Norm Congruence Among Tour Boat Passengers to Glacier Bay National Park

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Personal and social norms of visitors are receiving increased attention as a means of setting standards of quality in parks and recreation areas. However, if visitors' evaluations and behavior are not congruent with norm-based standards, then this approach may lack validity. This study tests norm congruence among tour boat passengers to Glacier Bay National Park. A sample of tour boat passengers was surveyed to determine (a) personal norms for the number of watercraft and aircraft seen, (b) number of watercraft and aircraft seen, and (c) the effect of watercraft and aircraft seen on enjoyment. Findings reveal the extent to which evaluations of seeing watercraft and aircraft are congruent with data on personal norms. Several theoretical and methodological issues that help interpret study findings are discussed.

Keywords norms, normative standards, standards of quality, carrying capacity, norm congruence, national parks, Glacier Bay National Park

Carrying capacity is an increasingly pertinent issue for park planning and management. In its most generic form, carrying capacity refers to the amount and type of visitor use that can be appropriately accommodated in a park or related area. Contemporary carrying capacity frameworks rely on indicators and standards of quality to set and manage carrying capacity (Graefe, Kuss, & Vaske, 1990; Manning, 1986; Manning, Lime, Hof, & Freimund, 1995; National Park Service, 1993; Shelby & Heberlein, 1986; Stankey et al., 1985).

Indicators of quality are specific, measurable variables that help to define the level of resource protection and the type of visitor experience to be provided and maintained.

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Indicator variables may include elements of the physical, social, and managerial environment that are important in determining the quality of natural and cultural resources and the quality of the visitor experience. Standards of quality define the quantitative condition of indicator variables. According to the frameworks noted above, carrying capacity is managed by monitoring indicator variables. When standards of quality have been reached or exceeded, so too has carrying capacity.

Not surprisingly, one of the most problematic issues in this contemporary approach to carrying capacity has been setting standards of quality. Such standards may be based on a variety of sources, including legal and administrative mandates, agency policy, historic precedent, expert judgment, interest group politics, and public opinion, especially that derived from current visitors. This latter source has special appeal because it involves those most directly interested in and affected by carrying capacity decisions and related management actions.

Research on visitor-based standards of quality has increasingly focused on personal and social norms. Can visitors—individually and collectively—express judgments about appropriate standards for relevant indicator variables? An emerging component of this question concerns the degree to which visitors’ evaluations and behavior are congruent with their normative standards. If visitors’ evaluations and behavior are not congruent with such standards, then the normative approach to setting standards of quality may lack validity. The issue of norm congruence is the focus of this study.

Norms and Norm Congruence

Developed in the fields of sociology and social psychology, norms have attracted considerable attention as an organizing concept in recreation research and management. In particular, as noted above, normative theory has special application to setting standards of quality for the recreation experience. If park visitors have normative standards concerning relevant aspects of recreation experiences, then such norms can be studied and used as a basis for formulating standards of quality. In this way, carrying capacity can be determined and managed more effectively.

While norms represent an appealing social construct, there are some substantive and methodological uncertainties concerning their definition and application. As originally developed in sociology, norms usually refer to social rules or standards of behavior. Early social theorists used terms such as customs, mores, and folkways as precursors to the contemporary concept of norms (Cooley, 1914; Sumner, 1940; Tonnies, 1961, 1971). In keeping with the theoretical base of sociology, norms are generally interpreted as being externally applied through social obligations and sanctions on individual behavior.

Recent reviews of social norms applied in the recreation context (Noe, 1992; Roggenbuck, Williams, Bange, & Dean, 1991) have identified several distinguishing features of norms. First, actions guided by norms are obligatory and are enforced by sanctions (Hovans, 1950; Rossi & Berk, 1985). Second, norms are action-oriented in that they guide behavior (Blake & Davis, 1964; Cancian, 1975; Biddle, 1986). Third, norms are shared by social groups (Rossi & Berk, 1985). Based on these reviews, it is suggested that recreation researchers may be studying personal norms or preferences rather than social norms. For example, crowding standards of recreationists (e.g., number of river encounters) may not be enforced by any type of social sanction, may not involve modifications of personal behavior, and may not be widely shared.

Other recreation researchers encourage a more expansive interpretation of social norms. Vaske, Graefe, Shelby, and Heberlein (1986), for example, define norms as "stan-
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Standards that individuals use for evaluating activities or environments as good or bad, better or worse” (p. 139). Similarly, Donnelly, Vaske, and Shelby (1992) define recreation-related norms as “evaluative standards which define the important aspects of a particular recreation experience” (p. 143). Finally, Shelby and Vaske (1991) suggest that (a) recreation often involves emerging norms for which strong sanctions and a sense of obligation have yet to fully evolve, (b) recreation-related norms can apply to social and resource conditions as well as behavior because such conditions are often a function of individual behavior, (c) recreation-related norms often regulate collective rather than individual behavior, and (d) recreation-related norms have documented some degree of consensus regarding a number of recreation-related norms.

