

Interpersonal and Social Values Conflict Among Coastal Recreation Activity Groups in Hawaii

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Abstract

We report on user conflicts at six Hawaiian beaches and compare the extent to which evaluations of coastal recreation conflicts differ among groups. This information can be used to help understand current recreation users at coastal sites in Hawaii. Exploratory factor analyses supported a multidimensional interpersonal conflict factor based on four activity subgroups and a multidimensional social values conflict factor based on three activity subgroups. In this study, interpersonal and social values conflicts of Hawaii recreationists align themselves by recreation activity group and not by behavior. ANOVAs and t-tests were used to assess the conflict differences according to gender, residency status, location, age, and recreation activities. A discussion follows regarding the implications of our findings on managing conflict and users.

KEYWORDS: Recreation conflict, interpersonal conflict, social values conflict

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In Hawaii, coastal environments such as beaches and coral reefs are focal points for recreation. Residents, and more than 80% of Hawaii's visitors, engage in recreation activities in the state's coastal and marine areas, with the majority of visitors participating in diving (200,000 per year) or snorkeling (3 million per year) (Hawaii Department of Business, Economic Development, and Tourism, 2002; VanBeukering & Cesar, 2004). Other popular coastal recreation activities include swimming, sunbathing, beach walking, surfing, and ocean kayaking. The purpose of this paper is to report on the extent to which user conflicts exist both within and among various recreation activity groups at select Hawaiian beaches and to compare the extent to which evaluations of coastal recreation conflicts differ among groups (e.g., residents vs. nonresidents). This information can be used to help understand current recreation users at coastal sites in Hawaii.

Recreation Conflict and Behavioral Responses

Conflict is one indicator of social carrying capacity in recreation and tourism settings. Empirical research has revealed several different types of conflict that can occur between people participating in similar or different types of outdoor recreation (see Graefe & Thapa, 2004; Manning, 1999 for reviews). *One-way* or *asymmetrical conflict* occurs when one activity group experiences conflict with or dislikes another group, but not vice versa. A study of snowmobilers and cross-country skiers, for example, showed that skiers disliked encounters with snowmobilers, but snowmobilers were not in conflict with skiers (Vaske, Needham, & Cline, 2007). *Two-way conflict* occurs when there is resentment or dislike in both directions (e.g., skiers in conflict with snowboarders, snowboarders in conflict with skiers; Thapa & Graefe, 2003; Vaske, Carothers, Donnelly, & Baird, 2000). Conflict between users engaged in different activities (e.g., hikers vs. mountain bikers) is known as out-group conflict, whereas conflict between participants in the same activity (e.g., hikers vs. other hikers) is known as in-group conflict (Manning, 1999).

Most recreation and tourism studies have examined *interpersonal* or *goal interference conflict* where the actual physical presence or behavior of an individual or group interferes with goals, expectations, or behavior of another individual or group (Vaske et al., 2007). A snorkeler, for example, may experience interpersonal conflict if he or she is cut off by or collides with a surfer. Recent research has also introduced and explored the concept of *social values conflict* (Vaske, Donnelly, Witmann, & Laidlaw, 1995; Vaske et al., 2007). Social values conflict occurs between groups who do not share similar opinions, norms, or values about an activity. Unlike interpersonal conflict, social values conflict is defined as conflict that can occur even when there is no direct physical contact or interaction among groups (Vaske et al., 2007). For example, although encounters with horseback riders may be rare in recreation settings such as urban parks, recreationists may philosophically disagree about the appropriateness of such animals in these settings. A study of wildlife viewers and hunters showed that viewers did not witness many hunters or hunting behaviors (e.g., see animals shot, hear shots fired) in a backcountry area because management regulations, rugged terrain, and topography separated the two groups (Vaske et al., 1995). Despite this, viewers still reported conflict

with hunters simply because of a conflict in values regarding the appropriateness of hunting in the area.

To differentiate social values and interpersonal conflict, studies have operationalized conflict by combining responses from two sets of questions asked in surveys of recreationists (Vaske et al., 1995; Vaske et al., 2007). First, individuals indicated how frequently events happened to them during their visit (e.g., being rude or discourteous, passing too closely). Responses were coded as observed (i.e., at least once) or did not observe the event (i.e., never saw). Second, users evaluated if they perceived each event to be a problem (i.e., no problem or problem). In both instances, answers were relegated to a dichotomy.

