

Visitors' Relationship to the Resource: Comparing Place Attachment in Wildland and Developed Settings

Cynthia A. Warzecha
David W. Lime
Jerrilyn L. Thompson

Abstract—Emotional/symbolic and functional place attachments were measured on the Green and Colorado Rivers in Canyonlands National Park and at Mount Rushmore National Memorial. Although Canyonlands and Mount Rushmore represent very different recreational settings, it was possible to measure both types of attachment by using 12 place attachment statements. In Canyonlands, river users on the Green and Colorado Rivers demonstrated different motives for taking a river trip and different levels of acceptance for potential management actions, based on respondents' level of agreement with place attachment statements. Compared to river users with relatively high agreement on the Colorado River, Green River users with relatively high levels of agreement indicated a stronger desire for wildland experiences.

Sense of place, also referred to as place attachment, has been recognized in disciplines such as geography and architecture since the early 1970s. In recent years, place attachment has gained increasing scientific interest in the field of resource management (Williams and Stewart 1998; Moore and Graefe 1994; Mitchell and others 1993). This study sought to show the potential utility of place attachment as a resource management tool. Specifically, the intent was to show an ability to measure place attachment in different types of recreational settings: a backcountry setting (Canyonlands National Park) and a front-country setting (Mount Rushmore National Memorial).

Another objective of the study—specifically in Canyonlands National Park—was to determine whether river users who demonstrated differing levels of agreement concerning place attachment on the Green and Colorado Rivers responded differently to questions about trip motives and potential management actions. An affinity for different motives and management actions could demonstrate a need for management plans that address differing recreational needs of users on these two rivers.

Two types of place attachment were measured: emotional/symbolic and functional. Emotional/symbolic attachment, also referred to as place identity (Stokols and Shumaker 1981, Schreyer and others 1981), refers to the emotional or

symbolic ties an individual may feel for a specific place. Personal emotional ties to a frequently visited park could represent this type of place attachment. Emotional/symbolic attachment also may be expressed as an identity with a symbolic meaning or idea. For example, an individual may identify with the idea of heritage, as symbolized by the National Park System, or the idea of wilderness.

Functional attachment, also referred to as place dependence (Stokols and Shumaker 1981; Schreyer and others 1981), describes the use of a resource to satisfy a need or goal. In a recreational setting, functional attachment often is related to the activity an individual may pursue in the context of the resource. Some activities are passive, such as viewing scenery, whereas others, such as whitewater rafting, involve close physical contact with the resource. The constructs of emotional/symbolic attachment and functional attachment have been presented in other recreational studies in the past ten years (Moore and Graefe 1994; Mitchell and others 1993; Williams and others 1992).

Study Areas

Canyonlands National Park, a backcountry setting, is in southeastern Utah. The Park encompasses 527 square miles and provides opportunities for numerous recreational activities, including hiking, camping, backpacking, mountain biking, four-wheeling and river running. Within park boundaries, the Green and Colorado Rivers offer river runners opportunities for several types of river experiences. Above the confluence, the calm waters of the Green and Colorado Rivers present favorable conditions for flatwater river trips. Several miles below the confluence of the two rivers, the Colorado River flows through Cataract Canyon, offering river runners approximately 14 miles of whitewater and 28 rapids (with difficulty ratings of up to class 5). The Green River is popular with canoers and kayakers and receives less motorized traffic than the Colorado River. Conversely, the Colorado River receives more commercial use (guided trips) than the Green River. Managers at Canyonlands are currently in the process of developing an updated river management plan for the Green and Colorado Rivers. The place attachment study was conducted as part of a larger visitor use study to gather a variety of data about river users (Warzecha and others 1999).

Mount Rushmore National Memorial, a front-country setting, is in southwestern South Dakota. The Memorial is considered a tribute to the birth, growth, preservation and development of the United States. The primary resource is

In: Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. Wilderness science in a time of change conference—Volume 4: Wilderness visitors, experiences, and visitor management; 1999 May 23–27; Missoula, MT. Proceedings RMRS-P-15-VOL-4. Ogden, UT: U.S.

Cynthia A. Warzecha, David W. Lime, and Jerrilyn L. Thompson are Research Assistant, Senior Research Associate, and Research Fellow, Department of Forest Resources, 115 Green Hall, University of Minnesota, 1530 Cleveland Avenue North, St. Paul, MN 55108 U.S.A.

the granite sculpture of Presidents Washington, Jefferson, Roosevelt and Lincoln. In 1998, the Memorial celebrated the completion of a 10-year redevelopment project that includes a new visitor center and museum, amphitheater, parking garage and Presidential Trail. This place attachment study was done as part of a larger study to determine visitor response to the new visitor facilities (Thompson and Lime 1999).

