent (11.2%) of the vehicles towed some type of trailer. The average number of axles per vehicle was 2.2, the average number of adults per vehicle was 1.8, and the average number of children per vehicle was also 1.8.

Visit Characteristics

About 84% of the visitors to BLSP were repeat visitors, with a little over 16% of the visitors being first time visitors. The average number of times all visitors reported visiting BLSP within the past year was 18.2 times.

Most of the visitors (60.2%) to BLSP during the study period indicated that they were staying overnight, with about 40% (39.8%) indicating that they were day-users. Of those staying overnight during their visit, most (82.2%) stayed in the campground at BLSP. Eight percent (8.2%) of the overnight visitors stayed in the motel at the park, and 2.7% stayed in a cabin at the park. Of those camping in the campground at BLSP, 86% reported camping in an RV, trailer, or van conversion, while 12% reported camping in a tent.

Of those reporting overnight stays, 12.3% stayed one night, 56.1% stayed two nights, 15.8% stayed three, and 16% stayed four or more nights. The average stay for overnight visitors was 3.8 nights. The median number of nights was 2, indicating that half of the overnight visitors stayed less than two nights and half of the overnight visitors stayed more than two nights. The highest percentage of visitors stayed two nights.

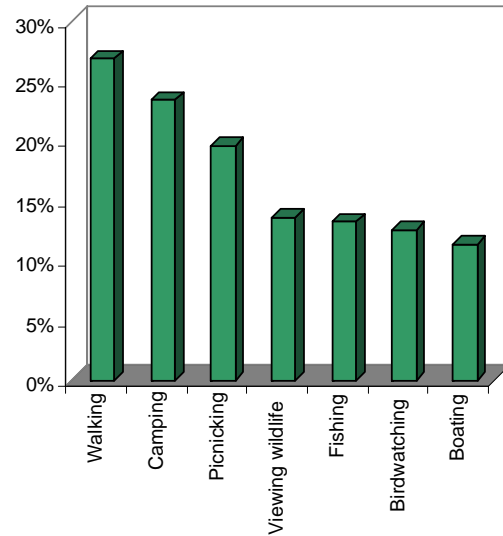
Thirty-eight percent (38%) of the visitors to BLSP visited the park with family. Twenty-one percent (21.3%) visited with family and friends, while 15.7% visited with friends, and 19.4% visited the park alone. Less than 6% (5.6%) of visitors indicated visiting the park with a club or organized group.

RECREATION ACTIVITY PARTICIPATION

Respondents to the survey were asked what activities they participated in during their visit to BLSP. Figure 3 shows the percentage of visitor participation in the seven highest activities. Walking was the highest reported (26.8%), camping was the

second (23.4%), and picnicking was the third (19.6%). Viewing wildlife (13.6%), fishing (13.2%), bird watching (12.5%), and boating (11.3%) were next.

Figure 3. Participation in Recreational Activities at BLSP



BLSP visitors reported engaging in other activities, including studying nature (7.5%), swimming in the pool (5.7%), attending a special event (4.9%), and attending an interpretive program (0.8%). Only 5.3% of visitors reported engaging in an "other" activity, including just driving through and sightseeing, and having dinner at the restaurant.

SATISFACTION MEASURES

Overall Satisfaction

When asked about their overall satisfaction with their visit, no visitors reported being dissatisfied or very dissatisfied with their visit. One hundred percent (100%) of BLSP visitors were either satisfied or very

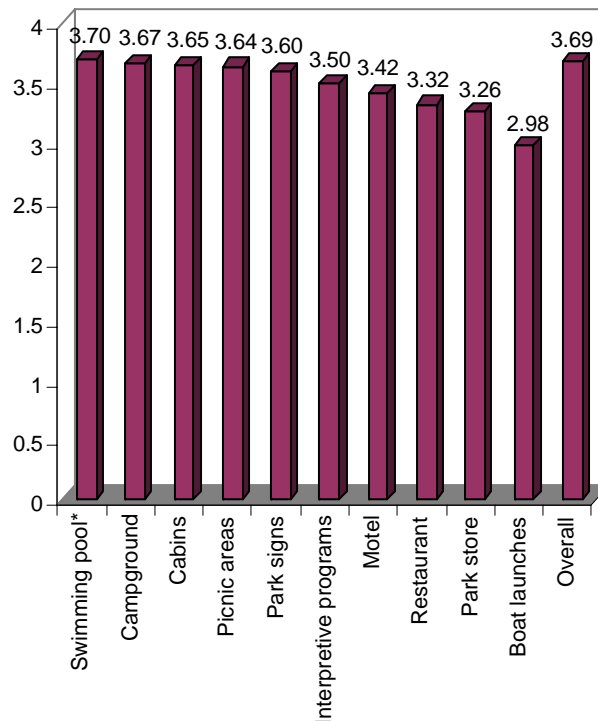
satisfied. Visitors' mean score for overall satisfaction was 3.69, based on a 4.0 scale with 4 being very satisfied and 1 being very dissatisfied.

No significant difference ($p < .05$) was found in overall satisfaction between first time and repeat visitors, with mean overall satisfaction scores of 3.65 and 3.70 respectively. Nor was there any significant difference in overall satisfaction between overnight visitors and day-users, with mean overall satisfaction scores of 3.71 and 3.68 respectively. Weekday visitors, however, had a significantly higher ($p < .05$) overall satisfaction score (3.84) than had weekend visitors (3.64).

Satisfaction with Park Features

Respondents were also asked to express how satisfied they were with ten park features. Figure 4 shows the mean scores for the ten features and also for visitors' overall satisfaction. The satisfaction score for the swimming pool (3.70) was the highest, with the other scores ranging from 3.67 (campground) to the lowest of 2.98 (boat launches). A multiple linear regression analysis ($r^2 = .62$) of the ten park features showed that all the variables combined to account for about two-thirds of the overall satisfaction rating. No significant differences were found in mean satisfaction ratings of park features between first time and repeat visitors,

Figure 4. Satisfaction with BLSP Features



*Although the swimming pool was closed for most of the survey period, several visitors made anecdotal comments to the surveyor expressing their satisfaction with the swimming pool and its completed construction.

between overnight visitors and day-users, or between weekend and weekday visitors.

PERFORMANCE RATING

Visitors were asked to rate the park's performance of eight select park attributes (question 7): being free of litter and trash, having clean restrooms, upkeep of park facilities, having helpful and friendly staff, access for persons with disabilities, care of natural resources, providing interpretive information, and being safe. Performance scores were based on a 4.0 scale, with 4 being excellent and 1 being poor.

