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I am submitting herewith a thesis written by John R. Collins, Jr., entitled "User Preferences for TVA Recreation Areas on Watts Bar and Chickamauga Reservoirs." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Forestry.

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USER PREFERENCES FOR TVA RECREATION AREAS
ON WATTS BAR AND CHICKAMAUGA RESERVOIRS

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ABSTRACT

An onsite personal interview was used to examine the responses of "day-users," "formal" campers and "informal" campers concerning management actions at TVA's Watts Bar and Chickamauga Reservoirs. Specifically investigated were the preferences of the three user types towards the new intensified management program implemented at Watts Bar Reservoir. The questionnaire contained user background information and 57 variables classified into six general categories which included: activity preferences, present management operations, management actions being implemented, items influencing area use and additional fee items. The results indicated lower than expected support by "day-users" and "formal" campers for the newly implemented intensified management program, while "informal" campers showed greater support than was expected for the same program. Other findings showed that "informal" campers were consistently lower in their ratings for five of the six general categories, and that "day-users" and "formal" campers' ratings were very similar and exhibited a more favorable response towards the six general categories than "informal" campers. Conclusions suggest incorporation of the existing and new management programs into one combined management program and expressed the need for using a water-oriented user classification system along with other suggestions for management and further studies.

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CHAPTER I

INTRODUCTION

In 1979, the Tennessee Valley Authority (TVA) implemented an intensified management program on recreation areas that it operates throughout its reservoir system. Under the new program, areas previously classified as "undeveloped" or "informal," which provided limited facilities and services, were modified and reclassified as "formal" recreation areas. This new management policy mandated that "formal" areas provide an onsite manager, have designated use areas, improved facilities and services, (enforced) regulations, and a fee system for camping. The purpose for this change in management strategy was to help correct existing problems of unsanitary conditions, user conflicts, user safety and security, and to enhance the user's recreational experience.

TVA - A Recreation Profile

TVA's involvement in recreation dates back to 1934 when a demonstration park and boat dock were built in cooperation with the National Park Service and the Civilian Conservation Corps. In 1937, TVA leased its first reservoir land to a public agency for recreational development (Cove Lake State Park, Tennessee) and by 1945, transferred reservoir land to a state agency for public recreation (Paris Landing State Park, Tennessee). Through 1968, TVA continued to lease, license, and transfer reservoir lands to outside agencies and commercial interests for recreational developments.

In order to monitor the success of these public agencies in providing recreational opportunities around the reservoirs, TVA conducted a study on

its recreational areas operated by outside agencies during 1968 and 1969. Results from this study revealed that TVA lands operated by these outside agencies were not able to meet the growing recreational needs of users (TVA, 1969). The findings also noted crowding, user conflicts, unsanitary conditions, and a lack of personal safety as prevalent problems and pointed out that increased visitation to these recreation areas was a major cause for these problems. As a result of this study, TVA recognized the need to take a more active role in the planning and development of recreational resources around the reservoirs and in 1969 began providing basic recreational facilities to assure the safe and sanitary conditions of the areas.

From 1969 to 1979, TVA pursued this new policy of directly maintaining and operating recreation facilities, amassing 106 such recreational areas. These areas varied from little more than a picnic table and garbage can at "undeveloped" areas to paved roads, toilets, grills, picnic tables, and boat launching ramps at "informal" areas. In spite of this direct management approach, the problems of overcrowding and user conflicts along with vandalism and rowdy behavior continued. Even though visitation was still on the rise, the real problem stemmed more from a lack of order and control over the influx of recreationists than from the number of visitors. A more intensified management approach was taken, and in 1979, TVA adopted a new policy governing the management of public recreation areas (Appendix A). Briefly, this new policy established, "(1) five types of recreation areas, (2) the level of management for each type of area, (3) appropriate recreation activities for each type of area and (4) a fee system for over-night camping at certain types of areas" (TVA, 1979).

Statement of the Problem and Objectives

In order to determine the success of this intensified management program, Watts Bar Reservoir was selected as a pilot area for developing and testing these newly classified "formal" areas. Due to the new management program, TVA managers anticipated a number of problems which became the basis for this study. From these problems, the following research objectives were derived:

- i. to determine the reaction of TVA recreationists to the new management program,
- ii. to point out any differences between "day-users," "formal" campers, and "informal" campers,
- and iii. to determine the success of the new management program in alleviating the problems of overcrowding, user conflict, safety, and sanitation.

Justification

The diverse number of recreational activities and specialization within activities has served to confound for the recreation planner the issue of "what to provide." Camping in its many versions is one example of such specialization within an activity. A clearer understanding of the types of recreation users and their respective preferences would certainly be an aid to recreation managers in making decisions.

Because little is known about the types of users at TVA recreation areas, or their preferences, adjustments to the new management program were anticipated. In order to perfect this new management program, preferences among the different types of users with respect to policy actions concerning TVA recreation development, management, maintenance, and facilities were sought by TVA officials. Knowing more specifically the preferences and types of clientele that visit the area

would provide a more direct target for planning and development. With such discrete guidelines for planners to follow, improved utilization of the reservoirs' recreation areas would provide a better opportunity for an enjoyable recreational experience and help make this new management action a greater success.

CHAPTER II

REVIEW OF LITERATURE

Traditionally, outdoor recreation research has focused on the physical aspects of recreational areas, investigating environmental impact and quality plus site design and maintenance. As laws and acts were passed and new approaches and techniques were developed to improve and protect the environment, the emphasis of outdoor recreation research shifted towards the social characteristics of the recreational user. Today, recreation research has emerged as a social science which delves into the recreational aspects of human behavior in relation to leisure time¹ and environments.

Theoretical Development of Leisure Studies

Even before the turn of the century, leisure was discussed and examined by scholars from a theoretical viewpoint. However, only during the past two decades has intensive research been conducted on forest recreation leisure behavior. Criticism of early attempts at leisure research was summed up by Bennett Berger (1962) when he wrote, "The sociology of leisure today is little else than a reporting of survey data on what selected samples

¹Leisure time: For the purpose of this study, leisure time is defined as time that is unobligated where the individual is free to do as he wishes. For a better discussion and meaning, the following references are suggested: Marion Clawson. "How Much Leisure, Now and in the Future?," Leisure in America: Blessing our Curse? Philadelphia: American Academy of Political and Social Science, April, 1964, p. 16. Sebastian de Grazia Of Time, Work and Leisure. New York: The Twentieth Century Fund, 1962, pp. 233-235.

of individuals do with the time in which they are not working and the correlation of these data with conventional demographic variables." That same year, the Outdoor Recreation Resources Review Commission (ORRRC, 1962) released in its final report similar findings which stated that the social variables of sex, age, race, religion, place of residence, education, income, and life cycle "accounted for only 30 percent of the variance in the measure of outdoor recreation activity." Seven years later, Meyershon (1969) reflected this same attitude in his examination of social and demographic characteristics by reporting that the standard social variables "do not provide sufficient information about people and corresponding patterns of leisure behavior." This denouncement of social variables was not an attempt to discredit previous research, for much was productive and without it the study of leisure behavior would not be where it is today; but it was an attempt to show that other dimensions of leisure behavior should be explored. Regardless of these statements, Christensen and Yoesting (1973) suggested inclusion of social variables in order to determine their relative importance in relation to newer variables.

Spurred by a search for newer variables that explained leisure behavior, recreation researchers developed ideas and concepts that have become the basis for leisure studies today. Issues such as the meaning of leisure, leisure as a state of mind, leisure as work, and leisure's relation to free time have produced numerous essays and prompted philosophical debate. The social group, considered more important for understanding participation activity than is the individual, has been used in studies by Field and O'Leary (1973), Cheek (1971) and Bultena and Wood

(1970). Childhood experiences was another variable investigated to determine its influence on leisure activity patterns by Yoesting and Burkhead (1971). Other attempts to explain leisure behavior were made by Mercer (1971) with his investigation of personal preferences and by Burch (1969) in his examination of personal drives. Burdge and Field (1972), Neulinger and Breit (1969) and Clawson (1959) all noted personal attitudes as contributing to leisure activities while Havinghurst (1957) proposed that leisure activity is shaped by personality traits. These were but a few of the many approaches studied in an attempt to develop a better understanding of the components of leisure behavior. Basically, this research has served to show the complexity of leisure behavior and its multi-variant nature.

Camping Research

Camping has probably been the most studied activity in the field of forest recreation research; yet, it seems the more facts that have been collected, the more complex it has become to provide for the camper. For example, the types of campers that a manager can expect at a camping area might include the environmental-oriented camper (Lime, 1971), the social-oriented camper (Etzkorn, 1963), the remote camper or the easy-access camper (Burch and Wenger, 1967), and the traveling camper (Wagar, 1963). To provide for this range of camper types presents a challenge. But to non-differentiate the camper population and provide for the "general" camper would be risky because, as Shafer (1964) pointed out in his study of New York campers, the "average" camper does not exist. The problem of "who to provide for" becomes more complex when considering the heterogeneity of interests that exists even among campers of the same

type; thus, prompting researchers to concentrate more on campers' motivations, attitudes, and preferences.

Hollender (1977) studied motives influential in people's decisions to go camping and their choice of camping areas and found divergence from their normal life style to be the most important motivating concern of campers. Clark and others (1977) investigated campers' and managers' attitudes toward camping in highly developed areas and found that campers actually preferred that type of area, while managers perceived that campers visited the area for convenience but would prefer to camp somewhere else. From a study comparing campers' preferences, West and others (1969) concluded that developed area campers were more adamant in their preferences than primitive area campers. Cordell and Sykes (1969) studied camper preferences for developed sites and found a great variety of needs and desires expressed by campers as to what constitutes a satisfying camping experience.

Over the years, camping research has made great strides in uncovering some of the components of leisure behavior, yet a fuller understanding of its complexities is needed so the many tastes in camping can be adequately met. Most of these studies seem to show a great diversity of interests among campers which supports the idea that variety rather than standardization is the approach to take when planning campgrounds.

Water Based Recreation Studies

During the earlier part of this century, recreation was generally not considered a primary purpose for water development projects and was therefore excluded from the planning process. Recreation remained incidental to water projects until the creation of the Flood Control Act of 1944 and

subsequent amendments. Although somewhat inconsistent, this law recognized recreation as a beneficial use of reservoirs and stated the importance of a multiple use policy when planning a water project. The importance of water as a base for recreation received additional support from the first national survey of outdoor recreation resources conducted by the ORRRC (1962) which listed water as an important base for recreational activity. Brewer and Gillispie (1969) conducted a study involving residents in the St. Louis, Missouri area in which two-thirds of the respondents indicated that they participated in water-based recreational activities. Although not a water-based activity, a study of campers' preferences by Cary (1975) showed that a large body of water was the most important physical attribute of a campground area. This finding suggested that recreationists derive aesthetic benefits from a body of water as well as benefits from participation in water-oriented activities. The importance of a body of water for recreational benefits cannot be over emphasized because as Driver (1977) states, "Most outdoor recreationists prefer to be near, in or on water." As a result of the recognition of water as a backdrop for a broad spectrum of outdoor recreational benefits, information about what influences water-based leisure behavior has prompted investigation by researchers, so that outdoor planners and managers can better meet the needs and desires of the users.

A variety of investigations have been made in an attempt to uncover new social variables which influence water-based leisure behavior. For instance, Van Doren and Lentnek (1969) studied activity specialization in an attempt to differentiate between five types of boating activities which were: sailing, water skiing, pleasure cruising, fishing, and non-specialized

boaters. Their findings revealed that type of equipment used (sail or horsepower of the motor), type of boating group (family or friends), length of boating experience, and the amount of time traveling to the boating site were predictive of activity preference. As previously mentioned, the standard social variables did not contribute substantially to predicting activity specialization. A similar study conducted by Lentnek and others (1969) investigated spatial behavior of recreation boaters. In this study, it was found that sailors and water skiers traveled the shortest distances, pleasure cruisers traveled longer distances than skiers or sailors, and fishermen and non-specialized boaters traveled the longest distances to recreational sites. It was also found that longer times spent traveling to sites were associated with a longer time spent at the site. Social groups such as family, friends, or family and friends were combined with the standard social variables in a study by Field and O'Leary (1973) and used as a basis for assessing participation in selected water activities. Results showed the social variables accounted for less than 5 percent of the variance when considered separately, but in combination with the social groups variable, the amount of explained variance ranged from 12 to 39 percent. Studies such as these are just a few of the many innovative attempts that are expanding the understanding of leisure behavior.