There are also potentially important methodological issues involved in the social norm concept. Questions designed to measure norms might be phrased in several ways, including the extent to which certain behaviors or conditions are either appropriate or preferred. The former may be more in keeping with the traditional meaning of social norms while the latter may be closer to a personal norm or preference.

It is clear that there are both definitional and methodological issues surrounding normative theory and its application to outdoor recreation. Recreation researchers probably have not been measuring social norms as this concept traditionally has been defined in sociology and social psychology. Personal norms or preferences may be the more operative concept. Nevertheless, the notion that individuals may have standards about relevant conditions of a recreation experience, and that there may be consensus about such standards, appears promising as a means to address some of the more difficult, evaluative aspects of carrying capacity and related recreation management issues. We use the term norm in this study recognizing the limitations described above, but also acknowledging that this terminology has achieved some standing in the recreation literature. Norm-related research can and should proceed as a means of exploring and resolving conceptual and measurement issues.

Application of norms to standards of quality in recreation began in the 1970s and is most fully described by Shelby and Heberlein (1986) and Vaske et al. (1986). These applications have relied heavily upon the work of Jackson (1965), who developed a relatively simple and straightforward methodology—return potential curves—to measure norms. Using these methods, the personal norms of individuals can be aggregated to test for the existence of social norms or the degree to which norms are shared across groups. Normative research in recreation has focused largely on issues of use density or crowding (e.g., Heberlein, Alfano, & Ervin, 1986; Patterson & Hammitt, 1990; Shelby, 1981; Vaske et al., 1986; Whittaker & Shelby, 1988; Williams, Roggenbuck, & Bange, 1991), but has also been expanded to include other potential indicators of quality, including ecological impacts at wilderness campsites (Shelby, Vaske, & Harris, 1988), wildlife management practices (Vaske & Donnelly, 1988), and minimum stream flows (Shelby & Whittaker, 1990).

As research on normative standards in recreation has matured, attention recently has been focused on norm congruence. This issue is sometimes referred to as “norm-impact compatibility” (Shelby & Vaske, 1991). The purpose of this type of research is to explore the extent to which respondents evaluate relevant aspects of their recreation experience in keeping with their normative standards. If visitor norms are to be used in establishing standards of quality, then norm congruence research is important to test the “validity” of visitor norms.

Research findings on norm congruence have been mixed. An initial test on three types of river users was supportive of norm congruence (Vaske et al., 1986). Fishermen, cano-
ers, and tubers who reported more river encounters than their personal and social norms also reported significantly higher levels of perceived crowding. However, a more recent study (Patterson & Hammitt, 1990) cast some doubt on norm congruence. In this study, 83% of backpackers encountered more parties than their personal norms at one or more of three locations (trailhead, along the trail, campsite), but only 34% of them reported that the number of encounters detracted from the solitude aspect of their backcountry experience. In other words, 61% of respondents whose personal encounter norms were violated did not express a negative reaction to the number of other hikers encountered. The most recent study of norm congruence suggests considerable support for the validity of normative standards (Williams et al., 1991). The personal norms of river floaters for encounters with others were measured, and the more the number of actual encounters reported exceeded personal norms, the more respondents reported: (a) experiencing a different type of trip than expected, (b) seeing too many people, (c) feeling disturbed by the number of people they saw, and (d) taking some action to avoid encounters with other people.

Study Methods

This study was conducted at Glacier Bay National Park, Alaska, in the summer of 1989. The principal visitor attraction in the park is the Grand Pacific Glacier, which is usually viewed by visitors during a tour boat cruise conducted daily. On randomly selected days, a field worker rode the tour boat and, near the conclusion of the trip, introduced the study to visitors and requested their participation. Less than 1% of the sample refused to participate. Visitors who agreed to participate and who were over 18 years of age completed a brief on-site questionnaire. A mailback questionnaire was then sent to this sample. Using three follow-up mailings, a response rate of 84% was attained, yielding 722 completed questionnaires.

Three variables derived from the questionnaire are relevant to this study: (a) a measure of personal norms for selected hypothetical numbers of watercraft (four types) and aircraft seen, (b) number of watercraft (four types) and aircraft seen, and (c) the effect of watercraft (four types) and aircraft seen on enjoyment. The measure of personal norms for watercraft and aircraft was derived by asking respondents how they would feel about seeing selected numbers of four types of watercraft and propeller-driven aircraft while viewing Grand Pacific Glacier (i.e., it asked respondents to evaluate hypothetical numbers of encounters). The four types of watercraft included cruise ships, tour boats, pleasure boats, and kayaks/canoes. For each of the five types of watercraft and aircraft, a random number was presented that varied from 0 to 3 for cruise ships and tour boats and from 0 to 9 for pleasure boats, kayaks/canoes, and aircraft. A 5-point Likert response scale was used that ranged from "very unpleasant" to "very pleasant." For the purposes of this study, this variable can be considered a measure of personal norms because it is an indication of an evaluative standard held by individual respondents. Because the question presented a single randomized number of watercraft/aircraft, a definitive personal norm for each respondent cannot necessarily be determined. However, this measure indicates whether a respondent's personal norm is above, below, or directly at the random number of watercraft/aircraft presented. Moreover, study data can be aggregated to calculate a social norm as has been done in the outdoor recreation literature.