No significant differences were found between overnight visitors and day-users and their performance ratings of the eight park attributes. First-time visitors had a significantly higher ($p < .05$) performance rating (3.89) regarding the park being free of litter and trash than had repeat visitors (3.66). Weekend visitors had a significantly higher ($p < .01$) performance rating (3.76)

regarding the park being safe than had weekday visitors (3.34). A multiple linear regression analysis ($r^2 = .39$) showed that the eight performance attributes combined to only moderately account for the variation in the overall satisfaction rating.

IMPORTANCE-PERFORMANCE MEASURES

The Importance-Performance (I-P) Analysis approach was used to analyze questions 7 and 12. Mean scores were calculated for the responses of the two questions regarding visitors' ratings of the performance and importance of the eight select park attributes. Table 2 lists the scores of these attributes, which were based on a 4.0 scale of 4 being excellent and 1 being poor, and 4 being very important and 1 being very unimportant.

Figure 5 shows the Importance-Performance (I-P) Matrix. The mean scores were plotted on the I-P Matrix to illustrate the relative performance and importance rating of the attributes by park visitors.

Table 2. Mean Performance and Importance Scores for Park Attributes

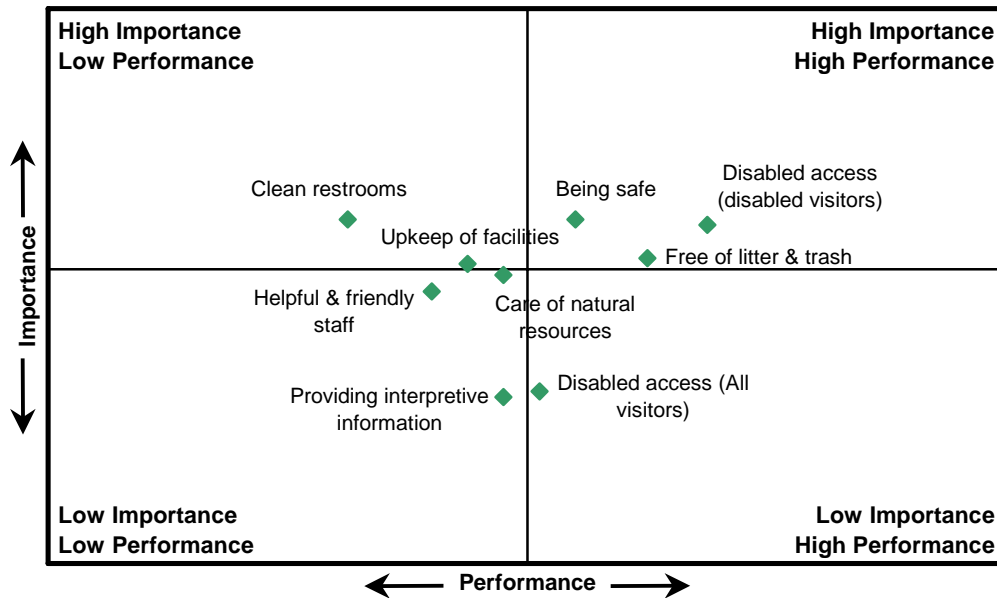
Attribute	Mean Performance Score*	Mean Importance Score*
A. Being free of litter/trash	3.70	3.85
B. Having clean restrooms	3.45	3.92
C. Upkeep of park facilities	3.55	3.84
D. Having helpful & friendly staff	3.52	3.79
E ₁ . Access for persons with disabilities	3.61	3.61
E ₂ . Access for persons with disabilities	3.75	3.91
F. Care of natural resources	3.58	3.82
G. Providing interpretive information	3.58	3.60
H. Being safe	3.64	3.92

E₁ = All visitors

E₂ = Disabled visitors only

* 1 = Poor performance or low importance rating, 4 = excellent performance or high importance rating

Figure 5. Importance-Performance Matrix of Park Attributes



The I-P Matrix is divided into four quadrants to provide a guide to aid in possible management decisions. For example, the upper right quadrant is labeled “high importance, high performance” and indicates the attributes in which visitors feel the park is doing a good job. The upper left quadrant indicates that management may need to focus on these attributes, because they are important to visitors but were given a lower performance rating. The lower left and right quadrants are less of a concern for managers, because they exhibit attributes that are not as important to visitors.

BLSP was given high importance and performance ratings for being safe and for being free of litter and trash. Disabled visitors gave BLSP high performance ratings for providing disabled accessibility. Characteristics that visitors felt were important but rated

BLSP low on performance were having clean restrooms and upkeep of park facilities.

CROWDING

Visitors to BLSP were asked how crowded they felt during their visit. The following nine-point scale was used to determine visitors’ perceptions of crowding:

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	

Visitors’ overall mean response to this question was 1.8. Over two-thirds (69.5%) of the visitors to BLSP did not feel at all crowded (selected 1 on the scale) during their visit. The rest (30.5%) felt some degree of crowding (selected 2-9 on the scale) during their visit.

Table 3. Locations Where BLSP Visitors Felt Crowded During Their Visit

Location	Frequency	Percent
On the lake	4	44.4%
Campground	3	33.3%
Swimming pool	2	22.2%
Total	9	100.0%

Visitors who indicated they felt crowded during their visit were also asked to specify where they felt crowded (question 15). One-fourth (25%) of the visitors who indicated some degree of crowding answered this open-ended question. Table 3 lists the locations where visitors felt crowded at BLSP. Of those who answered the open-ended question, the majority (44.4%) felt crowded on the lake.

No significant differences in perceptions of crowding were found between first time and repeat visitors, and between overnight visitors and day-users. Weekend visitors had significantly higher ($p < .01$) perceptions of crowding when compared to weekday visitors. Weekend visitors had a mean crowded score of 2.0, while weekday visitors had a mean crowded score of 1.1.

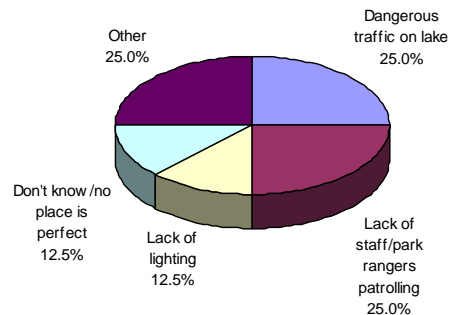
Crowding and satisfaction

A significant difference ($p < .001$) was found in visitors’ mean overall satisfaction with their visit and whether they felt some degree of crowding or not. Visitors who did not feel crowded had a mean overall satisfaction score of 3.79, whereas visitors who felt some degree of crowding had a mean overall satisfaction score of 3.47.