Methods for Study Site Comparisons

At Canyonlands National Park, data were collected through the use of a trip diary and a post-trip questionnaire. Both were distributed to parties before the beginning of their river trip. Sampling occurred from late May through mid-October 1998. On the Green River, a total of 173 diaries and post-trip surveys were distributed to river users, garnering an 83 percent response rate. A total of 567 surveys were distributed to river users on the Colorado River, for a response rate of 69 percent. Respondents either gave their diaries and questionnaires to their outfitter at the completion of their trip or returned them using the self-addressed stamped envelope provided.

At Mount Rushmore National Memorial, data were collected through the use of an on-site questionnaire. Sampling occurred from June through August 1998. A total of 973 questionnaires were completed. Less than 10 percent of visitors contacted declined to participate in the visitor use study.

To measure emotional/symbolic and functional place attachment, our study used place attachment statements from previous research by Williams and others (1995). Visitors were asked to respond to a set of 12 statements measuring place attachment. Six statements measured emotional/symbolic attachment:

- I would prefer to spend more time here if I could.
- I am very attached to this place.
- I identify strongly with this place.
- I feel like this place is part of me.
- This place means a lot to me.
- This place is very special to me.

Six statements measured functional attachment:

- No other place can compare to this area.
- The time I spent here could have just as easily been spent somewhere else.
- I get more satisfaction out of visiting this place than from visiting any other.
- This area is the best place for what I like to do.
- This place makes me feel like no other place can.
- I can't imagine a better place for what I like to do.

Respondents were asked to rate each statement on a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). For each study site (Green River, Colorado River and Mount Rushmore), grand mean scores were calculated for emotional/symbolic attachment and functional attachment to determine the strength of respondents' agreement with

the place attachment statements. (For analytical purposes, the five-point scale was reversed for the statement "The time I spent here could have just as easily been spent somewhere else" so it could be compared to the other functional statements.)

We used SPSS/PC+ to run two-tailed t-tests to determine whether there were statistically significant differences between study sites. Using Cronbach's Alpha, we examined the inter-item reliability for the six statements measuring emotional/symbolic attachment and the six statements measuring functional attachment.

Results of Study Site Comparisons

Levels of emotional/symbolic attachment were compared for the Green and Colorado Rivers in Canyonlands National Park and Mount Rushmore National Memorial (table 1). Statistically significant differences in levels of agreement with emotional/symbolic place attachment statements were evident among the sample of respondents at all study sites. Mean scores were highest for the Green River (3.98) and lowest for Mount Rushmore (3.54). Inter-item reliability for the six statements, as reflected by the Alpha scores, ranged from 0.88 to 0.91.

Levels of functional attachment were compared across three study sites (table 2). Statistically significant differences in levels of agreement with functional place attachment statements were demonstrated between the Green and Colorado Rivers as well as between the Green River and Mount Rushmore. Mean scores were highest for the Green River (3.59) and lowest for Mount Rushmore (3.32). Overall, the inter-item reliability coefficients for functional attachment statements were nearly as high as the emotional/symbolic statements (0.82 to 0.88).

Table 1—Levels of emotional/symbolic place attachment for three study sites.

Study area	N	Mean*	SD	Alpha
Green River	137	3.98 ^{ab}	0.78	0.91
Colorado River	376	3.80 ^{ac}	.73	.88
Mount Rushmore	832	3.54 ^{bc}	.69	.88

*Means identified with the same letter are significant at the p <0.05 level.

Table 2—Levels of functional place attachment for three study sites.

Study area	N	Mean*	SD	Alpha
Green River	136	3.59 ^{ab}	0.85	0.88
Colorado River	374	3.33 ^a	.78	.87
Mount Rushmore	834	3.32 ^b	.67	.82

*Means identified with the same letter are significant at the p <0.05 level.

Methods for Green and Colorado River Comparisons

In addition to determining levels of emotional/symbolic attachment and functional attachment at these study sites, we investigated differences in place attachment between river users. As an exploratory research effort, we sought to determine whether there was a relationship between high and low levels of agreement with place attachment statements and respondents' motives for taking a river trip as well as support for potential management actions in the Park.

Using a five-point Likert scale, respondents were asked to rate the importance of 23 different motives for taking a river trip (1 = not at all important, 2 = slightly important, 3 = moderately important, 4 = very important and 5 = extremely important). Respondents also were asked to rate their support for 23 potential management actions using a four-point Likert scale (1 = strongly oppose, 2 = oppose, 3 = support, and 4 = strongly support).