Of special significance to recreation managers are surveys conducted specifically for their area in order to obtain users' feelings about selected management concerns. Information about the recreationist's preferences concerning the activities provided, the area's design and appearance, maintenance and supportive services, present management

policies and proposed management actions are but a few of the many topics which have been surveyed in the past. Results from surveys such as these enable managers to assess the recreationist's desires, make appropriate adjustments, and provide a more desirable management program.

One such survey was conducted by Moeller and others (1974) at the Allegheny Reservoir, Pennsylvania in order to help managers balance the conflicts between campers and boaters. The survey was aimed specifically at users' feelings towards use controls, fee policies, recreation zoning, law enforcement, and facility development needs. Results showed similarities and differences existed among the campers and boaters and unless a change in management affected all segments of the population favorably, resistance would be encountered. They concluded by presenting five points to help resolve this issue. Another survey, conducted by Cary (1975) at Lake Hartwell, South Carolina was designed as a guide for developing future campgrounds so that management could meet future camping needs. The study investigated campers' reasons for selection of a campsite and found that facilities provided at the campsite and the campsite's aesthetics to be most significant. Burdge and others (1978) undertook a study in order to provide information about types of recreational use patterns at Lake Shelbyville, Illinois. They investigated the types of activities participated in, importance of various recreational facilities and problems experienced. In order to determine the characteristics and perceptions of campers at high and low density areas, a study was conducted at Hillman Ferry, Land Between the Lakes, Kentucky by Husted (1975). The survey investigated campers past experiences, group size, campsite selection, criticisms of the area and distances traveled. Results showed

high density campers camped more each year, used elaborate equipment and were more active than low density campers who tended to camp less but stayed for a longer period of time.

Although some recreation studies deal with a particular area, the problems investigated are usually common to other recreation areas, and can therefore provide a general understanding of leisure behavior and its aggregates. Just as no single study provides all the answers, each study built upon previous works helps to clarify the complexities of leisure behavior. Basically, the key to successful management is through the development of new techniques which explain leisure behavior and reflect the needs and desires of recreationists.

CHAPTER III

STUDY LOCALE, AREAS, AND SITES

Study Locale

As a means for assessing their new management program, TVA selected Watts Bar and Chickamauga Reservoirs as study areas on the basis of site characteristics and visitor data (TVA, 1975). The Watts Bar and Chickamauga Reservoirs are located in the mid and south central portions of East Tennessee, and together, they form a diagonal running southwesterly from Knoxville, Tennessee, towards Chattanooga, Tennessee (Figure I). Designed and built by TVA, these reservoirs are the seventh and eighth in a series of nine reservoirs situated on the Tennessee River system. They are both within a 60 mile radius of over 1.2 million people (Bureau of Census, 1978).

Study Areas

Construction for the Watts Bar Project began on July 1, 1939 and was completed at a cost of 35.2 million dollars. At normal pool, the reservoir has a length of 72 miles (115.9 kilometers), a surface area of 39,000 acres (15783.1 hectares) and a shoreline of 783 miles (1260.9 kilometers). Construction for the Chickamauga Project began on January 13, 1936 and was completed on January 15, 1940 at a cost of 39.8 million dollars. Beginning at the tailwaters of Watts Bar Dam, the Chickamauga Reservoir has a length of 59 miles (95.0 kilometers), a surface area of 35,400 acres (14326.2 hectares) and a shoreline of 810 miles (1304.3 kilometers). Most of the land around the reservoirs is administered by

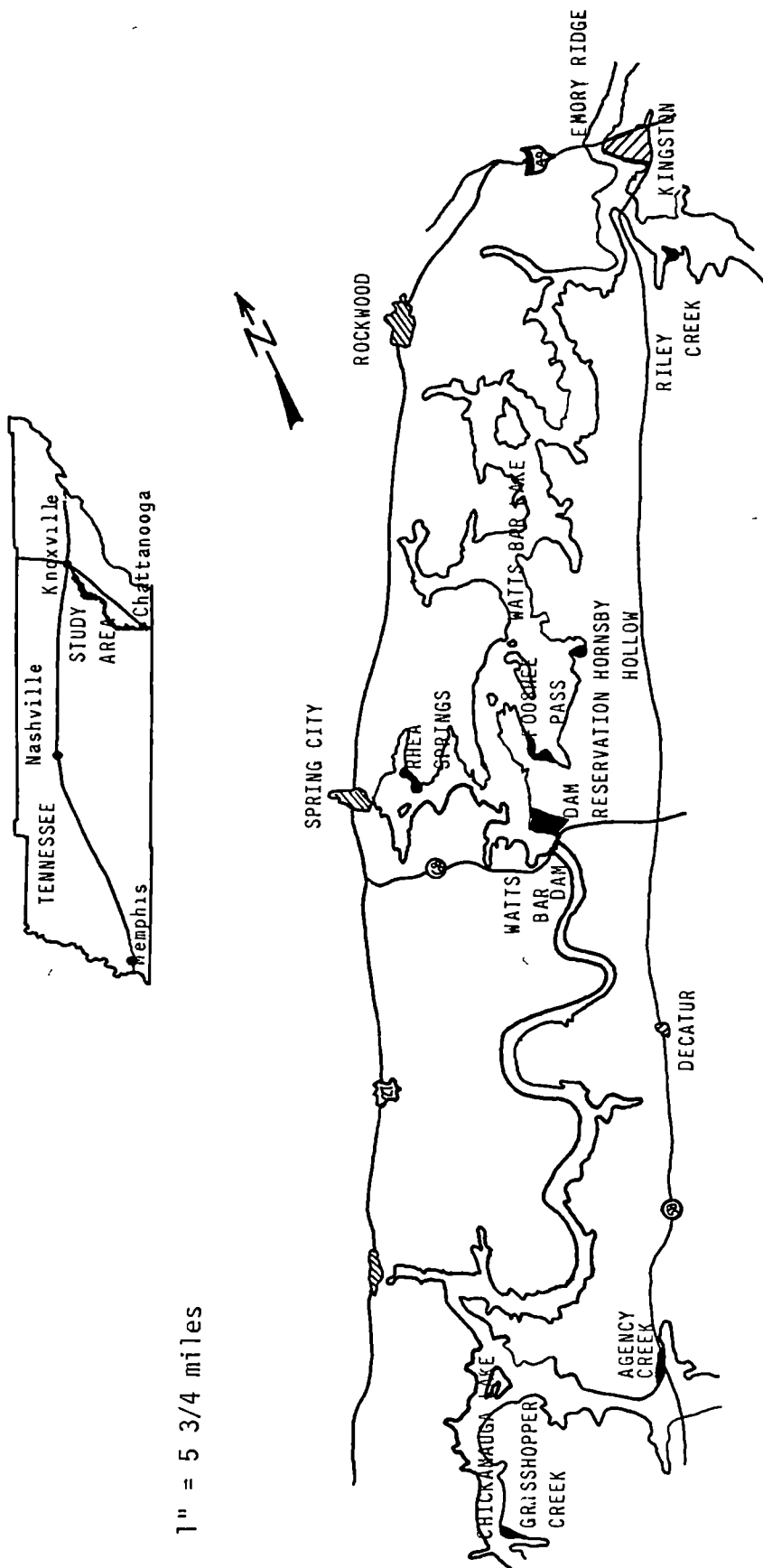


Figure 1. Study Area Location

TVA but others with vested responsibilities include State, County, local and private landowners. A variety of recreational opportunities are provided which range from boating, water skiing, swimming, and fishing to camping, picnicking, and sightseeing. Initially, development costs for recreational facilities on the two areas was \$415,100 and \$287,600, respectively. In 1977, Watts Bar and Chickamauga Reservoirs received a combined estimate of 442,600 visits² (TVA, 1978).

Study Sites

Five recreational areas on Watts Bar Reservoir were placed under the new management program while three recreational areas on Chickamauga Reservoir remained under the previous management policy to serve as "control" areas for the study. These three "control" areas were selected on the basis of their close proximity to the Watts Bar study areas and that recreationists dissatisfied or inconvenienced by the new management program might utilize the three study areas on Chickamauga Reservoir.

Of the five study areas on Watts Bar Reservoir, Rhea Springs was designated a day-use facility having 30 picnic units. The remaining four areas (Fooshee Pass, Riley Creek, Hornsby Hollow, and Dam Reservation) were designated as fee-camping areas with adjacent day-use facilities and contained 55, 26, 62, and 59 camping units, respectively. Together, these five areas accounted for 78.2 percent (199,900) of the 255,500 summer visits estimate to Watts Bar Reservoir in 1977 (TVA, 1977). A breakdown of this visitation shows Rhea Springs accounted for 12.6 percent (32,100), Fooshee Pass 20.9 percent (53,400), Riley Creek 4.3 percent (11,100),

²Visits: Entrance of a person into an area for recreational purposes.

Hornsby Hollow 19.7 percent (50,500), and Dam Reservation 20.7 percent (52,800).

All three areas on the Chickamauga Reservoir (Grasshopper Creek, Armstrong Ferry, and Agency Creek) were undeveloped use areas without a designated number of camping units. The 1977 summer estimates of visits to Chickamauga Reservoir listed these three areas as contributing 36.2 percent (67,800) to the 187,100 total visit estimate. Specifically, Grasshopper Creek accounted for 12.9 percent (24,200), Armstrong Ferry 13.3 percent (24,900), and Agency Creek 10.0 percent (18,700) of the visits.

CHAPTER IV

METHODOLOGY

Watts Bar Reservoir was selected as the area for pilot testing the new recreation management program, and Chickamauga Reservoir, the closest recreational area to the Watts Bar study area that was still managed under the old program, was used as a "control" area. The eight recreational sites, five on Watts Bar Reservoir and three on Chickamauga Reservoir, were selected for this study on the basis of existing records on past attendance. A random survey, consisting of personal, on-site interviews of day-users and campers, was conducted from early July through August, 1979, resulting in 156 responses. No accurate record of users' refusal to participate in the survey was kept, but a subjective approximation from the three interviewers estimated a refusal rate of less than five percent.

Research and Sampling Design

The eight recreational sites chosen for this study were divided into three groups on the basis of geographic proximity and assigned a number within their perspective group. The three groupings with each site's number in parenthesis were: Group 1 - Rhea Springs (1) and Dam Reservation (2); Group 2 - Fooshee Pass (1), Hornsby Hollow (2), and Riley Creek (3); and Group 3 - Armstrong Ferry (1), Agency Creek (2), and Grasshopper Creek (3). On each sampling day, the interviewers were given a randomly selected number from one to three that indicated which group of sites they were to sample. After knowing which group to sample, the interviewers were given a randomized list of numbers ranging from one to

two or one to three, depending on the number of recreation sites within their group. This randomly selected listing indicated the order of sampling for the sites within their group. For instance, if the order of numbers from the randomized list had read two, three, and one, site two was sampled first, site three was next, and site one was sampled last.

Sampling days were separated into holiday/weekend days and week days in order to allow a higher proportion of holiday/weekend days to be sampled. This split produced a more representative sample of recreationists, and was based on past visitation records to the individual sites. To determine a monthly sampling schedule, the number of holiday/weekend days that occurred for that particular month were numbered consecutively from one to N. A randomized list of (N minus two) numbers ranging from one to N was generated, and those numbers listed indicated which holiday/weekend days were scheduled for sampling that month. For example, nine holiday/weekend days occurred in July, and a randomized list of seven numbers (N minus two) generated a one, two, four, six, seven, eight, and nine listing which indicated the holiday/weekend days to be sampled. Next, week days were numbered consecutively from one to five, and the number of week days needed to complete the four day per week sampling schedule was determined. Conceivably, the number of week days needed could range from one to four days, depending on how many of the holiday/weekend days had already been selected for that particular week. Therefore, randomized lists of one, two, three, and four numbers having a range of one to five were used accordingly for selecting the week days necessary to complete the monthly sampling schedule. For example, if the first week in July already had both weekend days scheduled for sampling, then two week days

were needed to complete that week's schedule. The two days selected were obtained from the randomized list of two numbers ranging from one to five. Another situation might have occurred where only one weekend day was scheduled for that particular week; thus three week days were selected from a randomized list of three numbers ranging from one to five.

Sampling Procedure

After arriving at a site to be sampled, the interviewer made a pass through the entire area and numbered the occupied spaces. Twenty percent of the occupied spaces were calculated, and this value was used to determine how many of the occupied spaces were to be sampled. The 20 percent figure was derived from a desire to sample 1 percent of the total visitation to the area based on past attendance records. After determining the number of occupied spaces to sample, the interviewer determined which occupied spaces to sample by using a randomized list of numbers ranging from one to seventy. Seventy was indicative of the maximum number of spaces that could be occupied by the largest site used in the study. The interviewer scanned the list of randomized numbers and recorded each number that was equal to or less than the total number of occupied spaces. This was continued until acquiring the calculated number of spaces to be sampled which had been derived from the 20 percent calculation. Thus, if 20 spaces were occupied at a site, the number of spaces to be sampled was 20 percent of 20 or four spaces. To determine which four of the occupied spaces to sample, the interviewer took the first four numbers from the randomized list that were equal to or less than 20. These numbers indicated which spaces to return to for administering the interview. If a refusal occurred, the interviewer would select

the next appropriate number off the randomized list for interviewing.

