

NORM STABILITY AT ALCATRAZ ISLAND: EFFECTS OF TIME AND CHANGING CONDITIONS

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Abstract.—Research suggests that visitors often have norms about the resource and social conditions acceptable in a park and that understanding such norms can be useful for park management. Most studies of norms use data from cross-sectional surveys, and little is known about how norms may change over time. To explore this issue, we conducted a study in 2007 to determine whether norms for the number of people-at-one-time in the prison cellhouse at Alcatraz Island, California, had changed since a similar survey in 1998. We conducted an on-site, self-administered visitor survey using a questionnaire identical to the one used in 1998 and similar sampling procedures. The survey produced 453 usable questionnaires and yielded a response rate of 83 percent. There were few substantive differences in findings between the two studies. The findings are generally consistent with results from other research.

1.0 INTRODUCTION AND LITERATURE REVIEW

Contemporary park and outdoor recreation management frameworks, including Visitor Experience and Resource Protection (National Park Service 1997), require identification of indicators of quality and establishment of standards of quality (Manning 2007). Indicators of quality are measurable, manageable variables that help define the quality of natural resources and the visitor experience. Standards of quality define the minimum acceptable condition of indicator variables. Research suggests that visitors often have norms about the resource and social conditions acceptable in a park or related area, and that such norms can be useful as a means of formulating indicators and standards of quality (Manning 2007).

Most studies of visitor norms use data from cross-sectional surveys (Kuentzel and Heberlein 2003). Consequently, we do not know much about how normative standards may change over time. A dramatic or unpredictable change in recreation-related norms over time would diminish their utility for deriving standards and for long-term management of parks and outdoor recreation (Kim and Shelby 2008). Therefore, norm stability is an important issue for park and outdoor recreation management and research.

Studies of norm stability have found mixed results. A 1977 study of boaters on the Rogue River, Oregon, was replicated in 1984 (Shelby et al. 1988). There was no statistically significant difference for the maximum acceptable number of river encounters. However, camp encounter norms were significantly higher or more tolerant in the latter study. A similar study in three wilderness areas over a longer interval found few clear, consistent trends in tolerance for inter-group contacts (Cole et al. 1995). A 1978 study of hiking encounter norms in the wilderness of Denali National Park, Alaska, was replicated in 2000 and found fairly stable norms over this 22-year period (Bacon et al. 2003). A longitudinal study of boaters at Apostle Islands National Lakeshore, Wisconsin, found substantial changes in crowding-related norms from 1975 to 1985, but no substantial changes from 1985 to 1997 (Kuentzel and Heberlein 2003). Two other studies found substantial stability in normative standards of recreation visitors over time, but these studies covered only 2 to 3 years (Manning et al. 1999, Kim and Shelby 2008). Kim and Shelby (2008) found that zero- and single-tolerance norms tended to be stable over time. They attribute the greater stability to greater consensus or “crystallization,” which results in greater norm stability.

2.0 METHODS

Alcatraz Island is part of Golden Gate National Park in San Francisco, California; a famous federal prison facility operated on the island from 1934 to 1963. Today, the National Park Service (NPS) manages and conducts tours

of Alcatraz Island, including the prison itself. The NPS lengthened the prison cellhouse tour slightly between 1998 and 2007.

The current study was conducted on 10 randomly selected days in July and August of 2007 to determine whether normative standards of quality for the number of people-at-one-time in the prison cellhouse at Alcatraz Island had changed since a similar survey was conducted in 1998 (Manning et al. 2002). Both studies involved an on-site, self-administered visitor survey with identical questions measuring crowding-related norms. On each sampling day, a trained interviewer approached randomly selected visitors who were preparing to depart from Alcatraz Island and requested their participation in the survey. Visitors who agreed to participate received a copy of the questionnaire and were asked to complete it as they returned to San Francisco. The 2007 survey produced 453 usable questionnaires and yielded a response rate of 83 percent.

