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The flexible recreationist: The adaptability of outdoor recreation benefits to non-ideal outdoor recreation settings

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ABSTRACT

An attractive element of benefits-based management is its potential to link outdoor recreation benefits to specific setting types. The assumption embedded in these linkages is that outdoor recreation benefits are tied to narrow setting types rather than being flexible to most setting types. To investigate the relationship between benefits and setting types, an experiment was conducted in which participants were randomly assigned to one of six distinct outdoor recreation settings, which were defined with digitally manipulated photos and select written statements. Benefit factors were based on a principal components analysis, and mean differences were assessed between the setting types through a MANOVA. Our data showed that outdoor recreationists on public lands are able to envision themselves as achieving their desired benefits across setting types. While some benefit factors are shown to be more flexible (e.g. physical) than others (e.g. interpersonal), none of the benefit factors measured in the survey significantly predicted participants' satisfaction levels of their randomly assigned setting types. Instead, the ability of respondents to engage in preferred outdoor recreation activities is shown to be statistically significant in predicting satisfaction levels with randomly assigned setting types.

Management implications:

- The vision of a flexible outdoor recreationist whose benefit structure is adaptable to many setting types loosens, rather than constrains, land managers' ability to manage their lands for benefits.
- Likewise, our finding that incompatibility of outdoor recreation activities to setting type impacts satisfaction levels constrains, rather than loosens, land managers' ability to manage for activities.
- Despite loosening the strings of land management decisions for benefits, our findings do show that benefit factors are less compatible with setting types towards the ends of the spectrum (e.g. primitive and urban) and are generally most adaptable to backcountry setting types.

1. Introduction

A brief sketch of the evolution of outdoor recreation management highlights a central question facing outdoor recreation managers: for what do they manage? As explained in Driver (2008) and summarized in Parry, Gollob, and Frans (2014, p. 2), the answers in this evolutionary process have included: (1) activities (in activity-focused-management), (2) experiences (in experience-focused management), and (3) benefits (in benefits-based management). At the heart of each of these approaches is the assumption that land must be managed to meet the needs of outdoor recreationists while simultaneously protecting the resources on which they recreate. As stated in Williams (2007, p. 29):

> Recreation resource managers administer recreation resources such as campgrounds, wilderness areas, rivers, and trails, and require specific information on how the resource functions to provide satisfying recreation experiences. In other words, managers require information on the relation between recreation settings (resources and their characteristics) and the psychological outcomes motivating recreation participation in that setting.

The attempt to manage land so that it intersects with the "psychological outcomes motivating recreation participation" (Williams, 2007, p. 29) has led to a sizeable list of landscape alteration decisions land managers must navigate. For example, when discussing setting characteristics, some land managers must decide how many fractions of a mile outdoor recreationists prefer to be from a road. Besides the practical difficulties of making these decisions, there is a much larger issue at stake in land management practices. The larger issue is whether land must necessarily be micro-managed for outdoor recreationists, or if recreationists will adapt and find satisfaction in less than ideal settings. This issue begs the question: how fickle are outdoor recreationists when

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it comes to the management of outdoor setting characteristics?

In this paper, we test the capriciousness of outdoor recreationists regarding their outdoor setting preferences by measuring the relationship between recreation benefits and outdoor setting characteristics. We question whether recreationists are only able to realize benefits (and thereby achieve satisfaction) by recreating in their ideal settings, or if it is as we contend, that outdoor recreationists are flexible and adapt to non-ideal outdoor settings. In short, how amenable are outdoor recreationists' desired benefits to setting attributes?

2. Literature review

At the broadest level, as stated in Williams (2007, p. 29) "Understanding the relation between the recreation setting and recreation experience…has been the core theme in forest-based outdoor recreation research for over 35 years." Despite these significant research efforts, the relationship between setting and experience does not appear to be incredibly clear, and studies have portrayed an array of mixed results. As stated in Backlund and Stewart (2012, p. 396) "After almost 40 years of investigation, research on relationships between settings and experiential outcomes has produced mixed results."

Benefits-based management (BBM) purports to clean the muddied waters of the literature given that a central premise of BBM is "that benefits can be linked meaningfully with specific recreation activities and environments" (More & Kuentzel, 1999, p. 2). An understanding of the relationship between desired beneficial outcomes and the settings in which these benefits are sought can help managers to enable recreationists to optimize their outdoor recreational experiences in two ways: (1) Managers can recommend the best setting to the recreationist for attaining his or her desired outcomes; (2) Managers can develop settings to meet the desired outcomes of recreationists (Parry et al., 2014).