Understanding the extent and type of conflict is important for managing recreation and tourism settings because some management strategies may be effective for addressing one type of conflict but not another. When conflict stems from interpersonal conflict, for example, spatial zoning or temporal segregation of incompatible groups may be effective. When the source of conflict is a difference in social values, user information and education may be needed (Graefe & Thapa, 2004; Vaske et al., 2007). Managers need to understand the basis of user concerns and the type of conflict occurring to develop strategies for managing conflict.

Recreationists may cope with conflict events by choosing to visit an alternative location or return to the same location at a different time. *Temporal displacement* involves coping with negative events such as conflict by shifting the time of visitation. This may influence some users to visit during weekdays or off-peak time periods instead of weekends and during the peak use season. Users may also choose to visit a different location. This *spatial displacement* can involve shifts in use to other areas within the same recreation area (i.e., intra-site displacement) or to completely different recreation settings (i.e., inter-site displacement). If a user experiences conflict events, he or she might not change their location or time of visitation, but rather change their definition of the experience. This is known as *product shift*. A wilderness area, for example, may be reevaluated as a semi-primitive recreation area by a recreationist because he or she encountered levels of conflict inconsistent with their initial expectation of a wilderness area (Hall & Shelby, 2000; Manning, 1999; Shelby, Bregenzer, & Johnson, 1988).

The current study measured the extent to which conflict exists within and among various recreation activity groups at coastal sites in Hawaii. This study also examined whether recreationists would cope with conflict events by shifting their time or location of visitation (i.e., displacement) or by changing their definition of the setting and experience (i.e., product shift).

Method

Study Areas

Data for this study were obtained from summer users at six beach parks on the island of Oahu, Hawaii. The six study sites are (a) Kailua Beach Park, on the east coast (i.e., windward side) of the island; (b) Sans Souci/Kaimana Beach; (c) Diamond Head/Kuilei Cliffs Beach Park, within and immediately adjacent to the Waikiki-Diamond Head Shoreline Fisheries Management Area (FMA) on the south

coast of the island of Oahu; and three sites in the Pupukea Marine Life Conservation District (MLCD) on the northwest coast of the island: (d) Waimea Bay, (e) Three Tables, and (f) Shark's Cove. Recreation activities at these beach parks include sunbathing, swimming, beach walking, surfing, scuba diving, snorkeling, windsurfing, kitesurfing, kayaking, and fishing. Peak visitation is from June to August and December to January, but the beaches are popular all year.

Data Collection

Data were obtained from surveys administered on-site at each of the six beach parks during 2 weeks in July 2007 and 2 weeks in August 2007. Individuals at each site were approached in parking areas and on the beach or shore and were asked to complete a survey on-site. On-site surveys were necessary because personal contact information required for alternative approaches, such as telephone or mail surveys, was unavailable (e.g., anglers are not required to purchase fishing licenses in Hawaii, lifeguards rarely collect information about users). To increase the probability of achieving a representative sample of summer users, surveys were administered at least once for each day of the week and at least once for each of three time periods each day (8:00 a.m. to 10:30 a.m., 11:30 a.m. to 2:00 p.m., 3:00 p.m. to 5:30 p.m.).

Given that use levels are relatively high at these sites, it was not feasible or necessary to survey every person. Instead, individuals were selected through a systematic random sampling procedure (e.g., one random individual selected from every *n*th selected group). This reduced selection bias and is among the most widely accepted on-site sampling approaches for providing a representative sample from a large number of recreationists (Salant & Dillman, 1994). Users were asked if they would be willing to complete a questionnaire, asked to read a letter of consent/recruitment, and then asked to complete and return the questionnaire on-site. It took respondents less than 15 minutes to complete the questionnaire. This approach is consistent with social science and recreation research (Mitra & Lankford, 1999).

Table 1 shows the sample sizes and response rate for each survey site. Sample sizes obtained allow generalizations about the overall population of summer users at the 95% confidence level (Salant & Dillman, 1994). A nonresponse check was not necessary due to the large sample sizes and high response rates.