The number of watercraft and aircraft seen was measured by asking respondents to report, to the best of their recollection, how many of each of the five types of watercraft/aircraft were seen while viewing Grand Pacific Glacier. The effect of watercraft/aircraft seen on enjoyment was measured by asking respondents the extent to which the number
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of each of the five types of watercraft/aircraft seen added to or detracted from the enjoyment of the experience of viewing Grand Pacific Glacier. A 5-point Likert response scale was used, which ranged from “substantially add” to “substantially detract.”

To test norm congruence, the effects on enjoyment of seeing various numbers of watercraft/aircraft were compared with the data on personal norms. To make this comparison, visitor responses were classified according to two dimensions: (a) the number of watercraft/aircraft seen versus the hypothetical number of watercraft/aircraft presented in the questionnaire, and (b) the evaluation of the number of watercraft/aircraft seen versus the evaluation of the hypothetical number of watercraft/aircraft presented in the questionnaire. These dimensions were then cross-tabulated to determine the extent of norm congruence.

Data on personal norms rather than social norms were used for the test of norm congruence. Norm congruence is ultimately concerned with the validity or internal consistency of data on normative standards. As noted earlier, the operative issue is the extent to which respondents evaluate relevant aspects of their recreation experience in keeping with the data they provide on normative standards. The most appropriate and powerful test of this issue is conducted at the level of the individual respondent. This view is consistent with other tests of norm congruence as described earlier. Moreover, if data at the personal level are found to be generally valid or internally consistent, then this enhances the confidence with which personal norms can be aggregated to determine social norms.

Study Findings

Study data on personal norms for the number of watercraft/aircraft seen are shown in Table 1. Findings for four of the five watercraft/aircraft studied followed the expected pattern, with the mean “pleasantness” rating declining consistently with increasing numbers of watercraft/aircraft. The exception was kayaks/canoes, for which “pleasantness” ratings increased or remained relatively constant with increasing numbers of kayaks/canoes. Watching this type of watercraft apparently adds to the enjoyment of most visitors viewing the Grand Pacific Glacier. These findings suggest that, with the exception of kayaks/canoes, seeing watercraft/aircraft while viewing Grand Pacific Glacier should detract from enjoyment of the visitor experience.

An issue associated with normative data concerns the degree of consensus among the sample about such norms. This issue is often referred to as crystallization and is usually measured by calculating the standard deviations surrounding the means of the normative data. These standard deviations are shown in Table 1. However, interpretation of these standard deviations is problematic for two reasons. First, there are no general guidelines regarding what constitutes an acceptably low standard deviation so as to conclude that there is a sufficient degree of consensus. Second, the normative data reported in this study are based on a series of points along a standardized evaluative response scale. Most of the other encounter norm data reported in the literature are based on respondent reports of the maximum acceptable number of encounters. Thus, the means and standard deviations reported in this study are not directly comparable to other studies. However, most of the standard deviations reported in Table 1 are less than 1.0, indicating that most respondents are clustered in one portion of the rating scale for most of the range of encounters presented. Simple inspection of the distribution of response percentages reported in Table 1 affirms a considerable degree of consensus among the sample.

The means reported in Table 1 have been graphed in Figures 1 and 2 to construct a series of social norms for each type of watercraft/aircraft. Generally, the standard of
quality based on these social norms would be considered the number of encounters at which the plotted lines cross the neutral point or threshold from "pleasant" to "unpleasant." Two other properties of these social norm curves are potentially meaningful. The range of tolerable encounters represents the number of encounters above the neutral point. With the exception of kayaks/canoes, the range of tolerable encounters shown in Figures 1 and 2 is quite narrow. Norm intensity or salience refers to how strongly respondents feel about alternative numbers of encounters and is indicated by the distance from the neutral point to each point along the norm curve. The intensity or salience of the social norms shown in Figures 1 and 2 varies across the five types of watercraft/aircraft, but is generally not high.

Findings on the number of watercraft/aircraft seen and the extent to which they added to or detracted from visitor enjoyment are shown in Tables 2 and 3. (It will be noted that sample size drops substantially from Table 2 to Table 3. Many respondents reported seeing none of some of the five types of watercraft/aircraft. When asked to evaluate the
effect of seeing watercraft/aircraft, some of these respondents skipped this question, apparently thinking it did not apply.) Many respondents reported seeing none of the five types of watercraft/aircraft; however, some respondents reported seeing up to 5 or more of each type of watercraft/aircraft. Respondent evaluations of seeing watercraft/aircraft are generally consistent with these numbers as large percentages of respondents reported that the number of watercraft/aircraft seen (often 0) had no effect on their enjoyment. However, substantial percentages of respondents reported that, to some degree, the number of watercraft/aircraft seen added to or detracted from their enjoyment.

