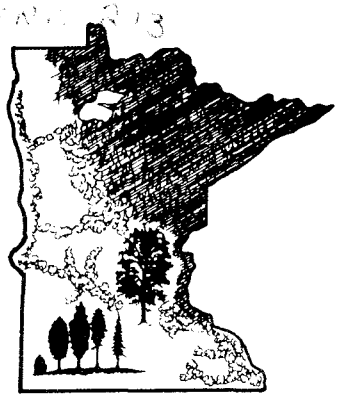

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A COMPARATIVE STUDY OF TWIN CITIES STATE AND CITY PARK USERS WITH EMPHASIS ON STATE PARK CAMPERS[1]

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Introduction

Park managers must understand the objectives of park visitors in order to serve the visitor adequately. Why, for example, does a camper choose camping over another recreation activity, and once chosen, why does he choose to camp at a given park?

In Minnesota, these questions are especially applicable to state park campers who reside in the Twin Cities. From 1965 to 1968, total state park visits increased by 53%. One-half of the state's populace are Twin Citians, and state parks within 125 miles of the metropolitan area draw up to 80% Twin Citians on many occasions.

Previous Research and Study Objectives

Many previous studies have recorded the primary activities of state park and other forest recreation users. While these studies provide a census of participants in various activities, they fail to ask why recreationists participate in those activities, and what they expect to gain from the overall experience.

West (1) was among the first to investigate the values to the camper of the Minnesota state park camping experience. His study of campers at St. Croix State Park demonstrates that one of the values of camping is that of strengthening the family bond by visitor interaction in the park environment. As a test question for future study, West asked campers the open-ended question, "What is the main reason you go camping?". The results of answers to this question provide the starting point for this study.

This study seeks to determine the values of state park camping to Twin Citians, and to order these values according to relative importance. It then compares the state park camping experience with that of the picnicking

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experience in the city park. From user data, the study also determines whether the state park camper and the city park picnicker represent the same, or different segments of the Twin Cities population.

Study in Brief

The data were obtained from random samples of campers at Scenic, St. Croix, and Whitewater State Parks, Minnesota, and of picnickers at two city parks: Minnehaha Park, Minneapolis, and Phalen Park, St. Paul. A total of 306 state park, and 143 city park interviews were obtained between the dates of June 14 and September 1, 1968.

These parks represent a diversity of location, attributes, facilities, and environments. St. Croix and Whitewater parks are just over 100 miles from the Twin Cities, and can be reached in about two hours by car. Scenic is about 225 miles from the Twin Cities, and is not within normal weekend driving distance. Scenic is a park of primeval coniferous and birch forests, and large lakes which provide excellent fishing. St. Croix Park, while on one of America's most scenic rivers, was logged in the early part of this century. The park has one artificial swimming pond and no natural lakes, and offers little topographic relief. Whitewater Park, in southeastern Minnesota, is located in a ravine which is surrounded by tall dolomite cliffs, and is part of an extensive hardwood forest. Minnehaha Park, site of Minnehaha Falls, is a favorite picnicking park for Twin Citians. Phalen Park, in east St. Paul, offers a range of activities besides picnicking, including golf, swimming, and canoeing.

Campers and picnickers were asked to choose from among seven categories the two most important, and the two least important reasons for visiting the park. State park campers were asked how often they visit large city parks in the Twin Cities, and city park picnickers were asked how often they visit Minnesota state parks. In order to compare users of each park studied, socio-economic and demographic data, vacation characteristics, length of stay, and other designations of the outing were recorded. An inventory of the recreational games used in these parks, and a measure of the naturalistic orientation of park users, were also determined in this study.

Results

Each park sample ranked "enjoyment of nature" as either the first or second most important reason for visiting state parks, and each sample ranked "specific recreation activities" as the least important reason for visiting state parks. Each park sample ranked "a change in the routine pattern of living" either second or third most important, and "to get outside to get some fresh air" was ranked either fourth or fifth in each case. There is a notable divergence in the ranking of the other three choices, however. The Scenic sample ranked "rest and relax" as the most important reason for camping, while other park samples ranked it no higher than fourth.

