Truths About Solitude at Grand Canyon

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During the post-World War II boom in outdoor recreation participation, a number of professionals became concerned with increased visitation and its effect on recreation experiences. Wagar (1964) was one of the first to develop a framework for the effects of increased visitation on recreation experiences. Wagar formulated his thoughts from the following premise: "When too many people use the same area, some traditional wildland values are lost." Within his widely cited monograph, he speculated on the detrimental effects of increased number of encounters on a number of experiential parameters, including solitude, crowding, and satisfaction. Since Wagar's time, the notion that increased visitor encounters diminish the quality of outdoor recreation experience has been at the heart of many studies, and has been a primary directive for many recreation research programs.

During the past few decades, concern over crowding in recreation environments has been widely shared by both land managers and visitors. In a poll of wilderness managers, Washburne and Cole (1983) found that more than half of their sampled managers reported crowding, and its detrimental effects on wilderness experiences, to be problems within their parks (see also Stankey 1973; Lucas 1980). Manning (1985) reviewed scores of studies that have examined recreation experiences related to solitude, crowding, and satisfaction. For all the interest and intensity of research that has been directed toward these experiences, results are still mixed and implications still tenuous.

A premise of this paper is that the emergent ambiguity in the literature related to solitude and crowding is partially a result of unstated assumptions and professional biases. The purpose of this paper is *to expose some myths associated with management of solitude and crowding in backcountry areas.* In doing so, this paper takes a broad "sweep" at managerial and research-oriented contexts. Although empirical evidence is introduced to support the truths that are developed herein, the evidence is de-emphasized to focus on unstated (or implied) assumptions associated with traditional ideologies. Methodology for the two backcountry user studies referenced in this paper are published elsewhere (Stewart and Carpenter 1989; Stewart, Cole, and Chen 1996).

Where are Opportunities for Solitude?

Like management frameworks for many backcountry areas, Grand Canyon's backcountry is divided into various *use zones,* each associated with a different level of development. In Grand Canyon, the four use zones are labeled Developed, Threshold, Primitive, and Wild, with the former being associated with well-maintained trails, three designated campgrounds (each holding 15 or more parties per night), running water, visible ranger patrols, hundreds of day-hikers each day, telephones, and other conveniences. The latter three zones are associated with less development than the Developed zone, with Wild being the zone of the least amount of managerial presence. The four use zones of Grand Canyon's backcountry parallel the directives of the Recreation Opportunity Spectrum, which recommend the provision of a range of recreational settings to afford a range of recreational experiences.

An important managerial question is: Which zone provides the best opportunities for visitors to experience solitude? Traditional viewpoints indicate that remoteness is an essential element of settings that afford solitude. As legitimized in the Wilderness Act of 1964, land area must be large and use of mechanized equipment and other civilizing effects must be minimal in order for environments to provide opportunities for solitude. The idealized landscapes for

many professionals (i.e., researchers, teachers, land managers) associated with protected area management are those that are pure, pristine, and untrammeled. Notions of restored or pre-Columbian ecosystems become enmeshed with traditional thoughts on environments that afford solitude. Although the term is fortunately becoming passé, developed zones occasionally are labeled as *sacrifice* areas. Since there need to be places in parks that accommodate masses of tourists, zones are sacrificed to concentrate tourists for the good of preserving the remainder of a park. Within this context, a sacrifice area would not be a place to seek solitude. After all, how could one experience solitude in tainted and degraded settings?

Affected by these traditions, more than four decades of research and managerial insight have enshrined remote backcountry travelers, who spend a week or more hiking where few have trod, as being experts on seeking solitude. One must go deep into virgin territory to capture the "Holy Grail" of backcountry experiences. Seeing the reflection of ourselves in such backcountry travelers, researchers (and teachers and managers) institutionalize such myths and point to the remotest of the remote locations as being appropriate places to experience solitude. In contrast, the truths present a different relationship between solitude and its necessary environmental settings.

Truth #1: All zones attract visitors seeking solitude. In the Grand Canyon 1984-85 backcountry user study, which sampled more than 3,000 backpackers over the course of 12 months, of the 524 respondents who reported solitude as being very important, 55% hiked in the Developed zone, 20% hiked in the Threshold zone, and 25% hiked in either the Primitive or Wild zone. One could argue that there was more solitude experienced in the Developed zone than all other zones combined. This truth is in direct contrast with some traditional myths of backcountry professionals.