As described earlier, the test of norm congruence focused on comparing data on personal norms with the effect of seeing watercraft/aircraft on enjoyment. This required a three-step process. First, visitors were classified on the basis of number of actual encounters with watercraft/aircraft versus the hypothetical number of encounters with watercraft/aircraft presented in the questionnaire. Results are shown in Table 4. For the
sake of simplicity, only data for cruise ships are shown in this table. The cells in this table were classified into three categories according to the relationship between actual and hypothetical number of cruise ships. Cells in the lower left-hand portion of the table represent respondents who saw fewer cruise ships than the hypothetical number with which they were presented in the questionnaire. Cells in the upper right-hand portion of the table represent respondents who saw more cruise ships than the hypothetical number with which they were presented in the questionnaire. Cells in the center diagonal of the table represent respondents who saw the same number of cruise ships with which they were presented in the questionnaire.

In step two, visitors were classified on the basis of their evaluation of the number of watercraft/aircraft actually encountered versus their evaluation of the hypothetical number of encounters with watercraft/aircraft presented in the questionnaire. Results are shown in Table 5. Again, for the sake of simplicity, only data for cruise ships are shown in this table. As above, the cells in this table were classified into three categories according to the relationships between evaluation of actual and hypothetical number of cruise ships. Cells in the lower left-hand portion of the table represent respondents who rated the actual number of cruise ships seen as less favorable than the hypothetical number of cruise ships with which they were presented in the questionnaire. Cells in the upper right-hand portion of the table represent respondents who rated the actual number of cruise ships seen as more favorable than the hypothetical number of cruise ships with which they were presented in the questionnaire. Cells in the center diagonal of the table represent respondents who rated the actual number of cruise ships seen the same as they rated the hypothetical number of cruise ships with which they were presented in the questionnaire.

### Table 2

<table>
<thead>
<tr>
<th>Number</th>
<th>Cruise ships</th>
<th>Tour boats</th>
<th>Canoes/kayaks</th>
<th>Pleasure boats</th>
<th>Aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>527 (78.8%)</td>
<td>376 (56.5%)</td>
<td>117 (17.6%)</td>
<td>117 (17.6%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>17 (2.5%)</td>
<td>89 (13.4%)</td>
<td>38 (5.7%)</td>
<td>17 (2.6%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 (0.4%)</td>
<td>38 (5.7%)</td>
<td>17 (2.6%)</td>
<td>11 (1.6%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2 (0.3%)</td>
<td>11 (1.6%)</td>
<td>6 (1.5%)</td>
<td>6 (1.5%)</td>
<td></td>
</tr>
<tr>
<td>5 or more</td>
<td>3 (0.4%)</td>
<td>29 (4.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3

<table>
<thead>
<tr>
<th>Effect on enjoyment</th>
<th>Cruise ships</th>
<th>Tour boats</th>
<th>Canoes/kayaks</th>
<th>Pleasure boats</th>
<th>Aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantially add</td>
<td>12 (3.6%)</td>
<td>59 (14.4%)</td>
<td>12 (3.0%)</td>
<td>5 (1.6%)</td>
<td></td>
</tr>
<tr>
<td>Somewhat add</td>
<td>18 (5.4%)</td>
<td>130 (31.7%)</td>
<td>37 (9.3%)</td>
<td>11 (3.5%)</td>
<td></td>
</tr>
<tr>
<td>Neither add nor detract</td>
<td>312 (62.5%)</td>
<td>275 (82.8%)</td>
<td>214 (52.2%)</td>
<td>317 (79.4%)</td>
<td>241 (76.3%)</td>
</tr>
<tr>
<td>Somewhat detract</td>
<td>59 (11.8%)</td>
<td>21 (6.3%)</td>
<td>6 (1.5%)</td>
<td>27 (6.8%)</td>
<td>36 (11.4%)</td>
</tr>
<tr>
<td>Substantially detract</td>
<td>29 (5.8%)</td>
<td>6 (1.8%)</td>
<td>(0.2%)</td>
<td>6 (1.5%)</td>
<td>23 (7.3%)</td>
</tr>
</tbody>
</table>
In step three, these two classifications of visitors were cross-tabulated to form a nine-cell table as shown in Table 6. This cross-tabulation tests for norm congruence as indicated in the following cell descriptions. The upper-left, middle-left, middle-right, and lower-right cells represent respondents whose evaluations of the number of watercraft/aircraft seen are incongruent with their normative standards. Respondents in the remaining five cells are congruent in their evaluation of the number of watercraft/aircraft seen when compared with data on their personal norms.