SAFETY CONCERNS OF VISITORS

Less than one-third (28.9%) of the visitors to BLSP did not rate the park as excellent for safety. Of those, 51.6% noted what influenced their rating. Their comments were grouped into categories and are shown in Figure 6. Appendix F provides a list of the comments.

Figure 6. Comments from Visitors Not Rating BLSP Excellent on Safety



Thirteen percent (12.5%) of the open-ended responses were from visitors who either had no reason for not rating safety excellent, or who felt that no place was perfect and could always improve. One-fourth (25%) of the open-ended responses, however, were from visitors who commented on dangerous lake traffic. Another 25% of visitors commented on what they perceived as a lack of rangers and staff patrolling the

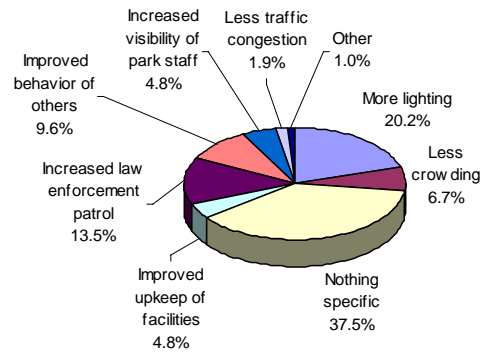
park, and a lack of lifeguards patrolling the pool.

Visitors were also given a list of nine attributes and were asked to indicate which of the nine would most increase their feeling of safety at BLSP. Although instructed to select only one attribute, many visitors selected more than one; consequently, 104 responses were given by 87 visitors. Figure 7 shows the percentage of responses given by visitors. Most (37.5%) felt that nothing specific would increase their feeling of safety, but 20.2% felt that more lighting would increase safety.

Visitors who felt that more lighting in the park would most increase their feeling of safety were asked to indicate where they felt more lighting was necessary. Seventy-six percent (76.2%) of those visitors answered this open-ended question. Table 4 shows the frequency and percentages of their responses.

There were no significant differences in the rating of safety by first time visitors versus repeat visitors or by overnight visitors versus day-users. Weekend visitors had a significantly higher ($p < .01$) safety rating (3.76) than weekday visitors (3.34). There were no differences in safety ratings by socio-demographic characteristics.

Figure 7. Percentage of Safety Attributes Chosen by Visitors



To determine if there were differences in perceptions of crowding, satisfaction with park features, and overall satisfaction, responses were divided into two groups based on how they rated BLSP on being safe. Group 1 included those who rated the park excellent, and Group 2 included those who rated the park as good, fair, or poor.

There were no significant differences in the perceptions of crowding between Group 1 and Group 2. However, Group 1 was significantly ($p < .05$) more satisfied overall than Group 2, with an overall satisfaction score of 3.78 whereas Group 2 had an overall satisfaction score of 3.58. Group 1 also had significantly ($p < .05$) higher satisfaction ratings for the campground,

Table 4. Locations Where Visitors Felt More Lighting Would Increase Safety

Location	Frequency	Percent
Campground	11	68.8%
Restrooms/shower houses	3	18.8%
Everywhere	2	12.5%
Total	16	100%

park signs, picnic areas, restaurant, park store, swimming pool, and boat launches than Group 2, as well as significantly higher ($p < .001$) performance ratings for all eight of the park attributes.

SUPPORT OF RESERVATION SYSTEM

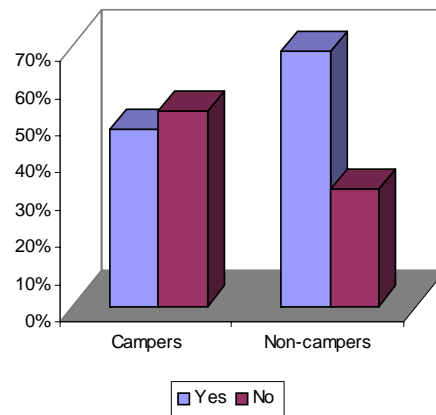
BLSP visitors were asked whether they would support setting aside at least 50% of all campsites in a reservation system, and charging a reservation fee not to exceed \$7.00. Fifty-eight percent (57.5%) of visitors would support such a system, while 42.5% reported that they would not.

There was no significant difference between first time and repeat visitors and the percentage of each that would or would not support a reservation system, nor was there a significant difference between weekday and weekend visitors. There was also no significant difference between overnight and day-use visitors and the percentage of each that would or would not support the reservation system.

However, when those overnight visitors staying in the BLSP motel or BLSP cabins (visitors who were already using a type of reservation system) were excluded from the equation to leave a comparison between campers and non-campers only, further analysis revealed that there was a significant difference ($p < .05$) between campers and non-campers and the percentage of each that would or would not support a reservation system. Figure 8 shows the differences between the two groups. An almost equal number of campers either supported or didn't support a reservation system, with 47.8% and 52.5% respectively. However, many more non-campers (68.5%) supported a reservation

system than didn't (31.5%). Non-campers include both day-users and the overnight visitors not staying in the campground at BLSP (including those visitors who stayed in the motel or cabins at BLSP).

Figure 8. Comparison of Support of Reservation System Between Campers and Non-campers



SUPPORT OF “CARRY IN/CARRY OUT” TRASH SYSTEM

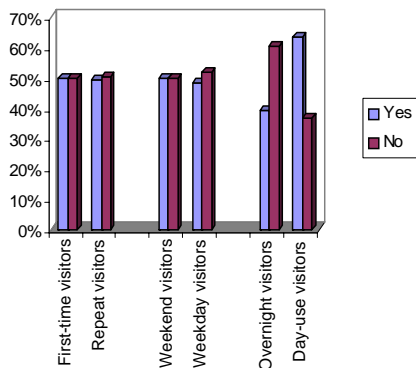
BLSP visitors were also asked to indicate whether they would be willing for the park to establish a “carry in and carry out” trash removal system, thereby promoting recycling and reducing the burden of handling trash in the park. Visitors were almost equally divided on this issue, with 49.6% who would support such a system and 50.4% who would not support a “carry in and carry out” system.

There were no significant differences between first time and repeat visitors, and whether each group would support this type of trash system. Both first time and repeat visitors were almost equally likely to support or oppose a carry

in/carry out trash system. No significant difference was found between the percentages of weekend and weekday visitors and whether each would support or oppose this type of trash system. Both were as equally likely to support or oppose the proposed system.

There was, however, a significant difference ($p < .05$) between whether overnight visitors and day-use visitors would support the carry in/carry out trash system. Overnight visitors were more likely to oppose (60.6%) than support (39.4%) the proposed system, while day-users were more likely to support (63.3%) the system rather than oppose it (36.7%). Figure 9 shows the percentage of support or opposition between each group.