As part of the exploratory analysis, we looked at the mean scores in the highest and lowest quintile for emotional/symbolic attachment and functional attachment for both the Green and Colorado Rivers. Thus, the highest and lowest 20 percent of the mean scores for each type of place attachment for each river were categorized as having either a "high" or "low" level of agreement with the place attachment statements as compared to scores in the remainder of the sample. Utilizing quintiles allowed us to examine both ends of the agreement spectrum while maintaining a sufficient sample size. Although the upper and lower quintiles do not represent the majority, it is important to recognize that these groups may serve as an important barometer in evaluating attitudes about resource management issues.

We used SPSS/PC+ to run two-tailed t-tests to determine whether there were statistically significant differences between respondents with high and low levels of agreement with emotional/symbolic and functional attachment statements and how they responded to statements regarding motives for taking a river trip as well as potential management actions. We examined differences in responses *within* the Green River and *within* the Colorado River as well as *between* the Green and Colorado Rivers for respondents demonstrating high and low levels of agreement with the place attachment statements

Results of Green and Colorado River Comparisons

For both types of place attachment, respondents with high and low levels of agreement indicated differences in the importance of motives for taking a river trip (rated on a five-point scale). These differences were apparent both within the Green and Colorado Rivers and between the Green and Colorado Rivers. For both rivers, the importance of experiencing solitude, for example, was rated higher for respondents with high levels of agreement with emotional/symbolic statements than for respondents with low levels of agreement (table 3). In addition, experiencing solitude was more important for Green River respondents with high levels of emotional/symbolic agreement (4.75) than for respondents on the

Colorado River with high levels of agreement (4.03). For functional attachment, significant differences were found between respondents with high and low levels of agreement on the Green River (4.72 and 3.79, respectively). Statistically significant differences also existed between respondents with high levels of agreement on the Green and Colorado Rivers (4.72 and 3.87, respectively).

Strength of agreement also was associated with statistically significant differences in respondents' ratings of the importance of experiencing an undeveloped river (table 4). For the Green and Colorado Rivers, respondents with high emotional/symbolic agreement rated the importance of experiencing an undeveloped river higher than respondents with low agreement. Experiencing an undeveloped river was rated more important by Green River users expressing high emotional/symbolic agreement (4.82) than by Colorado River users expressing high agreement (4.43). The same pattern emerged for respondents with low levels of agreement. Evaluation of functional attachment, as associated with the importance of experiencing an undeveloped river, revealed significant differences between respondents with high and low levels of agreement on the Green River (4.84 and 4.38, respectively). Statistically significant differences also existed between respondents with high and low levels of agreement on the Green and Colorado Rivers.

Respondents' support for potential management actions (rated on a four-point scale) also were associated with their levels of agreement with place attachment statements. Regarding emotional/symbolic attachment, respondents on the Green River with high levels of agreement (table 5) exhibited more support for prohibiting motorized rafts than respondents with low levels of agreement. For both emotional/symbolic and functional attachment, significant differences also were found between rivers at both levels of agreement.

Table 3—Importance of solitude for respondents with high and low place attachment on the Green and Colorado Rivers in Canyonlands National Park.

	Emotional/symbolic attachment		Functional attachment	
	Colorado River	Green River	Colorado River	Green River
Low	3.36 ^a	3.83 ^a	3.62	3.79 ^a
High	4.03 ^{ab}	4.75 ^{ab}	3.87 ^b	4.72 ^{ab}

Means identified with the same letter are significant at the p <0.05 level.

Table 4—Importance of experiencing an undeveloped river for respondents with high and low place attachment on the Green and Colorado Rivers in Canyonlands National Park.

	Emotional/symbolic attachment		Functional attachment	
	Colorado River	Green River	Colorado River	Green River
Low	3.88 ^{ab}	4.33 ^{ab}	3.90 ^b	4.38 ^{ab}
High	4.43 ^{ab}	4.82 ^{ab}	4.19 ^b	4.84 ^{ab}

Means identified with the same letter are significant at the p <0.05 level.

Table 5—Support for prohibiting motorized rafts for respondents with high and low place attachment on the Green and Colorado Rivers in Canyonlands National Park.

	Emotional/symbolic attachment		Functional attachment	
	Colorado River	Green River	Colorado River	Green River
Low	1.65 ^b	2.55 ^{ab}	1.78 ^b	2.77 ^b
High	1.88 ^b	3.47 ^{ab}	1.89 ^b	3.41 ^b

Means identified with the same letter are significant at the $p < 0.05$ level.

Table 6—Support for reserving campsites and maintaining a predetermined itinerary for respondents with high and low place attachment on the Green and Colorado Rivers in Canyonlands National Park.

	Emotional/symbolic attachment		Functional attachment	
	Colorado River	Green River	Colorado River	Green River
Low	2.66 ^{ab}	1.48 ^b	2.57 ^b	1.48 ^b
High	2.24 ^{ab}	1.55 ^b	2.39 ^b	1.41 ^b

Means identified with the same letter are significant at the $p < 0.05$ level.