Table 6 shows the number and percentage of all respondents who fall into each data cell for four of the five types of watercraft/aircraft studied. Data for kayaks/canoes are shown in Table 7. It will be remembered from Figure 2 that data on personal norms for this type of watercraft showed that visitor enjoyment tended to increase or remain relatively constant with increasing numbers of kayaks/canoes. Thus, in this case the lower-left, middle-left, middle-right, and upper-right cells of Table 7 represent respondents whose evaluations of the number of kayaks/canoes seen are incongruent with data on their personal norms.

Findings from Tables 6 and 7 suggest that the vast majority of respondents across all five types of watercraft/aircraft demonstrate norm congruence. The percentage of respondents who demonstrate norm incongruence is relatively consistent across the five types of watercraft/aircraft and ranges from 14.2% for aircraft to 19.9% for both tour boats and

Table 5
Evaluation of actual versus hypothetical number of cruise ships encountered

<table>
<thead>
<tr>
<th>Hypothetical encounters</th>
<th>Substantially detracts*</th>
<th>Somewhat detracts</th>
<th>Neither adds nor detracts*</th>
<th>Somewhat adds*</th>
<th>Substantially adds*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very unpleasant</td>
<td>17*</td>
<td>15*</td>
<td>50*</td>
<td>4*</td>
<td>3*</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>1*</td>
<td>19*</td>
<td>69*</td>
<td>14*</td>
<td>6*</td>
</tr>
<tr>
<td>Neutral</td>
<td>2*</td>
<td>12*</td>
<td>113*</td>
<td>21*</td>
<td>4*</td>
</tr>
<tr>
<td>Pleasant</td>
<td>2*</td>
<td>2*</td>
<td>38*</td>
<td>25*</td>
<td>2*</td>
</tr>
<tr>
<td>Very pleasant</td>
<td>8*</td>
<td>9*</td>
<td>24*</td>
<td>6*</td>
<td>5*</td>
</tr>
</tbody>
</table>

*aactual equal hypothetical
*bactual lower than hypothetical
*cactual higher than hypothetical
Table 6
Cross-tabulation for cruise ships, tour boats, pleasure boats, and aircraft

<table>
<thead>
<tr>
<th>Actual vs. hypothetical encounters</th>
<th>Type</th>
<th>Evaluation of actual vs. hypothetical</th>
<th>Actual &lt; hypothetical</th>
<th>Actual = hypothetical</th>
<th>Actual &gt; hypothetical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual &lt; hypothetical</td>
<td>Cruise ships</td>
<td>16 (3.5%)</td>
<td>82 (18.2%)</td>
<td>133 (29.5%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tour boats</td>
<td>25 (8.6%)</td>
<td>83 (28.5%)</td>
<td>78 (26.8%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleasure boats</td>
<td>24 (6.9%)</td>
<td>94 (26.9%)</td>
<td>125 (35.7%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aircraft</td>
<td>9 (3.3%)</td>
<td>77 (28.0%)</td>
<td>113 (41.1%)</td>
<td></td>
</tr>
<tr>
<td>Actual = hypothetical</td>
<td>Cruise ships</td>
<td>33 (7.3%)</td>
<td>60 (13.3%)</td>
<td>16 (3.5%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tour boats</td>
<td>21 (7.2%)</td>
<td>30 (10.3%)</td>
<td>7 (2.4%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleasure boats</td>
<td>10 (2.9%)</td>
<td>18 (5.1%)</td>
<td>7 (2.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aircraft</td>
<td>22 (8.0%)</td>
<td>13 (4.7%)</td>
<td>6 (2.2%)</td>
<td></td>
</tr>
<tr>
<td>Actual &gt; hypothetical</td>
<td>Cruise ships</td>
<td>43 (9.5%)</td>
<td>53 (11.8%)</td>
<td>15 (3.3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tour boats</td>
<td>22 (7.6%)</td>
<td>20 (6.9%)</td>
<td>5 (1.7%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleasure boats</td>
<td>21 (6.0%)</td>
<td>41 (11.7%)</td>
<td>10 (2.9%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aircraft</td>
<td>19 (6.9%)</td>
<td>14 (5.1%)</td>
<td>2 (0.7%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Boldfaced entries = incongruent cells (incongruent cells fall into the following four types of respondents: (1) saw fewer than hypothetical, but rated number seen as less favorable than hypothetical, (2) saw same as hypothetical, but rated number as less favorable than hypothetical, (3) saw same as hypothetical, but rated actual number as more favorable than hypothetical, and (4) saw more than hypothetical, but rated actual number as more favorable than hypothetical).

An average of 17.3% of respondents across all five types of watercraft/aircraft demonstrate norm incongruence.

