Differential Campsite Pricing and Campground Attendance

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ABSTRACT

Several changes in the characteristics of campers' visits were discovered by comparing camping permit data before and after the start of differential campsite pricing at a New Hampshire state park campground in 1973. Differentials included a premium charge for waterfront sites and a preferential rate for New Hampshire residents. Attendance by state residents increased significantly over the average for the preceding 2 years. Total revenue increased by 61 percent. The preferential rates did not produce longer visits or more frequent repeat visits by state residents. Use of waterfront sites did not decline in response to premium rates. Significant declines in visit length and party size were noted, but appear to be independent of the fee policies.

Keywords: Campsite pricing, recreation expenditures, differential fees, camper behavior, park attendance, fee policies, New Hampshire State Parks.

THE PROBLEM

THE USE OF FEES as a management tool, for regulating resource use and modifying visitor behavior in addition to generating revenue, is a recurring recommendation in outdoor recreation literature. It has been suggested, for example, that raising fees might reduce crowding at peak times and in heavily used areas *(Clawson and Knetsch 1966)*; that reducing or even eliminating fees might produce a more even workload in periods when attendance is traditionally low *(Lime and Stankey 1971)*; and that preferential fees for state residents and differentials based upon site quality may be more equitable than flat rates *(LaPage 1968)*.

Competitively based differentials obviously exist among some commercial recreation enterprises. Differentials within park systems—such as higher fees at campgrounds that provide swimming facilities—have existed for many years. However, reports of the success of these practices in achieving managerial goals are apparently nonexistent, and experimental studies of the effects of differential fees are rare.

Canavan *(1973)* reported that camping parties did adjust their use of waterfront sites in response to a $2 fee differential at Wells State Park in Massachusetts, during periods of less than peak use in the summer of 1972. Use of waterfront sites decreased by as much as 30 percent in some months. More than 60 percent of the campers visiting waterfront sites felt that the extra charge was justified. The $2 differential at Wells State Park was created by reducing the standard fee of $3 to $2 at 30 inland sites, and increasing it to $4 at 25 waterfront sites. The impact on total revenue was minimal, since the average site price remained near the 1971 level. The applicability of these findings may be limited because of the reduction in price at inland sites. A more common practice might be to increase the price of both types of sites, or to raise the waterfront price and hold the inland site price constant.

Before applying differentials based on site quality, an administrator might want to know how the differentials could affect his workload. For example, will there be more requests to switch campsites after a busy weekend, requiring rewriting of permits and correction of records? Will the frequency of permit extentions be affected? What will be the effect upon average visit lengths? Each of these factors may influence the amount of service required and may necessitate changes in the campground maintenance routine.

Fee differentials between in-state and out-of-state residents raise added questions. What will be the change (if any) in the proportions of resident and nonresident campers, the frequencies and lengths of their visits? In 1973, four states—Idaho, Maine, New Hampshire, and Vermont—established differential camping fees based on residence. An analysis of 1972 and 1973 camping permits for these four state park systems might provide some answers to these questions.

THE STUDY SITUATION

Before New Hampshire announced its residence differential, we had established a system for computer analysis of all information on camping permits at Pawtuckaway State Park in southeastern New Hampshire. A search program identified all permit extensions and consolidated the permits written into total visits, making it possible to determine visit lengths accurately. The program also summarized data on campers' origins, repeat visits during the season, and moves from one campsite to another during a single visit to the campground.

The 169 campsites at Pawtuckaway State Park are distributed along a waterfront and inland to a distance of about 900 feet from the lakeshore. Because of the obvious differences in site quality, a second differential was estab-

lished at this park between the 61 waterfront and the 108 inland sites. Before 1973, camping rates were $1.00 per person over 12 years of age. This rate resulted in an average campsite fee of $2.44 per night. With the implementation of the dual differential in 1973, the new family rates were:

	Resident	*Nonresident*
Inland sites	$3.00	$4.00
Waterfront sites	4.00	5.00

In addition to the fee changes in 1973, New Hampshire state parks adopted a policy of reserving a minimum of 20 percent of their campsites for New Hampshire residents. At Pawtuckaway, a block of 33 sites (21 waterfront and 12 inland), served by a single access road, were set aside for the exclusive use of New Hampshire residents.