3.0 FINDINGS

The survey asked respondents what they enjoyed most about their trip to Alcatraz Island. In 2007, nearly two-thirds (61.8 percent) reported that they most enjoyed the cellhouse audio tour; this answer was by far the most commonly reported response. These findings are very similar to 1998 (when 75 percent most enjoyed the cellhouse audio tour) and show that the audio tour is an especially important indicator of the quality of the visitor experience.

The 1998 and 2007 surveys also measured normative standards of quality for the number of visitors in the prison cellhouse at Alcatraz. The survey included a series of questions about respondents' standards of quality with respect to the number of visitors on Michigan Avenue, an important location in the prison cellhouse. First, respondents were asked whether they had visited the prison cellhouse during their trip to Alcatraz Island. Virtually all respondents (99.5 percent) had visited Michigan Avenue in both the 1998 and 2007 surveys. Respondents who had visited Michigan Avenue were shown a series of six photographs (Fig. 1) depicting a range of visitor use on Michigan Avenue.

Table 1.—Mean and median acceptability* of use levels

Use Level	Mean Acceptability Rating 2007	Mean Acceptability Rating 1998
Photo 1 - 10 People	3.54	3.24
Photo 2 - 22 People	3.35	3.11
Photo 3 - 34 People	2.40	2.31
Photo 4 - 46 People	-0.01	-0.20
Photo 5 - 58 People	-1.89*	-2.09
Photo 6 - 70 People	-3.00	-3.04

* Scale of -4 ("Very Unacceptable") to +4 ("Very Acceptable")

The levels of use depicted in the photographs ranged from 10 to 70 people. Respondents were asked to rate the acceptability of each photograph on a scale from -4 ("Very Unacceptable") to +4 ("Very Acceptable"). Table 1 reports the mean acceptability rating for each photograph for both the 1998 and 2007 surveys. The mean acceptability rating in the 2007 survey ranged from -3.00 for the photograph depicting 70 people on Michigan Avenue to 3.54 for the photograph depicting a use level of 10 people. Mean acceptability ratings for each photograph were very similar across the two surveys and no significant differences were found.

Figure 2 presents the social norm curve derived from the mean acceptability ratings for each photograph. As the norm curve illustrates, Alcatraz Island visitors consider a use level of approximately 46 people to be the threshold of acceptability. Use levels of less than 46 people are, on average, considered acceptable, and use levels of greater than 45 people are, on average, considered unacceptable. There is virtually no difference between the 1998 and 2007 surveys in the threshold of acceptability. Alcatraz Island visitors in 1998 considered a use level of approximately 44 people to be the threshold of acceptability.

Several questions asked respondents to select the photograph that showed the level of use they would prefer to experience on Michigan Avenue, the number of visitors they typically saw, and the highest level of use the NPS should allow (Table 2). Respondents also had the option to indicate that the NPS should not restrict the number of visitors allowed in the prison cellhouse.



Photo 1 - 10 People



Photo 2 - 22 People

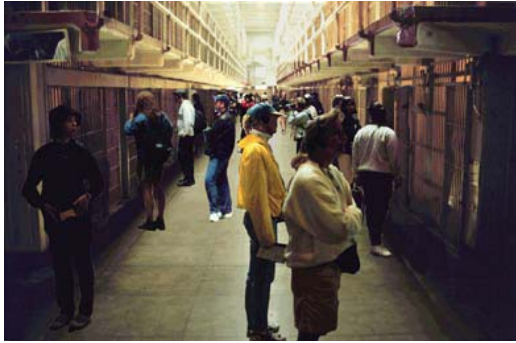


Photo 3 - 34 People



Photo 4 - 46 People



Photo 5 - 58 People



Photo 6 - 70 People

Figure 1.—Study photographs.

Respondents preferred an average of 25.4 visitors on Michigan Avenue. The maximum number of visitors that respondents thought the NPS should allow averaged 44.0. However, this number is underestimated to some degree because 20 respondents indicated that none of the photographs showed a use level high enough to limit use in the cellhouse, and 11 respondents reported that the NPS should not limit use of the cellhouse. Finally, the number of visitors typically seen by respondents averaged 38.2, slightly fewer than in 1998 (40.7). These values did not differ significantly from 1998 survey values.