However, it is prudent to note that the data represented in Tables 6 and 7 might also be interpreted as three somewhat different tests of norm congruence. A first type of test represents respondents who saw fewer watercraft/aircraft than the hypothetical number presented in the questionnaire. Norm incongruence is quite low in this situation, ranging from 4.5 to 19.4% and averaging 10.8% across all five types of watercraft/aircraft. A second type of test represents respondents who saw more watercraft/aircraft than the hypothetical number presented in the questionnaire. Again, norm incongruence is quite

Table 7
Cross-tabulation for kayaks/canoes

<table>
<thead>
<tr>
<th>Actual vs. hypothetical encounters</th>
<th>Evaluation of actual vs. hypothetical</th>
<th>Actual &lt; hypothetical</th>
<th>Actual = hypothetical</th>
<th>Actual &gt; hypothetical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual &lt; hypothetical</td>
<td>52 (14.3%)</td>
<td>135 (37.2%)</td>
<td>45 (12.4%)</td>
<td></td>
</tr>
<tr>
<td>Actual = hypothetical</td>
<td>6 (1.7%)</td>
<td>28 (7.7%)</td>
<td>7 (1.9%)</td>
<td></td>
</tr>
<tr>
<td>Actual &gt; hypothetical</td>
<td>14 (3.9%)</td>
<td>38 (10.5%)</td>
<td>38 (10.5%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Boldfaced entries = incongruent cells.
low, ranging from 5.7 to 15.5% and averaging 11.8%. A third type of test represents respondents who saw the same number of watercraft/aircraft presented in the questionnaire. This might be interpreted as the strictest test of norm congruence. In this situation, norm incongruence is considerably higher, ranging from 31.7 to 68.3% and averaging 48.4%.

A more detailed examination of the data in Tables 6 and 7 provides additional insight into norm incongruence. Each of the three rows in these tables can be broken down into more detail to assess the degree of incongruence. This analysis is presented in Tables 8 through 10. Table 8 represents respondents in row 1 of Table 6 and, by definition, includes all respondents who actually encountered fewer watercraft/aircraft than the hypothetical number with which they were presented in the questionnaire. For the sake of simplicity, only data for cruise ships are presented in this analysis.

Respondents found in the lower left-hand portion of Table 8 correspond with the respondents in the upper-left cells of Table 6. (Fifteen respondents are found in these positions based on the cruise ship data.) It is important to note from Table 8 that none of the respondents represent instances of "extreme" incongruity. That is, in no case where respondents actually encountered fewer cruise ships than the hypothetical number presented in the questionnaire did these respondents rate the actual encounters as negative while rating the hypothetical number as positive. In all cases in Table 8, norm incongruence resulted from a contrast between a neutral and either a positive or a negative evaluation. Data for the other four types of watercraft/aircraft show similar patterns.

Table 8

<table>
<thead>
<tr>
<th>Effect of hypothetical encounters</th>
<th>Effect of actual encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Substantially detracts</td>
</tr>
<tr>
<td>Very unpleasant</td>
<td>14</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
</tr>
<tr>
<td>Pleasant</td>
<td>0</td>
</tr>
<tr>
<td>Very pleasant</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note. Boldfaced entries = incongruent cells.*

Table 9

<table>
<thead>
<tr>
<th>Effect of hypothetical encounters</th>
<th>Effect of actual encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Substantially detracts</td>
</tr>
<tr>
<td>Very unpleasant</td>
<td>2</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>7</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
</tr>
<tr>
<td>Pleasant</td>
<td>0</td>
</tr>
<tr>
<td>Very pleasant</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note. Boldfaced entries = incongruent cells.*
Data for row 3 of Table 6 (cruise ships only) are shown in Table 10. Once again, there are few examples of incongruent responses, and only three of those incongruent responses resulted from a contrast between positive and negative evaluations. Data for the other four types of watercraft/aircraft show similar patterns.

Table 9, which represents the data for row 2 in Table 6 (cruise ships only), also shows few instances of incongruent responses resulting from a contrast between positive and negative evaluations. Data for the other four types of watercraft/aircraft show similar patterns. However, as previously noted, when respondents were asked to evaluate a hypothetical number of cruise ships that was the same as the number they actually encountered, the percentage of incongruence is higher than in other conditions. Inspection of the data reveals that a high proportion of the incongruent responses in Table 9 results when respondents who had seen 0 cruise ships were asked hypothetically how they would respond to seeing 0 cruise ships (what we will refer to as the 0/0 condition). Of the 49 incongruent responses in Table 9, 15 result from the 0/0 condition (for the 0/0 condition 15 of 18 are incongruent). Thus, when the 0/0 condition is dropped from the analysis, total incongruence for cruise ships drops from 44.9 to 37.3%. This pattern also holds true for other watercraft/aircraft in row 2 of Table 6. When the 0/0 condition is dropped, total incongruence across all watercraft/aircraft in row 2 of Table 6 drops from 50.2 to 37.7%.