The analyses of 1971 and 1972 camping permits at Pawtuckaway produced both a system for handling permit data and several base-line measures of campground use. These data made it possible to measure the impacts of the major policy changes in 1973 on such campground characteristics as visit length, camper origin, and occupancy rates of waterfront and inland sites.

METHOD OF STUDY

All information from camping permits issued during 1971, 1972, and 1973 was transferred to data cards. Because many campers prefer to register for only 1 or 2 days at a time even though they may be planning to stay for the maximum allowable 2 weeks, it was necessary to consolidate all reregistrations into single visits. During 1971 and 1972, nearly one-third of all campers extended their stay at least once during a single visit.

During 1971 and 1972, approximately 10 percent of permit extensions involved a change of campsite. Despite this low frequency, we were interested in maintaining a record of site-switching. This record provided an opportunity to discover any relationship between fee differentials and the frequency of site-switching: (1) within the waterfront zone, (2) within the inland zone, and (3) between zones.

As a byproduct of consolidating permit extensions and plotting site-switching, we developed a measure of the frequency of early departures. During 1972, over 350 parties left at least 1 day before their permits expired. Refunds are not made for early departures, and we were interested in determining whether early departures would decline when fees were increased in 1973.

The main computer program for this study provided a site-by-site annual summary for each zone, listing: total registered parties, total registered persons, total adults, total days the site was occupied, total days on which the site was occupied by two parties on the same day, percentage of capacity use, a frequency listing of visit lengths and average visit length for each site, a frequency listing of party sizes, and average party size. The waterfront and inland zone summaries also provided frequencies of site use by resident and nonresident campers, total dollar income for the zone, the average income per site-day, and a season-long percentage occupancy graph.

A second program, in addition to summarizing site-switching, also provided a summary of repeat visits (during the season) by campers' home states, a summary of types of equipment used by residents and nonresidents, and a summary of the only item of data not provided directly by the permit, local or nonlocal origin of visitors. A local visitor was defined as one living within 50 miles of the park. (Copies of both programs and output samples are available from the authors upon request.)

RESULTS

Attendance and Occupancy

Despite the increased cost to campers that resulted from the 1973 fee differentials, total campground visits increased by 7 percent and the number of permits issued was up 3 percent over the 1971-72 averages. But while the volume of business and park income increased, there were slight declines in total persons and in site occupancy rates for the 1973 season (table 1).

During the 3 years of the study, the average party size, of both resident and nonresident campers, decreased by nearly one-third per-

Table 1.—Occupancy and attendance statistics, 1971-73, Pawtuckaway State Park

Item	Average 1971-72	1973	Difference
	No.	*No.*	*Percent*
Permits issued	6,119	6,285	+3
Permit extensions	2,014	1,905	−5
All parties	4,105	4,380	+7
Total persons	15,954	15,715	−1
Average party size	3.89	3.59	−8
Occupied site nights	13,149	12,427	−5
Parties turned away	1,007	597	−41
Average percent occupancy:	*Percent*	*Percent*	*Percent*
Waterfront (61 sites)	70	66	−4
Inland (108 sites)	53	45	−8
All (169 sites)	60	53	−7

son. This decline is more than three times that reported by the Census Bureau for family size during the same period *(U.S. Bureau of the Census 1973)*.

The sharp reduction in party size may be a reflection of a shift in the camping public toward younger campers and more nonfamily camping groups. Further evidence of such a shift is the 6-percent increase in tent campers in 1973, over the 55 percent reported in 1972. (No comparison with 1971 is possible because camping equipment was not recorded on permits until 1972).

The average percentage of occupancy declined in 1973 by 4 percent in the waterfront zone and by 8 percent in the inland zone. These declines in occupancy, without a similar drop in visits, reflect the effect of a gradually eroding average length of visit (table 2). Although permit extensions were slightly less frequent in 1973, their effect was nearly balanced by a decline in early departures (table 3), so that the shorter visits appear to be the result of a long-term trend rather than a direct effect of the increase in fees. Average visit length declined by approximately ¼ day during each year of the study at both waterfront and inland sites. The suggestion of a long-term trend is supported by an examination of earlier sample surveys of campers at this park, which reported average visit lengths of 6.4 to 7.6 days in 1967, based on samples of 107 and 40 campers respectively *(LaPage 1971, Jansen et al. 1971)*. The shorter 1973 visit may, again, be a reflection of a change in the camping clientele from family groups toward smaller, younger, and unrelated camping groups.