Once the interviewer arrived at an occupied space, he identified himself to the party and explained the purpose of the survey. If the party consented to an interview, one person from the party was selected, usually the male or female head of household, and asked to respond to the questionnaire. The interviewee was given a copy of the questionnaire to follow while the interviewer read each question and recorded the interviewee's responses. Any necessary clarifications were made during this time, and respondents were thanked for their time and assistance at the conclusion of the interview.

The Survey Questionnaire

The questionnaire used in this study was developed by TVA Recreation Staff for the purpose of obtaining specific information concerning the user's background and preferences. Because user types were separated into day-users and campers, a questionnaire was developed for each type, with the day-user questionnaire being a subset of the larger camper questionnaire. In addition, the camper questionnaire distinguished between the "formal" and "informal" camper types, thus allowing an analysis to be made of campers' preferences for the new and old management programs. Five general sections of the questionnaire pertaining to both types of users were as follows: Section 1 - User Background Characteristics, Section 2 - Activity Preferences, Section 3 - Present Area Operations, Section 4 - Management Actions Being Implemented, and Section 5 - Items Influencing Area Use. Section 6 - Additional Fee Items pertained only to camper types. The questionnaire was pretested on TVA staff members for assessing clarification and understanding of the questions and for

determining the length of time needed for administering the interview. The eight page questionnaire took approximately 15 minutes to administer.

Section 1 (User Background Characteristics) investigated recreationists' past usage of the area, distance traveled from home, type of equipment brought, length of stay, place of residence, type of group, age of party members, income, and a special question for "informal" campers dealing with the reason for camping in that type of area. Section 2 (Activity Preferences) listed 15 activities which ranged from water-based activities such as fishing, swimming, boating, and skiing to land-based activities such as picnicking, sunbathing, camping, hiking, and other game oriented activities. Section 3 (Present Area Operations) was designed to investigate the user's opinions of services and maintenance supplied to the area, the design and appearance of the area, law enforcement of the area, and satisfaction received while recreating at the area. Seven questions in this section pertained only to the "formal" campers and dealt with the campsite's design and usefulness of the on-site manager. Section 4 (Management Actions Being Implemented) dealt with rules and regulations covering day-use areas and camping areas and the user's desire to have an on-site manager present. Section 5 (Items Influencing Area Use) investigated the importance of the area's overall appearance, facilities, and services in influencing the user's decision to use the area. Section 6 (Additional Fee Items) dealt with the campers' willingness to pay an additional charge for the ten items listed.

Except for Section 1, all sections employed a five point Likert scale for recording the user's response. Sections 2, 5, and 6 used the following scale: one = extremely important, two = very important,

three = moderately important, four = of little importance, and five = not important, Section 3 ranged from one = strongly agree, two = agree, three = neither agree nor disagree, four = disagree, to five = strongly disagree, while section 4 ranged from one = strongly support, two = support, three = neither support nor oppose, four = oppose, to five = strongly oppose. In order to rate the overall preference for a question, responses one and two of the Likert Scale were combined to form a "pro" category, and responses four and five were combined to form a "con" category, while response three was considered neutral. Then the distribution percentage for both the "pro" and "con" response categories were compared to determine the majorities response to the question. If there was a 5 percent difference or less between the "pro" and "con" categories, the preferred response was considered split.

Data Analysis

Once the survey data had been collected, the information was coded, key punched, and analyzed using the Statistical Analysis System (SAS-79) computer program. As a preliminary analysis, univariate statistics were used to examine the entire sample, and the sample divided into day-users, "formal" campers, and "informal" campers. From this preliminary analysis, the Chi-square statistic was chosen as the significance test for determining the association among the three types of user groups. This decision was based on the ability of the Chi-square statistic to handle discrete categories of nominal and ordinal data, a relatively small sample size, and unequal populations within the three types of groups. The statistic tested the null hypothesis: the three groups were drawn from the same population. To further test this null hypothesis, the ANOVA statistic was used to compare the means of the

three user types. For Section 2 through Section 6, the Spearman Rank Correlation Coefficient (r_s) statistic was used to investigate whether the three types of user groups had the same preference rankings for each section.

For this study, a significant difference among group types was based on a probability level of $p \leq .05$. Only if a significant difference occurred could the sample groups be interpreted as different from one another on the items compared.

Assumptions and Limitations

Some basic assumptions underlying this study pertained to the methodology used for acquiring the data. First of all, it was necessary to assume that the questionnaire was a valid technique for measuring user preferences, and that the interviewee's responses were true and unbiased. Also, since the research design used in this study was partially based on past records of attendance to the study areas, it was assumed that these early records of visitation were accurate and still pertained today. Finally, the 156 respondents interviewed were assumed to be indicative of the true population that recreates to the study areas.

Although this study was initially designed to run through the entire summer use season (June to Labor Day), approval for using the questionnaire was not granted until late June. This limited the sampling period and therefore the sampling size. Also, sampling days were limited by administrative constraints which served to decrease the sample size initially expected. The effect of the small sample size generates cautious interpretation of the statistical results.

CHAPTER V

THE ENTIRE SAMPLE

User Background Characteristics

Of the 156 respondents sampled, 93.5 percent resided in Tennessee while the remaining 6.5 percent came from Georgia, Alabama, and Ohio. Most of the respondents, 92.0 percent, lived within 60 miles of the interview sites, while 66.0 percent lived within 30 miles of the area. Females represented 51.0 percent of the surveyed respondents, males represented 42.0 percent, and males and females responding together represented 7.0 percent of the sample.

Of the five social group types used in the survey, the single family group-type was represented most often (34.0 percent), followed closely by family and friends (32.7 percent), and two or more families (29.5 percent). Group size ranged from one to twenty-five persons for an average of six people per group, with a mode of four per group representing 18.3 percent of the sample. The survey showed that 58.0 percent of the groups consisted of two members from six to twelve years old, and 53.0 percent had two members between 25 and 34 years old. About 62.0 percent of the respondents received a total family income between \$10,000 and \$25,000, with 27.0 percent in the \$15,000 to \$20,000 category. In terms of equipment brought, 50.6 percent had a boat for some form of water recreation, while some type of camping equipment was next, with trailer campers comprising 32.1 percent, tents 28.8 percent, and pickup campers 21.6 percent.

Of the 104 respondents that had used the area the previous year, 45.2 percent used the area for camping trips, 27.9 percent for day-use excursions, and 26.9 percent for both camping trips and day-use excursions. Previous campers reported having made from one to fifty camping trips to TVA recreation areas last year, with 68.0 percent reporting from one to six trips. Previous day-users showed a range of one to sixty trips to TVA recreation areas last year, with one to six trips being the most common (42.0 percent). The mean length of stay for previous campers was 5.6 nights, with a range of one to seventy-five nights and a mode of two nights. Previous day-users stayed an average of 5.8 hours, with a range of 1 to 11 hours and a mode of 4 hours.

Activity Preferences

Seven of the fifteen activities listed were rated "important"³ by all the respondents, with seven other activities rated "not important," and one activity rated "neutral" (TABLE I). "Camping" was the most important activity among users (83.7 percent) with "swimming" next in importance (76.8 percent), followed by "picnicking" (72.8 percent). "Sunbathing" (61.8 percent), "boat fishing" (57.9 percent), "pleasure boating" (56.7 percent), and "shore fishing" (56.0 percent) completed the list of activities rated as "important." Among those activities rated "not important," "bird watching" was least (80.5 percent) followed by "riding trail bikes" (77.9 percent), and "playing softball" (69.1 percent).

³The "extremely important" and "very important" response choices were combined into an "important" rating, while the "of little importance" and "not important" response choices were combined into a "not important" rating, and the "moderately important" response choice was considered a "neutral" rating.

TABLE I
Activities Preferred by "All" Respondents

Activity Variable	Frequency of Response % ¹		Mean ⁴ Score	Mean Ranking
	Important ²	Not Important ³		
Camping	83.7	11.8	1.73	1
Swimming	76.8	11.6	1.93	2
Picnicking	72.8	9.3	2.03	3
Sunbathing	61.8	21.7	2.36	4
Shore Fishing	56.0	26.7	2.53	5
Boat Fishing	57.9	30.9	2.54	6
Pleasure Boating	56.7	30.0	2.59	7
Water Skiing	46.4	42.4	2.99	8
Riding Bicycles	30.9	49.0	3.35	9
Pier Fishing	27.9	52.4	3.50	10
Hiking	28.0	55.3	3.56	11
Volleyball	14.7	67.3	3.93	12
Softball	14.1	69.1	4.01	13
Trail Bikes	10.7	77.9	4.28	14
Bird Watching	8.1	80.5	4.31	15

¹Percentages will not total 100%, due to the "neutral" response being excluded from the analysis.

²Important: Combines "Extremely Important" and "Very Important" responses.

³Not Important: Combines "Of Little Importance" and "Not Important" responses.

⁴Mean Score: Includes all five response choices.

"Playing volleyball" (67.3 percent), "hiking" (55.3 percent), "pier fishing" (52.4 percent), and "riding bicycles" (49.0 percent) completed the list of activities rated as "not important" in descending order. "Water skiing" received a "neutral" rating, with less than 5 percent difference between 46.4 percent of "important" responses and 42.4 percent of "not important" responses.

Present Area Operations

In general, respondents felt quite favorable towards the management operations at the two TVA study areas with nearly two-thirds (62.3 percent) of the sample agreeing with every question; thus, an indication that present management operations were at appropriate levels (TABLE II).

Issues concerning the user's experience received the highest percentage of agreeable responses with 99.3 percent of the respondents indicating they had a "relaxing time," 98.6 percent indicating they had "fun," and 97.9 percent indicating they "would return again." There was not a single respondent who "disagreed" with these three statements, although this could have been biased by the survey being administered by TVA personnel. Approximately 97.5 percent were "satisfied with their visit" while 81.8 percent indicated "the area was not overcrowded." The question of "crowding" drew the highest number of unfavorable responses for this section with 10.4 percent indicating the area was crowded.

The study areas' overall design received the next highest percentage of agreeable responses with 96.6 percent agreeing that the general appearance of the area visited was "attractive." The "distance between campsites" was appropriate to 91.6 percent of the campers while 90.5

TABLE II

Responses by "All" Users to Present Management Operations

Management Variable	Frequency of Response % ¹		Mean ⁴ Score	Mean Ranking
	Agree ²	Disagree ³		
Will Return Again	97.9	0.0	1.32	1
Had Fun	98.6	0.0	1.33	2
Had a Relaxing Time	99.3	0.0	1.41	3
Area Has Attractive Appearance	96.6	1.4	1.53	4
Satisfied Visit	97.5	2.5	1.54	5
Garbage Can Pickup O.K.	90.9	7.7	1.65	6
Restrooms Usually Clean	87.9	7.9	1.71	7
Mgr. Increases Feeling of Security	82.5	8.4	1.75	8
Campsite Condition O.K.	94.7	3.2	1.76	9
Campsite Distance O.K.	91.6	6.4	1.79	10
Campsite Well Defined	90.5	5.3	1.84	11
Vandalism No Problem	81.6	10.2	1.88	12
Theft No Worry	84.3	6.5	1.91	13
Manager Usually Available	73.0	1.0	1.92	14
Manager Helpful	74.5	3.0	1.93	15
Litter Pickup O.K.	85.1	11.0	1.94	16
Area Is Not Overcrowded	81.8	10.4	2.01	17
Access Road Condition O.K.	77.9	19.4	2.21	18
Drinking Alcohol and Rowdiness a Problem	26.6	62.3	3.38	19
Campsites Too Close	9.6	76.6	3.83	20
Campsites Too Far Apart	6.5	82.8	3.98	21

¹Percentages will not total 100%, due to "neutral" response being included.

²Agree: Combines "Strongly Agree" and "Agree."

³Disagree: Combines "Disagree" and "Strongly Disagree."

⁴Mean Score: Includes all five response choices.

percent felt the campsites were "well defined." In an effort to further check campers' preference for campsite distance, they were also asked to respond to the campsites "being too close together" and "too far apart." The former statement had 9.6 percent of the respondents in agreement while 76.6 percent were in disagreement. For the latter statement, 6.5 percent were in agreement, while 82.8 percent disagreed with the statement. Overall, area design was favored by at least 76.6 percent of the sample, while less than 10 percent of the respondents had any dislike for the area.