Significant differences in ratings of support for reserving campsites and maintaining a predetermined itinerary were found between the two rivers for both emotional/symbolic and functional attachment (table 6). In comparison to respondents on the Colorado River, respondents on the Green River indicated lower levels of support for this type of management action. On the Colorado River, respondents with high levels of agreement with emotional/symbolic statements indicated less support for reserving campsites and maintaining a predetermined itinerary (2.24) than respondents expressing low levels of agreement (2.66).

Discussion

Using 12 place attachment statements, we were able to measure the level of agreement and identify distinct relationships for both emotional/symbolic and functional place attachment at three different recreational settings at the two National Park Service units. As such, this analysis provides another useful variable for segmenting visitors with respect to their preferences and attitudes concerning recreation settings. A sound understanding of visitor preferences and attitudes is critical in the development of a successful management plan. As suggested by Moore and Graefe (1994), managers need to recognize the importance of place attachment and incorporate it into the planning process.

Based on respondents' level of agreement concerning their emotional/symbolic and functional attachment to the resource, users on the Green and Colorado Rivers assigned different levels of importance to their motives for taking a river trip. In addition, respondents indicated different levels

of acceptance for potential management actions, depending on the strength of their attachment to the resource. Statistically significant differences were found both *within* the Green and Colorado Rivers as well as *between* the two rivers. Compared to river users with a high level of agreement concerning place attachment on the Colorado, Green River users with a high level of agreement indicated a stronger desire for wildland experiences and management actions that provide opportunities for those types of experiences.

Based on the findings, we think it is appropriate for National Park Service planners and managers to consider different management strategies for these two river resources in Canyonlands National Park. Each river has the potential for different recreational opportunities, thus attracting people seeking different kinds of experiences. The results of this study lend support for the establishment of management guidelines that would best fulfill differing visitor needs. Implementation of Recreation Opportunity Spectrum (ROS) could provide a nonmotorized, low-density use setting on the Green River, allowing visitors an increased feeling of solitude in a minimally developed setting. On the Colorado River, current conditions provide opportunities for private and commercial user groups and a variety of watercraft.

Failure to consider different management scenarios for the Green and Colorado Rivers could lead to the displacement of Green River visitors. As stated by Mitchell and others (1993), "what is lost may perhaps never be replaced or substituted." Arguably, wildland settings are becoming less abundant, and people seeking backcountry, solitude-oriented experiences may be more easily displaced than other user groups. Sustaining a broad spectrum of opportunities for visitors would allow Canyonlands National Park to better meet the needs of a greater diversity of user groups.

References

- Mitchell, M. Y.; Force, J. E.; Carroll, M. S.; McLaughlin, W. J. 1993. Forest places of the heart: Incorporating special spaces into public management. *Journal of Forestry* 91:(4), 32-37.
- Moore, R.L.; Graefe, A.R. 1994. Attachments to recreation settings: The case of rail-trail users. *Leisure Sciences* 16:(1), 17-31.
- Schreyer, R.; Jacob, G.; and White, R. 1981. Environmental meaning as a determinant of spatial behavior in recreation. In J. Frazier and B. Epstein (Eds.), *Proceedings of the applied geography conferences* (pp. 294-300).
- Stokols, D.; Shumaker, S. A. 1981. People in places: A transactional view of settings. In D. Harvey (ed.), *Cognition, social behavior, and the environment* (pp. 441-488). Hillsdale, NJ: Erlbaum.
- Thompson, J. T.; Lime, D. W. 1999. Mount Rushmore National Memorial: 1998 Visitor Use Study. Technical Report to the USDI National Park Service. St. Paul, MN: University of Minnesota, Department of Forest Resources, Cooperative Park Studies Unit.
- Warzecha, C. A.; Lime, D. W.; Manning, R. E.; Freimund, W. A. 1999. Rivers of Canyonlands National Park: 1998 Visitor Use Study. Technical report to the USDI National Park Service. St. Paul, MN: University of Minnesota, Department of Forest Resources, Cooperative Park Studies Unit.
- Williams, D. R.; Anderson, S. B.; McDonald, C. D.; Patterson, M. E. 1995. Measuring place attachment: More preliminary results. Unpublished paper presented at the Outdoor Recreation Planning and Management Research Session, 1995 NRPA Leisure Research Symposium, San Antonio, TX.
- Williams, D. R., Patterson, M. E., Roggenbuck, J. W. 1992. Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences* 14 (1):29-46.
- Williams, D. R.; Stewart, S. I. 1998. Sense of place: An elusive concept that is finding a place in ecosystem management. *Journal of Forestry* 96:(5), 18-23.