Figure 9. Support for “Carry In/Carry Out” Trash System Between Groups



ADDITIONAL VISITOR COMMENTS

Respondents to the survey were also given the opportunity to write any additional comments or suggestions on how DNR could make their experience at BLSP a better one (question 23). Over one-fourth (28.5%) of the total survey participants responded to this question, with 41 responses given by 35 respondents. The comments and suggestions were listed and grouped by similarities into 10 categories for frequency and percentage calculations. The list of comments and suggestions is found in Appendix G. Table 5 lists the frequencies and percentages of the comments and suggestions by category.

The majority (41.5%) of comments were general positive comments, such as: “Great park”, “I love this park”, and “Keep up the good work”. The rest of the comments were categorized based on similar suggestions or comments, such as suggestions about the campground, needing improvement to or better maintenance of the boat launches, and other suggestions not falling into any other category.

Table 5. Frequency and Percentage of Comments and Suggestions from BLSP Visitors

Category	Frequency	Percent
1. General positive comments	17	41.5%
2. Suggestions about campground	6	14.6%
3. Improve or better maintain boat ramps	3	7.3%
4. Provide more trash receptacles	2	4.9%
5. Comments about the reservation system	2	4.9%
6. Better maintenance/upkeep	2	4.9%
7. Improve restaurant	2	4.9%
8. Problems with dogs	2	4.9%
9. Need more funding	2	4.9%
10. Other	3	7.3%
Total	41	100.0%

Discussion

MANAGEMENT IMPLICATIONS

The results of this study provide relevant information concerning BLSP visitors. However, the results should be interpreted with caution. The surveys were collected only during the study period of September and October 1999; therefore, visitors who visit during other seasons of the year are not represented in the study's sample.

Satisfaction Implications

Sixty-nine percent (69%) of BLSP visitors reported that they were very satisfied with their visit to the park. Williams (1989) states that visitor satisfaction with previous visits is a key component of repeat visitation. The high percentage of repeat visitation (84%) combined with their positive comments provide evidence that BLSP visitors are indeed satisfied with their park experience.

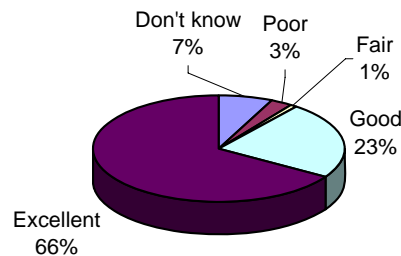
Interestingly, weekday visitors were significantly more satisfied with their visit than weekend visitors, although satisfaction scores for both were high. Although crowding perceptions for both were low, weekend visitors had significantly higher crowding scores than weekday visitors, which may have affected their overall satisfaction. While not significant, a comparison between the two groups revealed a slightly higher percentage of weekend visitors who were also repeat visitors (86%) when compared to the percentage of weekday visitors who were repeat visitors (77%). Research has shown that repeat visitors often develop an identity to or a

familiarity with an area, instilling a sense of ownership for that area (Armistead & Ramthun, 1995). This sense of ownership may lead repeat visitors to feel encroached upon, thus contributing to a decrease in overall satisfaction.

Safety Implications

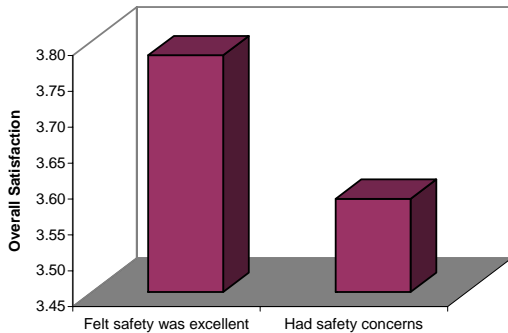
BLSP managers should be commended for providing a park in which visitors feel safe. Only one-third (34%) of visitors did not give an excellent rating regarding safety, and the majority of those not giving an excellent rating gave a good rating instead (Figure 10). Safety was also given a "high importance, high performance" rating on the I-P Matrix. In fact, a large percentage (38%) of visitors indicated that nothing specific would increase their feeling of safety at BLSP.

Figure 10. Safety Ratings of BLSP.



There were some visitors, however, who did express safety concerns; and since visitors' perception of safety did affect their overall satisfaction of their visit at BLSP (Figure 11), it behooves managers

Figure 11. Levels of Satisfaction Ratings by Safety Concerns



to give consideration to their concerns. Twenty-five percent (25%) of visitors with safety concerns responded to an open-ended question with comments regarding dangerous traffic on the lake. Another 25% commented on their perceptions of a lack of visible park staff or rangers patrolling the park or lifeguards patrolling the swimming pool. Out of a list of nine safety attributes, 20% of visitors selected more lighting as the attribute that would most increase their feeling of safety at BLSP.

Crowding Implications

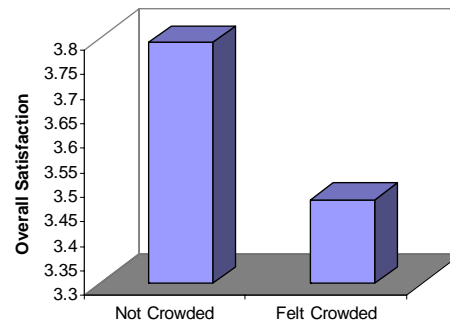
Visitors’ perceptions of crowding at BLSP were not high. Over two-thirds (70%) of visitors did not feel at all crowded, and the mean crowded score for visitors was only 1.8. However, visitors’ perceptions of crowding did influence their overall satisfaction at BLSP, indicating that visitors’ perceptions of crowding should be a management concern.

Crowding is a perceptual construct not always explained by the number or density of other visitors. Expectations of visitor numbers, the behavior of other

visitors, and visitors’ perception of resource degradation all play a significant role in crowding perceptions (Armistead & Ramthun, 1995; Peine et al., 1999). As mentioned earlier, weekend visitors had significantly higher perceptions of crowding than weekday visitors, and visitors who felt crowded had a significantly lower overall satisfaction than visitors who did not feel crowded (Figure 12).

In addressing the issue of crowding, one option is to review comments relating to crowding and consider options that would reduce crowding perceptions. For example, although there were only a few comments from those visitors who felt crowded, most of the comments listed the lake as where visitors felt crowded. Further study could determine if crowding perceptions here are due to the number of people or perhaps the behavior of those on the lake.

Figure 12. Overall Satisfaction is Lower for Those Who Felt Crowded



Performance Implications

Visitors felt that clean restrooms and upkeep of park facilities were very important but rated BLSP lower in performance in both these areas.

