

A STUDY OF BACKCOUNTRY USE WITHIN YELLOWSTONE NATIONAL PARK

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Objectives

Records of backcountry use in Yellowstone National Park indicate that use increased from 16,767 backcountry camper nights in 1971 to 33,297 backcountry camper nights in 1974, a doubling in three years (1). A similar increase was recorded in Grand Teton National Park. Use of wilderness areas in the state by backpackers has increased also, but not at the rate of increase that applies to the two National Parks.

Records maintained by the two National Parks of backcountry use are incomplete in that only overnight use records are maintained. Both Parks require backpackers intending to stay overnight in the backcountry to obtain a permit.

Day use is an important and growing use of backcountry areas. A 1974 study of backcountry use in Grand Teton National Park found that an estimated 62 percent of the total backcountry use was accounted for by day users (2). The 1974 study indicated that the most severe litter problems, complaints about congestion, and evidence of overuse were associated with the backcountry fringe areas where the day users tend to concentrate.

Backcountry use of Yellowstone Park differs from that occurring in Grand Teton National Park on two counts. First, backcountry use in Grand Teton is concentrated along a twelve to fifteen mile stretch of the Teton mountain range with the Teton peaks being the focal attraction. Access to this area is gained through six major trailheads. In contrast, backcountry use of Yellowstone is diffused throughout the Park with access gained from more than forty trailheads. Second, the major activity interests of Grand Teton backcountry users were related to general hiking, sightseeing experiences. In Yellowstone a significant percentage of backcountry users are known to be fishermen hiking to a backcountry fishing area and other individuals intending to observe a specific wildlife species. As such, Yellowstone backcountry management plans have to account for the impact of the user on the physical resources as well as the wildlife resources of the area. Those Yellowstone backcountry areas with high bear populations are of particular concern, both from the standpoint of the users' safety and from the standpoint of bear habitat intrusion.

The overall objective of this study is to estimate the level of use of selected backcountry trails in Yellowstone National Park and to develop other information relating to the backcountry user's experience that will assist Yellowstone Park personnel in the formulation of backcountry management plans. A more explicit statement of the study objective is expressed in the following sub-objectives.

- 1) To determine the number, spatial distribution, and activity type of persons using the Yellowstone National Park backcountry.
- 2) To develop general activity profiles by user type, including length of stay, travel patterns within the backcountry, recreation participation patterns and other information that will indicate resource use demands.
- 3) To obtain general attitudinal and user preference information that will assist Park officials in evaluating present management policies and/or will provide guidelines for the establishment of new backcountry use policies.
- 4) To correlate the estimated use parameters with information from a standardized trailhead self-registration system and systematic sampling of trail use by photo-electric trail traffic counters for purposes of providing Park personnel with convenient and inexpensive means of updating trail use estimates.

#### Procedures

The sample design for this study called for interviews to be conducted with trail users on 10 separate days for each of 36 pre-selected trails. In addition, each of these 36 trails was to be monitored 20 days each with a photo-electric trail counter to get estimates of trail use. The sampling procedure was designed so that the photo-electric counters would be monitoring the trails on which the personal interviews were being conducted. The purpose of this arrangement was to allow the personal interview counts to be correlated with the counts recorded on the photo-electric counters and also with the registration data collected at the self-registration stations located at or near the head of each trail.

A questionnaire was developed to record user numbers, user types, trails used by respondents, time spent on the trails, activity participation, problems encountered and to obtain an evaluation of the respondent's experience in the backcountry. The photo-electric counters were to be furnished by the Park Service for use during the interview phase of the study. The services of six individuals from the Young Adult Conservation Corps (YACC) program operating in Yellowstone Park were to be made available to the study as interviewers. Due to circumstances beyond the control of the Park Service or the study team, acquisition of the required photo-electric counters was not completed until the summer interview period was almost over. Employee turnover in the YACC program was high, and, as a result, there were periods during the summer when there were only two

interviewers available. Not only did the lack of interviewers affect the sampling schedule, but the time required to train new interviewers caused disruptions that had not been contemplated in the original sample design. As a result of the problems with the photo-electric counters and YACC interviewers, modifications in the original sample design had to be made.

A total of 1074 interviews were completed during the summer period. The interviews were concentrated on the 27 high-use trails out of the original list of 36 trails. Instead of 10 interview days per trail, an average of 7.8 days of interviewing was accomplished for the 27 trails actually used for the study. Two days of interviewing time was spent on each of three other trails before it was decided to eliminate them in the modified sample design. A decision has not been made at this time on whether the questionnaires completed on these three trails will be used in the general summary. While the photo-electric counters were located on some of the trails after they were received, the count data is insufficient for any meaningful analysis.

### Results

Because the original sample design could not be implemented, some of the objectives proposed for this study will not be accomplished this year. In particular, it will not be possible to estimate the total number of backcountry users as stated in Objective No. 1, or to correlate the user counts taken from the forms at the self-registration stations with the counts taken from the photo-electric trail counters as described in Objective No. 4. However, the Park Service has agreed to seek funding to continue the study another year.

If the study is continued, data collection will be limited to photo-electric monitoring of trail use and correlating the counts obtained from the electric counters with the counts obtained from the self-registration stations. For the 27 trails on which personal interviews were conducted this past summer, it is felt that the remaining objectives can be accomplished. At present, the data from these questionnaires are being prepared for computer processing. The results will be available in the Spring of 1979.

### Literature Cited

Unpublished records maintained by Park personnel, Yellowstone National Park, Mammoth, Wyoming.

Wolfley, B. F. 1976. An analysis of Backcountry Use in the Grand Teton National Parks, 1974. M. S. Thesis, University of Wyoming, Laramie, Wyoming.