Table 1

Sample Sizes and Response Rates for Six Hawaiian Beach Park Study Sites

| Study Site | <i>n</i> | Response Rate |
|----------------------------|-----------------|----------------------|
| Kailua | 921 | 85.0 (%) |
| Sans Souci/Kaimana | 585 | 89.7 |
| Diamond Head/Kuilei Cliffs | 340 | 75.1 |
| Waimea Bay | 395 | 93.8 |
| Three Tables | 292 | 92.4 |
| Shark's Cove | 288 | 93.4 |

Results

The following analyses and results are presented by personal and trip characteristics (e.g., activity groups, residency, and age), interpersonal conflict, and social values conflict. Analyses for behavioral responses (e.g., displacement, product shift) are covered last.

Personal and Trip Characteristics

Activity groups. Respondents were asked to indicate the one main activity in which they participated during their visit to the site on the day they were surveyed. Table 2 shows the most popular main summer activities at the six Hawaiian beach parks in rank order.

Table 2

Main Summer Activities at Six Hawaiian Beach Parks

| Main Activity | <i>n</i> | Percent |
|---|----------|----------|
| Swimming or wading | 870 | 32.8 (%) |
| Sunbathing | 760 | 28.6 |
| Snorkeling | 363 | 13.7 |
| Beach walking or hiking | 246 | 9.3 |
| Surfing | 202 | 7.6 |
| Boating (e.g., kayak, canoe, motorboat) | 68 | 2.6 |
| SCUBA diving | 63 | 2.4 |
| Windsurfing or Kitesurfing | 55 | 2.1 |
| Fishing | 27 | 1.0 |

Sociodemographic characteristics. Overall, there were more female respondents (52.4%, $n = 1426$) than male respondents (40.8%, $n = 1110$) surveyed at the six Hawaiian beach park study sites. In terms of age, respondents were relatively young and ranged from age 18 to 96. Human subjects/regulatory compliance protocols required that no individuals under age 18 be surveyed. In total, 22.9% of respondents were 18 to 26 years old, 22.2% were 27 to 37 years old, 22.2% were 38 to 47 years old, and 32.8% were 48 and older. The percentage of residents and nonresidents was more evenly split. Overall, 50.6% ($n = 1,377$) of the respondents were residents and 49.4% ($n = 1,345$) were nonresidents. Sociodemographic characteristics by individual beach park location are reported elsewhere (Needham et al., 2008a, 2008b, 2008c).

Recreation Conflict and Coping Behavior

As discussed above, there are multiple types of conflict (e.g., interpersonal, social values). Consistent with past research (Vaske et al., 1995; Vaske et al., 2007), respondents in this study were first asked how frequently they had observed three different situations or events for six different activity groups during their visit to the site on the day they were surveyed. The six activity groups were (a) sunbathers or swimmers, (b) snorkelers or divers, (c) surfers, (d) windsurfers or kitesurfers, (e) boaters (e.g., kayak, motorboat), and (f) anglers (i.e., people fishing). Respondents were asked how frequently they had observed each of these activity groups (a) be-

ing rude or discourteous, (b) being too close, and (c) not looking where they were going (e.g., anglers not looking where they cast their line/hook). Responses for these situations or events were measured on 4-point scales of *never*, *once or twice*, *sometimes*, and *many times*.

Interpersonal conflict and activity groups. Exploratory factor analysis (EFA) using Varimax rotation was conducted to determine if the activity groups were, in fact, well defined in measuring interpersonal conflict (validity check). Both the Kaiser-Meyer-Olkin (KMO) value of .89 (Guadagnoli & Velicer, 1988; Tabacknick & Fidell, 1996) and Bartlett's Test of Sphericity (BTS) value of $p < .001$ support a multidimensional interpersonal conflict factor consisting of four activity group dimensions within the factor (see Table 3). These four dimensions account for 78.0% of the variance. The four activity group dimensions supported by this analysis strategy are (a) sunbathers or swimmers, (b) snorkelers or divers, (c) surfers and windsurfers or kitesurfers, and (d) boaters and anglers. An overall component reliability (Cronbach's alpha = .93) confirms that deletion of any of the four dimensions would not increase reliability of the construct. A composite variable representing all 18 items measuring interpersonal conflict was used for subsequent analyses.