Restroom cleanliness and facility upkeep are frequently given lower ratings by visitors to state parks (Fredrickson & Moisey, 1999), but managers often experience difficulty in maintaining their park facilities in the face of ever increasing visitor numbers and changing visitor expectations.

Implications for BLSP's Interpretive Programs and Information

Another area of concern for managers at BLSP is the low performance and importance ratings given by visitors regarding BLSP providing interpretive information. Less than one percent of visitors indicated attending an interpretive program. Although two-thirds of visitors gave either good or excellent ratings regarding BLSP providing interpretive information, about 72% of visitors, when asked how satisfied they were with BLSP's interpretive programs, reported that they didn't know. These results suggest that visitors may not be aware of the interpretive programs, and thus do not attend them.

Implementation of Reservation System

Although more than half (58%) of the visitors reported that they would support the proposed reservation system, campers (the users most likely to be affected by such a system) responded with a slight majority (53%) who would not support such a system. RV campers (those campers who might be expected to use the reservation system more) were more likely to oppose (60%) than support (40%) the proposed reservation system, while tent campers were more likely to support (67%) than oppose (33%) the system.

Implementation of "Carry In and Carry Out" Trash System

Visitors were almost equally divided in their support for or rejection of this proposed trash system. Further analysis of the users who might be most affected by this type of trash removal system (picnickers and overnight visitors) revealed that a slight majority (52%) of picnickers supported the proposal but a majority of overnight visitors (62%) did not support the proposal.

Conclusion

BLSP visitors are very satisfied with BLSP, as evidenced by the high percentage of visitors who were repeat visitors, and also by their high satisfaction ratings. BLSP visitors also gave high performance ratings to the park being safe, being free of litter and trash, and providing disabled accessibility. Visitors' crowding perceptions were also low.

The results of the present study suggest some important management and planning considerations for BLSP. Even though BLSP visitors rated their visits and the park features relatively high, felt fairly safe, and did not feel very crowded, continued attention to safety, crowding, and facility upkeep and maintenance can positively effect these ratings.

Just as important, on-going monitoring of the effects of management changes will provide immediate feedback into the effectiveness of these changes. On-site surveys provide a cost effective and timely vehicle with which to measure management effectiveness and uncover potential problems.

RESEARCH RECOMMENDATIONS

The results of the present study serve as baseline visitor information of BLSP. The frequency and percentage calculations of survey responses provide useful information concerning socio-demographic characteristics, use patterns, and satisfaction of BLSP visitors. In addition, the “sub-analysis” of data is important in identifying implications for management of BLSP. (The sub-analysis in the present study included comparisons using Chi-square and ANOVA between selected groups, multiple linear regression, and the Importance-Performance analysis.) Additional relevant information may be determined from further sub-analysis of existing data. Therefore, it is recommended additional sub-analysis be conducted to provide even greater insight to management of the park.

Data collection should be on a continuum (Peine et al., 1999), which is why additional visitor surveys at BLSP should also be conducted on a regular basis (e.g., every three, four, or five years). Future BLSP studies can identify changes and trends in socio-demographic characteristics, use patterns, and visitors’ satisfaction at BLSP.

The methodology used in this study serves as a standard survey procedure that the DSP can use in the future. Because consistency should be built into the design of the survey instrument, sampling strategy and analysis (Peine et al., 1999), other Missouri state parks and historic sites should be surveyed similarly to provide valid results for comparisons of visitor information between parks, or to measure change over time in other parks.

The present study was conducted only during the study period of September and October 1999. Therefore, user studies at BLSP and other parks and historic sites might be conducted during other seasons for comparison between seasonal visitors.

METHODOLOGY RECOMMENDATIONS AND CONSIDERATIONS FOR BLSP AND OTHER PARKS

The on-site questionnaire and the methodology of this study were designed to be applicable to other Missouri state parks. Exit surveys provide the most robust sampling strategy to precisely define the visitor population (Peine et al., 1999); therefore, it is recommended that exit surveys be conducted at other state parks and historic sites if at all possible.

Survey Signage

It is recommended that adequate signage be utilized when collecting surveys on-site. Two “Visitor Survey” signs facing opposite directions were used in the present study to inform visitors exiting the park that a survey was being conducted. Although the signs aided in the workability of the methodology, the three-way intersection at the exit made it difficult for the surveyor to anticipate whether vehicles were exiting or not. It was also difficult for the surveyor to survey each exiting vehicle if more than one vehicle was exiting from opposite sides of the intersection.

The “survey station” also often became an “information station” when visitors would stop to ask questions. Many visitors would also engage the surveyor in conversation regarding their feelings

about BLSP. For these reasons, an assistant to help administer the surveys would be helpful.

Survey Administration

Achieving the highest possible response rate (within the financial constraints) should be a goal of any study. To achieve higher response rates, the following comments are provided.

The prize package drawing and the one-page questionnaire undoubtedly helped attain the response rates in the 1998 Missouri State Parks Visitor Survey as well as in the 1999 Missouri State Parks Visitor Survey. Continued use of the one-page questionnaire and the prize package drawing is suggested.

The most frequent reason that visitors declined to fill out a survey was because they did not have enough time. Most non-respondents were very pleasant and provided positive comments about the park. Some even asked if they could take a survey and mail it back. One recommendation would be to have self-addressed, stamped envelopes available in future surveys to offer to visitors only after they do not volunteer to fill out the survey on-site. This technique may provide higher response rates, with minimal additional expense. One caution, however, is to always attempt to have visitors complete the survey on-site, and to only use the mail-back approach when it is certain visitors would otherwise be non-respondents.

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Appendix A. Big Lake State Park Visitor Survey



Big Lake State Park



The Missouri Department of Natural Resources and the University of Missouri are seeking your evaluation of Big Lake State Park. This survey is voluntary and completely anonymous. Your cooperation is important in helping us make decisions about managing this park. Thank you for your time.

1. Is this your first visit to Big Lake State Park? (Check only one box.)
 yes no If no, how many times have you visited this park in the past year? _____

2. During this visit to the park, are you staying overnight? (Check only one box.)
 yes If yes, how many nights are you staying at or near the park during this visit? _____
 no (If no, skip to question 4.)

3. If staying overnight, where are you staying? (Check only one box.)
 campground in Big Lake State Park
 tent RV/trailer/camper
 motel in Big Lake State Park
 cabin in Big Lake State Park
 nearby lodging facilities
 nearby campground
 friends/relatives
 other (Please specify.) _____

4. With whom are you visiting the park? (Check only one box.)
 alone family and friends club or organized group
 family friends other (Please specify.)