Maintenance and services supplied to the areas were appropriate according to at least 73.0 percent of the sample with "campsite conditions" being judged adequate by 94.7 percent, and "garbage can pickup" considered adequate by 90.9 percent. The manager's "helpfulness" and "availability" received the lowest percentage of agreeable responses for any service variable, with 74.5 percent and 73.0 percent, respectively, while "condition of the access road is adequate," drew the second largest percentage of disagreement with 20.0 percent. Another issue which drew a certain amount of disagreement had to do with the area's "litter pickup," with 11.0 percent of the respondents expressing dissatisfaction with this service.

Management operations concerning users' safety and security were considered adequate with "theft no worry," "vandalism no problem," and "manager's presence increases feeling of security" receiving over 81.0 percent in favorable responses. However, "drinking alcohol and rowdy behavior" along with "vandalism" were considered a problem by 26.6 percent and 10.2 percent of the respondents, respectively.

Ranking of the management operations by mean scores, from most to least agreed, showed that four of the statements from the experience category were among the top five, with a mean of 1.32 for "will return again," 1.33 for "had fun," 1.41 for a "relaxing time," and 1.54 for a "satisfied visit" (TABLE II). Items that were least agreed upon included: "campsites too far apart" ranked last with a mean of 3.98, "campsites too close" was next with a mean of 3.83, followed by "drinking alcohol and being rowdy is a problem" ranked 19th with a mean of 3.38, and the "access road condition OK" ranked 18th with a mean score of 2.21 (TABLE II). Other statements of interest were "the area is not overcrowded" which was ranked 17th with a mean of 2.01 and "litter is adequately picked up" ranked 16th with a mean of 1.94. Because mean scores could have ranged from one to five with a score of three indicating a neutral response, most management operations were considered adequate or satisfactory by the respondents.

Management Actions Being Implemented

Respondents were asked to indicate the degree to which they supported or opposed the management actions being considered for TVA recreation areas (TABLE III). The results showed that six of the nine management actions were "supported" by a majority of the sample (77.9 percent to 51.0 percent). Only 8.4 percent to 28.1 percent of the respondents opposed the six actions while two of the remaining nine issues were opposed by a majority of users (54.0 percent or more). The remaining issue was split with 42.0 percent of the sample either for or against the issue.

Of the six management actions supported by respondents, "provide an onsite manager" received the largest percentage with 77.9 percent in

TABLE III

Responses by "All" Users to Management Actions Being
Implemented on TVA Recreation Areas

Management Action Valuable	Frequency of Response % ¹		Mean ⁴ Score	Mean Ranking
	Support ²	Oppose ³		
Provide an onsite manager	77.9	8.4	1.86	1
Limit overnight camping to 14 consecutive days	70.8	17.5	2.15	2
Close campground to vehicular traffic after 10 p.m.	73.4	17.5	2.16	3
Allow camping only where there is a camping pad	60.4	19.6	2.29	4
Designate some areas for day- use only	59.2	25.6	2.47	5
Close day-use areas from sunset to sunrise	51.0	28.1	2.72	6
Allow as many groups to camp at an area that want to camp there	42.2	42.8	2.97	7
Allow people to camp wherever they want	33.3	54.9	3.22	8
Charge a fee where an onsite manager is not provided	13.7	73.2	3.92	9

¹Percentages will not equal 100%, due to "neutral" response being included.

²Support: Combines "Strongly Support" and "Support."

³Oppose: Combines "Oppose" and "Strongly Oppose."

⁴Mean Score: Includes all five response choices.

favor and only 8.4 percent in opposition. "Closing the campground to vehicular traffic after 10 p.m." was next with 73.4 percent favoring such an action and 17.5 percent opposing it. "Close day-user areas from sunset to sunrise" had a supportive response of 51.0 percent and was opposed by 28.1 percent.

"Charging a fee where an onsite manager is not provided" received the highest percentage of "oppose" responses with 73.2 percent objecting, while 13.7 percent favored such action. "Allow people to camp wherever they want" was opposed by 54.9 percent, while 33.3 percent supported the issue. The one statement that was rated split in response by the majority, "allow as many groups to camp at a campground as want to camp there," received 42.8 percent opposed and 42.2 percent in support of such action.

The management actions had a range in mean scores from 1.80 to 3.92, with "providing an onsite manager" the most preferred item (TABLE III). The rankings also showed that management action which directed greater control on the user (rankings two through six) were preferred over action that allowed more freedom to the user. Based on mean scores, the majority of management actions were supported by the respondents.

Items Influencing Area Use

Of the six items influencing area use, four were rated "important" by at least a 50.0 percent majority, while the remaining two items were evenly split among the sample majority (TABLE IV). The survey showed that water was either directly or indirectly responsible for influencing area use with "being right on the lakeshore" and "good fishing nearby" ranked first and second, respectively. The remaining "important" items, "type of facilities provided" and "nearness to home" had mean scores that indicated only moderate

TABLE IV
Response by "All" Users to Items Influencing Area Use

Items Variable	Frequency of Response % ¹		Mean ⁴ Score	Mean Ranking
	Important ²	Not Important ³		
Being Right on the Lakeshore	92.2	3.3	1.60	1
Good Fishing Nearby	75.2	14.3	2.08	2
Type of Facilities Provided	64.9	13.3	2.23	3
Nearness to Home	52.9	25.5	2.62	4
Usually Not Many People Here	34.5	31.7	2.95	5
Presence of an Onsite Manager	40.0	43.3	3.05	6

¹Percentages will not equal 100%, due to the "neutral" response not being included.

²Important: Combines "Extremely Important" and "Very Important."

³Not Important: Combines "Of Little Importance" and "Not Important."

⁴Mean Score: Includes all five response choices.

influence on area use. An interesting result showed that "presence of an onsite manager" was least important to influencing area use (TABLE IV), but "providing an onsite manager" was the most preferred item in the - Management Actions Being Implemented section of the survey (TABLE III).

Additional Fee Items

Campers rated four of the ten additional fee items as "important" with a 43.0 to 57.4 percent majority, while the remaining six items were rated "not important" by a 45.3 to 64.5 percent majority (TABLE V). Interestingly, the four services that the majority of campers were willing to pay a charge for, all dealt with enhancing the living facilities around the campsite. On the other hand, the six services that campers were not willing to pay a charge for dealt more with outdoor sports and activities away from the campsite.

Ranking mean scores showed that "water hookups" (2.38) was the most desired service, with "campground store" (2.44), "electrical hookups" (2.60), and "firewood" (2.81) completing the top four preferred items. Of the six services rated "not important," those services dealing with water-based activities were ranked more important than services dealing with land-based activities. Overall, the mean scores seemed to indicate that campers had little desire to pay any fee for the activity services mentioned.

TABLE V
Response by "All" Campers to Additional Fee Items

Fee Items Variable	Frequency of Response % ¹		Mean ⁴ Score	Mean Ranking
	Important ²	Not Important ³		
Water Hookups	57.4	24.1	2.38	1
Campground Store	57.3	18.5	2.44	2
Electrical Hookups	50.0	29.7	2.60	3
Firewood	43.0	30.8	2.81	4
Swimming Pool	34.3	45.3	3.29	5
Boat Rentals	25.2	52.4	3.53	6
Canoe Rentals	21.5	57.1	3.69	7
Motor Rentals	20.8	60.4	3.73	8
Bicycle Rentals	21.5	63.6	3.74	9
Tennis Courts	17.8	64.5	3.82	10

¹Percentages will not equal 100%, due to the "neutral" response not being included.

²Important: Combines "Extremely Important" and "Very Important."

³Not Important: Combines "Of Little Importance" and "Not Important."

⁴Mean Score: Includes all five response choices.

CHAPTER VI

"DAY-USERS," "FORMAL" CAMPERS, AND "INFORMAL" CAMPERS

A Comparison of User Type Responses

Characteristics showing similarity among all user types included: state residency (Tennessee), age of juveniles in groups (6 to 12 years old), type of support equipment brought (boats), previous use of the area (yes), and number of previous camping trips made to the area over the past 12 months (1 to 4) (TABLE VI). Those characteristics which reflected major differences among all user types were: group type, group size, type of camping equipment brought, length of stay, and number of previous day-use trips made to the area over the past 12 months (TABLE VI). "Day-users" also showed a difference from "formal" and "informal" campers concerning distance traveled to the recreation area (less than 25 miles vs. 25 to 50 miles), age of adults in the group (35 to 44 vs. 25 to 34 years old), length of stay (4 to 6 hours vs. 1 to 3 nights), and purpose of previous trips made during the past 12 months (day-use vs. camping). "Informal" campers showed a distinct difference from "day-users" and "formal" campers concerning respondents' sex (male vs. female), and yearly gross income (less than \$10,000 and \$10,000 to \$15,000 vs. \$15,000 to \$20,000). "Formal" campers showed less differentiation in background characteristics than "day-users" or "informal" campers, with 4 items that differed from the other two user types, while "day-users" had 8 characteristics and "informal" campers 6 characteristics that differed from either of the other user types.

Approximately 37.5 percent (21) of the 56 items listed in the remaining sections of the questionnaire were found to be significantly different among the user types (Chi-square, $p = 0.05$) (TABLE VIII).

TABLE VI
Majority Response by User Type to Background Characteristics

Characteristics	"Day-Users"		"Formal" Campers		"Informal" Campers	
	Response	%	Response	%	Response	%
State Residency	Tenn.	100 0	Tenn.	93.5	Tenn	87.5
Age of Juveniles	6-12	63.0	6-12	38 7	6-12	77 1
Support Equipment	Boat	64 7	Boat	71 7	Boat	65 2
Previous Use	Yes	87.0	Yes	58 6	Yes	66.7
No. of Previous Cp Trips	1-4	46 7	1-4	48 3	1-4	59.3
Group Type	Family & Friends	44.4	Two or More Families	33 9	Single Family	41.7
Group Size	1-3	31.8	4-5	31 1	1-3 ¹	58.4
Camping Equipment	Pick-up Campers	50.0	Trailer Campers	51.6	Tents	43.8
No. of Previous Day-Use Trips	≥ 13	44 9	1-5	66.7	6-12	50.0
Distance Traveled	< 25 mi.	68 9	25-50 mi	57.9	25-50 mi.	47 9
Age of Adults	35-44	58 7	25-34	43.5	25-34	64.6
Length of Stay	4-6 hr.	56 6	1-3 nights	64 5	1-3 nights	47.9
Purpose of Previous Trips	Day-use	63.2	Camping	71.9	Camping	59 4
Respondents Sex	Female	69 2	Female	47.7	Male	52.2
Total Yearly Income	\$15-20,000	31.8	\$15-20,000	27.8	<\$10,000 ²	56.6

¹Also tied with Group Size was > 7, percentage has both combined

²Also tied with Total Yearly Income was \$10 to \$15,000, percentage has both combined.

TABLE VII
Variables Receiving Significantly Different Responses Using Chi-Square Analysis by User Types*

Significant Variables	"Day-Users"		"Formal" Campers		"Informal" Campers		Sig. Level p = 0.05
	Response	%	Response	%	Response	%	
Camping	Impt. ¹	47.7	Impt.	96.7	Impt.	100.0	0.0001
Shore Fishing	Splt. ²	46.5	Impt.	50.8	Impt.	70.8	0.0021
Boat Fishing	Splt.	43.2	Impt.	55.7	Impt.	72.3	0.0479
Bird Watching	N Impt. ³	55.8	N Impt.	51.7	N Impt.	50.0	0.0484
Presence of Onsite Manager	Impt.	45.5	Impt.	59.0	N Impt.	77.8	0.0001
Type Facilities Provided	Impt.	82.2	Impt.	67.2	Impt.	44.4	0.0016
Nearness to Home	Impt.	62.2	Impt.	55.7	Splt.	38.3	0.0141
Onsite Manager Increases							
Feeling of Security	Agree ⁴	83.7	Agree	93.5	Agree	63.2	0.0024
Restrooms Usually Clean	Agree	90.0	Agree	96.8	Agree	71.1	0.0004
Vandalism No Problem	Agree	75.6	Agree	91.9	Agree	72.5	0.0007
Onsite Manager Helpful	Agree	64.9	Agree	85.2	N/A ⁵	--	0.0399
Litter Pickup Adequate	Agree	87.0	Agree	91.9	Agree	73.9	0.0160
Access Road Condition O.K.	Agree	91.1	Agree	82.0	Agree	60.4	0.0035
Drinking Alcohol and Rowdiness a Problem	Disagree ⁶	64.5	Disagree	73.8	Split	44.8	0.0194
Allow Camping Only on Pad	Suprt. ⁷	71.7	Suprt.	76.3	Suprt.	45.8	0.0086
Provide an Onsite Manager	Suprt.	82.6	Suprt.	91.7	Suprt.	56.3	0.0001
Designate Day-Use Areas	Suprt.	71.1	Suprt.	69.5	Oppose ⁸	56.2	0.0001
Limit Camping to 14 Consecutive Days	Suprt.	73.9	Suprt.	75.0	Suprt.	62.5	0.0401
Close Campground after 10 p.m.	Suprt.	67.4	Suprt.	88.3	Suprt.	60.4	0.0040
Allow No Limit in Camping Area	Splt.	41.3	Oppose.	53.4	Suprt.	60.4	0.0315
Close Day-Use Areas from Sunset to Sunrise	Suprt.	44.4	Suprt.	65.0	Suprt.	39.6	0.0079

*Table VII also shows the majorities response and percentage for each variable used.