Average visit lengths for campers at waterfront sites were consistently longer, in every year, than those of campers at inland sites. The higher cost of waterfront sites in 1973 did not appear to reduce average visit lengths; the reduction from the 1971-72 average was the same in both zones.

Throughout the 3 years, the average camping visit of a New Hampshire resident was over ½ day longer than that of a nonresident. The preferential rates given New Hampshire residents in 1973 did not increase their average length of visit.

Table 2.—Average visit length in days for all campers, 1971-73

Category	1971	1972	1973
Waterfront campsites	4.19	3.89	3.62
Inland campsites	2.96	2.79	2.46
N. H. residents	3.78	3.65	3.23
Nonresidents	3.14	2.92	2.60
Campground totals: *	3.49	3.25	2.95

* Campground totals are slightly higher than would be derived by weighting the averages for each class of sites because zone averages include two shorter visits for every party that changed its campsite.

Table 3.—Visit extensions and early departures of campers in 1972 and 1973

Item	Percentage of total parties		
	1972	1973	Difference
Number of extensions:			
None	69	74	+5
One	20	17	−3
Two	7	6	−1
3 to 13	4	3	−1
Days left early			
None	93	96	+3
One	5	3	−2
Two or more	2	1	−1
			Percent
Paid camper days not camped	1,411	696	−51
Cost to campers*	$874	$725	−17

* Estimated from average cost per site of a night's camping of $2.44 in 1972 and $4.05 in 1973.

Origin of Visitors

The number of nonresident visitors to the park dropped by 4 percent in 1973, while the number of New Hampshire parties increased by 36 percent over the previous 2-year average. During 1971 and 1972 the proportion of visitors from New Hampshire was 27 percent; in 1973 it went up to 35 percent. Visitors from Massachusetts dropped from 44 percent to 41 percent, and Canadians from 4 percent to 2 percent. Local (50-mile radius) visits increased from 40 to 45 percent.

The preferential fees for residents did not seem to encourage repeat visits during the season. Fifteen percent of the New Hampshire visitors made two or more camping trips to Pawtuckaway each year in 1971 and 1972. In 1973, the proportion of New Hampshire residents who made repeat visits increased to 18 percent. For all visitors, the repeat visit rate was a constant 11 percent for each of the 3 years.

The proportions of residents and nonresidents who used the waterfront zone did change significantly during 1973. With 34 percent of the waterfront sites reserved for New Hampshire residents, use by residents increased from 31 percent in 1971-72 to 44 percent of the waterfront zone use in 1973 (table 4).

Table 4.—Percentage of visitors at waterfront and inland sites who were not residents of New Hampshire, 1971 to 1973

Nonresident occupancy of—	Average 1971-72	1973	Change
Waterfront campsites	69	56	—13
Inland campsites	74	70	—4
All sites	73	65	—8

Site-Switching

Moving from one site to another during a single visit is not encouraged by the park management. However, it does occur when families who want to camp near each other do not arrive at the same time; and it is often done in conjunction with a permit extension, when a camper wishes to improve his location during an extended visit. Because it does occur, we felt that site-switching might be responsive to fee differentials, when some campers seek to improve their locations and others attempt to economize by moving from a premium waterfront site to a less expensive inland site. Site-switching might also increase with reduced occupany levels and a resulting increase in opportunities.

The total incidence of site-switching was relatively constant from year to year (table 5). However, there is slight evidence that the premium rate for waterfront sites may have discouraged a small amount of movement into the waterfront zone from the inland zone. It also appears that the premium rate may have encouraged more shopping around within the waterfront zone. There was no significant movement from more expensive sites to less expensive ones.