An implication of this truth is that the notion of developed areas as being sacrifices needs to be abandoned. For most park visitors, these so-called sacrifice areas are wonderful places that afford a variety of beneficial and high-quality experiences. Referring to such areas as "sacrifice," symbolically degrades the users who enjoy it (i.e., by suggesting that such users are too dumb to know better) and precludes creative thought on managing for various kinds of recreational experiences. In other words, visitors in such developed areas do not pine for purer experiences in more remote and less-trammeled landscapes. The developed area is more of an ideal than a sacrifice to its visitors.

As another implication of this truth, managerial frameworks emphasizing a diversity of opportunities are based upon a successful premise. Although the success is not due to each visitor finding the setting that provides solitude *in some absolute sense*, the success is due to each visitor finding the setting that provides solitude *in their particular case*. In this sense, hikers of different use zones share similar experiences of solitude. Solitude experiences are not better or worse between zones. The directive is to continue to maintain and enhance such diversity in settings so that each visitor can select for themselves the setting that will provide solitude.

What Factors Influence Solitude and Crowding?

The development of a "satisfaction model" was initiated by Alldredge (1973) and expanded by Shelby (1980; see also Manning 1985) in which satisfaction and perceptions of crowding are influenced by encounters (and density). Although scores of studies are associated with discourse on the "satisfaction model," empirical support is unimpressive. Lack of substantive relationships between encounters, perceived crowding, and satisfaction has been recurrent in recreation research (cf. Graefe, Vaske, and Kuss 1984; Gramann 1982; Shelby and Heberlein 1986). The model is still grounded primarily in speculation and hypothetical relationships. Indeed, it could be argued that the model was developed *in spite of empirical evidence*.

In Manning's (1985) review of numerous studies examining aspects of crowding, the majority of relationships were inconsequential, and just three studies explained more than 15% of variance in satisfaction or crowding. An example of the typical strength of such relationships is

illustrated in a study of Grand Canyon river rafters: Shelby (1980) found that density and encounters explained 3% of the variance in satisfaction. Due to the lack of convincing evidence, researchers have explained the lack of empirical support for the satisfaction model through concepts that emphasize idiosyncratic explanations, such as user displacement (Kuentzel and Heberlein 1992), rationalization (Manning and Ciali 1980), product shift (Shindler and Shelby 1995), and other forms of individual coping behavior (Hammitt and Patterson 1991).

A second generation of crowding studies is more optimistic in its search for supportive empirical evidence (e.g., Shelby, Vaske, and Heberlein 1989). Since the mid-1980s, the growth in studies focused upon situational effects on the outdoor recreation experience has lost momentum. A perceived lack of explanatory power attributed to situation attributes may have influenced a turn toward person-based concepts, such as norms or coping behavior (e.g., Hammitt and Patterson 1991). These latter-day crowding studies often suggest that dispositional characteristics of the respondent explains recreation experiences. In doing so they rely, in various renditions, on respondent acceptability reports to hypothetical scenarios (in which some threshold number of encounters is sought). As with the first generation of crowding studies, responses to hypothetical scenarios, compared with reports of actual recreation experiences, are the most supportive of the "satisfaction model" (cf. Stankey 1973 with Shelby, Vaske, and Donnelly 1996).

In contrast to the direction of latter-day crowding studies, a premise of the 1994-95 Grand Canyon backcountry user study was that the lack of consensus regarding relationships between attributes and experiences is due to a mono-method bias, specifically the limitations of the post-trip mailback questionnaire. Riddick, DeSchriver, and Weissinger (1984 1991) have indicated that more than 90% of studies published in recreation journals are based on a one-time assessment, such as a post-trip mailback questionnaire. Although there may be a variety of purposes to employ a post-trip mailback questionnaire, the investigation of recreationists' response to setting attributes may be more directly assessed using alternative techniques. An outdoor recreation experience is associated with movement through many different settings with exposure to a multitude of various sets of situational attributes. The investigative challenge is to develop research designs that are sensitive to variation in both situational attributes and recreation experience. Unless hypothetical, a one-time assessment lacks sensitivity to the collection of *discrete sets of experiences coupled with situations* associated with a given recreation endeavor.