5. Which recreational activities have you engaged in during this park visit? (Check all that apply.)
 picnicking bird watching swimming in pool
 fishing studying nature attending special event
 camping viewing wildlife attending interpretive program
 walking boating other (Please specify.)

6. How satisfied are you with each of the following in Big Lake State Park? (Check one box for each feature.)

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know
a. campgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. park signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. picnic areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. restaurant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. park store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. swimming pool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. boat launches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. cabins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. motel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. interpretive programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How do you rate Big Lake State Park on each of the following? (Check one box for each feature.)

	Excellent	Good	Fair	Poor	Don't Know
a. being free of litter/trash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. having clean restrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. upkeep of park facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. having a helpful & friendly staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. access for persons with disabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. care of natural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. providing interpretive information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. being safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. If you did not rate this park as excellent on being safe, what influenced your rating?

9. Which of the following would most increase your feeling of being safe at Big Lake State Park? (Check only one box.)

- more lighting where? _____
- less crowding
- nothing specific
- improved upkeep of facilities
- increased law enforcement patrol
- improved behavior of others
- increased visibility of park staff
- less traffic congestion
- other (Please specify.) _____



PLEASE TURN SURVEY OVER.



10. Do you support setting aside at least 50% of all campsites in a reservation system in order to guarantee a site, and charging a reservation fee not to exceed \$7.00? (Check only one box.) yes no

11. Do you support establishing a "carry in and carry out" system as a means of promoting recycling and reducing the burden of handling trash in this park? (Check only one box.) yes no

12. When visiting any state park, how important are each of these items to you? (Check one box for each feature.)

	Very Important	Important	Unimportant	Very Unimportant	Don't Know
a. being free of litter/trash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. having clean restrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. upkeep of park facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. having a helpful & friendly staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. access for persons with disabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. care of natural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. providing interpretive information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. being safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Overall, how satisfied are you with this visit to Big Lake State Park? (Check only one box.)

Very Satisfied Satisfied Dissatisfied Very Dissatisfied

14. During this visit, how crowded did you feel? (Circle one number.)

1 2 3 4 5 6 7 8 9
Not at all Slightly Moderately Extremely
Crowded Crowded Crowded Crowded

15. If you felt crowded on this visit, where did you feel crowded?

16. What is your age? _____ 17. Gender? female male

18. What is the highest level of education you have completed? (Check only one box.)

grade school vocational school graduate of 4-year college
 high school some college post-graduate education

19. What is your ethnic origin? (Check only one box.)

Asian African American Native American/American Indian
 Hispanic Caucasian/White Other (Please specify.) _____

20. Do you have a disability that substantially limits one or more life activities or might require special accommodations?

yes no If yes, what disability or disabilities do you have?

21. What is your 5-digit zip code (or country of residence, if you live outside the U.S.)? _____

22. What is your annual household income?

less than \$25,000 \$50,001 - \$75,000
 \$25,000 - \$50,000 over \$75,000

23. Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experience in Big Lake State Park a better one.

THANK YOU FOR YOUR HELP.
YOU ARE ALWAYS WELCOME IN MISSOURI STATE PARKS.

Appendix B. Survey Protocol

Protocol for Big Lake State Park Visitor Survey

Hi, my name is _____, and I am conducting a survey of park visitors for Missouri state parks. The information that I am collecting will be useful for future management of Big Lake State Park.

The survey is one page, front and back side, and only takes about 3-5 minutes to complete. Anyone who is 18 or older may complete the survey, and by completing the survey, you have the opportunity to enter your name in a drawing for a prize package of \$100 worth of concession coupons. Your participation is voluntary, and your responses will be completely anonymous.

Your input is very important to the management of Big Lake State Park. Would you be willing to help by participating in the survey?

[If no,] Thank you for your time. Have a nice day.

[If yes,]

Here is a pencil and clipboard with the survey attached (for each respondent). Please complete the survey on both sides. When finished, return the survey(s), clipboard(s), pencils, and prize entry form(s) to me.

Thank you for taking time to complete the survey. Your help is greatly appreciated. Have a nice day.

Appendix C. Prize Entry Form

**WIN A PRIZE PACKAGE OF CONCESSION COUPONS
WORTH \$100**

Enter a drawing to win \$100 worth of gift certificates! These certificates are good for any concessions at any state park or historic site. Concessions include cabin rentals, canoe rentals, boat rentals, restaurant dining, horseback riding, etc.

You may enter the drawing by simply filling out the back of this entry form and returning it to the surveyor. Your name, address, and telephone number will be used only for this drawing; thus, your survey responses will be anonymous. The drawing will be held November 1, 1999. Winners will be notified by telephone or mail. Redemption of gift certificates is based on dates of availability through August 31, 2000.

Name: _____

Address: _____

Phone #: () _____

Appendix D. Observation Survey

Date _____ Day of Week _____ Time Slot _____
 Weather _____ Temperature _____ Park/Site _____

	Survey #’s	# of Adults	# of Children	Vehicle Type	Additional Axles	# of Visits Today
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						

Time Slot Codes:

Time Slot 1 = 8:00 - 12:00 p.m.
 Time Slot 2 = 12:00 - 4:00 p.m.
 Time Slot 3 = 4:00 - 8:00 p.m.

Weather Codes (examples):

Hot & Sunny Windy
 Cold & Rainy Sunny
 Cloudy Humid

Appendix E. Responses to Survey Questions

Big Lake State Park Visitor Survey

1. Is this your first visit to Big Lake State Park? (n=121)

yes	16.5%
no	83.5%

If no, how many times have you visited this park in the past year? (n=91)

The responses from this open-ended question were grouped into the following 9 categories:

0	8.8%
1	16.5%
2	15.4%
3-5	16.5%
6-10	9.9%
11-20	18.7%
21-50	9.9%
51-100	2.2%
101+	2.2%

The average # of times repeat visitors visited the park in the past year was 18.2 times.

2. During this visit to the park, are you staying overnight? (n=118)

yes	60.2%
no	39.8%

If yes, how many nights are you staying overnight at or near the park during this visit? (n=57)

The responses from this open-ended question were grouped into the following 6 categories:

1	12.3%
2	56.1%
3	15.8%
4-10	12.4%
11+	3.6%

The average # of nights respondents visiting the park for more than one day stayed was 3.8.