Specific to this study, the question of whether certain benefits can only be realized in specific settings, or if benefits can be attained regardless of the setting (see More & Kuentzel, 1999), is of particular importance. Stein and Lee (1995) noted the relationship between setting characteristics and benefits in three studies. Namely, Manfredo, Driver, and Brown (1983) examined the desires of recreationists in three separate settings in Wyoming in the late 1970s. Then, Virden and Knopf (1989) studied the relationship between desired psychological experiences and preferred environmental settings in southwestern Colorado. Finally, Yuan and McEwen (1989) inquired about the association between setting characteristics and benefits among campers in western Kentucky. In all three studies, results revealed that certain recreationist profiles correlate with beneficial outcomes and setting characteristics. However, further research was purported in all three cases. For example, Virden and Knopf (1989, p. 159) declared, "systematic explanations for these relationships were not clearly apparent from the results of this particular study."

Those investigating the setting/benefits relationship broadened the model to include more potentially contributing variables. Stein and Lee (1995) included activities in their analysis and found that by participating in a variety of activities, multiple benefits can be realized. In order to better understand the relationship of benefits to setting characteristics, Shin, Jaakson, and Kim (2001) ran multiple regressions and found that certain attributes, namely the social characteristics of the recreation setting, significantly contributed to the attainment of several benefits. Conversely, a meta-analysis from nine benefits-based pilot studies conducted by Pierskalla, Lee, Stein, Anderson, and Nickerson (2004) revealed that certain activity types as opposed to the setting characteristics contributed more to benefit opportunities.

Some researchers have employed the market research technique of segmentation to gain a broader understanding of the relationship between benefits and recreation setting. For example, Hendricks, Schneider, and Budruk (2004) created segments out of benefit factors and the user clusters to reveal that simple modifications such as site design, planning, and visitor information can enhance recreationists' experience. Using similar methods, Zanon, Hall, Lockstone-Binney, and Weber (2014) collected data from over 11,000 questionnaires from 33 diverse parks located in Australia and applied both factor analysis and cluster analysis to identify seven recreationist segments. Parry et al. (2014) also applied factor analysis of benefit items and cluster analysis of outdoor recreationists from all 50 U.S. states to yield six segmentations, which provided a more succinct comprehension of both the benefits and the public land users. What remains missing is a clear indication of the extent to which setting characteristics influence benefits.

While a clear connection between outdoor setting and benefits has not been established, More and Kuentzel (1999, p. 5) argue that "it may prove to be impossible to link specific benefits to specific activities and sites" for several reasons. One salient reason forwarded by the authors' is that benefits "may be available from multiple activities." For example, the benefit of improved health can be achieved by engaging in nearly any outdoor recreation activity such as biking, hiking, or mountain climbing. Likewise, improved health can be achieved in practically any conceivable setting from a city park to a backcountry setting. In short, recreationists are flexible and adaptable to a variety of outdoor settings rather than being inflexible and narrowly tied to setting types.

As demonstrated above, studies have yet to reveal the direct relationship between outdoor settings and the benefits outdoor recreationists seek to realize. Moreover, the nature of previous studies investigating the relationship between setting types and benefits have been correlational, which introduces numerous methodological issues. For these reasons, the first purpose of the current study is to improve understanding of the relationship between outdoor settings and the benefits recreationists desire. Former studies have also demonstrated mixed findings in regard to the influence activities have on satisfaction levels among recreationists in public land settings.[1] Thus, the second purpose to the current study is to ascertain the extent to which activities influence satisfaction in outdoor recreation settings. By examining the relationship between setting type and desired benefits by outdoor recreationists, outdoor recreation managers will gain a better understanding of how to optimize recreationists' satisfaction with recreational settings.

3. Methods

The use of traditional intercept surveys poses a practical problem for testing the adaptability of outdoor recreation benefits to non-ideal settings. If outdoor recreationists recreate in ideal settings, it is difficult to find rogue misaligned outdoor recreationists in the field. In fact, if our hypothesis is correct (that outdoor recreationists' are indeed flexible), most recreationists elect to recreate in desirable settings. Behan, Richards, and Lee (2001) introduced photo manipulation into a traditional intercept study to measure the impact Jeep tours have on certain recreation benefits. We build on their methodology by employing a photo manipulation experiment to measure the flexibility of outdoor recreationists to varied recreation settings. Whereas Behan and colleagues conducted their study with on-site visitors, "immediately

[1] To measure quality of the outdoor recreation experience, researchers have traditionally used satisfaction as the criterion of choice. Numerous studies have established and confirmed satisfaction as a quality measure (see National Academy of Sciences, 1969; Bultena & Klessig, 1969; Lime & Stankey, 1971; More & Buhyoff, 1979; and Floyd, 1997). Satisfaction serves as a cognitive representation of the expectations users have of their needs, motivations, and various other states (Bultena & Klessig, 1969). When these cognitive expectations correspond with outcomes from the outdoor recreation experience, satisfaction is said to have been attained. Based on these social psychological expectations, Bultena and Klessig (1969) defined satisfaction as "a function of the degree of congruence between aspirations and the perceived reality of experiences" (p. 349). Moreover, satisfaction is viewed by researchers as a relative concept that comprises characteristics of the setting as well as those of the recreators (Manning, 1999a, 1999b). For this reason, attention from the researcher and the manager should focus on both the setting characteristics and those who recreate on these settings.

following their recreation experience" (p. 4), we limited our study to individuals who are self-reported outdoor recreationists.