A primary tenet of the 1994-95 study follows from the above Truth #1: Individuals respond to situational attributes, but the attributes required to evoke a given response (such as solitude) varies across individuals. If this is the case, then research designs need to partition effects of situations from effects of persons, since both contribute to an experiential response. For example, for one individual, solitude may require an isolated campsite, whereas for another individual solitude is associated with a drive-in campground. If both individuals were respondents in a survey, the analysis for these two individuals would show that solitude does not vary even though the two sets of setting attributes are drastically different (i.e., different setting, same response). A spurious conclusion could be reached that situational attributes do not exhibit an effect (e.g., Knopf, Peterson, and Leatherberry 1983). However, if responses of both individuals in both environments were captured, then one could partition the effects of situations from the effects of persons. In other words, the relative contribution of each situation could be assessed (via intra-subject differences on solitude; i.e., the same person providing responses in two different settings). With the post-trip mailback questionnaire generally associated with one response set, it effectively precludes the ability to distinguish whether the responses are contingent on the situation or on the person (see Shelby and Heberlein 1986:100 for further discussion on this point). In other words, a one-time assessment is unable to distinguish the following two questions: Do individuals differ in their response to set-

ting attributes? versus, Do setting attributes influence a response from individuals? Thus an implicit assumption of most cross-sectional analyses (in search of situational effects) is that inter-personal differences do not exist (i.e., person-based effects are negligible).

In short, if one aligns with the empirical evidence of the 1970s and early 1980s, a conclusion would be that solitude, crowding, and satisfaction are not easily given to management influence. If one aligns with the "post-satisfaction model" literature, a conclusion would be that user traits and dispositional characteristics are most relevant. In a reinvigorated search for managerial factors which may influence solitude, crowding, and satisfaction, the 1994-95 user study employed diary-like techniques with a sample of approximately 200 backcountry hikers. The truths exhibited are in contrast to findings from previous literature.

Truth #2: Several managerial factors consistently influence solitude and crowding. As the number of groups encountered increased, solitude decreased for 77% and crowding increased for 85% of sampled hikers. In addition, as evidence of other hikers increased (e.g., noticeable litter and trash on trail and campsites), solitude decreased for 65% and crowding increased for 68% of sampled hikers. These are reliable findings that hold for hikers of various use zones at Grand Canyon.

An implication of this truth is that design and maintenance efforts, even in the well-developed Bright Angel Corridor, should continue to be directed at minimizing the number of groups encountered and evidence of other people. In the past decade, the Grand Canyon staff has re-positioned one of the corridor campgrounds out of a cottonwood grove and onto a "bench" area (with upland desert scrub). To their credit, the park staff has been careful to create vegetative screenings, campsite spacings, litter clean-up, re-vegetation of some areas, and other privacy-inducing effects to foster positive recreational experiences, such as solitude, in this heavily traveled use zone. Many visitors within developed use zones are seeking experiences associated with solitude and want to avoid feeling crowded. *Do not give up on developed areas as places to foster solitude.*

Truth #3: Several non-managerial factors consistently influence solitude and crowding. As encounters with wildlife increased, solitude increased for 64% and satisfaction increased for 63% of sampled hikers. As social interaction within one's own group increased, crowding decreased for 42% and satisfaction increased for 57% of sampled hikers. These are reliable findings that hold for hikers of various use zones at Grand Canyon.

It is important to have a realistic view of the extent of managerial influence. Management directs effort to factors which are controllable, but the total contexts of visitor experiences need consideration. Since non-managerial factors such as sightings of wildlife and social interaction within one's own hiking group consistently influenced solitude (and crowding and satisfaction), do not be alarmed with occasional complaints from a few "unhappy campers." For a portion of sampled hikers, their degree of solitude was not influenced by factors directly linked to managerial control. In short, the fulfillment of beneficial recreation experiences is based on several situational factors, only some of which can be managed.

Conclusion

Solitude opportunities may be more prevalent than previously thought. Abandon the myths of remoteness and pristineness as being requisites for solitude. Some park visitors find solitude in the most developed of places. This is not to encourage further development in parks; it is simply to say that researchers and managers need to embrace all areas of parks as being suitable for high-quality outdoor recreation experiences. Solitude experienced by a visitor to a developed area is not lesser in quality than solitude experienced by a visitor to a remote area. Recognition of the diversity of environments that provide solitude is a first step in improving on its management.

References for this paper are available on request to the first author.