3. If staying overnight, where are you staying? (n=73)

campground in Big Lake State Park	82.2%
tent	12.0%
RV	86.0%
motel in Big Lake State Park	8.2%
cabin in Big Lake State Park	2.7%
nearby lodging facilities	1.4%
nearby campground	0.0%
friends/relatives	2.7%
other	2.7%

4. With whom are you visiting the park? (n=108)

alone	19.4%	family & friends	21.3%	club or organized group	5.6%
family	38.0%	friends	15.7%	other	0.0%

5. Which recreational activities have you engaged in during this park visit?

picnicking	19.6%	bird watching	12.5%	swimming in pool	5.7%
fishing	13.2%	studying nature	7.5%	attending special event	4.9%
camping	23.4%	viewing wildlife	13.6%	attending interpretive program	0.8%
walking	26.8%	boating	11.3%	other	5.3%

12 visitors participated in an "other" activity. Their responses are as follows:

Anniversary party.	Just looking.
Biking.	Playing cards and visiting.
Card playing.	Restaurant.
Dinner at the lodge.	Taking a scenic drive.
Dinner at the lodge.	Visiting.
Driving.	Visiting.

In addition to percentages of responses, a mean score was calculated for each feature in questions 6, 7, 12, and 13. The score is based on a 4.0 scale with 4 = very satisfied, 3 = satisfied, 2 = dissatisfied, and 1 = very dissatisfied (Q. 6 & 13); 4 = excellent, 3 = good, 2 = fair, and 1 = poor (Q. 7); and 4 = very important, 3 = important, 2 = unimportant, and 1 = very unimportant (Q. 12). The mean score is listed in parenthesis following each feature.

6. How satisfied are you with each of the following in Big Lake State Park?

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know	
a. campgrounds (3.67)	61.1%	30.6%	0.0%	0.0%	8.3%	n=108
b. park signs (3.60)	58.4%	38.9%	0.0%	0.0%	2.7%	n=113
c. picnic areas (3.64)	59.6%	33.7%	0.0%	0.0%	6.7%	n=104
d. restaurant (3.32)	33.6%	29.9%	6.5%	1.9%	28.0%	n=107
e. park store (3.26)	29.4%	37.3%	9.8%	0.0%	23.5%	n=102
f. swimming pool (3.70)	47.4%	14.7%	2.1%	0.0%	35.8%	n=95
g. boat launches (2.98)	23.9%	19.6%	7.6%	8.7%	40.2%	n=92
h. cabins (3.65)	26.9%	11.8%	1.1%	0.0%	60.2%	n=93
i. motel (3.42)	20.2%	20.2%	2.2%	0.0%	57.3%	n=89
j. interpretive programs (3.50)	14.1%	14.1%	0.0%	0.0%	71.8%	n=85

7. How do you rate Big Lake State Park on each of the following?

	Excellent	Good	Fair	Poor	Don't Know	
a. being free of litter/trash (3.70)	69.2%	30.0%	0.0%	0.0%	0.8%	n=120
b. having clean restrooms (3.45)	52.2%	36.5%	5.2%	1.7%	4.3%	n=115
c. upkeep of park facilities (3.55)	57.1%	39.5%	2.5%	0.0%	0.8%	n=119
d. having a helpful/friendly staff (3.52)	59.0%	29.9%	8.5%	0.0%	2.6%	n=117
e. access for persons with disabilities (3.61)	47.7%	27.5%	0.9%	0.0%	23.9%	n=109
f. care of natural resources (3.58)	57.9%	32.5%	1.8%	0.9%	7.0%	n=114
g. providing interpretive information (3.58)	42.5%	23.6%	2.8%	0.0%	31.1%	n=106
h. being safe (3.64)	66.1%	23.5%	0.9%	2.6%	7.0%	n=115

8. If you did not rate this park as excellent on being safe, what influenced your rating?

16 visitors (51.6% of those who did not rate the park as excellent on being safe) responded to this. The 16 responses were divided into 5 categories. Frequencies and percentages of responses in each category are listed.

	<u>Frequency</u>	<u>Percent</u>
1. Dangerous traffic on lake	4	25.0%
2. Lack of staff/rangers patrolling the park	4	25.0%
3. Lack of lighting	2	12.5%
4. Don't know/no place is perfect	2	12.5%
5. Other	<u>4</u>	<u>25.0%</u>
Total	16	100.0%

9. Which of the following would most increase your feeling of being safe at Big Lake State Park?

104 responses were given by 87 visitors.

	<u>Frequency</u>	<u>Percent</u>
1. More lighting	21	20.2%
2. Less crowding	7	6.7%
3. Nothing specific	39	37.5%
4. Improved upkeep of facilities	5	4.8%
5. Increased law enforcement patrol	14	13.5%
6. Improved behavior of others	10	9.6%
7. Increased visibility of park staff	5	4.8%
8. Less traffic congestion	2	1.9%
9. Other	<u>1</u>	<u>1.0%</u>
Total	104	100.0%

16 visitors (76.2% of those who indicated more lighting would most increase their feeling of safety) reported where they felt more lighting was necessary. Their answers were grouped into the following 3 categories. Frequencies and percentages of each category are listed.

	<u>Frequency</u>	<u>Percent</u>
1. Campground	11	68.8%
2. Restrooms/shower houses	3	18.8%
3. Everywhere	<u>2</u>	<u>12.5%</u>
Total	20	100.0%

10. Do you support setting aside at least 50% of all campsites in a reservation system in order to guarantee a site, and charging a reservation fee not to exceed \$7.00? (n=113)

yes 57.5%
no 42.5%

11. Do you support a “carry in and carry” out system as a means of promoting recycling and reducing the burden of handling trash in this park? (n=115)

yes 49.6%
no 50.4%

12. When visiting any state park, how important are each of these items to you?

	Very Important	Important	Unimportant	Very Unimportant	Don't Know	
a. being free of litter/trash (3.85)	84.9%	15.1%	0.0%	0.0%	0.0%	n=119
b. having clean restrooms (3.92)	91.6%	8.4%	0.0%	0.0%	0.0%	n=119
c. upkeep of park facilities (3.84)	84.2%	15.8%	0.0%	0.0%	0.0%	n=120
d. having a helpful/friendly staff (3.79)	78.8%	21.2%	0.0%	0.0%	0.0%	n=118
e. access for disabled persons (3.61)	62.8%	25.7%	5.3%	0.0%	6.2%	n=113
f. care of natural resources (3.82)	81.9%	18.1%	0.0%	0.0%	0.0%	n=116
g. providing interpretive information (3.60)	61.5%	27.5%	3.7%	0.9%	6.4%	n=109
i. being safe (3.92)	92.1%	7.9%	0.0%	0.0%	0.0%	n=114

13. Overall, how satisfied are you with this visit to Big Lake State Park?

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	
(Mean score = 3.69)	69.4%	30.6%	0.0%	0.0%	n=121

14. During this visit, how crowded did you feel? (n=118)

On a scale of 1-9, with 1 = Not at all crowded and 9 = Extremely crowded, the mean response was 1.8.