Participants in the photo manipulation experiment were exposed to digitally altered photos of varied recreation settings and asked to rate their anticipated level of satisfaction recreating in that setting. The photo manipulation experiment allows us to measure how changes in recreation settings impact anticipated satisfaction levels of outdoor recreation. If our supposition that outdoor recreationists are flexible to recreation settings, we would not expect to see dramatic changes in satisfaction levels across various settings. We would also expect that other factors of outdoor recreation (in particular activity type) impact satisfaction levels more than setting type. Formally stated: H1) *setting type does not impact anticipated satisfaction levels of benefits sought by outdoor recreationists,* H2) *overall satisfaction of recreating in a specific setting is impacted by outdoor recreation activity.*

3.1. Variables

The two independent variables in this study are: 1) the setting type to which participants were randomly "placed" and 2) ideal/non-ideal placement in setting type. We measure the impact setting placement has on outdoor recreation benefits as well as perceived satisfaction with outdoor recreation and activities that would take place in those settings. The first independent variable consisted of six setting types, ranging from primitive to urban, which were illustrated through digitally manipulated photos (see Fig. 1) and descriptive paragraphs.

Criteria for the six setting types was modified from Bruns, Driver, Lee, Anderson, and Brown (1994) matrix of recreation setting characteristics. Each setting type included qualitative descriptions of 14 different conditions. Because all 14 conditions would be too burdensome for the participants to evaluate, the authors limited the number of levels to six. Setting criteria were based on standards used in the literature (Manning, 1999a, 1999b; Stankey et al., 1985) and in-depth deliberation among the study authors. The setting variables are shown in Table 1.

The second independent variable, known as preferred/not preferred placement was based on the difference between participants' preferred generic outdoor recreation setting and the one to which they were assigned. This variable controls for those participants who were randomly placed in their ideal setting. For example, if participant X was randomly placed into their ideal outdoor recreation setting (e.g., middle country), then that individual was coded as "preferred." Likewise, if participant X was randomly placed into one of their non-ideal settings (e.g., urban), then they were coded as not preferred.

The first dependent variable (benefits) was comprised of 54 outdoor recreation benefit items which originated from Driver's (2008) 207 benefit statements and were scientifically reduced down to seven factors by Parry et al. (2014). Although the original intent of Driver's (2008) benefit items was to determine the extent to which outdoor recreation effectuated benefits, the current study has taken on a more speculative approach in which participants are asked to consider the activities and benefits they would realize in various settings. By measuring anticipated benefits among experienced outdoor recreationists, we gain the advantages of experimental manipulation and increased generalizability, which are a challenge in traditional outdoor recreation intercept studies.

To measure benefits, participants were asked "to consider how strongly they [sic] would desire/not desire each of the [listed] benefits if [they] were to recreate in (insert outdoor setting)". For example, a participant would be presented with the manipulated image of an urban setting (see Fig. 1) and a qualitative description of that setting, followed by a benefit statement such as "Improved group cooperation." On a scale of one to six, respondents were then asked to indicate how much they would desire "Improved group cooperation" while recreating in an urban area.

The second dependent variable (perceived satisfaction with outdoor recreation) was measured by asking participants to indicate their overall perceived satisfaction with the setting type to which they were assigned. A seven-point scale, ranging from 1 = very dissatisfied to 7 = very satisfied, was used for response options. Because actual experiences were not ascertained, the satisfaction measures were more representative of cognitive expectations that recreationists envisioned with regards to their anticipated recreational outcomes.

3.2. Procedure

An email message containing a link to an online survey was sent to students enrolled in an introductory psychology class at a medium-sized university. Those students then had the option of forwarding the email message to up to nine additional family members, friends, and acquaintances. Participants were then randomly assigned to one of the six setting types. After viewing one of the setting photos and reading a description of the respective setting characteristics, participants were asked to: 1) anticipate the desirability of 54 outdoor recreation benefit items with that setting in mind; 2) indicate their perceived satisfaction of engaging in five outdoor recreation activities (motorized, group, non-motorized, resource/heritage, water-based) in that same setting; 3) rate their overall satisfaction of their randomly setting; 4) rank each of the six setting types from least desirable to most desirable. This final step allowed us to determine whether participants were randomly assigned to their preferred or not preferred setting.