Interpersonal conflict and sociodemographic characteristics. A two-sample t-test was conducted to determine if there were any differences between the composite variable interpersonal conflict and gender. Male respondents ($M = .42$, $SD = .57$) produced significantly higher scores than did female respondents ($M = .30$, $SD = .44$), with $t(1178) = 3.99$, $p < .001$. The effect size of the gender manipulation was $r^2_{pb} = 1.3\%$.

Another two-sample t-test was conducted to determine if there were any differences between the composite variable interpersonal conflict and residency. Hawaiian residents ($M = .50$, $SD = .58$) produced significantly higher scores than did nonresidents ($M = .19$, $SD = .34$), with $t(1179) = 11.10$, $p < .001$. The effect size of the residency manipulation was $r^2_{pb} = 9.0\%$.

One-way, between subjects ANOVA analysis yielded no significant findings between age of respondents and whether they experienced interpersonal conflict ($F(3, 1177) = .436$, $p = .727$).

Interpersonal conflict and main activity. A one-way, between subjects ANOVA was conducted on the scores from the nine types of popular main summer activities in which respondents participated during their visit on the day they were surveyed (Table 4). The results were significant ($F(8, 1147) = 13.54$, $p < .001$). A Tukey HSD test revealed that the means for sunbathing, swimming, fishing, snorkeling, diving, walking, surfing, and windsurfing or kitesurfing (i.e., all but boating) as a main activity differed significantly ($p < .001$). This manipulation accounted for 8.6% of the variance in scores (using eta squared).

Table 3

Exploratory Factor Analyses for Interpersonal Conflict by Activity Groups

| Variable | <i>f</i>^a | <i>M</i> | <i>SD</i> |
|---|-----------------------------|-----------------|------------------|
| SEEN – Sunbathers or Swimmers being too close | .79 | .74 | .96 |
| SEEN - Sunbathers or Swimmers not looking where they are going | .79 | .75 | .95 |
| SEEN - Sunbathers or Swimmers being rude or discourteous | .69 | .49 | .82 |
| SEEN – Snorkelers or Divers being too close | .75 | .28 | .65 |
| SEEN - Snorkelers or Divers not looking where they are going | .72 | .34 | .73 |
| SEEN - Snorkelers or Divers being rude or discourteous | .66 | .31 | .74 |
| SEEN – Surfers being too close | .85 | .34 | .76 |
| SEEN – Windsurfers or kitesurfers being rude or discourteous | .85 | .28 | .72 |
| SEEN – Surfers not looking where they are going | .84 | .36 | .79 |
| SEEN – Surfers being rude or discourteous | .83 | .31 | .74 |
| SEEN – Windsurfers or kitesurfers being too close | .83 | .36 | .79 |
| SEEN – Windsurfers or kitesurfers not looking where they are going | .81 | .34 | .76 |
| SEEN – Anglers being rude or discourteous | .80 | .18 | .58 |
| SEEN – Anglers not looking where they cast their line/hook | .79 | .24 | .65 |
| SEEN – Anglers being too close | .79 | .24 | .65 |
| SEEN – Boaters not looking where they are going | .75 | .28 | .68 |
| SEEN – Boaters being rude or discourteous | .74 | .23 | .63 |
| SEEN – Boaters being too close | .73 | .31 | .72 |

^a factor loadings

Interpersonal conflict and beach location. A one-way, between subjects ANOVA was conducted on the scores from the six Hawaiian beach park locations (Table 5). The results were significant, $F(5, 1175) = 4.29, p = .001$. A Tukey *HSD* test revealed the means for Diamond Head/Kuilei Cliffs, Waimea Bay, Three Tables, and Shark’s Cove beach parks differed significantly ($p = .001$). This manipulation accounted for 1.8% of the variance in scores (using eta squared). Diamond Head/Kuilei Cliffs Beach Park is part of the Waikiki-Diamond Head Shoreline FMA on the south coast of the island of Oahu. Waimea Bay, Three Tables, and Shark’s Cove beach parks are in the Pupukea MLCN on the northwest coast of Oahu.