15. If you felt crowded on this visit, where did you feel crowded?

A total of 9 open-ended responses were given. The 9 responses were divided into 3 categories. Frequencies and percentages of responses in each category are listed.

	<u>Frequency</u>	<u>Percent</u>
lake traffic/on the lake	4	44.4%
campground/campsites	3	33.3%
swimming pool	2	22.2%
Total	9	100.0%

16. What is your age? (n=115)

Responses were divided into the following 4 categories:

18-34 10.4%
35-54 41.8%
55-64 21.7%
65-85 26.1%
(Average age = 53.4)

17. Gender? (n=113)

Female 51.3%
Male 48.7%

18. What is the highest level of education you have completed? (n=119)

grade school	2.5%	vocational school	13.4%	graduate of 4-year college	10.9%
high school	39.5%	some college	29.4%	post-graduate education	4.2%

19. What is your ethnic origin? (n=117)

Asian	0.0%	African American	0.9%	Native American/American Indian	6.8%
Hispanic	0.0%	Caucasian/White	91.5%	Other	0.9%

20. Do you have a disability that substantially limits one or more life activities or might require special accommodations? (n=116)

yes	10.3%
no	89.7%

If yes, what disability or disabilities do you have? (n=11)

The following is a list of all responses to this open-ended question.

Ankles.	Knee.
Arthritis.	Multiple sclerosis.
Back disability.	Neuropathy.
Bad legs.	Stroke.
Have had polio.	Walking problems.
Heart problems.	

21. What is your 5-digit zip code (or country of residence, if you live outside the U.S.)? (n=113)

The states with the highest percentages of respondents were:

Missouri (61.1%)
 Nebraska (20.4%)
 Iowa (8.0%)
 Kansas (7.1%)

22. What is your annual household income? (n=114)

less than \$25,000	17.5%	\$50,001 - \$75,000	15.8%
\$25,000 - \$50,000	46.5%	over \$75,000	20.2%

23. Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experience in Big Lake State Park a better one.

35 of the 123 visitors (28.5%) responded to this question. A total of 41 responses were given, and were divided into 10 categories. Frequencies and percentages of responses in each category are listed.

	<u>Frequency</u>	<u>Percent</u>
1. General positive comments	17	41.5%
2. Suggestions about campground	6	14.6%
3. Improve or better maintain boat ramps	3	7.3%
4. Provide more trash receptacles	2	4.9%
5. Comments about the reservation system	2	4.9%
6. Better maintenance/upkeep	2	4.9%
7. Improve restaurant	2	4.9%

8. Problems with dogs	2	4.9%
9. Need more funding	2	4.9%
10. Other	<u>3</u>	<u>7.3%</u>
Total	41	100.0%

Appendix F. List of Responses for Safety Concerns (Q 8)

Responses to Question # 8

If you did not rate this park as excellent on being safe (Question 7, letter h.), what influenced your rating?

Dangerous traffic on the lake

- The lake.
- Too crowded with jet skis.
- Too many jet skis without some kind of water regulation!
- Traffic on the lake.

Lack of staff/park rangers patrolling the park

- Lack of full-time staff.
- No enforcement after midnight.
- No park rangers after midnight. No police for fighting and drunk campers.
- Swimming pool lifeguards.

Lack of lighting

- Need more lighting at night.
- Need more lighting by restrooms.

Don't know/no reason/no place is perfect

- Just arrived....first visit here.
- With kids, I never feel that they are 100% safe.

Other

- Boat ramps dangerous.
- Could use a gate.
- The sewer in the lake from the cabins.
- Too many autos drive through.

Appendix G. List of Responses for Additional Comments (Q 23)

Responses to Question #23

Please write any additional comments about your park visit or suggestions on how the Missouri Department of Natural Resources can make your experience in Big Lake State Park a better one.

General positive comments

- A very fine, well-maintained facility.
- Beautiful park, excellent value, thanks!
- Big Lake very well cared for park.
- Excellent!
- Glad you got the pool open again.
- Great always!
- Hard to improve on.
- I think our state parks are great. Keep up the good work. Thanks.
- Love this park.
- My grandma (92 years old) was able to get around here easily. Was even allowed to drive up to picnic table with her. Thanks!
- Thank you.
- Think it is taken care of excellently.
- This is a very nice state park. Missouri needs a hundred more just like it!
- This is one of the nicest state parks in MO of the northern state. Like most state parks need more funding on northwest region.
- Very impressed.
- We come back often.
- Wider boat ramp. Reserved spots in campground. The park rangers are the best.

Suggestions about campground

- Camping area needs a beach area or banks with a slight grade.
- It would be nice if you had a place for group camping that was reservable.
- More electrical hook-ups in sites closer to the point of use.
- More spots needed for RVs.
- Need boat docks and rock on the banks to save the trees. Need more camping sites.
- This park has been too crowded all summer. We need more electric hook-up spots for RVs.

Improve or better maintain boat ramps

- Fix boat docks and ramps.
- Need boat docks and rock on the banks to save the trees. Need more camping sites.
- Wider boat ramp. Reserved spots in campground. The park rangers are the best.

Provide more trash receptacles

- Like to have trash bins near bath houses.
- There needs to be a trash dumpster at the north end of the park. Also people who bring dogs should have to clean up after them.

Comments about reservation system

- Even if a smaller percentage of lots were made available to reserve, we'd be trampled to death. Also, would be great to do this over the phone with our credit card rather than drive 80 miles round trip just to make arrangements.
- Wider boat ramp. Reserved spots in campground. The park rangers are the best.

Better maintenance/upkeep

- Restrooms need scrubbed down completely not just sprayed with pine cleaner. Have people scoop their own dog poop.
- Room should be cleaned better. Lots of spiders and webs.

Improve restaurant

- Improvement of restaurant.
- Quality of food in restaurant is not the best.

Problems with dogs

- Restrooms need scrubbed down completely not just sprayed with pine cleaner. Have people scoop their own dog poop.
- There needs to be a trash dumpster at the north end of the park. Also people who bring dogs should have to clean up after them.

Need more funding

- Believe not enough park money is spent at this state park. It rates low among other parks in state.
- This is one of the nicest state parks in MO of the northern state. Like most state parks need more funding on northwest region.

Other

- Could consider having more promotion and/or statewide activities.
- Don't have Ernie collect money next year, or ever again. He is a burden to campers. He won't leave us alone.
- There were rumors that the lake would be closed to boating due to high water. It was difficult to substantiate whether this was true or not. I would like to know exactly where to go to find out such information. -- Greg Thompson, Rt. 1 Box 117, 118 S. Wallis St., Pickering, MO 64476, (660) 927-3796.