3.3. Participants

The sample was comprised of self-identified outdoor recreationists of diverse backgrounds. Only those who had participated in some form of outdoor recreation on public lands (Bureau of Land Management, national forest, state parks, national parks, and city parks) were permitted to participate in the study. In total, 699 adults (65% female; 35% male) were recruited. As shown in Table 2, the average age of the sample was 33 years, comprising 83% Caucasian, 6% Hispanic, 3% Asian/Pacific Islander, and less than 1% African American and Native American ethnicities. Compared to other data reporting outdoor recreation participation (see The Outdoor Foundation, 2014), our sample was slightly younger and less diverse. Moreover, the majority, or 57%, reported having no children while 43% had one or more children. Our sample also exhibited relatively varied education levels in which 34% had a college degree, 51% had some college, and 14% had a high school diploma at the time of participation. Nearly 33% reported incomes of less than $20,000 with nearly 15% reporting annual incomes in excess of $100,000 annually. Our sample resided in 41 out of 50 states at the time of participation in this study with the majority (72%) claiming Colorado as their current state of residence followed by California at nearly five percent. Finally, 25% spend time recreating in the outdoors less than once per month, 19% once a month, 28% at two to three times per month, and 25% at least once per week.

4. Results

In order to test hypothesis 1 (setting type does not impact anticipated satisfaction levels of benefits sought by outdoor recreationists), participants were randomly placed in a setting type represented by a manipulated photo and qualitative description and asked to rate the desirability of 54 outdoor recreation benefits if they were to recreate in that setting. Those responses were condensed down to the underlying factor structure by a principle components factor analysis with varimax rotation. The resulting factor output resembled the established seven-factor solution yielded by Parry et al. (2014)'s study on the underlying factors of benefits people seek when participating in outdoor recreation. The factors retained the same names given in the aforementioned study, including economic benefits, community cohesion, relationship with nature, physical enhancement, interpersonal relations, mental serenity,

