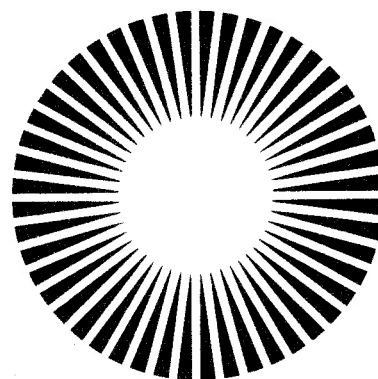


RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI
RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI
RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI
RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI
RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI RRDI

REGIONAL RESOURCES DEVELOPMENT INSTITUTE



ASSESSMENT OF VISITOR CHARACTERISTICS AND
PERCEPTIONS ASSOCIATED WITH VISITOR USE LEVELS
AT FORT SUMTER NATIONAL MONUMENT

Report Addendum



ASSESSMENT OF VISITOR CHARACTERISTICS AND
PERCEPTIONS ASSOCIATED WITH VISITOR USE LEVELS
AT FORT SUMTER NATIONAL MONUMENT
Report Addendum

Kathleen L. Andereck, Research Assistant
and
Robert H. Becker, Director

Regional Resources Development Institute
Clemson University
Clemson, South Carolina

Contract Number CA-5000-4-8003
Sub-agreement #39

April 1989

INITIAL COMMENTS

This document is an addendum to the report entitled Assessment of Visitor Characteristics and Perceptions Associated with Visitor Use Levels at Fort Sumter National Monument that was submitted to the National Park Service late in 1988. The purpose of this addendum is to address comments on the report made by management at Fort Sumter National Monument.

Specifically, the addendum will discuss concerns dealing with the effects management changes may have on carrying capacity at Fort Sumter. Additionally, visitor comments regarding Fort maintenance will be addressed.

FACTORS IMPACTING CARRYING CAPACITY

Carrying capacity

In order to determine carrying capacity, a description of the relationships between conditions at a recreation site and impacts associated with these conditions is required. The conditions at a recreation site, or management parameters, include factors that can be manipulated by management such as use level and length of stay. The impact associated with these conditions, or impact parameters, describe what happens to visitors as a result of such conditions, such as perceived crowding and visitor satisfaction (Shelby and Heberlein 1986; Graefe et al. 1984).

Research is able to determine the relationship between management parameters and impact parameters. However, carrying capacity estimates also require value judgments on the part of recreation managers. Before capacity can be determined, managers must specify evaluative standards indicating acceptable impact levels on various aspects of visitor experiences. In order to adequately do this, the type of visitor experiences to be provided must be specified and formally stated in management objectives (Shelby and Heberlein 1986).

When the type of experience to be provided to the visitor has been specified, management is able to determine the variables considered important for a particular site. In carrying capacity studies, factors such as perceived crowding, and visitor expectations and preferences for use level are often considered important. Management can then determine evaluative standards

for each of these factors to determine tolerable impacts, such as what level of perceived crowding among visitors is acceptable. It is then possible to measure the impact of use level on important visitor experience factors and modify management parameters (ie. limit use level) if necessary (Shelby and Heberlein 1986).

Carrying capacity at Fort Sumter

The management objectives relating to visitor experiences at Fort Sumter, although less specific than desirable, are as follows:

Visitor Use and Safety

To provide a level and character of visitor use which can be supported by Fort Sumter and Fort Moultrie over an indefinite period of time, which minimizes perceived overcrowding, and which uses measurable thresholds based upon established standards for interpretation, safety, cultural resource preservation, physical capacity, and facility capacity.

To minimize threats to public health and safety caused by visitation in excess of park carrying capacities, adverse weather conditions which influence docking safety, and potential environmental health hazards.

Acquisition of Information

To encourage and participate in efforts to acquire information through research, or other means, in order to facilitate development of the best possible strategies for preserving the significant archaeological and other cultural resources and enhancing opportunities for compatible resource use and enjoyment.

- To identify and monitor the impacts of visitor use on interpretation and park resources in order to derive and update appropriate carrying capacity indices for the various units of the Monument.

- To identify and maintain visitor population studies, profiles, and area tourism patterns in order to provide appropriate service and interpretation.

Interpretation

To provide an unhurried setting and level of visitor use which enhances understanding and appreciation of the significant historic events associated with the Monument and to further awareness of how the historic resources of the Monument illustrate the evolution of United States seacoast defense.

To promote awareness of:

- The events of the Civil War at or near Fort Sumter with particular emphasis on the "First Shot of the Civil War" and the Confederate Defense of Charleston Harbor 1861-1865.
- The historic resources of the fort and how they characterize various stages in development of seacoast fortifications.

