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LOW COMPLIANCE RATES AT UNMANNED TRAIL REGISTERS

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ABSTRACT

Only 28 percent of the visitors to a portion of the Selway-Bitterroot Wilderness registered at voluntary trail registration stations. This is much lower than previous studies indicated and means some use estimates based on trail registers may be very unreliable.

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KEYWORDS: recreation use estimation, trail registers, compliance rates, Wilderness, Selway-Bitterroot, Montana.

Unmanned, voluntary trail registers are commonly used in parks and forests in the United States and Canada primarily to provide information about visitor use for reports and management planning. Trail registers are the major alternative to mandatory travel permits for gathering use data (Hendee and Lucas 1973). About half of the National Forest areas in the National Wilderness Preservation System have trail registers rather than permit systems (Lime and Buchman 1974), and many other nonwilderness dispersed recreation areas have trail registers.

The problem with trail registers is obvious--not all people register. As a result, the information is incomplete, and use is understated. In addition, some types of visitors are more likely to register than others and, therefore, the information is also biased.

Two studies examined trail register compliance rates and concluded that a substantial majority of visitors registered. Wenger and Gregerson (1964) reported an overall registration rate of 74 percent for the Three Sisters and Mountain Lakes Wildernesses in Oregon in 1961 and 1962. Lucas and others (1971) estimated 65 percent of the visitor groups registered in the Mission Mountains Primitive Area in Montana in 1968.

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The similarity of the results of these two studies and the general similarity of the relationship of registration rates to factors such as method of travel, length of stay, local vs. nonlocal visitor origins, etc., suggested that registration rates might be reasonably consistent from area to area, and that data from trail registers provided a possible base for use estimates when adjusted for the minority of nonrespondents. This conclusion is now brought into question by new data, based on 1974 use of part of the Selway-Bitterroot Wilderne , in Montana, that produced estimates of registration rates less than half the estimates of the previous studies.

STUDY AREA

The Stevensville Ranger District, Bitterroot National Forest, includes more than 100,000 acres of the Selway-Bitterroot Wilderness. This northeast corner of the Wilderness consists of the eastern slope of the main Bitterroot mountain range from Blodgett canyon north. About 10 major canyons, each with headwater lakes, are served by trails, and several other trails follow minor canyons or ridges to peaks or lakes.

Amount of use varies from moderate on some trails (more than 2,000 annual visitor days from trail register data) to very light on other trails (less than 100 visitor days). Most use is in the summer, predominantly day-use (from 45 to 88 percent of the groups registering at each trailhead take 1-day trips), and about 90 percent of the visitors are hikers.

Standard Forest Service trail registers (fig. 1), requesting each party to fill out and deposit a registration card, are located at all trailheads and have been in use for 4 years. All the registers are located at or very near the trailhead parking area.

Figure 1.--Standard Forest Service trail registers are used in the Selway-Bitterroot Wilderness.

STUDY METHODS

Five sample trailheads (table 1) were chosen in consultation with Ranger District personnel for a study of visitor impacts on trails and campsites. To better estimate actual use, trail registration compliance was studied on these trails.

Each trailhead was checked for a total of 7 days, once on each day of the week, during the first half of August 1974. Observers, not in uniform and not driving official vehicles (to avoid influencing visitor behavior), inconspicuously watched each trail register from about 8:00 a.m. to 5:00 p.m. daily. Visitor behavior was recorded on a tally sheet after the party had left. Party size, method of travel, and overnight or day use were all noted, as well as whether or not the party registered. Day users could be identified by the absence of backpacks or packhorses. None of the visitors were interviewed.

Table 1.--*Number of groups observed and percent registering at each of five Selway-Bitterroot Wilderness trailheads by selected group characteristics, 1974*

Type of user	Trailhead: Mill Creek	Bear Creek	Big Creek	Kootenai Creek	Sweeney Creek	Study area total
DAY-USERS						
Observed	12	27	19	35	10	103
Registered (%)	25	22	16	17	20	19
OVERNIGHTERS						
Observed	9	5	11	14	6	45
Registered (%)	33	20	82	36	67	49
HIKERS						
Observed	16	28	27	44	14	129
Registered (%)	38	25	37	25	43	31
HORSEMEN						
Observed	5	4	3	5	2	19
Registered (%)	0	0	67	0	0	11
Total						
Observed	21	32	30	49	16	148
Registered (%)	29	22	40	22	38	28

RESULTS

Only 28 percent of the 148 parties observed registered (table 1). (There is approximately a 95 percent probability that the range between 20 and 36 percent includes the true percent registering.[2]) This is well below half of the 75 percent estimate of the Oregon study (Wenger and Gregersen 1964) and the 65 percent estimate of the Mission Mountains study (Lucas and others 1971). On weekdays, the rate was slightly higher (30 percent) than on weekends (26 percent). This day-of-week difference agrees with the Mission Mountains study, but is the reverse of the Oregon study (Wenger and Gregersen 1964). The low rates were consistent from trail to trail (table 1); registration for all visitors at each trail varied from 22 to 40 percent.

Although registration patterns for various types of visitors in the Selway-Bitterroot were similar to those reported in the Oregon and Mission Mountains studies, registration rates for each visitor category were consistently much lower in the Selway-Bitterroot. In all the studies, overnight visitors were more likely to register than day users--49 percent compared to 19 percent in the Selway-Bitterroot Wilderness (table 1). Hikers complied better than horsemen--31 percent compared to only 11 percent in the Selway-Bitterroot. Only in the overnight visitor category were registration percentages even remotely similar between the Selway-Bitterroot study and the other two studies: Selway-Bitterroot, 49 percent; Oregon, 79 percent; Mission Mountains, 75 percent.