4.0 DISCUSSION AND CONCLUSIONS

The study findings lead to two primary conclusions. First, the number of people at one time on Michigan Avenue is a good indicator of quality of the visitor experience on Alcatraz Island since nearly all visitors take the prison cellhouse tour and feel that it is the highlight of their visit. However, there are indications that visitors are concerned with growing use levels in the cellhouse. Visitor perceptions of current use levels in the cellhouse are approaching the maximum number of people judged acceptable, meaning that the cellhouse may be reaching

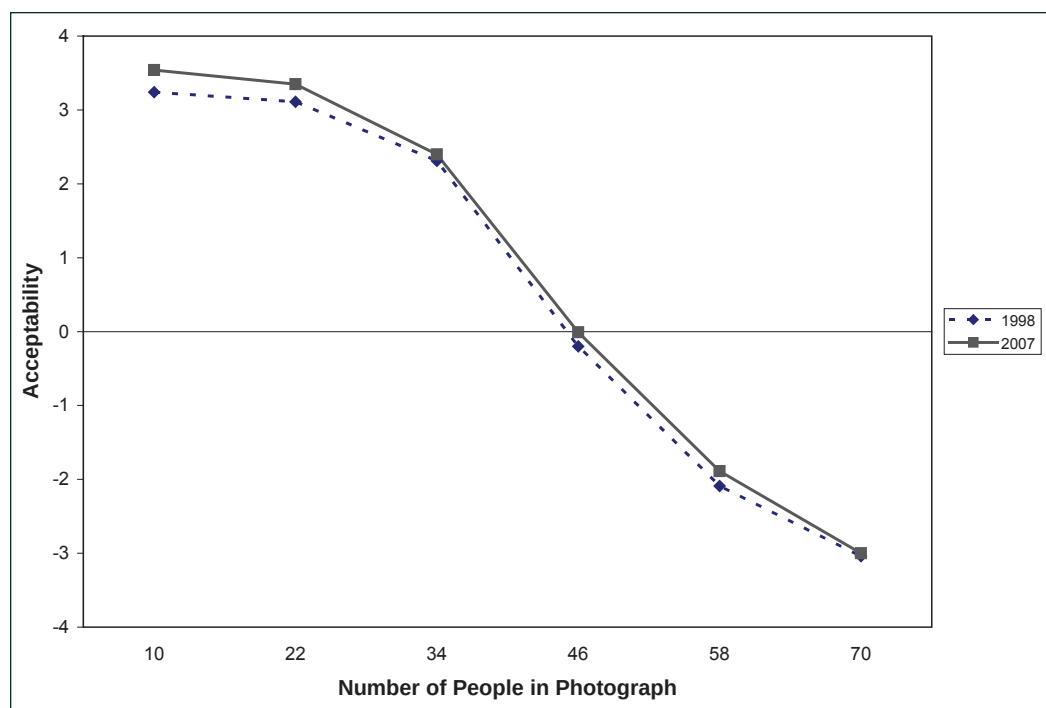


Figure 2.—Social norm curve for number of people at one time in the cellhouse.

Table 2.—Standards of quality for different evaluative dimensions

Evaluative dimension	2007*	1998*
Preference	25.4	25.1
Acceptability	45.9	45.0
Management action	44.0	43.9
Typically seen	38.2	40.7

* Average number of people

capacity and may need further management, such as reservations for the cellhouse tour, or use limits.

Second, normative standards for this indicator seem to be very stable. Few substantive differences in normative standards occurred between the present study and the identical study conducted in 1998. These findings are consistent with results from other studies that found that single-tolerance norms, like the ones measured in this study, tend to be stable over time (Bacon et al. 2003, Kim and Shelby 2008). Additionally, even with minor changes to the format and length of the cellhouse tour at Alcatraz, the normative standard for the number of people-at-one-time in the cellhouse has remained stable. This consistency implies that managers can confidently use normative standards for long-term management.

5.0 CITATIONS

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The content of this paper reflects the views of the authors(s), who are responsible for the facts and accuracy of the information presented herein.