¹Impt. "Extremely Important" and "Very Important" responses were combined.

²Splt.: When the majorities' response differs from another response by less than 5%.

³N.Impt.. "Of Little Importance" and "Not Important" combined

⁴Agree. Combines "Strongly Agree" and "Agree."

⁵N/A Not Applicable

⁶Disagree Combines "Disagree" and "Strongly Disagree "

⁷Suprt Combines "Strongly Support" and "Support "

⁸Oppose Combines "Oppose" and "Strongly Oppose."

Activities preferred showed little difference among user types, as did items influencing area use. Additional fee items pertained to campers only and showed no significant difference in camper type responses. Issues pertaining to present management operations and management actions being implemented showed the greatest difference among user type responses. "Informal" campers accounted for 71.4 percent (15) of all items which had significantly different responses using the Chi-Square analysis.

Among the four activities that differed significantly, "day-users" were responsible for three activities, while "informal" campers accounted for the other activity based on the Chi-Square analysis (TABLE VII). Although the largest percentage of all user types rated camping as "important," responses were found to differ significantly ($\chi^2 = 61.0$, d.f. = 2, $p = 0.0001$), as "day-users" were over-represented in the "not important" response which contributed 43.0 to the χ^2 value. Shoreline fishing differed significantly ($\chi^2 = 16.8$, d.f. = 2, $p = 0.0021$), as "day-users" were over-represented in the "not important" response which contributed 8.0 to the χ^2 value. Bird watching, rated "not important" by the majority from all user types, differed significantly ($\chi^2 = 9.6$, d.f. = 2, $p = 0.0484$), as "day-users" contributed 4.4 to the χ^2 value and were over-represented in the "important" response. Boat fishing showed a significant difference ($\chi^2 = 9.6$, d.f. = 2, $p = 0.0479$), with "informal" campers the major contributor to the χ^2 value (5.7) by virtue of being under-represented in the "not important" response.

Three items influencing area use were found to differ significantly among user type responses, with "informal" campers responsible for two of the items, and all three user types accounting for the third item (TABLE VII). Presence of an onsite manager showed a significant difference in response

($\chi^2 = 36.7$, d.f. = 2, $p = 0.0001$) with the majority of "day-users" and "formal" campers rating this item as "important," while the majority of "informal" campers rated this item "not important," "Informal" campers were responsible for 23.5 of the χ^2 value due to their high representation in the "not important" response. "Informal" campers were also responsible for type of facilities provided showing a significant difference ($\chi^2 = 17.4$, d.f. = 2, $p = 0.0016$), as they contributed 10.0 to the χ^2 value and were over-represented in the "not important" response. Nearness to home was the third item to show a significant difference in response ($\chi^2 = 12.5$, d.f. = 2, $p = 0.0141$), as "day-users" were under-represented in the "neutral" response, "formal" campers under-represented in the "not important" response, and "informal" campers over-represented in the "not important" response; each contributing 4.3, 4.7, and 3.6, respectively, to the χ^2 value.

"Informal" campers were mainly responsible for six of the present management operations variables showing a significant difference in user type responses, while "day-users" accounted for the seventh variable (TABLE VII). Although the majority from all user types "agreed" that the onsite manager increased their feeling of security, "informal" campers had 30.0 percent of their respondents "disagree." This accounted for the significant difference found in responses ($\chi^2 = 16.5$, d.f. = 2, $p = 0.0024$), and contributed 10.9 to the χ^2 value. Usually clean restrooms was "agreed" upon by a majority from all user types, but, again, "informal" campers were over-represented in the "disagree" response (23.7 percent). Analysis showed this difference to be significant ($\chi^2 = 20.5$, d.f. = 2, $p = 0.0004$), with "informal" campers contributing 13.4 to the χ^2 value. While a 72.5

percent or greater majority from all user types "agreed" that vandalism was not a problem in their area, a significant difference in responses occurred ($\chi^2 = 19.4$, d.f. = 2, $p = 0.0007$), due to the frequency of "formal" campers being under-represented and "informal" campers over-represented in the "disagree" response (which contributed 6.3 and 8.6, respectively, to the χ^2 value). Response to litter pickup being adequate showed that all user types "agreed" by a 73.9 percent majority or more. However, a significant difference occurred ($\chi^2 = 12.2$, d.f. = 2, $p = 0.0160$), due to "informal" campers being over-represented in the "disagree" response, which contributed 8.0 to the χ^2 value. When asked if the access road condition was adequate, at least a 60.4 percent majority from all user types "agreed." Yet, responses to this item were found to differ significantly ($\chi^2 = 15.7$, d.f. = 2, $p = 0.0035$), with "day-users" under-represented and "informal" campers over-represented in the "disagree" response (which contributed 3.8 and 4.7, respectively, to the χ^2 value). Response to drinking of alcoholic beverages and rowdy behavior being a problem showed that "day-users" and "formal" campers "disagreed" by at least 64.5 percent majority, while "informal" campers showed an even split in response at 44.0 percent. These responses showed a significant difference ($\chi^2 = 11.7$, d.f. = 2, $p = 0.0194$), with "informal" campers the major contributor to the χ^2 value (7.4) from being over-represented in the "agree" response. The onsite manager being helpful was "agreed" upon by at least a 64.9 percent majority of "day-users" and "formal" campers, and did not pertain to "informal" campers. Analysis showed a significant difference in response ($\chi^2 = 6.8$, d.f. = 2, $p = 0.0399$), as "day-users" were over-represented in the "neutral" response which contributed 4.0 to the χ^2 value.

Also of interest were the users' responses to management actions being implemented, which had 77.8 percent (7) of the nine issues differing significantly in user type responses (TABLE VII). Of the seven issues, "informal" campers accounted for the major difference on five issues, while "formal" campers were responsible for the other two issues.

At least a 45.8 percent majority from all user types "supported" allowing camping only where a pad exists, but analysis showed a significant difference in responses ($\chi^2 = 13.6$, d.f. = 2, $p = 0.0086$) as "informal" campers contributed 8.8 to the χ^2 value and were over-represented in the "opposed" response. Providing an onsite manager was "supported" by at least a 56.3 percent majority from all user types, but still showed a significant difference in responses ($\chi^2 = 23.0$, d.f. = 2, $p = 0.0001$), with "formal" campers under-represented and "informal" campers over-represented in the "opposed" response. Each contributed 7.8 and 14.6, respectively, to the χ^2 value. Designating areas for day-use only was "supported" by a majority of "day-users" and "formal" campers, while the majority of "informal" campers were "opposed" to such action. Further analysis shows a significant difference in responses ($\chi^2 = 34.5$, d.f. = 2, $p = 0.0001$), with "informal" campers the major contributor to the χ^2 value (23.6) by being over-represented in the "opposed" response. Limiting overnight camping to 14 consecutive days showed a significant difference in responses ($\chi^2 = 10.0$, d.f. = 2, $p = 0.0401$), even though a 62.5 percent majority or more of all user types "supported" this action. Again, "informal" campers accounted for the major difference by being over-represented in the "opposed" response, which contributed 6.9 to the χ^2 value. Allowing as many people to camp at a campground that want to camp

there also showed a significant difference in responses ($\chi^2 = 10.6$, d.f. = 2, $p = 0.0315$), as "informal" campers were over-represented in the "support" response and contributed 6.6 to the χ^2 value. At least a 60.4 percent majority from all user types "supported" closing the campground to traffic after 10 p.m., yet a significant difference in responses was shown ($\chi^2 = 15.4$, d.f. = 2, $p = 0.0040$), as "formal" campers were under-represented and "informal" campers over-represented in the "opposed" response. This contributed 6.9 and 6.3, respectively, to the χ^2 value. "Formal" campers were also responsible for the significantly different responses concerning the closing of day-use areas from sunset to sunrise ($\chi^2 = 13.8$, d.f. = 2, $p = 0.0079$). This significance was mainly due to the "formal" campers being under-represented in the "opposed" response which contributed 8.3 to the χ^2 value.

A Categorical Comparison of User Type Preferences

In addition to the Chi-square statistic used to determine association among user type responses for each variable, a categorical type of analysis was performed on each questionnaire section by user type. This categorical analysis involved the Analysis of Variance statistic which compared the grand means of each user type on the basis of whether the means were equal. The grand mean was derived by calculating a mean response value per user type for each question, and from these mean response values, a grand mean response value was determined for the entire section by user types. It was felt that this approach would give a condensed picture of each user types' response, from which a comparison of variability among user type responses could be assessed. Also, it was assumed that the data collected met all assumptions necessary (independent, random samples, normal distribution,

and equal variances) to use the parametric statistic.

Results from the Analysis of Variance tests showed that in all cases, the null hypothesis was accepted in favor of the alternative hypothesis. This indicated that there was no significant difference among the user types' grand means for any questionnaire section (TABLE VIII).

However, examination of Figure II, a graphic representation of the grand means by user type for each questionnaire section, showed that the pattern and direction of each user type's graph was quite similar in nature. This indicated that the Present Area Operations section received the most favorable responses from all three user types over any other section, with a grand mean value ranging from 1.78 for "day-users" to 2.24 for "informal" campers. On the other hand, the Management Actions Being Implemented section drew one of the less favorable responses by all three user types, with a grand mean value ranging from 2.50 for "formal" campers to 2.92 for "informal" campers. Also depicted in Figure II is the similarity in responses among "day-users" and "formal" campers, with no more than 0.15 points separating either grand mean for any section. Another observation obtained from Figure II reveals the consistency with which "informal" campers had lower grand mean values except for the Activities section; a result that was obtained from the Chi-square analysis used earlier. The graph also points out that the Activities section received unfavorable responses from all user types.

A Comparative Analysis of Variable Rankings

Overall ranking of the variable means for each section by user types was performed in order to compare the importance of each item. Next, the Spearman's Correlation Coefficient statistic was selected to determine if

TABLE VIII

Analysis of Variance Results for User Type Grand Means
from Each Questionnaire Section

Questionnaire Section	Grand Mean Values			F Ratio	Sig. Level p = 0.05
	"Day Users"	"Formal" Campers	"Informal" Campers		
Activity Preference	3.12	2.99	2.89	0.287	* ¹
Present Management Operations	1.78	1.93	2.24	1.840	NS ²
Management Actions Being Implemented	2.52	2.50	2.92	1.060	NS
Items Influencing Area Use	2.34	2.39	2.78	1.500	NS
Additional Fee Items	N/A ³	3.09	3.31	0.250	* ¹

¹*: F ratios of less than 1.00 imply that there is not enough evidence to suggest any mean difference exists among the populations.

²NS: Not Significantly Different.

³N/A: Not Applicable.

