

# Public Campgrounds: Are They Profitable?

Kenneth C. Gibbs

**ABSTRACT**—A detailed cost analysis on 111 USDA Forest Service (Region 6) campgrounds in the Pacific Northwest indicated that managing the average campground costs from \$0.28 to \$3.01 per recreation visitor-day (RVD), the amount depending on level of development. Revenue per RVD ranged from 0 to \$0.27. Campers are currently being subsidized \$12 million in taxes annually in this region alone—from \$2.07 to \$22.27 for an average family (3.7 people) per 24 hours. Cost implications of four possible management goals reflecting varying levels of subsidization (from 0 to total) are examined.

One of the most popular forms of outdoor recreation today is camping—which can represent anything from spreading a sleeping bag under the stars to traveling in a big motor home. In part because of this diversity, questions arise as to the responsibilities of public agencies. Should the agencies supply camping facilities? Should society be expected to provide these opportunities regardless of the user's ability to pay? If so, we must know, first, how much this costs the taxpayer and, second, exactly whom it subsidizes.

In this article I focus on the costs and profitability (difference between revenue from fees and all costs) to one federal agency in one region—the USDA Forest Service in the Pacific Northwest. Using detailed data, I also examine the cost implications of various management goals.

## Study Area

Information was gathered from campgrounds operated by the Forest Service (USFS) in Region 6 (Washington and Oregon). The geography of the region is varied, and the types of recreation available are many. In the western part, the recreationist can camp in the rain forest on the Olympic Peninsula, on or near sand dunes in southern Oregon, or in the steep, low-elevation terrain of the coastal mountains. Towards the center of the region, recreational environments vary from high alpine conditions in parts of the Cascade Mountains to pine and sagebrush. The eastern section of the region is partly mountainous and partly gently rolling hills. In southcentral and southeastern Oregon, desert and near-desert conditions prevail.

The Forest Service classifies campgrounds according to their development, which determines the type of recreational experience provided. Five categories (experience levels) define the degree to which an area has been modified and the amount of interaction a camper will likely have with other campers. Experience level 1 campgrounds, wherein little site modification has occurred, are called primitive; few facilities exist and the degree of social interaction among campers is minimal. At the other extreme, experience level 5 campgrounds have been highly modified, have a large number of modern facilities (for example, flush rather than pit toilets), and provide considerable camper interaction.

Approximately 1,020 USFS campgrounds exist in Region 6, of which nearly 840 can be used without charge. At the others, fees vary from \$1 to \$4 per site. For this study, I first stratified campgrounds by experience level and geographic location and then randomly selected 111 campgrounds for sampling. Although all experience levels were sampled, the rate varied from 10 to 100 percent. The sampling scheme was designed to be representative of the population, and the 11-percent sample was adequate to obtain statistical reliability. Estimated campground use is shown in table 1.

## Cost Data

Costs can be separated into three components: facility costs (FC), operation and maintenance (O&M), and timber opportunity costs (TOC). The measure of recreational use for calculating average costs is the recreation visitor-day (RVD), equivalent to 12 visitor-hours (1 person for 12 hours, 12 people for 1 hour, or any combination). Average cost is total annual cost (FC + O&M + TOC) divided by total annual RVDs. Average revenue per campground is total annual revenue collected divided by total annual RVDs. These definitions, permit comparing average revenue directly with average cost.

Data sources were primarily personal interviews with recreation and timber specialists and other ranger district personnel. Usage figures from Recreation Information Management data were obtained in conjunction with these consultations but were revised on the basis of specialists' personal knowledge and experience with each campground. Recognizing the traditional limitations in these types of data, I sought to gain the most useful information through cost-component breakdowns rather than totals. Limitations still exist in the accuracy of the visitor-days information.

**Facility costs.**—Campground facilities are items such as picnic tables, roads (within the campground), traffic barriers, toilet facilities, signs, trails, parking spurs, and water. The relevant facility cost is the current replacement value of the campground if it were to be built at its present location today, and includes not only the cost of each facility but also related transportation and labor. The facility-cost items detailed in this study were summed to derive the total at each campground.

Because the facilities are estimated to have a 20-year useful life, the initial capital cost is amortized over that span at an appropriate interest rate. Interest cost must be included because even if the campground's construction were not financed, the money could have been used elsewhere. A 10-percent interest rate has been used here.

**Operation and maintenance costs.**—The annual costs of operating and maintaining campgrounds cover personnel, vehicles, contracts, and tools and materials.