Table 4*ANOVA for Interpersonal Conflict and Main Activity*

| Main Activity Type | <i>n</i> | <i>M</i> | <i>SD</i> | Min | Max |
|--------------------|----------|----------|-----------|-----|------|
| Sunbathing | 352 | .26 | .40 | .00 | 2.00 |
| Swimming | 366 | .34 | .50 | .00 | 2.67 |
| Fishing | 11 | .80 | .88 | .00 | 3.00 |
| Snorkeling | 167 | .22 | .36 | .00 | 2.06 |
| Scuba diving | 23 | .32 | .40 | .00 | 1.67 |
| Walking | 112 | .36 | .52 | .00 | 2.17 |
| Boating | 23 | .49 | .72 | .00 | 3.00 |
| Surfing | 78 | .78 | .58 | .00 | 2.61 |
| Wind/kitesurfing | 24 | .58 | .59 | .00 | 2.50 |
| Total | 1156 | .34 | .49 | .00 | 3.00 |

| Interpersonal Conflict | <i>SS</i> | <i>df</i> | <i>M</i> ² | <i>F</i> | <i>p</i> |
|------------------------|-----------|-----------|-----------------------|----------|----------|
| Between groups | 24.26 | 8 | 3.03 | 13.54 | <.001 |
| Within groups | 256.98 | 1147 | .22 | | |
| Total | 281.24 | 1155 | | | |

Table 5*ANOVA for Interpersonal Conflict and Six Hawaiian Beach Park Study Sites*

| Beach Parks | <i>n</i> | <i>M</i> | <i>SD</i> | Min | Max |
|--------------|----------|----------|-----------|-----|------|
| Kailua | 399 | .39 | .54 | .00 | 3.00 |
| Sans Souci | 245 | .36 | .53 | .00 | 3.00 |
| Diamond Head | 133 | .46 | .51 | .00 | 3.00 |
| Waimea Bay | 166 | .27 | .43 | .00 | 2.17 |
| Three Tables | 117 | .27 | .48 | .00 | 3.00 |
| Shark's Cove | 121 | .25 | .41 | .00 | 2.06 |
| Total | 1181 | .35 | .50 | .00 | 3.00 |

| Interpersonal Conflict | <i>SS</i> | <i>df</i> | <i>M</i> ² | <i>F</i> | <i>p</i> |
|------------------------|-----------|-----------|-----------------------|----------|----------|
| Between groups | 5.38 | 5 | 1.077 | 4.288 | .001 |
| Within groups | 295.08 | 1175 | .251 | | |
| Total | 300.46 | 1180 | | | |

Social values conflict and activity groups. Exploratory factor analysis (EFA) using Varimax rotation was conducted to determine if the activity groups were, in fact, well defined in measuring social values conflict (validity check). Both the Kaiser-Meyer-Olkin (KMO) value of .91 (Guadagnoli & Velicer, 1988; Tabacknick & Fidell, 1996) and Bartlett's Test of Sphericity (BTS) value of $p < .001$ support a multidimensional social values conflict factor consisting of three activity group dimensions within the factor (see Table 6). These three dimensions account for 79.1% of the variance. The three activity group dimensions supported by this analysis strategy are (a) windsurfers or kitesurfers and surfers, (b) anglers and boaters, and (c) sunbathers or swimmers and snorkelers or divers. An overall component reliability (Cronbach's alpha = .961) confirms that deletion of any of the three dimensions would not increase reliability of the construct. A composite variable representing all 18 items measuring social values conflict was used for subsequent analyses.

Social values conflict and sociodemographic characteristics. A two-sample t-test was conducted to determine if there were any differences between the composite variable social values conflict and gender. Male respondents ($M = .39, SD = .54$) produced significantly higher scores than did female respondents ($M = .32, SD = .47$), with $t(1167) = 2.42, p = .016$. The effect size of the gender manipulation was $r^2_{pb} = .50\%$.

Another two-sample t-test was conducted to determine if there were any differences between the composite variable social values conflict and residency. Hawaiian residents ($M = .46, SD = .56$) produced significantly higher scores than did nonresidents ($M = .23, SD = .41$), with $t(1168) = 7.85, p < .001$. The effect size of the residency manipulation was $r^2_{pb} = 5.0\%$.

One-way, between subjects ANOVA analysis yielded no significant findings between age categories of respondents and whether they experienced social values conflict, $F(3, 1166) = .83, p = .48$.