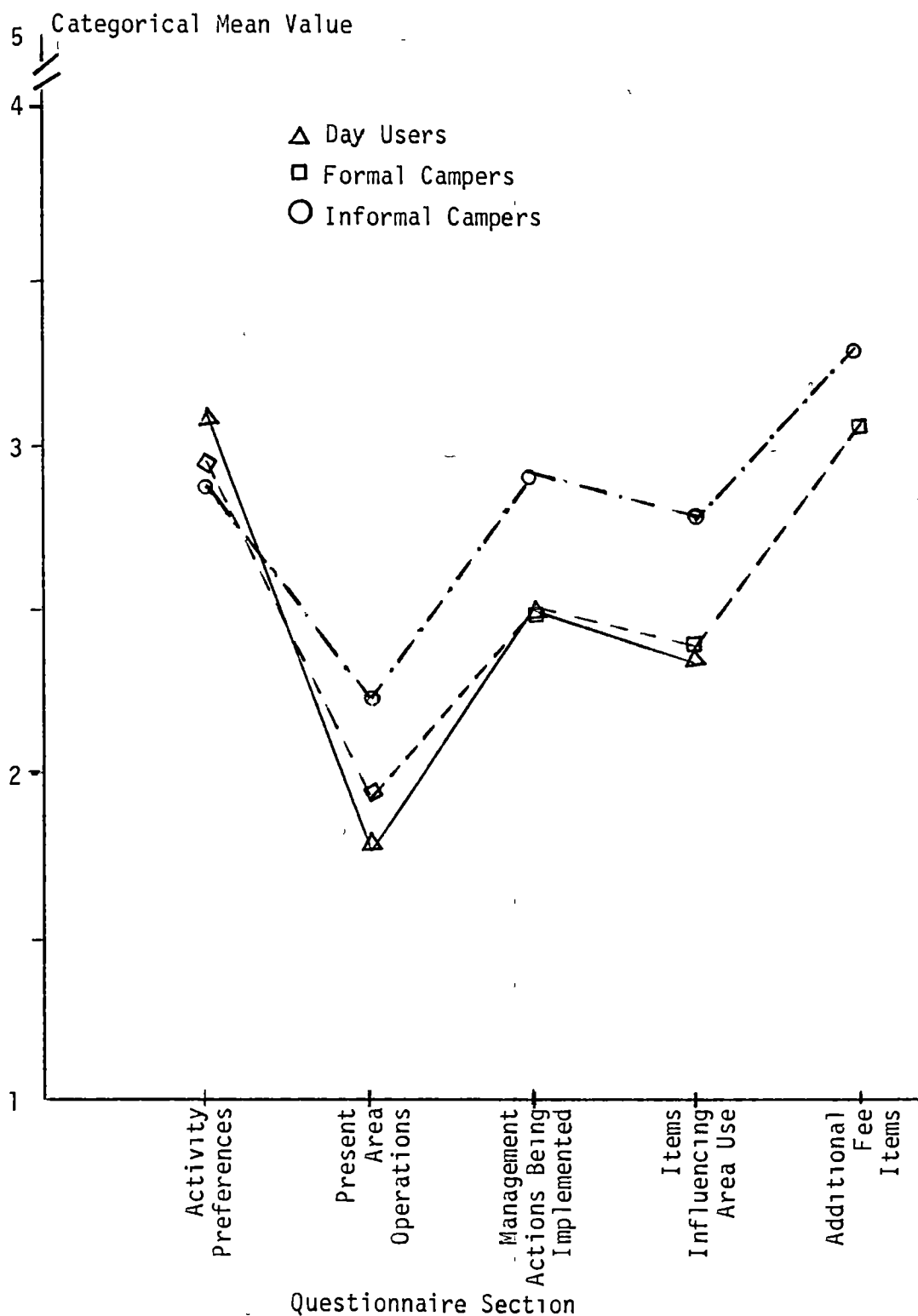


Figure 2. Categorical Means for Each Questionnaire Section by User Types

the rank order of the variables followed similar patterns among the user types.

As presented earlier in the Categorical Analysis, very few activities received a favorable response based on a mean response value of 2.89 or higher. This point was again emphasized in TABLE IX, where the mean response per user type for each activity was used to rank the activities by importance. A mean value of 2.60 or higher was considered "neutral" to "not important." Ranking of the upper seven activities among all user types reflected a difference in user type responses, with "day-users" favoring swimming most and "formal" and "informal" campers ranking camping first. Ranking of the other six activities showed that "day-users" differed from the other two user types for all six activities, while "formal" and "informal" campers matched on three activity rankings. Yet, the remaining lower ranked variables showed a good deal of similarity among all user types. Spearman's analysis showed all three user types' rankings to be significant beyond the 0.002 level, indicating a rejection of the null hypothesis for the alternative, which states that a similar relationship exists among the user type rankings. "Formal" and "informal" campers had the strongest relationship among rankings with a rho value of 0.945, while "day-users" and "formal" campers had the next strongest relationship with a rho value of 0.921, and "day-users" and "informal" campers had the weakest relationship with a 0.886 rho value.

In comparing the user types' rankings for the Present Area Operations, only those variables (14) which pertained to all user types were used for ranking (TABLE X). Observation of the mean responses showed that all variables were given a favorable rating by all user types, except for

TABLE IX
Activity Preference Rankings by User Type

Activity Variable	"Day-Users"		"Formal" Campers		"Informal" Campers	
	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$
Camping	5	2.93	1	1.25	1	1.23
Swimming	1	1.78	2	1.94	2	1.33
Picnicking	2	1.87	3	2.15	3	2.02
Sunbathing	3	2.07	7	2.68	6	2.21
Shore Fishing	6	2.95	6	2.59	4	2.08
Boat Fishing	7	3.02	5	2.54	5	2.09
Pleasure Boating	4	2.86	4	2.53	7	2.41
Water Skiing	8	3.11	8	2.77	8	3.17
Bicycles	11	3.65	9	3.08	9	3.40
Pier Fishing	9	3.56	10	3.47	11	3.50
Hiking	10	3.63	11	3.62	10	3.43
Volleyball	12	3.77	12	4.02	14	3.96
Softball	13	4.00	13	4.08	12	3.91
Trail Bikes	15	4.44	15	4.42	13	3.95
Bird Watching	14	4.01	14	4.41	15	4.45

TABLE X
Present Area Operations Rankings by User Types

Operations Variable	"Day Users"		"Formal" Campers		"Informal" Campers	
	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$
Will Return						
Again	1	1.23	2	1.33	2	1.40
Had Fun	2	1.30	1	1.32	1	1.38
Relaxing Time	4	1.41	3	1.37	3	1.48
Area has						
Attractive						
Appearance	5	1.43	7	1.48	4	1.70
Satisfied Visit	3	1.39	6	1.47	5	1.75
Gargabe Can						
Pickup O.K.	6	1.50	9	1.54	6	1.98
Restrooms						
Usually Clean	7	1.65	4	1.42	8	2.24
Mgr. Increases						
Secure Feeling	8	1.72	5	1.43	9	2.25
Vandalism No						
Problem	13	2.00	8	1.50	11	2.33
Theft No Worry	11	1.91	11	1.70	7	2.17
Little Pickup						
O.K.	10	1.76	10	1.63	12	2.54
Area Not Over-						
crowded	12	1.93	12	1.87	10	2.27
Access Road						
Condition						
O.K.	9	1.73	13	2.10	13	2.79
Alcohol and						
Rowdiness						
No Problem	14	2.53	14	2.26	14	3.15

two variables which received mean values greater than 2.60 by "informal" campers. The Spearman's statistic showed all three rankings to be significant at the 0.0200 level, thus indicating a relationship exists. Although this section showed weaker relationships among the rankings than in the Activities section, "formal" and "informal" campers again had the strongest relationship with a rho value of 0.842. "Day-users" and "informal" campers were next with a rho value of 0.818, followed by "day-users" and "formal" campers with a 0.815 rho value.

Analysis of the user types' rankings for the Management Actions Being Implemented section showed that all three user types rated providing an onsite manager first (TABLE XI). However, ranking of the remaining eight variables exhibited a good deal of variability among the user type rankings. The Spearman's analysis revealed that only two of the three combinations of user type rankings were found significant. "Day-users'" and "formal" campers' rankings were found significant at the 0.004 level and also had the strongest relationship with a rho value of 0.883. "Formal" and "informal" campers' rankings were significant at the 0.044 level and had a rho value of 0.700. "Day-users'" and "informal" campers' rankings were not significant ($p = 0.096$), which required acceptance of the null hypothesis that no relationship exists.

User type rankings for the Items Influencing Area Use section showed very little similarity with only one combination of user type rankings being significant (TABLE XII). "Formal" campers expressed the importance of five items, all of which had mean values lower than 2.60. "Day-users" had four of the same items rated important, while "informal" campers showed only two items as being important. Spearman's analysis

TABLE XI

Management Actions Being Implemented Rankings by User Types

Management Actions Variable	<u>"Day-Users"</u>		<u>"Formal" Campers</u>		<u>"Informal" Campers</u>	
	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$
Provide an on-site manager	1	1.78	1	1.52	1	2.38
Limit overnight camping to 14 consecutive days	2	1.91	3	2.05	2	2.50
Close campground to vehicles after 10 p.m.	5	2.28	2	1.73	4	2.56
Allow camping only where pad exists	4	2.11	4	2.10	5	2.71
Designate some areas for day use only	3	2.02	5	2.14	8	3.29
Close day-use areas from sunset to sunrise	6	2.91	6	2.28	7	3.08
Allow no limit on group size at a campground	7	3.02	7	3.27	3	2.54
Allow people to camp wherever they want	8	3.09	8	3.50	6	2.98
Charge fee when onsite manager not provided	9	3.54	9	3.93	9	4.27

TABLE XII
User Type Rankings for Items Influencing Area Use

Influencing Area Use Variable	<u>"Day-Users"</u>		<u>"Formal" Campers</u>		<u>"Informal" Campers</u>	
	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$
Being Right on the Lakeshore	1	1.53	1	1.48	1	1.83
Good Fishing Nearby	3	2.34	2	2.02	2	1.89
Type of Facili- ties Provided	2	1.80	3	2.07	3	2.87
Nearness to Home	4	2.42	5	2.46	4	3.02
Usually Not Many People Here	5	2.86	6	2.90	5	3.11
Presence of an Onsite Manager	6	2.87	4	2.33	6	4.22

showed only "day-users'" and "informal" campers' rankings to be significant ($p = 0.0034$), with a rho value of 0.900. "Day-users'" and "formal" campers' rankings were not found to be significant ($p = 0.242$), as were "formal" and "informal" campers' ($p = 0.136$).

Comparing the rankings of the Additional Fee Items section by "formal" and "informal" campers showed that both camper types matched the top four rankings (TABLE XIII). However, examination of the mean values reveals that four of the ten items were rated "important" by "formal" campers with a mean value lower than 2.60, while only two items were rated "important" by "informal" campers. Spearman's analysis showed that the two rankings were similar, with a probability level of 0.002 and a rho value of 0.879.

TABLE XIII
Additional Fee Items Rankings by User Types

Additional Fee Variables	<u>"Formal" Campers</u>		<u>"Informal Campers</u>	
	Rank	$\bar{X}$	Rank	$\bar{X}$
Water Hookups	1	2.28	1	2.51
Campground Store	2	2.33	2	2.57
Electrical Hookups	3	2.34	3	2.94
Firewood	4	2.55	4	3.15
Swimming Pool	5	3.15	6	3.47
Boat Rentals	6	3.60	5	3.45
Canoe Rentals	8	3.73	8	3.64
Motor Rentals	10	3.83	7	3.62
Bicycle Rentals	9	3.74	9	3.74
Tennis Courts	7	3.65	10	4.04

CHAPTER VII

IMPLICATIONS AND DISCUSSION

Several points of interest have emerged in an attempt to answer the three study objectives. Under the first hypothesis, it was expected that "day-users" and "formal" campers would show support for the new management program, while "informal" campers would be more apathetic towards the new program. The premise for this hypothesis was that the new management program seemed to cater to the "day-users" and "formal" campers' style of recreating more so than to the "informal" campers' style.

Results indicated that "day-users" and "formal" campers did show support for the new program; however, their "support" ratings were not as strong as expected. The opportunity for increased comfort and security provided by the new program was expected to generate a larger amount of support from both user types, yet their "support" ratings for this category of items were less than 0.10 of a point from the "neutral" rating. Furthermore, this category of items was one of the lowest rated categories, overall, by both user types.

The lower than expected rating by "day-users" and "formal" campers for the new management program could be attributed in part to the belief that most people are initially resistant to any type of change. This seems especially true for this study since the existing management program that users were accustomed to was quite different than the new management program, with its regulations and fees. Support for the new management program was also hindered by the fact that both user types expressed satisfaction for the existing management program and rated it higher than any other category

of items. It might be surmised that both "day-users" and "formal" campers' natural resistance to change seemed to be a major contributor to their lack of support for the new management program.

Another unexpected result was the "neutral" rating by "informal" campers for the new management program. Such a highly structured and regulated program seems contradictory to the "informal" campers' style of recreating. Yet some management actions proposed under the new program received high priority rankings by "informal" campers which helped produce the unexpected "neutral" rating. A possible explanation as to why these management actions were favored by "informal" campers despite it being inhibiting to their recreating style, stems from the management problems identified by them at existing recreation areas. "Informal" campers indicated that rowdy behavior, vandalism, and theft were major problems they had encountered, with slightly over 60.0 percent indicating that an onsite manager would increase their feeling of security. It, therefore, seems probable that "informal" campers supported providing an onsite manager and closing the campground to vehicular traffic after 10 p.m. as steps towards alleviating these problems. It might also be speculated that "informal" campers supported providing an onsite manager on the basis that it would help resolve other existing management problems identified as: unsanitary restrooms, poor access road conditions, and abundance of litter.