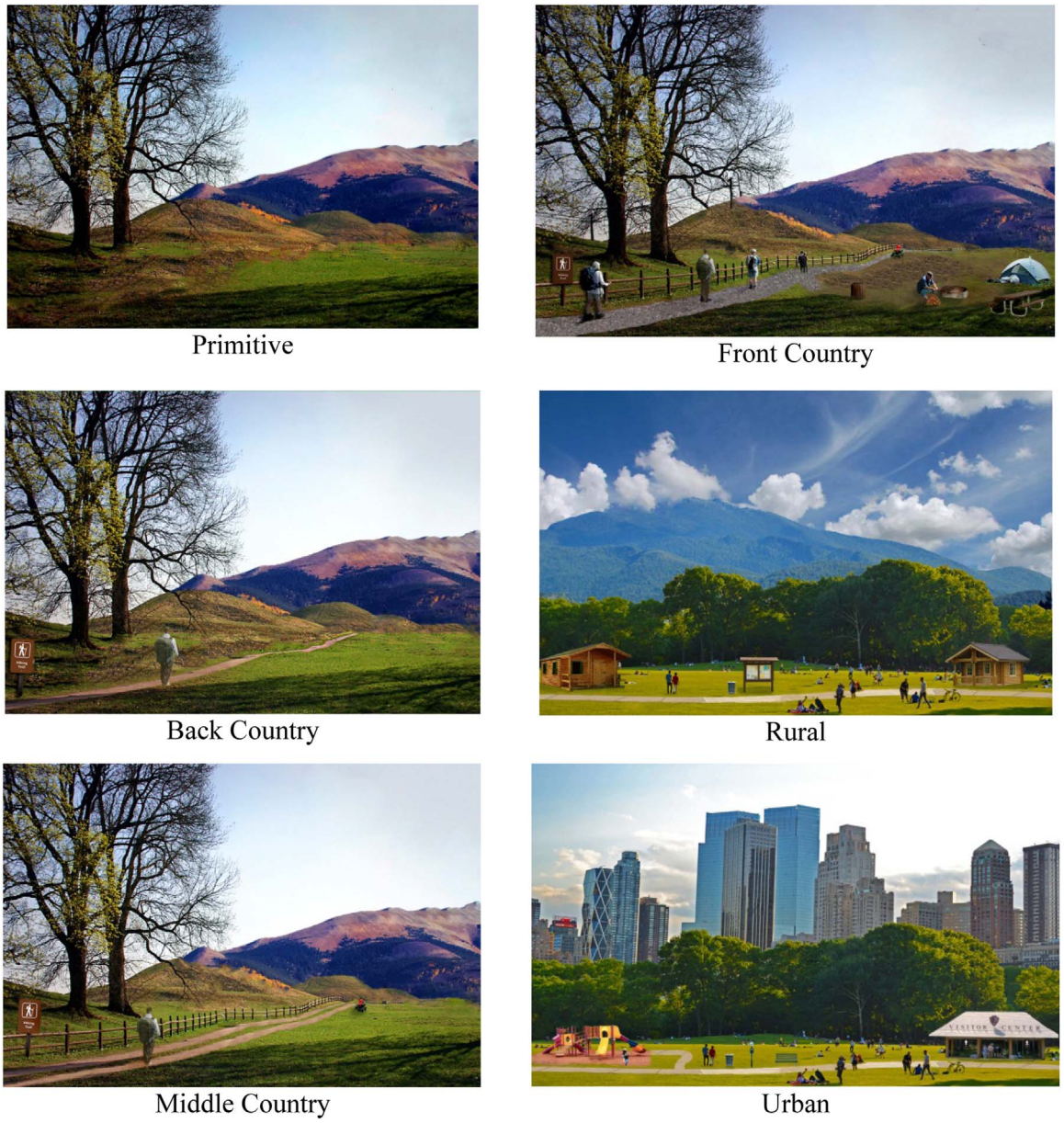

Fig. 1. Digitally manipulated photos containing crucial aspects of six setting types.

and independence.

The mean score for the benefit factors were computed, and the results indicate a clear preference for the physical benefits of outdoor recreation. Conversely, the least desired benefit construct was interpersonal relationships. Correlations were then run on the aggregated factors to examine their relationships. As shown in Table 3, these factors are highly correlated. For example, when outdoor recreationists desire mental serenity, they also tend to desire physical enhancement. Cronbach alphas were computed on the items that formed the factors to examine inter-item reliability. As displayed, these scores were all very high, ranging from .86 to .95.

A one-way MANOVA was conducted to determine the effect of anticipated satisfaction of recreational experiences in the six assigned setting types on the seven desired outdoor recreation benefits factors. MANOVA results indicate that setting type [Wilks' $\lambda = .880$, $F(5, 672) = 2.465$, $p = .001$, $\eta^2 = .025$] significantly affects the desired outdoor recreation benefits factors. However, multivariate effect sizes are small as indicated by the low η^2. Fig. 2 displays the adjusted means of the benefit factors by anticipated satisfaction within setting types. Contrary to hypothesis 1, participants' perceived satisfaction with the seven benefits factors *is* influenced by the setting type. For example, the back country setting tends to yield higher anticipated satisfaction levels of the desired benefits whereas the urban and primitive settings result in lower anticipated satisfaction ratings. In general, the back country setting is perceived as the optimal setting to achieve most benefits, while the urban setting is viewed as the least optimal setting for most benefits.

Univariate ANOVA and Scheffé post hoc tests were conducted as follow-up tests. ANOVA results indicate that (contrary to our hypothesis) all benefit factors except community cohesion significantly differed by setting type (see Table 4). Scheffé post hoc results for the relationship with nature factor indicate that those assigned to middle country, back country, and urban settings showed significant differences. The physical enhancement benefit also showed significant differences between those responding on behalf of the back country and urban settings. Finally, the mental serenity factor produced significant differences for those in the rural and back country settings.

To test hypothesis 2 (overall satisfaction of recreating in a specific

Table 1
Outdoor recreation setting characteristics and conditions.