Table 5.—Incidence and direction of site-switching, 1971 to 1973

Number of moves	Average 1971-72	1973	Change
	No.	*No.*	*Percent*
From waterfront to waterfront	28	40	+43
From waterfront to inland	10	7	—30
From inland to waterfront	96	84	—13
From inland to inland	59	60	+ 2
All moves	193	191	— 1

Revenue and Cost to Campers

The average cost of a campsite per day for all classes of sites, for resident and nonresident visitors alike, was $4.05 in 1973. Waterfront sites averaged $4.58 per day, inland sites $3.75 per day. The average cost of campsites of all classes during the previous 2 years was $2.44. Therefore the average increase in income to the park for each occupied waterfront campsite in 1973 was $2.14 per day; for inland sites it was $1.31.

The dollar income from camping permits increased dramatically in 1973; income was 61 percent higher than the preceding 2-year aver-

Table 6.—Revenue from camping permits, 1971 to 1973, Pawtuckaway park

Source	Average 1971-72	1973	Increase
			Percent
Waterfront sites (61)	$14,083	$26,461	+88
Inland sites (108)	18,883	26,651	+41
All sites (169)	$32,966	$53,112	+61

age of $33,000 (table 6). The income from waterfront sites increased by 88 percent, while that from inland sites increased by 41 percent. The portion of the $20,146 increase in campground income attributable to waterfront premiums is 29 percent, 39 percent is due to the nonresident differential, and 32 percent is a direct result of changing the fee basis from number of adults to campsites. The per-site charge was, in effect, a price increase of $0.56, from the average of $2.44 in 1972 to a minimum, for all campers, of $3.00 in 1973.

Camper Reactions

A supply of printed forms inviting comment about the differential fee systems at Pawtuckaway State Park was conspicuously displayed at the camper registration counter throughout the 1973 camping season.

Sixteen comments were returned; four of them were totally unrelated to camping fees, and two commended the idea of the differential. One nonresident objected to the differential and one resident objected to the waterfront premium charge. Three nonresidents suggested that the resident fee be applied to nonresidents who were registering for 1 week or longer. The remaining five comments questioned the complexity of the system and the need for it. A complaint rate of less than 2 per thousand parties seems to be an acceptable endorsement of the changed fee policies.

Although the reactions of would-be campers who must be turned away at the gate because of capacity crowds are difficult to document, the 41-percent reduction in turn-aways during 1973 (table 1) appears to be a desirable side effect of the fee changes. Differential campsite pricing, or at least more realistic campsite pricing, seems to result in improved equity not only in resource allocation among users but in reducing the number of disappointed nonusers as well.

CONCLUSIONS

Differential fees based on residence of campers and inherent campsite attractiveness were accepted by campers, and did not produce any significant change in overhead costs, numbers of visits, length of visits, or site-switching. A redistribution of resident and nonresident use of premium waterfront sites occurred, but this was, at least in part, a result of reserving 34 percent of all waterfront sites for the exclusive use of New Hampshire residents. The premium charges at heavily used waterfront sites did not result in a significant reduction in use.

Incidental findings from the study were: (1) an apparent trend toward smaller camping parties and shorter visits, and (2) a significant increase in tent camping accompanied by a decrease in recreational vehicle camping.

This experiment in differential campsite pricing, using available data, is one example of the kind of recreation research that can be carried out through the combined efforts of park administrators and researchers. Policies and administrative practices of public agencies are constantly changing, and their records, before and after those changes, are frequently available for analysis. In many instances, valuable information for an agency contemplating a major policy change may be buried in its own past records.

This experiment, though conducted at a public park, has important implications for the commercial campground industry. Approximately one-third of the campsites in this study were considered worth a premium. The premium rates alone increased average park earnings by 29 percent. Use of premium sites declined by only 4 percent; and that decline appears to reflect a market trend that is independent of local prices.

Differential campsite pricing is not a common practice at the Nation's 9,000 commercial campgrounds. However, if one-third of the campsites in each campground could qualify for premium rates because of superior quality, condition, or features, many of the industry's

marginal operations might become profitable. In New Hampshire alone, the 212 operating campgrounds (averaging 67 sites each) may have as many as 4,700 premium sites that could rent for an additional $1 per day through the 100-day season. And, since the best sites are the ones that are most likely to be 100-percent occupied, differential pricing could theoretically generate an additional $470,000 per season for the state's commercial campground industry.

Differential campsite pricing at the 5,500 campgrounds provided at public expense across the country might lead to more realistic pricing, better park funding, and a more equitable use of public campsites if the results of this study are a valid indication of camper response.

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