Table 6

Exploratory Factor Analyses for Social Values Conflict by Activity Groups

| Variable | h^a | M | SD |
|---|-------|-----|------|
| PROBLEM – Windsurfers or kitesurfers being too close | .85 | .35 | .78 |
| PROBLEM – Windsurfers or kitesurfers being rude or discourteous | .84 | .29 | .73 |
| PROBLEM – Windsurfers or kitesurfers not looking where they are going | .83 | .34 | .79 |
| PROBLEM – Surfers not looking where they are going | .78 | .29 | .69 |
| PROBLEM – Surfers being too close | .77 | .27 | .64 |
| PROBLEM – Surfers being rude or discourteous | .76 | .26 | .66 |
| PROBLEM – Anglers being too close | .85 | .28 | .71 |
| PROBLEM – Anglers not looking where they cast their line/hook | .85 | .28 | .72 |
| PROBLEM – Anglers being rude or discourteous | .83 | .23 | .66 |
| PROBLEM – Boaters not looking where they are going | .73 | .31 | .73 |
| PROBLEM – Boaters being rude or discourteous | .73 | .27 | .69 |
| PROBLEM – Boaters being too close | .71 | .33 | .74 |
| PROBLEM - Sunbathers or Swimmers not looking where they are going | .85 | .34 | .68 |
| PROBLEM - Sunbathers or Swimmers being too close | .82 | .39 | .71 |
| PROBLEM - Sunbathers or Swimmers being rude or discourteous | .78 | .26 | .61 |
| PROBLEM – Snorkelers or Divers being too close | .76 | .22 | .59 |
| PROBLEM - Snorkelers or Divers not looking where they are going | .74 | .25 | .64 |
| PROBLEM - Snorkelers or Divers being rude or discourteous | .67 | .21 | .29 |

^a factor loadings

Social values conflict and main activity. A one-way, between subjects ANOVA was conducted on the scores from the nine types of popular main summer activities in which respondents participated during their visit on the day they were surveyed (Table 7). The results were significant, $F(8, 1137) = 7.65, p < .001$. A Tukey *HSD* test revealed that only the means for surfing, sunbathing, swimming, snorkeling, and walking as a main activity differed significantly ($p < .001$). This manipulation accounted for 5.1% of the variance in scores (using eta squared).

Table 7

ANOVA for Social Values Conflict and Main Activity

| Main Activity Type | <i>n</i> | <i>M</i> | <i>SD</i> | Min | Max |
|--------------------|----------|----------|-----------|-----|------|
| Sunbathing | 347 | .26 | .41 | .00 | 2.06 |
| Swimming | 366 | .35 | .51 | .00 | 2.61 |
| Fishing | 10 | .71 | .54 | .00 | 1.67 |
| Snorkeling | 164 | .28 | .46 | .00 | 2.67 |
| Scuba diving | 23 | .39 | .52 | .00 | 2.33 |
| Walking | 111 | .36 | .50 | .00 | 2.17 |
| Boating | 24 | .35 | .47 | .00 | 1.72 |
| Surfing | 77 | .69 | .60 | .00 | 2.61 |
| Wind/kitesurfing | 24 | .52 | .56 | .00 | 2.17 |
| Total | 1146 | .35 | .49 | .00 | 2.67 |

| Social Values Conflict | <i>SS</i> | <i>df</i> | <i>M</i> ² | <i>F</i> | <i>p</i> |
|------------------------|-----------|-----------|-----------------------|----------|----------|
| Between groups | 14.141 | 8 | 1.768 | 7.645 | <.001 |
| Within groups | 262.897 | 1137 | .231 | | |
| Total | 277.038 | 1145 | | | |

Social values conflict and beach location. A one-way, between subjects ANOVA analysis yielded no significant findings between Hawaiian beach park location and whether respondents experienced social values conflict, $F(5, 1164) = 1.36, p = .24$.