Setting	Remoteness	Naturalness	Facilities	Contacts	Evidence of Use	Travel Mode
Primitive	The setting is far from any motorized route of any kind.	The natural landscape is undisturbed.	There is no form of facilities whatsoever.	You see less than three people a day. The sounds of other people are very rare.	There is also no alteration to the natural terrain.	There is no mechanized use whatsoever, including bicycles.
Back Country	The setting is close to a motorized route, but no improved roads of any type are near to the setting.	The landscape is naturally appearing and modifications are not readily noticeable.	There are some primitive trails made of native materials such as log bridges and carved wooden signs.	You see less than 6 people a day. The sounds of other people are infrequent.	Areas of alteration are uncommon, so little surface vegetation wear is observed.	No motorized vehicles are used at the setting.
Middle Country	The setting is on or near motorized routes, not close to a highway, but close to an improved road.	The landscape is naturally-appearing. There are maintained and marked trails and a simple trail head.	Some basic developments are found, including improved signs and very basic toilets.	You see on average less than 14 people a day. Sounds of people are occasionally heard.	There are some small areas of alteration. Surface vegetation is showing wear with some bare soils.	Four-wheel drive, all-terrain vehicles, dirt bikes, or snowmobiles are the only type of motorized vehicle permitted.
Front Country	The setting is on or near improved gravel roads, but still close to highways.	The landscape is partially modified by roads/trails, utility lines, etc., but none overpower natural features.	There are improved yet modest, rustic facilities such as campsites, restrooms, trails, and interpretive signs.	You see less than about 30 people a day.	Small areas of alteration are prevalent. Surface vegetation is gone with compacted soils observed.	Two-wheel drive vehicles predominant, but also four wheel drives and non-motorized, mechanized use.
Rural	The setting is on or near paved primary highways, but still within a rural area.	Natural landscape is substantially modified by agriculture or industrial development.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits are close by.	People seem to be generally everywhere.	There are a few large areas of alteration. Surface vegetation is absent with hardened soils.	Ordinary highway auto and truck traffic is characteristic.
Urban	The setting is within view of municipal streets and roads within towns or cities.	Urbanized developments dominate the landscape.	Elaborate full-service facilities such as laundry, restaurants, and groceries are nearby.	The setting is a busy place where other people are constantly in view.	There are large areas of alteration prevalent, and some erosion is visible.	A wide variety of street vehicles and highway traffic is ever-present.

Table 2
Demographics among study participants.

Variables	%
Gender	
Male	35
Female	65
Education Level	
Grade School or Less	.9
Some High School	1.9
High School Graduate	11.6
Some College	51.5
College Graduate	19.9
Some Graduate Studies	4.1
Graduate Degree Recipient	10.2
Household Income Range	
Under $9,999	19.9
$10,000 to $14,999	7.6
$15,000 to $19,999	5.0
$20,000 to $29,999	9.3
$30,000 to $49,999	18.3
$50,000 to $99999	25.3
$100,000 and over	14.6
Ethnicity	
African-American	.7
Asian/Pacific Islander	3.3
Caucasian	83.5
Hispanic	6.4
Native American	.4

Table 3
Factor inter-correlations, coefficient reliabilities, and means.

	1	2	3	4	5	6	α	*M*
Community	*.65*	*.70*	*.54*	*.71*	*.57*	*.46*	.95	2.33
Economic		*.56*	*.51*	*.68*	*.57*	*.51*	.91	2.46
Nature			*.78*	*.52*	*.81*	*.70*	.90	2.16
Physical				*.49*	*.84*	*.76*	.89	1.81
Interpersonal					*.57*	*.48*	.86	2.62
Mental						*.79*	.88	1.97

Note: 1 = Economic, 2 = Nature, 3 = Physical, 4 = Interpersonal, 5 = Mental, 6 = Independence. All correlations are significant at the .01 level.

Fig. 2. Adjusted means of benefit factors by setting type.

Table 4
Mean comparison of benefits by setting type.

Benefits	*df*	*F*	*n*	*p*	η^2
Community Cohesion	5	.82	672	.54	.006
Economic	5	2.48	672	.03	.018
Relationship w/Nature	5	3.61	672	.003	.026
Physical Enhancement	5	3.24	672	.007	.024
Interpersonal Relations	5	2.81	672	.016	.02
Mental Serenity	5	3.97	672	.001	.029
Independence	5	3.11	672	.009	.023

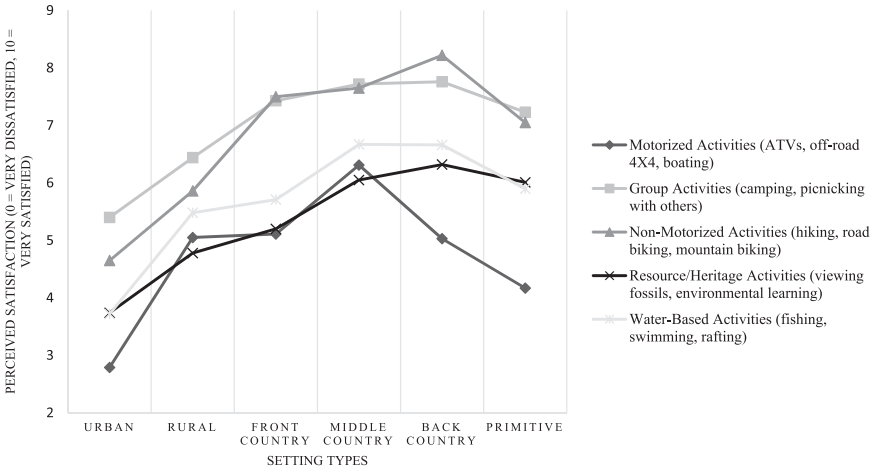

Fig. 3. Adjusted means of activity categories by setting type.