The relationship of party size to registration, not included in table 1, also followed the pattern of the Oregon and Mission Mountains studies. In the Selway-Bitterroot, only 10 percent of lone individuals registered, 35 percent of 2- to 5-person groups registered, and only 17 percent of the 6-person or larger groups complied.

DISCUSSION--WHY WERE REGISTRATION RATES SO LOW?

A number of possible explanations for the low registration rates in the Selway-Bitterroot Wilderness come to mind. First, use of the Selway-Bitterroot Wilderness might differ from use of the two other study areas. Not so--the types of use are very similar. The Mission Mountains and the two Oregon areas are predominantly summer, day-use, hiking areas without substantial outfitter use. Selway-Bitterroot registration was studied in the summer; the sample was 89 percent hiker, 70 percent day-use. Heavy use by horsemen, use by outfitters, and short stays--all associated with lower registration rates--do not explain the difference.

All three of the study areas draw most of their visitors from the local region, and the Oregon and Mission Mountains studies showed slightly lower registration by local people. The Selway-Bitterroot study area might draw a higher proportion of visitors from the immediate vicinity, but comparative data are lacking. However, residence was not a strong factor in explaining registration rates in previous studies. Furthermore, the Selway-Bitterroot study area and the Mission Mountains Primitive Area both draw many of their visitors from the same area. Possibly, a feeling by visitors that this section of the Selway-Bitterroot is "their backyard" has some effect, but it seems far too weak to explain the large difference.

People who had visited the area previously during the season had slightly lower registration rates in the Oregon and Mission Mountains studies. The Selway-Bitterroot has only slightly more repeat visitors than the Mission Mountains. Data on repeat

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[2]Interpolated from table 3, Confidence intervals for binomial distribution, 95 percent interval, p. 87, in *Elementary Forest Sampling*, Agric. Handb. 232.

visitors to the Oregon areas were unavailable. This factor also does not account for the striking difference. Design and location of station, sign wording, and registration cards were similar in all cases.

There were no wilderness management controversies, personalities, or other peculiarities apparent that would account for the very low rates.

Registration rates might be lower now than they were in the 1960's for reasons that are obscure but perhaps related to shifts in political and social attitudes. Wilderness use has been growing very rapidly and a great many visitors are new since the 1960's. Some of the new visitors may be indifferent to requests to fill out forms whose importance is not apparent.

The percentage of visitors that register at unmanned stations may vary much more than previously thought. Perhaps the high rate of registration in the two earlier studies was not typical. There are almost 90 National Forest Wildernesses, and sampling only 2 is inadequate. Electronic trail counters in the Idaho Primitive Area indicate only about 18 percent of the 1974 visitors registered.[3] An earlier study in Canada also reported very low rates--35 percent--for completion of a questionnaire at registers placed at attractions reached by trail (lakes, primarily) rather than at trailheads (Thorsell 1968). Thorsell attributed the low rate to the long, 19-question form, but it could be a warning of variability in registration rates. In contrast, Merriam and others (1973) report 95 percent of the parties observed in the Boundary Waters Canoe Area registered at special stations at campsites.

MANAGEMENT IMPLICATIONS

Managers using registration-based visitor data for management planning must be cautious. Applying an assumed registration rate or a formula developed elsewhere, or at an earlier date, such as that in the study of the Mission Mountains (Lucas and others 1971) could produce gross errors. On the other hand, using raw registration data without some correction might be extremely unreliable, also. Actual use in the Selway-Bitterroot study area is apparently three to four times what the raw registration data indicate. Furthermore, actual use is probably more than twice that previously thought, based on an assumed, typical registration rate. Reported use figures for units of the Wilderness System and general, dispersed recreation that were based on registration data might be just as unreliable. In many cases, reported use could be too low.

Registration rates in each area using trail registers should be spot-checked and periodically rechecked. Preliminary checking for 10 days or so at several well-used access points might indicate if rates are low and indicate the need for further checking to obtain more precise estimates. The difference between 65 and 75 percent registration rates in terms of use estimates based on each rate is about 15 percent. This is not good accuracy, but it is probably acceptable. But the difference in estimates based on 75 versus 30 percent registration rates is about 250 percent, which is clearly unacceptable. Furthermore, low registration rates provide an inherently unreliable base for use estimates (Lucas and others 1971, p. 37).

Efforts to raise registration rates might help. Education and publicity would be worth trying (Lime and Lorence 1974); many visitors may view registering as more akin to signing a guest book than an important contribution to the protection and management of the area. Stations *must* be serviced frequently--a station with no cards, pencil, or pen not only loses information, it feeds the visitor's doubts about the importance of

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[3]Personal communication from Earl F. Dodds, Ranger, Big Creek Ranger District, Payette National Forest, Idaho.

registration. Station design should be reevaluated. Brighter colors could be considered (the present brown and gray design blends in perhaps too well). Location very close to the trail's edge, perhaps even in conjunction with some kind of gate, real or symbolic, might improve visitor compliance. In at least one area, the present system is not working and some experimentation seems needed.

The relative advantage of permit systems over trail registers (Hendee and Lucas 1973) may be greater than thought. Permits may be the only reliable way to obtain important use data for increasingly demanding management planning (Lime and Buchman 1974). The trail register's usefulness is now in question. If trail registers are performing as poorly elsewhere as reported here and their performance cannot be improved, they need to be replaced with some different system.

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