Another problem identified by "informal" campers that might also explain their higher than expected rating for the new program, dealt with the crowded conditions at "informal" camping areas. This problem apparently influenced "informal" campers to support limiting overnight camping to 14 consecutive days and allowing camping only where a pad exists, two

management actions proposed under the new program, in an effort to improve crowded conditions and prohibit large groups from taking over an entire area.

The "informal" campers' willingness to alter their recreating style by supporting some management actions proposed under the new program even though it might conflict with their recreating style, seems to indicate the severity of those problems previously mentioned. It also appears that the new management program was favored by "informal" campers only as a means to solving certain existing problems and improving present conditions; otherwise, it probably would have received an "opposed" rating by "informal" campers as expected.

The second study objective dealt with the similarities and differences exhibited by all three user types for the survey items. Results seemed to show more of a similarity among the user types than expected, even though each user type had a distinct style of recreating. Both the Analysis of Variance statistic and the Spearman Correlation Coefficient for the rank order of the variables showed very little or no difference among the user types' responses. This was probably due in part to the fact that a large percentage of all user types lived within close proximity to the recreation sites and therefore had similar preferences, plus the respondents' reluctance to make critical comments about TVA recreation programs to the TVA interviewer. However, some distinct patterns common to all user types were apparent. Plotting of the category mean values by user type for each questionnaire section revealed a similar hierarchy of sections by all user types. First, all user types gave the Present Area Operations section the best rating of all. This was followed by the Items Influencing Area

Use, with the Management Actions Being Implemented third. The Activity Preference section and the Additional Fee Items completed the hierarchy in that order.

The rather low rating of the Activity Preference section in the hierarchy seems to suggest that users to these two recreation areas were activity specific. In other words, the areas were used for only a few types of recreational activities. This idea was supported by the fact that six of the top eight ranked activities were in some way directly related to water. Also, the top two items that influenced area use, being right on the lake shore and good fishing nearby, gave additional support to this idea. It might also have been, that the activities list was generated by the TVA staff and may not have included relevant activities of users.

Plotting of the category mean values indicated that "informal" campers consistently had much lower category mean values than the other two user types, except for the Activity Preference section, where they exhibited the highest value. On the other hand, "day-users'" and "formal" campers' category mean values were much closer in comparison, suggesting a greater similarity among these two user types.

Not until the Chi-square analysis of each variable did any significant differences among user types become apparent. Even though the majorities' response by each user type were the same, significant differences were found, due to the frequency of responses in the remaining response choices. In most cases, "informal" campers were the major contributors to the Chi-square value, indicating their responses differed from the "day-users'" and "formal" campers' response.

What these statistical results can provide TVA management as an indicator for recreational planning, development, and policy must be interpreted with caution. Although the results indicated a good deal of similarity among the user types, pooling of responses into a single population could have adverse effects. For instance, if the ranking of the Present Area Operations variables by user type were pooled, over 50.0 percent of the variables would shift more than two positions from their original user type ranking. This would be detrimental when attempting to improve management operations that were of concern to the recreationists, because a variable that was high priority to one user type might be shifted further down on the priority scale and not be considered. Consequently, a decline in user satisfaction and enjoyment could develop. It would seem that as long as three distinct recreating styles were apparent at TVA recreation areas, it would be risky to combine all user types' responses into one user population.

It was also the purpose of this study to determine if the new management program had alleviated the problems of user conflict, crowding, sanitation, and safety that existed at recreation areas before the new management program was implemented. The majorities' response by "day-users" and "campers" for all four items were quite favorable, implying the new management program was a success. It is, however, difficult to ascertain if certain aspects of the program or the entire program were responsible for resolving these problems. It also seems premature after only one season to judge the success of the program, and that follow up studies should be continued for a number of seasons before any final judgment is formulated.

CHAPTER VIII

CONCLUSION

Assessment of the results seems to indicate that a more successful management approach might include a combination of the new and existing management programs. This type of management approach was deemed necessary since the new program was successful in alleviating problems that existed at areas previously operated under the existing program, while the existing program was favored by all three user types over the new program. Providing an onsite manager was one aspect that should be incorporated into the combined management program because it was the most important management action identified by all user types under the new program. Not only would this help to deter any serious deviant behavior by providing constant surveillance of the recreation sites, but it would also provide assistance to the recreationist and immediate attention to problems of sanitation, litter and safety. Because all three user types favored the existing program over the new program, the combined management program should provide recreation sites that were less developed, with an emphasis on facilities centrally located in the area. Not only would this approach be less costly, but it might also be easier for the recreationist to become accustomed to since the management program appears to be more a middle of the road approach than either of the other two programs.

The utility of both the categorical type of analysis and the individual item analysis can be applied to TVA management, despite their contrasting conclusions. In problem situations where management decisions were critical, such as: user conflict, safety and sanitation, the more specific Chi-square

analysis would seem pertinent. This approach would allow a closer investigation into the viewpoints of each respondent concerning the issue at hand. In other situations where the decisions were more general and less critical, results from the categorical analysis would probably serve the situation adequately.

Since the results were somewhat contradictory as to whether the three user types had similar preferences, a more distinguishable type of user classification may help to avoid this problem in future studies. A new user classification system could be based on the water-oriented activities of the area since a body of water was noted as the main attraction to the area. The water-oriented activities could include: pleasure boating, skiing, boat fishing, shoreline fishing and swimming; and would also be more indicative of where user conflicts mainly occur. Thus the potential for more specific problems that diminish user satisfaction could be identified. Studies of this nature have already been conducted by Field and O'Leary (1973), Yoesting and Burkhead (1971) and Van Doren and Lentnek (1969) on other recreation areas.

Suggestions for further studies include administering the questionnaire in some impersonal manner so that the respondents will not be inhibited in expressing their true opinions. This might have been the cause for a large number of respondents choosing the "neutral" rating, rather than be embarrassed by sounding critical of TVA management. It might also have been the reason "informal" campers rated the new management program better than expected. Some impersonal type of surveys include giving the user the questionnaire and letting them return it at their convenience, while another possibility would be to use a mail-in type of questionnaire.

Another suggestion for future research deals with the study's methodology. Instead of comparing responses of users from different recreation sites, a more indicative study of users' opinions towards the new management program would be to conduct a before and after type of survey. This way responses could be examined for noticeable changes that might have occurred because of the new management program.

Results from this study were deemed necessary in order to help clarify the needs and desires of TVA reservoir recreationists and to aid in evaluation of TVA's newly implemented intensified management program. The findings were based on the viewpoints of three types of recreationists at two study areas and provided some insight and ideas for management and future studies. Before any new recreational program should be implemented, identification of user types and some indication of their expected leisure pursuits would help in providing the recreationists with an opportunity to pursue a high quality experience.

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APPENDICES

APPENDIX A

POLICY STATEMENT
TVA RESERVOIR RECREATION FACILITIES

TVA builds and operates recreation facilities at selected locations on its reservoirs to help meet the need for public access to lakes and for use of TVA lands and shorelines. Types of recreation areas are designated and developed by TVA as: (1) boat launching ramps, (2) day-use areas, (3) group camps, (4) public campgrounds, and (5) informal public use areas. Fees are assessed for use of public campgrounds and group camps and camping use of informal public use areas. No fees are charged for use of boat launching ramps, day-use areas, and unimproved land. Onsite management is provided at public campgrounds and other recreation areas as required

TVA works with Federal, State, and local public agencies and, where appropriate, with private interests in development, operation, maintenance, and management of TVA recreation facilities. Selected fee and nonfee areas are made available to public agencies for operation as public recreation areas. Certain fee areas are leased to private profit-oriented parties for operation as public commercial recreation enterprises. TVA retains direct responsibility for all sites not turned over to other public or private interests. TVA avoids development of camping facilities where nearby existing or planned private facilities of similar type and quality are capable of meeting public needs.

All facilities developed under this program are constructed, maintained, and operated according to TVA standards and guidelines to assure the areas are safe, sanitary, and available to the general public and to ensure, to the extent possible, that they complement surrounding land uses

TVA - RECREATION AREAS MANAGEMENT PROGRAM

From the inception of the public use area program, use of these areas has increased. This use has brought about the need for new and more intensified management of the public use areas. The management outlined here will include improved security and a fee system.

Area Designation and Management

Public Boat Ramp--Use will be limited to boat launching only. Only ramp, parking, and a courtesy pier will be developed. No overnight camping will be permitted. No user's fee will be assessed.

Day-Use Areas--Use would be limited to those activities customarily engaged in during the daylight hours, including but not limited to, picnicking, swimming, boat launching, hiking, and fishing. Facility development would vary according to sites, but may include picnic sites, restrooms, showers, swimming beach, boat ramps, interpretive facilities, open play space, and bank fishing facilities. No overnight camping would be permitted. No fee would be charged. Activity programming including environmental/energy education and interpretation will be conducted at selected sites.

Informal Public Use Areas--Management of these areas would accommodate a variety of uses, including day-use activities and overnight camping. Facilities will be developed to accommodate both uses. Where overnight camping is permitted, separation of day users and campers will be achieved through design, site development, and use regulations. A fee will be charged for overnight camping only, in

accordance with Public Law 93-303 Overnight camping use would be limited to 14 days per visit in each camping area.

Group Camp--Use would include both day-use activities and overnight camping. Users would be limited to organized clubs and groups (handicapped, church groups, school groups, senior citizens, and the disadvantaged). Advanced reservations would be required. Fees would be charged for use of camp. A fee schedule based on the ability of respective groups to pay will be developed. Camping units, sanitary facilities, pavilions, environmental/energy and interpretative facilities, and open play areas will be provided.

Public Campground--Overnight campers would be the only permitted users. A full complement of facilities could be included in these areas (toilet-shower buildings, camping sites, swimming beach, etc.). Resident managers would be provided at each area. User fee would be charged in accordance with Public Law 93-303. Fees will be comparable to fees charged at similar areas. Overnight camping user would be limited to 14 days per visit in each camping area. Activity programming will be conducted at selected sites

Fee System Implementation

On all TVA-developed recreation areas Federal laws apply. These laws specify that recreation use fees can be charged for overnight camping areas having specified facilities on all areas financed with Federal funds.

A recreation use fee will be implemented beginning on a selective basis with the 1979 recreation season. The TVA recreation

use fee will be based on, and equitable with, use fees for similar recreation facilities in the Tennessee Valley region.

A recreation use fee will be charged for overnight camping at all public campgrounds, selected informal public use areas, and group camps.

No entrance fees will be charged. Golden Age Passports will be accepted. Passport provisions will apply only to the basic camping fee.

Special recreation use fees will be used at group camps. To provide camping opportunities to the broadest cross section of the population possible, camping fee rate schedule will be developed that will be geared to a group's ability to pay. Special rates will be granted to the handicapped, the economically/socially disadvantaged, senior citizens, and other groups that meet the established criteria.

Implementation of Program

Overview

TVA now manages most sites developed under the public use area program and logically must expect to assume responsibility, at least initially, for direct implementation at most sites. However, we will involve public agencies and the private sector in this program by making selected areas available to these interests for operation (in accordance with TVA standards) as public parks or commercial recreation facilities. It is felt that the effort to involve local public and private organizations in implementation will be a long-term process occurring over a period of several years. TVA will continue to monitor

all areas operated by others to assure areas are operated and maintained to TVA specifications. A more detailed discussion of the role of TVA, local agencies, and the private sector follows.

TVA Role

TVA will continue direct onsite management of: (1) all fee and nonfee recreation areas not designated for other agency (public or private) operation, and (2) those designated recreation areas for which no interested or qualified operator is available. TVA will provide resident managers or caretakers to operate managed camping areas and selected day-use areas. Manager duties will include collection of user fees at camping areas, general site maintenance, and provision of visitor information. Managers will monitor user activity and security, and report irregularities to appropriate law enforcement agencies. TVA would assure enforcement of rules and regulations and that visitor security is adequately available at all sites.

Many existing sites will require capital improvements to make them suitable for specific uses. Examples include development of onsite managers' residence sites, dumping stations, and camping spurs at areas designated for camping, and construction of centralized parking facilities and entrance gates at day-use areas. TVA will develop these and other necessary improvements as funds permit.

Role of Local Agencies

Many local public agencies have assisted TVA in developing public use areas within their jurisdiction. A few have also taken over operation and maintenance of selected TVA-developed sites. TVA

will intensify this approach by more actively seeking to license or lease to or contract with local agencies to operate TVA-developed sites, both fee and nonfee, according to TVA standards and use regulations. As an inducement to local agency involvement, TVA will, in some cases, provide supplementary funds or direct assistance to help defray costs of operation, security, onsite managers, cyclic maintenance, and other responsibilities. Depending on the needs of individual agencies, agreements for making sites available will range from short-term, 30-day, revocable licenses to long-term or permanent recreation easements. The latter will be particularly appropriate in cases where local agencies plan to expand on the basic facilities developed by TVA. Expansion plans will be subject to TVA approval. In all cases TVA will retain responsibility for monitoring these areas to assure compliance with agreed management policies and operation and maintenance standards.