setting is impacted by outdoor recreation activity), participants were asked to rate their level of perceived satisfaction of five recreation activities if they were to recreate in their randomly assigned setting. Another one-way MANOVA was conducted to determine the effect of setting type on the five outdoor recreation activities. From a general standpoint, participants perceived the highest satisfaction with group activities (m = 7.71), followed by non-motorized (m = 7.67), water-based (m = 7.58), motorized (m = 6.48), and resource/heritage (m = 5.73) was reported as the least preferred. The Box's test was significant indicating that homogeneity of variance was not fulfilled, F (75, 806645) = 2.35, p < .001, so the Pillai's Trace test statistic is used in interpreting the MANOVA results (Tabachnick & Fidell, 2013). Results indicate that assigned setting type [Pillai's Trace = .268, F (25, 3465) = 7.86, $p < .001$, $\eta^2 = .054$] significantly affects expected satisfaction of outdoor recreation activities. Although multivariate effect size is more than double that of the MANOVA conducted for the outdoor recreation benefits, it is still relatively small as indicated by the relatively low η^2.

Fig. 3 presents the adjusted means for perceived satisfaction with activity categories by the setting types. Consistent with our hypothesis, the graph indicates a comparable pattern of perceiving highest satisfaction levels in the back country setting with the exception of motorized activities, which is viewed as most attainable in the middle country setting. The urban setting effectively produces the lowest anticipated satisfaction ratings among the various activity categories, which is most likely due to perceived incompatibility with the activity categorical options. A univariate ANOVA test was conducted to examine for differences among the activity groupings and the setting types. ANOVA results indicate that all activity categories, namely motorized [$F(5, 693) = .16.64$, $p < .001$, $\eta^2 = .107$], group [$F(5, 693) = 14.17$, $p < .001$, $\eta^2 = .093$], non-motorized [$F(5, 693) = 28.82$, $p < .001$, $\eta^2 = .172$], resource/heritage [$F(5, 693) = 12.47$, $p < .001$, $\eta^2 = .083$], and water-based [$F(5, 693) = 13.91$, $p < .001$, $\eta^2 = .091$] significantly differ by setting type.

With significant differences found in both the above MANOVAs, indicating that anticipated satisfaction with outdoor recreation benefits and activities differ by setting types, a regression was run to determine the extent to which activities and benefits predict overall perceived satisfaction with outdoor settings. The forward technique of multiple regression was conducted to determine the accuracy of the independent variables (satisfaction with the five activity categories, including group, water-based, resource/heritage, motorized, and non-motorized, the seven benefit factors, and the preferred/non-preferred setting variable) in predicting the dependent variable (overall satisfaction with the setting type). Regression results presented in Table 5 indicate that the model significantly predicts overall satisfaction with the setting type, [$R^2 = .479$, $R^2_{adj} = .474$, $F(6, 671) = 87.98$, $p < .001$]. This model accounts for 48% of variance in outdoor recreation satisfaction with a particular setting. Results indicate that all five activity categories significantly contribute to satisfaction in the outdoor setting while only one benefit factor (interpersonal relations) significantly predicts satisfaction in outdoor recreation settings.

Table 5
Coefficients for model variables.

Predictors	B	β	*t*	*p*
Non-Motorized Activities	.169	.312	8.237	.001
Group Activities	.119	.208	5.502	.001
Water-Based Activities	.054	.112	3.047	.01
Interpersonal Relations	.030	.124	4.198	.001
Preferred/Not-Preferred	−.433	−.119	−4.242	.001
Motorized Activities	.043	.090	2.852	.01
Resource/Heritage Activities	.039	.078	2.360	.05
Community Cohesion	.041		1.022	.307
Economic	−.032		−.850	.396
Relationship w/Nature	.002		.057	.955
Physical Enhancement	.021		.652	.514
Mental Serenity	.026		.758	.449
Independence	−.031		−.968	.333

$R^2 = .479$.

As discussed above, participants were randomly assigned to a setting type but they were also asked to indicate their preferred setting from the six possible used in the study. Participants who were randomly assigned to their preferred setting were labeled as such in the independent variable “preferred/not preferred.” Those who were randomly assigned to any other setting were labeled as not preferred. The preferred/not-preferred setting variable contributed to satisfaction levels. The negative coefficient indicates that recreating in not-preferred settings reduces anticipated satisfaction levels.

Overall, this regression model emphasizes the importance of achieving satisfaction with setting type through activities as opposed to outdoor recreation benefits. Moreover, the model underlies the importance of recreating in what the recreationist would consider to be a preferred setting. The robust R-squared value substantiates the extent to which activities influence satisfaction in outdoor settings. Clearly, activities are salient factors in explaining satisfactory experiences in outdoor settings.