**THE AUTHOR**—Kenneth C. Gibbs is associate professor, Department of Resource Recreation Management, School of Forestry, Oregon State University, Corvallis. This publication is FRL 1359, Forest Research Laboratory, Oregon State University. Financial assistance was provided from FRL project F-025 and from the Pacific Northwest Forest and Range Experiment Station, USDA Forest Service, Portland, Oregon.

**Table 1. Campground use in recreation visitor-days (RVDs), Forest Service Region 6, 1977.**

	Experience level					
	1	2	3	4	5	All
	----- Number -----					
Total campgrounds <sup>1</sup>	76	325	523	92	5	1,021
Estimated RVDs per campground	3,063	3,594	7,413	37,583	21,567	8,661
Total estimated RVDs	232,750	1,168,148	3,876,894	3,457,664	107,834	8,843,290

<sup>1</sup>Data from Forest Service Regional Office, Portland, Oregon. Because campgrounds are frequently reclassified, these figures may be out of date.

Included under personnel are temporary and borrowed crews, seasonal and permanent staff, and miscellaneous workers. In many cases, maintenance personnel have been funded by CETA or YCC, but they have still been included here as costs to society. For each personnel category, the number of work hours spent on each campground was established. Combining the number of hours worked with the salary gave the total personnel cost for each campground.

Contract costs include any fees paid out for work contracted outside the Forest Service, such as garbage collection, septic tank pumping, and law enforcement. These costs were apportioned to each campground.

Vehicle costs were established for each personnel category, and operation costs, including depreciation, were determined for each campground.

Tool and material costs include the purchase of small tools, oil, fuel (other than for vehicles), and supplies such as paint, plumbing, and gravel. Vandalism costs have also been included in these calculations.

**Opportunity costs.**—The opportunity cost of a resource is the value that resource would have enjoyed in its next best alternative use. If it is assumed that the primary alternative function of Forest Service lands in Oregon and Washington is timber production, the opportunity cost of a campground would be equivalent to the revenue foregone from timber on those same acres. Therefore, the crucial question for each campground is: How much timber has been foregone?

Foregone revenue is difficult to determine precisely. In this study, each sampled campground was individually analyzed and the number of acres in and immediately adjacent to it recorded. Then the management plan most likely to apply, had the area been classified for timber production, was determined. Management plans were categorized as either clearcut or some variation of shelterwood. Discounted present net worth of all future timber harvests was established by considering the site index, stand age, and volume of each area. Volume estimates for those stands in clear-

cut regimes were taken from McArdle and Meyer (1930), whereas those under shelterwood management were derived from managed-stand yield tables provided by ranger district personnel. Volume from intermediate cuts was included. Actual dollar values for harvested timber were analyzed from outputs of neighboring sales in the same year to calculate average stumpage values. The discounted present net worth of all future rotations was then amortized over 20 years to arrive at the annual timber opportunity cost attributable to recreational campgrounds.

### Results and Discussion

For each sampled campground, the amount of use (total annual RVDs for camping and picnicking) and the revenue from user fees were recorded. Revenue and cost figures (table 2) were grouped by experience level and individual cost components were separated for a clear and specific breakdown (for details, see van Hees 1978). Because no user fees were charged for experience levels 1 and 2, no revenues were generated. At level 3, 4, and 5 campgrounds, \$1 to \$4 were collected per site per 24 hours for each group (3.7 people in the average group) of recreationists. Although experience levels 1 and 4 had no timber opportunity costs, this does not imply that no opportunity costs were incurred. A more thorough study should evaluate other alternate uses of the land.

In general, as experience levels increased, so did costs and revenues, except for experience level 4, where the sample contained one very large and popular campground with enough RVDs to lower the ratio of cost to use. Most campgrounds in this study had high costs per visitor-day, raising some question about the overabundance of facilities. One solution might be to close down underutilized facilities. Although the issue of user fees would remain, the average difference between existing fees and costs might be altered.

By converting the figures in table 2 to group 24-hour days, we see that campgrounds at experience level 5, for example, collected \$2.00 in revenue from an aver-

**Table 2. Average revenues and costs per RVD, at 10-percent interest, for Region 6 campgrounds, 1977.**

	Experience level					
	1	2	3	4	5	All
	----- Dollars -----					
Revenue per RVD	0.00	0.00	0.13	0.25	0.27	0.19
Cost per RVD						
Operation and maintenance	.14	.45	.52	.46	.79	.48
Facilities	.14	.81	1.14	.89	2.22	1.01
Timber opportunity	.00	.18	.08	.00	— <sup>1</sup>	.04
Total	.28	1.44	1.74	1.35	3.01	1.53

SOURCE: 111 sample campgrounds.