Role of the Private Sector

Public Law 93-303 requires that all day-use facilities (picnic areas, boat ramps, etc.) developed at Federal expense be made available to the public free of charge. Therefore, it will not be feasible to make these types of areas available to private, profit-oriented operators. TVA will lease selected areas to the private sector to the fullest extent possible, but some fee areas (camping areas) may also not be attractive to private operators due to their small size and/or remote location. The procedure will be similar to TVA's practice of making specific undeveloped reservoir tracts available under a long-term lease arrangement to private interests for development.

of commercial recreation facilities. Cost of the lease will be based on the appraised value of the land, including existing camping facilities. By securing sufficient tenure, operators can afford to develop substantial capital improvements, such as water and electrical hookups, swimming pools, recreation buildings, camp stores, etc. Proposed development and operation plans, including proposed fee structures, will be subject to TVA review and approval. TVA will continue to monitor leased areas to assure compliance with lease regulations.

APPENDIX B

USER PREFERENCES AT TVA RECREATION AREAS

CAMPERS

TVA 20027

FORM NO 0377

FORM TYPE

DAY-USERS

Reservoir Site
7 8 9 10 11
Type of Area Date
12 13 14 15 16 17 18
MONTH DAY YEAR

Good Morning (Afternoon) Sir (Ma'am) I am working for the Tennessee Valley Authority. TVA is taking a more active role in managing its recreation areas. We are conducting a study of people's opinions concerning the management of TVA recreation areas. You have been randomly selected from among the people here today to express your opinions concerning our management policies. Your answers will be held strictly confidential and you personally cannot be identified from the interview. Will you spare 10-15 minutes for a brief interview?

O.M.B. No. 074-R099

1. Did you use this area last year? 1 Yes ____ No ____ ☐ 19
- If yes, for what purpose? Camping Trip ____ Day-Use Trip ____ ☐ 20
- How many times? Camping Trip ____ Day-Use Trip ____
21 22 23 24

(ANSWER QUESTION NUMBER TWO ONLY IF YOU ARE CAMPING WHERE A FEE IS NOT CHARGED.)

2. Are you camping here because
- a. Camping is no longer allowed at TVA areas you have used before? a Yes ____ No ____ ☐ 25
- b. There were no available campsites at a TVA fee campground? b. Yes ____ No ____ ☐ 26
- c. TVA is charging a camping fee at a campground you have used before? c Yes ____ No ____ ☐ 27

3. How far do you live from here? 3 (Miles) _____

28	29	30	31

4. HOW MANY of each of the following items did you bring this trip?

<u>32</u> <u>33</u> Tent	<u>40</u> <u>41</u> Boat
<u>34</u> <u>35</u> Pickup camper	<u>42</u> <u>43</u> Bicycle
<u>36</u> <u>37</u> Trailer camper	<u>44</u> <u>45</u> Trail bike
<u>38</u> <u>39</u> Self-contained camper	

5. a. How many nights have you already spent camping here? 5 a. 46 47
- b. How many more nights do you plan to stay? b 48 49

- 6 While you are here, how important is participation in the following activities? (FOR EACH ACTIVITY, CHECK THE APPROPRIATE RESPONSE)

	Extremely Important	Very Important	Moderately Important	Of Little Importance	Not Important	
a. Picnicking	☐	☐	☐	☐	☐	☐ 50
b. Swimming	☐	☐	☐	☐	☐	☐ 51
c. Sunbathing	☐	☐	☐	☐	☐	☐ 52
d. Camping	☐	☐	☐	☐	☐	☐ 53
e. Playing volleyball	☐	☐	☐	☐	☐	☐ 54
f. Riding bicycles	☐	☐	☐	☐	☐	☐ 55
g. Water skiing	☐	☐	☐	☐	☐	☐ 56
h. Fishing from shoreline	☐	☐	☐	☐	☐	☐ 57
i. Pleasure boating	☐	☐	☐	☐	☐	☐ 58
j. Hiking	☐	☐	☐	☐	☐	☐ 59
k. Playing softball	☐	☐	☐	☐	☐	☐ 60
l. Fishing from boat	☐	☐	☐	☐	☐	☐ 61
m. Bird watching	☐	☐	☐	☐	☐	☐ 62
n. Riding trail bikes	☐	☐	☐	☐	☐	☐ 63
o. Fishing from pier	☐	☐	☐	☐	☐	☐ 64
Other (specify)						
p. _____	☐	☐	☐	☐	☐	
q. _____	☐	☐	☐	☐	☐	

7. Your response to the following statements will provide managers with information on levels of maintenance and management which you feel are appropriate. To what extent do you agree or disagree with the following statements? (FOR EACH ITEM CHECK THE SPACE WHICH BEST DESCRIBES YOUR RESPONSE)

(IF YOU ARE CAMPING IN A FEE CAMPGROUND OR THERE IS AN ONSITE MANAGER RESPOND TO ALL ITEMS)

(IF THERE IS NO ONSITE MANAGER DO NOT RESPOND TO STATEMENTS k OR p)

(IF YOU ARE CAMPING ON UNDEVELOPED LAND DO NOT RESPOND TO STATEMENTS MARKED WITH AN ASTERISK [*])

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	
a. Garbage can pickup is adequate	_____	_____	_____	_____	_____	☐ 65
b. General appearance of this area is attractive	_____	_____	_____	_____	_____	☐ 66
c. The presence of an on-site manager increases my feeling of security	_____	_____	_____	_____	_____	☐ 67
* d. Distance between campsites is about right	_____	_____	_____	_____	_____	☐ 68
e. Will return to this area again	_____	_____	_____	_____	_____	☐ 69
f. Had fun while I was here	_____	_____	_____	_____	_____	☐ 70
g. Restrooms are usually clean	_____	_____	_____	_____	_____	☐ 71
h. Vandalism is not a problem here	_____	_____	_____	_____	_____	☐ 72
i. The time spent here has been relaxing	_____	_____	_____	_____	_____	☐ 73
* j. Campsites are too close together	_____	_____	_____	_____	_____	☐ 74
* k. The onsite manager was helpful	_____	_____	_____	_____	_____	☐ 75

		Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	
	l Litter is adequately picked up	_____	_____	_____	_____	_____	☐ 7
	m. Condition of the access road is adequate	_____	_____	_____	_____	_____	☐ 8
*	n. Campsites are well defined	_____	_____	_____	_____	_____	☐ 9
*	o. Campsites are too far from each other	_____	_____	_____	_____	_____	☐ 10
*	p. The onsite manager was usually available	_____	_____	_____	_____	_____	☐ 11
	q. The area is not overcrowded	_____	_____	_____	_____	_____	☐ 12
	r. Usually not worried about theft here	_____	_____	_____	_____	_____	☐ 13
	s. People drinking alco- holic beverages and being rowdy is a problem here	_____	_____	_____	_____	_____	☐ 14
*	t Condition of my camp- site is adequate	_____	_____	_____	_____	_____	☐ 15
	u. Was satisfied with my visit here	_____	_____	_____	_____	_____	☐ 16

- 8 How do you feel about the following management actions being taken on TVA recreation lands? (CHECK THE SPACE WHICH INDICATES THE DEGREE YOU SUPPORT OR OPPOSE EACH ACTION)

	Strongly Support	Support	Neither Support Nor Oppose	Oppose	Strongly Oppose	
a. Allow camping only where there is a camping pad	_____	_____	_____	_____	_____	☐ 17
b. Provide an onsite manager	_____	_____	_____	_____	_____	☐ 18
c. Designate some areas for day use only	_____	_____	_____	_____	_____	☐ 19
d. Limit overnight camping to 14 consecutive days	_____	_____	_____	_____	_____	☐ 20
e. Allow people to camp wherever they want	_____	_____	_____	_____	_____	☐ 21
f. Charge a fee where an onsite manager is not provided	_____	_____	_____	_____	_____	☐ 22
g. Close the campground to vehicular traffic after 10 p.m.	_____	_____	_____	_____	_____	☐ 23
h. Allow as many groups to camp at a campground as want to camp there	_____	_____	_____	_____	_____	☐ 24
i. Close day-use areas from sunset to sunrise	_____	_____	_____	_____	_____	☐ 25

9. The following is a list of facilities and/or services which may be found in highly developed campgrounds and recreation areas. An additional fee, other than the standard camping fee, is generally charged for these facilities or services.

How important, if at all, is the availability of each item to you? (CHECK THE SPACE WHICH INDICATES THE DEGREE OF IMPORTANCE OF EACH ITEM.)

	Extremely Important	Very Important	Moderately Important	Of Little Importance	Not Important	
a. Electrical hookups	☐	☐	☐	☐	☐	26
b. Water hookups	☐	☐	☐	☐	☐	27
c. Tennis courts	☐	☐	☐	☐	☐	28
d. Swimming pool	☐	☐	☐	☐	☐	29
e. Bicycle rentals	☐	☐	☐	☐	☐	30
f. Canoe rentals	☐	☐	☐	☐	☐	31
g. Boat rentals	☐	☐	☐	☐	☐	32
h. Motor rentals	☐	☐	☐	☐	☐	33
i. Campground store	☐	☐	☐	☐	☐	34
j. Firewood	☐	☐	☐	☐	☐	35

10. How important was each of the following items in influencing your decision to use this area? (CHECK THE SPACE WHICH INDICATES THE DEGREE OF IMPORTANCE OF EACH ITEM)

		Extremely Important	Very Important	Moderately Important	Of Little Importance	Not Important	
a	Presence of an onsite manager	_____	_____	_____	_____	_____	☐ 36
b	Type of facilities provided	_____	_____	_____	_____	_____	☐ 37
c	Usually not many people here	_____	_____	_____	_____	_____	☐ 38

	Extremely Important	Very Important	Moderately Important	Of Little Importance	Not Important	
d. Nearness to home	_____	_____	_____	_____	_____	☐ 39
e. Being right on the lake shore	_____	_____	_____	_____	_____	☐ 40
f. Good fishing nearby	_____	_____	_____	_____	_____	☐ 41
g. Absence of a fee	_____	_____	_____	_____	_____	☐ 42
h. Absence of an organized campground	_____	_____	_____	_____	_____	☐ 43
i. Isolation	_____	_____	_____	_____	_____	☐ 44
j. Natural setting	_____	_____	_____	_____	_____	☐ 45

The final set of questions asks about characteristics of you and your group. Your answers will be held strictly confidential and you personally cannot be identified in the results of the study.

11. Where is your place of residence?

_____	_____	_____					
7-21	City	22-36	County	37	State	38	Zip Code
				39	40	41	42 43

12. Check the statement which best describes your group

_____ Single family	_____ Friends
_____ Two or more families	_____ Individual
_____ Family and friends	

☐ 44

13. AGE CATEGORIES: How many people in your group are in these age categories?

45 _____ 46	51 _____ 52	57 _____ 58
Less than 5	18-24	45-54
47 _____ 48	53 _____ 54	59 _____ 60
6-12	25-34	55-64
49 _____ 50	55 _____ 56	61 _____ 62
13-17	35-44	65 or older

- 14 What income category represents your total family income before taxes?

☐ Under 6,000	☐ 15,000-19,999	☐ 30,000-39,999
☐ 6,000-9,999	☐ 20,000-24,999	☐ 40,000 or more
☐ 10,000-14,999	☐ 25,000-29,999	



- 15 What is your occupation?

-
- 16 We have asked questions of you. If you have further comments or suggestions about the management of TVA recreation lands, please do so below.

VITA

The author was born in Knoxville, Tennessee, on December 27, 1952. He attended elementary school in Knoxville and graduated from Knoxville Catholic High School in May, 1970. The following June, he entered The University of Tennessee, Knoxville and received a Bachelor of Science degree in Forestry in August, 1975.

The author took a Forestry Crew Leader position with the City of Dallas, Texas, Parks and Recreation Department from August, 1975, until July, 1977. In September, 1977, he entered The University of Tennessee, Knoxville Graduate School to begin work towards a Master's degree in Forestry, specializing in Forest Recreation. During this period, he was elected into the Honor Society of Forestry, Xi Sigma Pi, and the Honor Society of Agriculture, Gamma Sigma Delta. He received a Master of Science degree with a major in Forestry in June, 1981.

The author was married to the former Sue Claire London of Knoxville, Tennessee, on May 15, 1976 and is the son of Mr. and Mrs. John R. Collins, Sr. of Knoxville, Tennessee.