Displacement and product shift. Recreationists and tourists may cope with conflict by choosing to visit alternative locations or return to the same location at different times. We measured three different coping behaviors: (a) *temporal displacement* (i.e., shift time of visit), (b) *spatial displacement* (i.e., shifts to other areas within the same recreation area [intra-site] or to completely different recreation settings [inter-site]), and (c) *product shift* (i.e., reevaluate and change definition of experience or setting). Respondents were asked, "Assuming that you could be on Oahu Island again in the future, how likely would you take the following actions based on the number of people or behavior of other activity groups that you have seen at [this] Beach Park?" Two items were used to measure temporal displacement: (a) "come back to [this] Beach Park, but avoid peak use times (weekdays, holidays)" and (b) "come back to [this] Beach Park earlier or later in the day when less people are here." Two items were used to measure spatial displacement: (a) "go to other nearby or adjacent beach/marine areas instead" (i.e., intra-site) and (b) "go to other beach/marine areas on other parts of Oahu Island instead"

(i.e., inter-site). One item was used to measure product shift: “come back to [this] Beach Park, but change the way I think about this area, deciding that it offers a different type of experience than I first believed.” Finally, one item was used to measure no behavior change: “come back to [this] Beach Park realizing that conditions I saw today are suitable.” Responses to these six items were measured on 5-point scales from *very unlikely* to *very likely*. These variables are generally consistent with past research measuring these coping behaviors (Hall & Shelby, 2000; Shelby et al., 1988).

In response to conflict, most respondents (74.2%) are still unlikely to change their behavior; they will come back to the beach site realizing that conditions they experienced are suitable. However, 71.2% of respondents are likely to come back, but avoid peak use times such as weekends and holidays, and 66.9% are likely to come back earlier or later in the day when less people may be in the area, suggesting that many users are likely to be temporally displaced because of conditions they experienced. Only 26% of users are likely to go to other beach or marine areas on other parts of Oahu Island, and only 22.6% are likely to go to other nearby or adjacent beach or marine areas, suggesting that most users are unlikely to be spatially displaced because of conditions they experienced. Most respondents are also unlikely to experience a product shift by changing the way that they think about the area and deciding that it offers a different type of experience than they first believed (26%).

Discussion

Exploratory factor analyses show that for this study of Hawaii recreationists, interpersonal conflicts and social values conflicts align by recreation activity group and not by behavior (i.e., being rude or discourteous, being too close, and not looking where they were going). We found that four activity group dimensions (i.e., (a) sunbathers or swimmers, (b) snorkelers or divers, (c) surfers and windsurfers or kitesurfers, and (d) boaters and anglers) were well defined in measuring interpersonal or goal interference conflicts. Interpersonal conflict occurred when the physical presence of one recreation activity group interfered with the goals of another recreation activity group. We also demonstrated that interpersonal conflict in this case was dependent on gender, residency, the main activity in which respondents participated during their visit to the site on the day they were surveyed (except for boating), and beach location.

We found that three activity group dimensions (i.e., (a) windsurfers or kitesurfers and surfers, (b) anglers and boaters, and (c) sunbathers or swimmers and snorkelers or divers) were well defined in measuring social values conflict. We demonstrated that social values conflict, or conflict that occurred even when there was no direct physical contact or interaction among recreation activity groups, was also dependent on gender, residency, and the main activity in which respondents participated during their visit to the site on the day they were surveyed (i.e., for surfing, sunbathing, swimming, snorkeling, and beach walking). Beach location did not play a role in whether respondents experienced social values conflict.

As noted above, spatial zoning or temporal segregation of recreation activity groups may be effective in resolving interpersonal conflict. Zoning activity groups

to keep them apart is often used to mitigate conflict. For example, some zoning to keep activity groups apart is already being used to mitigate conflict at Kailua Beach Park, but these levels of conflict are relatively minor and may not deserve much additional direct management attention (Needham et al., 2008b). Zoning does not seem to be feasible or necessary at Sans Souci/Kaimana Beach at this time, but may be useful for separating surfers and windsurfers/kitesurfers at Diamond Head/Kuilei Cliffs Beaches (Needham et al., 2008a). Where levels of conflict are relatively minor, direct management action in the form of zoning may not be appropriate. In a coastal beach environment, zoning may be logistically impossible and enforcement may prove to be expensive and time consuming. It may be more appropriate to do more to inform users of appropriate behaviors by improving user education and awareness (e.g., signs, brochures, orientation sessions, and contact with on-site personnel).

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