STEP 2: Field Procedure (continued)

b. Obtain a horizontal ground distance (base line) whose terminals are visible both on the ground and on the stereo pair of photos on which the tract is located. Pinprick the base line terminals and transfer to the adjoining photo. The following rules apply when selecting and measuring base lines:

(1) Terminals on photos should be at least 1/2" from flight line.
(2) Terminals may be at different elevations than the tract corners.
(3) Terminals may be on either side of the flight line, or on opposite sides of it.
(4) Base line horizontal ground distances can be determined in several ways: (a) directly from an accurate map of the area upon which the terminals can be located, (b) by chaining or taping -- "breaking chain" is necessary when the terminals are not on approximately the same contour, or (c) by careful pacing when the ground is relatively level between terminals.
(5) The minimum acceptable base line ground length will depend upon the scale of the photography. If possible, it should be at least 3/4" long on the photograph.

STEP 3: Radial Line Plot (RLP) Preparation (Figures 2 and 3)

a. Rule a line across the center of a (circa) 24 x 24-inch piece of poster board or similar material (see Figure 2).
b. Tape the photo pair to the board with flight line segments and ruled board line coinciding. Keep photos approximately 1/4" apart.
c. Prick through the photo tract corners, base line terminals and principal points into the underlying board.
d. Remove photos, label all pinpricks on board (see Figure 3).
e. With ruler and sharp pencil, draft radial lines from each principal point through the tract corners and line terminals associated with it. These radial line intersections identify the true plan position of the tract corners and base line terminals -- i.e., the RLP removes essentially all topographic displacement and scale variation present in the original photographs (see Figure 3).
f. Connect the RLP base line terminals; connect the RLP tract corners.

STEP 4: Determine Radial Line Plot Scale (RF)

a. Basic formula: $RF = \frac{\text{Radial line plot distance}}{\text{Equivalent ground distance}}$

b. Example:

(1) RLP base line terminal separation = 1.18"/12" = 0.098'

(2) Ground distance between base line terminals = 126'

(3) $RF = \frac{0.098'/0.098'}{126'/0.098'} = 1:1,290$

STEP 5: Area Measurement

a. Select a dot grid having an adequate coverage and dot density. The original scale of the photo or map for which the grid was designed must be known.

STEP 5: Area Measurement (continued)

b. Example:

(1) Dot grid scale = 1 dot per acre at a scale of 1:15,840 (i.e., 40 dots per square inch)

(2) Number of dots counted with this grid in RLP tract = 150 dots

(3) Area of tract = $\frac{(\text{RLP scale reciprocal})^2}{(\text{Dot grid reciprocal})^2}$ x 150 dots

$$= \frac{1290^2}{15840^2} \times 150 \text{ dots} = .0066 \times 150 = \underline{.99 \text{ acres}}$$

So long as tract corners and base line terminals are 1/2" or more from the photo flight line, no difficulty is encountered in getting good intersections. However, when a point falls on the flight line or very close to it, special steps must be taken to locate the point in its true plan position:

SITUATION A: Points falling on the photo flight line (see Figure 4)

a. Rule a line between the point on the flight line and the farthest consecutive tract corner (e.g., tract corner #3 lies on the flight line, corner #4 lies farther from the flight line than #2 -- in this case, rule a line between #3 and #4 on both photographs).
b. Select an auxiliary point on the line approximately midway between the two points on both photographs.
c. Obtain an intersection for the auxiliary point on the RLP.
d. Extend a line from the RLP off-the-flight-line tract corner through the auxiliary corner intersection to the RLP flight line. This point on the RLP flight line is the tract corner.

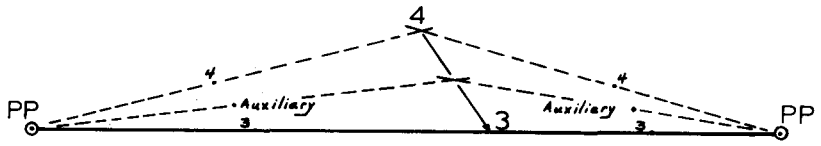

Figure 4. Location of tract corner situated on flight line.

SITUATION B: Points falling too close to photo flight line (see Figure 5)

a. Extend the radial lines from each principal point on the RLP considerably beyond the zone of intersection in order to create a zone of line divergence on either side of the intersection.
b. By means of a finely-divided ruler, locate and mark a point of equal divergence of the lines on either side of the intersection.
c. Bisect the distance between the points of equal divergence to locate the radial line intersection of the point.

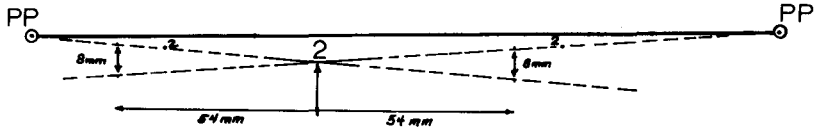

Figure 5. Location of tract corner too close to flight line.

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