Discussion

Like the literature on norm congruence described earlier, findings from this study are somewhat mixed. Examining the sample as a whole, findings suggest that only a relatively small percentage of respondents evaluated the number of watercraft/aircraft seen in a way that was incongruent with data on their personal norms for seeing watercraft/aircraft. These findings were generally consistent over the five types of watercraft/aircraft studied. However, a subsample of respondents who saw the same number of watercraft/aircraft as the hypothetical number presented in the questionnaire present an especially strict test of norm congruence. In this situation, norm incongruence is considerably higher, averaging nearly half of this subsample. Several theoretical and empirical issues may help to interpret these findings.

First, the subsample of respondents who saw the same number of watercraft/aircraft as the hypothetical number presented in the questionnaire constitutes an especially strict test, indeed. By definition, this test requires respondents to correctly predict how they would evaluate a single specific number of encounters with any of five types of watercraft/aircraft.

Table 10

<table>
<thead>
<tr>
<th>Effect of hypothetical encounters</th>
<th>Effect of actual encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Substantially detracts</td>
</tr>
<tr>
<td>Very unpleasant</td>
<td>3</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>0</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
</tr>
<tr>
<td>Pleasant</td>
<td>2</td>
</tr>
<tr>
<td>Very pleasant</td>
<td>7</td>
</tr>
</tbody>
</table>

Note. Boldfaced entries = incongruent cells
Norm Congruence Among Tour Boat Passengers

aircraft. This may be unreasonable for several reasons discussed below. Other tests of norm congruence allow for some latitude around the personal norm to account for some of the uncertainties associated with norm evaluation. Williams et al. (1991), for example, created three categories of respondents to test for norm congruence, those whose norms were met, those whose norms were moderately exceeded, and those whose norms were highly exceeded.

Second, the range of watercraft/aircraft explored in this study also suggests a rather strict test of norm congruence. The range of watercraft/aircraft dealt within this study was very narrow. For example, the hypothetical number of cruise ships presented to respondents ranged from 0 to 3. Moreover, the vast majority of respondents actually saw fewer than 3 cruise ships. Thus, the difference between the actual and the hypothetical numbers of cruise ships was quite small for nearly all respondents. Many respondents could have been judged incongruent with their normative standards based on actual and hypothetical differences of only 1 or 2 cruise ships. This issue cuts across all five types of watercraft/aircraft studied.

Third, as noted earlier, there was little or no “extreme” incongruence. Nearly all of the incongruence resulted from a contrast between a neutral and either a positive or negative evaluation. In a typical example of incongruence, a visitor might have actually encountered 2 ships and indicated that they “neither added nor detracted” from their experience, but may have indicated that an encounter with 1 ship would have an “unpleasant” effect.

Fourth, a methodological issue may have contributed to norm incongruence. As described earlier, normative standards were determined by asking respondents to evaluate the “pleasantness” of seeing alternative numbers of watercraft/aircraft. For respondents who were presented a hypothetical number of 0 watercraft/aircraft, the interpretation of this question, and thus the response given, is somewhat problematic. Some respondents may have felt that if there were no watercraft/aircraft present, then the absence of sightings could have neither a pleasant nor an unpleasant impact on their experience. Study findings showed a bimodal distribution in ratings of seeing 0 watercraft/aircraft (with peaks at the neutral and pleasant scale points), supporting this hypothesis. Likewise, evaluating the effect of encounters with watercraft/aircraft on visitor experience may have been problematic for respondents when they had had no such encounters. Given the equivocal interpretation of the survey questions dealing with 0 encounters, the relatively high incongruence rates observed for respondents who actually saw 0 watercraft/aircraft and who were also presented with a hypothetical number of 0 watercraft/aircraft may not be incongruent in the sense we originally intended. Instead, they may have resulted from differing interpretations of the two similar questions. This issue cuts across all five types of watercraft/aircraft studied.

Fifth, the literature suggests that not all encounters are evaluated uniformly (Manning, 1985). That is, there may be something about an encounter, such as the behavior of the entity encountered or the timing of the encounter, that causes it to be evaluated more positively or negatively than anticipated. This situation may cause instances in which the actual number of encounters are evaluated more positively or negatively than a normative standard may suggest. Such instances are based on reasonable and valid criteria, yet are classified as incongruent in this study. This suggests that it is probably unreasonable to expect universal norm congruence.

Sixth, a relatively global measure—effect on enjoyment—was used to evaluate the number of watercraft/aircraft seen. The literature suggests that such global measures are not as closely tied to normative standards for encounters as are more specific measures,
such as perceived crowding (Shelby & Vaske, 1991). Because one might expect a closer
and more consistent relationship between normative standards for encounters and a more
specific evaluative measure such as perceived crowding, a more specific evaluative mea-
sure may have reduced the amount of norm incongruence found in this study.