<sup>1</sup>Less than one cent.

**Table 3. Potential revenues and subsidies for various goals, by experience level, for USFS Region 6 campgrounds, 1977**

Goal	Revenue collected per group <sup>1</sup> per 24 hrs., by experience level					Required annual tax revenue <sup>2</sup>	Subsidy per group <sup>1</sup> per 24 hrs., by experience level				
	1	2	3	4	5		1	2	3	4	5
	----- Dollars -----					Millions of dollars	----- Dollars -----				
1	—	—	—	—	—	13.5	2.07	10.66	12.88	9.99	22.27
2	2.07	10.66	12.88	9.99	22.27	None	—	—	—	—	—
3	1.04	3.33	3.85	3.40	5.85	9.2	1.04	7.33	9.03	6.59	16.43
4	0	0	12.88	9.99	22.27	1.7	2.07	10.66	0	0	0
Currently	0	0	.96	1.85	2.00	12.0	2.07	10.66	11.91	8.14	20.28

SOURCE: 111 sample campgrounds

<sup>1</sup>Based on 3.7 people per group.

<sup>2</sup>Required annual tax revenue is the sum of the subsidy multiplied by the estimated use across all experience levels.

age group of 3.7 people (\$0.27 × 2 RVDs per 24 hrs. × 3.7 people = \$2.00) but had O&M costs of \$5.85 and facility costs of \$16.43. Thus, the \$2.00 fee fell far short of covering the costs. This was true at all experience levels, where revenues covered no more than 18 percent of total costs. Fee revenue fell short of total costs by \$12 million annually. But these numbers must be interpreted as unique to USFS Region 6 campgrounds in 1977 and not generalized to all publicly provided facilities. (See Tyre 1975 for similar figures in the South and Reiling 1976 for costs on the Oregon coast.) Because these costs have been averaged across campgrounds, they do not directly apply to each USFS campground.

Which direction should public campground management take? To help answer that question, different goals of society should be evaluated. Once a goal is postulated, average costs could be calculated to indicate the inherent trade-offs between user fees and subsidization.

#### Management Goals

To assess the appropriateness of certain courses of action, I have considered only four of all possible policy goals and their cost implications (table 3).

**Goal 1: Total subsidization.**—If camping should be available regardless of ability to pay (i.e., no fees), campgrounds should be supported entirely by tax revenues. In 1977, approximately \$13.5 million would have been needed for USFS Region 6 alone (table 3). Use would probably increase if fees were abolished, and resources would be more efficiently utilized.

**Goal 2: No subsidization.**—At the other extreme, it could be assumed that the actual users do not need subsidizing, in which case user fees should cover all costs. Different fees, derived from the average costs in table 2, would be charged for each experience level and, as use changed, so could fees. Although these fees may seem high, the burden would be on users, not taxpayers.

**Goal 3: Users pay O&M costs.**—Some combination of Goals 1 and 2 may be more appropriate. Perhaps users should cover operation and maintenance costs but let annual tax revenues subsidize facility and opportunity costs. Then substantial tax revenues would still be needed to operate campgrounds (table 3).

**Goal 4: Subsidize experience levels 1 and 2.**—An appropriate goal may be to subsidize use of the less developed campgrounds but insist that visitors at the more developed areas pay their own way. This alternative would give private campgrounds an opportunity to compete. It would take only \$1.7 million in tax revenues to annually subsidize experience levels 1 and 2 (table 3). User fees for experience levels 3, 4, and 5 would be the same as suggested under Goal 2, and camper subsidies for levels 1 and 2 would be identical to those under Goal 1.

#### Implications

Producing revenue from campgrounds clearly is not a significant Forest Service objective. Should it be? That depends on society's goals for providing recreational opportunities to its members. In this study, profitability refers to the relationship between all costs (including noncash costs) and revenues generated from user fees. The concept of profitability can be used to analyze who the payers are and how much they need to pay. But profitability must be clearly distinguished from economic feasibility or efficiency—the relationship between costs and the private and social benefits accruing to users—which is important for making efficient resource allocation decisions. Although the campgrounds studied here are not now profitable, applying different management policies might alter the situation if, in fact, that is the goal. In any case, society must define its goals and then evaluate how different goals affect both users and taxpayers.

Before any policies regarding fees and costs are implemented, the characteristics and desires of users must be ascertained. Then perhaps it can more easily be decided how the type of experience should relate to ability to pay. Tax revenues can be used to subsidize the deserving users. ■

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