Preservation of Cultural Resources

To preserve and protect the park's cultural and archaeological resources which commemorate significant historical events associated with Fort Sumter and Fort Moultrie, and also to preserve and protect those resources which particularly illustrate the evolution of seacoast defense in the United States; and in this context to continue a carefully planned program of cyclic maintenance of cultural resource.

To minimize deterioration and erosion of historic fabric caused by visitor density levels, environmental source pollution, earthquake, flooding, hurricanes, wave action and other adverse impacts of the coastal environment.

Access and Circulation

To facilitate access to and circulation between and within the various units of the Monument.

- To ensure the availability of safe, convenient ferry access between Charleston and other approved departure points, and units of the Monument, with appropriate interpretive services.

Based on these management objectives, the following variables were identified by the National Park Service, Fort Sumter Tours, Inc. and Regional Resources Development Institute researchers as important to determining carrying capacity:

- 1. Use levels (density)
- *2. Satisfaction
- *3. Perceived crowding
- *4. Number of social contacts
- *5. Expectations for social contacts
- *6. Preferences for social contacts
- *7. Expectations for density
- *8. Preferences for density
- 9. Experience visiting historic areas
- 10. Observing objectionable behavior
- *11. Overlap trips
- 12. Visitor age
- *13. Number in visitor's groups
- *14. Boat on which visitor traveled to fort
- *15. Weather
- 16. Amount of time spent at fort
- *17. Inconvenienced by number of people at Fort
- *18. Worth the time it took to visit
- *19. Worth the cost of the trip
- *20. Too many people on the boat
- *21. Too many people at the fort
- *22. Bothered by others on the boat
- 23. Bothered by others at the Fort
- *24. Type of group visitor was with
- *25. Importance of visit to the fort
- *26. Place of departure
- 27. First visit to fort
- 28. Civil War as a hobby or special interest
- 29. Finding place that helped appreciate historical significance
- *30. Finding place to think and be alone with thoughts
- *31. Avoided places because of too many people
- 32. Trouble getting around fort
- 33. Gender
- 34. Fort Sumter visit major reason for Charleston trip

The relationship between these variables and use level was determined. Those that are significantly impacted by use level are marked with an asterisk. (Those marked by a dash were not appropriate for analysis with use level). This established the relationship between the management parameter of use level and

impact parameters. Details of the analysis can be seen in the initial report submitted to the Park Service.

After the relationship between use level and impact parameters had been established, a carrying capacity was recommended. As indicated in the preceding discussion, a final carrying capacity must be based on evaluative standards set by park management. Evaluative standards for the carrying capacity of Fort Sumter were not specified, so the recommendations were based on standards commonly used in carrying capacity studies (eg. Shelby and Heberlein 1986). Levels of use were considered tolerable until either: 1) the number of individuals giving a negative response on an item increased sharply, or 2) the number of individuals giving a negative response on an item exceeded one-third of the study respondents. The carrying capacity recommended was a minimum threshold of 241 to 260 people, a maximum threshold of 266 to 285 people, with a threshold of 266 to 275 people being a middle-of-the-road capacity.

It must be stressed that the capacities cited above are not based on evaluative standards set by management. If managers feel that the standards used for these threshold are not appropriate, capacities may be different. Additionally, the nature of the relationships between use level and impact parameters must be viewed within the context of management practices at the time of the study. Differing practices would potentially change the nature of the relationships causing differences in study results. Changes in various aspects of the trip and their potential ensuing results on carrying capacity are discussed in the next section.

Impacts on carrying capacity

Changing several aspects of the management of Fort Sumter could result in changes in carrying capacity. These changes involve scheduling, staffing, structural, as well as other modifications.

Staffing and interpretive talks

Adequacy of staffing levels is probably impacted by use level. It is likely that more staff at the Fort would increase carrying capacity to some extent, but is needed only for larger groups. Greater visitor accessibility to an information source is a major benefit of increased staffing levels. Visitors with questions relating to the Fort find it easier to locate an available ranger. More staff members can facilitate flow around the Fort by providing directional information, perhaps reducing congestion in some areas.

The initial report indicated that ability to hear the ranger's interpretive talk is strongly related to the number of people present. As the number of people increases, particularly over 175, more people report that they are not able to hear the talk as well. One suggestion given was that a public address system of some sort be used for larger groups. An alternative approach would be to increase the number of staff and split the visitors into two groups. This would accomplish several things that could increase carrying capacity. First, the visitors that unload from the boat earliest would not have to wait several minutes for everyone to gather for the talk. Second, two smaller groups would improve visitors' ability to hear the talk by

ensuring everyone is within hearing distance and reducing peripheral noise. Third, visitors would be grouped into smaller units of people perhaps reducing perceived crowding. Finally, having groups located in two separate locations upon completion of the talk may facilitate more efficient dispersion and flow by reducing congestion around the talk area. One problem that may arise from splitting visitors into two groups is that the first group would be required to move to a talk location away from the entrance of the Fort perhaps resulting in some visitors separating from the group and missing the talk. Additionally, if one group disperses before another, the ensuing noise and movement may be disruptive to visitors still listening to the other talk.