Seventh, normative standards have been found to be more fully developed and more
strongly held by more specialized and experienced visitors (Hammitt, McDonald, & Noe,
1984; Manning, 1986; Shelby & Vaske, 1991; Williams et al., 1991). The sample of
visitors employed in this study consisted of nearly all first-time visitors to the study area
who were participating in a nonspecialized activity. This suggests that a more experienced
and specialized visitor group may have reduced the amount of norm incongruence found
in the study.

Eighth, an additional methodological issue that may affect study findings concerns
the cross-sectional nature of this survey. Respondents were asked to report data regarding
their personal norms for seeing watercraft/aircraft and their evaluation of seeing varying
numbers of watercraft/aircraft in the same survey instrument. To the extent that respon-
dents might have recognized the potential linkage between these questions and con-
structed or modified their responses accordingly, study findings might overestimate the
degree of norm congruence. However, care was taken in the design of the questionnaire
to first ask for evaluations of the actual number of the watercraft/aircraft seen and to
separate the evaluation and normative standards questions by two pages. Nevertheless, a
potentially stronger research strategy would involve a pretest-posttest design.

Finally, there may be a relationship between norm congruence and norm salience. As
described earlier, norm salience refers to how strongly respondents feel about the variable
under study or how important it is in determining the quality of the recreation experience.
Several studies have indicated a relationship between norm salience and norm crystalli-
zation (Shelby, 1981; Shelby & Vaske, 1991; Vaske et al., 1986). It seems reasonable to
expect less consensus regarding normative standards for variables that are less important
to respondents. Similarly, it may be reasonable to expect less congruence regarding
normative standards for variables that are not highly important to respondents. It was
reported earlier that the social norms derived from study data were generally not high in
intensity or salience. This may help to explain the levels of norm incongruence found in
this study. This is suggested even more strongly by the varying levels of norm salience
found among the five types of watercraft/aircraft included in this study. Norm salience
was highest for encounters with aircraft and, for the sample as a whole, norm incongru-
ence was lowest for this type of craft. Similarly, norm salience was lowest for kayaks/
canoes and norm incongruence was highest for this type of craft.

A final issue raised in this study concerns the conceptualization and measurement of
norms. As noted earlier, application of normative theory to recreation research has raised
a number of issues, including the definition of norms, the differences between personal
and social norms, and how norms might best be measured. The data presented in this study
probably do not represent norms as traditionally defined in sociology and social psychol-
ogy. In terms of face validity, the Glacier Bay study data might be interpreted most
accurately as personal preferences for encounter levels. This can be contrasted to the face
validity of measures used in other studies that might be best interpreted as "acceptance"
or "tolerance" of encounters.

These issues, however, do not diminish the potential practical importance or rele-
vance of the study findings. The extent to which there is consensus among visitors
concerning preferences about indicators and standards of the quality of the visitor ex-
perience helps to resolve traditionally problematic evaluative issues in outdoor recreation
area management. The extent to which there is internal consistency or congruence within such data is a vitally important part of such applications. However, the ways in which consensus-related issues are conceptualized and measured may influence tests of internal consistency or congruence. This issue constitutes an important research priority.

Conclusion

This study presents data on the extent of norm congruence among tour boat passengers to Glacier Bay National Park. Data on personal norms for seeing watercraft/aircraft are compared to evaluations of seeing watercraft/aircraft to determine the internal consistency of visitor reports. The study adds to the growing literature on normative standards in outdoor recreation by testing norm congruence in a frontcountry setting, by examining norms for five types of watercraft/aircraft, and by including a normative standard with a generally positive slope.

The study uses data collection and analysis techniques that are somewhat different from other studies that have examined the issue of norm congruence. The study questionnaire did not ask respondents to report their personal norms directly. Instead, respondents were asked to make judgments about randomized numbers of contacts with watercraft/aircraft. These judgments provide data that are indicative of personal norms. In effect, respondents were asked to predict how they would react to varying numbers of watercraft/aircraft and were then placed in the position of making similar judgments about the actual number of watercraft/aircraft experienced on site. In this way, norm congruence is tested by examining the internal consistency of the predictive and actual judgments. Study data can also be aggregated to construct a series of social norms. There appears to be a generally high degree of consensus about these social norms.

Study findings for the sample as a whole suggest relatively high levels of norm congruence, and these findings are generally consistent with two other studies of norm congruence (Vaske et al., 1986; Williams et al., 1991). However, a subpopulation of respondents constituting a stricter test of norm congruence suggests substantially higher levels of incongruence, and these findings are more consistent with those of Patterson and Hammitt (1990).

A number of theoretical and methodological issues are identified that add insights to study findings and suggest direction for additional research. Several of these issues suggest ways in which norm congruence may be over- or underestimated in this study. Other issues concern how norms are conceptualized and measured and how this might influence tests of norm congruence. Future research should be designed to further explore the implications of these issues. Norm congruence remains an important issue in determining the extent to which normative standards might be used to resolve evaluative issues in outdoor recreation.

References


ison of three publics. Paper presented at the National Recreation and Park Association Congress, Indianapolis, IN.