Physical changes

Some physical changes might increase the carrying capacity of the Fort. Although a bigger dock is not necessary, expediting unloading time from the boat could be beneficial. Two unloading ramps should be used for larger groups whenever possible.

Wider stairways in the Fort might help to accommodate more people, but changing flow patterns could have the same result. Attempting to get visitors to move in several directions might facilitate dispersion and help avoid congestion in any one area. This is likely best done socially by staff members rather than physically. Observation suggests that rangers are able to change flow patterns to some extent simply by pointing out, or suggesting that visitors look at, specific points of interest. For example, mentioning the air conditioned museum tends to

orient flow patterns toward the museum, while mentioning the shells still embedded in the brick wall often directs a number of visitors toward that section of the Fort. Pointing out three or four particularly interesting sections of the Fort, such as the museum, the shells in the wall, and the powder magazine door, might help group dispersal.

Most of the respondents that report avoiding areas because of too many people indicate that it is the gift shop that they avoided (10.3%). This suggests that carrying capacity might be increased by either eliminating the gift shop or moving it to a place with more space. Moving the gift shop from the museum area would also increase the size of the museum somewhat, another area that a few (3.1%) visitors report avoiding because of too many people.

Boat scheduling changes

Increasing the number of boat trips to the Fort would not, in itself, impact the carrying capacity of Fort Sumter. Because it is the number of people or capacity of the boat filled that are the salient factors, distribution of people throughout the day is what effects number of people on the boat. Generally, at least during the summer months, the earlier boats are much more full than those later in the day. Undoubtedly this is influenced by the hot afternoon weather to some extent. Perhaps adding another boat early in the day would redistribute visitation and result in fewer people per boat. Logistically, this poses difficulties, particularly since it would result in overlap trips, a factor demonstrated to negatively impact visitor

experiences. One possible way to redistribute visitation is to run an evening trip. Visitors may choose to go to the Fort in the evening because it is cooler and many other attractions in the area are closed.

Crowding on the boat is strongly influenced by capacity of the boat filled. Another change that might be made is to run only the two larger boats, the Spirit of Charleston and the General Beauregard, to the Fort. These two boats do not reach capacity nearly as often as the Major Anderson.

Summary

Staffing, interpretive, structural and scheduling changes potentially modify carrying capacity. The preceding discussion, however, is speculative. Although research for the report and observation of visitors at the Fort suggest that these factors influence carrying capacity thresholds, only additional research can confirm such speculation.

MAINTENANCE AT FORT SUMTER

One final aspect of the report over which park management expressed concern was the comments regarding maintenance. Five comments dealing with maintenance were received from visitors during the survey period. All five expressed dissatisfaction with the condition of the women's restroom. These comments are of great concern to managers of the Fort, and they wish to see these comments balanced with those reflecting the usual high standards maintained at the Fort. Unfortunately, no other comments regarding maintenance were received during the 1987 study, so it is not possible to include any others.

Realizing that maintenance was reviewed quite highly by visitors in the 1985 study (see Table 1), it is important to point out several factors that differed in the 1987 study. Most importantly is that comments regarding maintenance were not solicited from respondents in 1987 as they were in 1985; the few comments received were volunteered by respondents. As is often the case, people tend to be much more vocal about things they do not like rather than things they view positively. Thus, it is not surprising that no positive comments concerning maintenance were received. Considering the number of visitors contacted (1,687), five negative comments regarding maintenance, which represents less than three percent of respondents, should alert management to a potential problem, but should not be blown out of proportion.

Another factor to be considered is that the 1987 study took place over an extended period of time with many more people

contacted that in previous years. This, naturally, results in the potential for a greater variety of comments, both positive and negative. Additionally, the Fort experienced some very high density levels during the study period, a factor that inhibits staff abilities to keep up with maintenance.

In sum, although the comments regarding maintenance must be considered, they should not be viewed in an overly negative light. Few comments were received suggesting that the majority of visitors to Fort Sumter did not have a negative reaction to maintenance standards.

Table 1	
Visitor Evaluations of Fort Maintenance, 1985 Study	
Evaluation	Percent (%)
Excellent	58.9
Good	21.0
Fair	17.8
Poor	2.3

REFERENCES

Graefe, Alan R., Jerry J. Vaske, and Fred R. Kuss. 1984. Social carrying capacity: An integration and synthesis of twenty years of research. Leisure Sciences 6(4):395-431.

Shelby, Bo and Thomas A. Heberlein. 1986. Carrying capacity in Recreation Settings. Corvallis, OR: Oregon State University Press.