5. Discussion

5.1. Activites, benefits and satisfaction

The twofold purpose of this study was to further clarify the relationship between outdoor settings and the benefits recreationists desire and to gain an understanding of the role of activities in this

relationship. We hypothesized that outdoor recreationists are flexible to setting types when recreating to achieve benefits but are less flexible to setting types when engaging in outdoor recreation activities. A photo manipulation experiment was employed by randomly assigning participants to images and descriptions of different setting types and then measuring their anticipated satisfaction with that setting type based on their perceived ability to realize their benefits and engage in their favorite recreation activity. We found that the ability to realize benefits are generally not related to satisfaction levels with setting type but that satisfaction with activities is related.

A close examination of Figs. 2 and 3 reveal some trends that may help inform managerial actions as well as help clarify the relationship between setting types and outdoor recreation. The first trend, that lower levels of anticipated satisfaction are located towards the poles of the setting types, is clear for both benefits (Fig. 2) and activities (Fig. 3). Examining benefits first, the lowest levels of anticipated satisfaction for three benefit factors (physical enhancement, independence and relationship with nature) are in an urban setting. Satisfaction levels for three benefit factors (mental serenity, community cohesion and interpersonal relationships) bottom out in rural settings while the remaining benefit factor (economic) logically reaches its low point in a primitive setting. Similarly, but more exaggerated when compared to benefit factors, the lowest level of satisfaction for each activity category (group activities, non-motorized activities, water-based activities, resource/heritage activities, and motorized) also reached the lowest levels of satisfaction in an urban setting. One way to interpret the decline in anticipated satisfaction in the urban and primitive settings is that these two setting types are more restrictive to specific activities than are other settings.

Second, backcountry is the optimal setting for both benefits and satisfaction with activities. Benefit factors that registered their highest levels of desirability in a backcountry setting include physical enhancement, mental serenity, independence, community cohesion and interpersonal relationships. Satisfaction for only two benefit factors reached their peaks outside of a backcountry setting, including relationship with nature (middle country) and economic benefits (urban). The story is (generally) the same for activities with every activity category reaching peak satisfaction with the backcountry setting except water-based activities and motorized activities which registered their highest levels of satisfaction with the slightly more developed middle country.

Third, Table 5 findings confirm our hypotheses that recreationists can better adapt their benefits to the setting than they can adapt their activities to the setting. This finding suggests that there is not as much of a need to attenuate to recreationists at an individual level as their benefits can take root in multiple settings types. For example, the benefit factor physical enhancement was shown to be desired in all setting conditions, implying that if the setting is perceived to enable the individual's desired activity, then satisfaction can be achieved.

Fourth, regression results presented in Table 5 highlight both the relationship between activities and setting type and the lack of relationship between benefits and setting type. With a robust R^2 of nearly 48%, the model indicates that all five of the activity categories were significant in predicting overall satisfaction with the setting, however just one of the benefit factors, interpersonal relations, was shown to be significant. This finding is consistent with Mowen, Graefe, and Virden (1997) in that activity involvement exhibited a significant relationship with evaluations of satisfaction with particular outdoor experiences. Likewise, other than interpersonal relationships, respondents' benefit factors had no impact on satisfaction of setting type.

Finally, while placing an outdoor recreationist in their preferred setting is desirable, it is not the only way to increase satisfaction of outdoor recreation. As demonstrated in Table 5, satisfaction with activities in randomly assigned settings can increase the satisfaction with the setting type. Non-motorized activities are the most impactful in terms of influencing satisfaction levels of outdoor setting type. This is followed by group activities, water-based activities, motorized activities and resource/heritage activities.[2]

5.2. Limitations

In addition to discussing what we did find in the data, it is important to discuss what we did not find and are not asserting. We are not asserting that the concept of benefits and the practice of benefits-based management are not useful in outdoor recreation management. Our findings do not challenge the idea that outdoor recreationists seek to realize beneficial outcomes and/or avoid negative ones. Instead, this paper recognizes the utility of benefits and advances their usefulness by showing that benefits are somewhat flexible to diverse setting types.

Likewise, we are not arguing that activities are more important than benefits in outdoor recreation management. Instead, we show that activities are more stringently tied to recreation settings than are benefits. In short, if recreationists can engage in their favorite activity in a complimentary setting, they will report higher levels of satisfaction with that setting. Benefits, on the other hand, are less dependent on setting type as they are more malleable to non-preferred setting types.

6. Conclusion

Our findings show that outdoor recreationists can realize benefits in a variety of outdoor settings. A photo manipulation experiment demonstrated that across benefit factors, anticipated satisfaction levels did not degrade terribly when subjects found themselves in less than ideal settings. By contrast, there was significant fluctuation in anticipated satisfaction levels between different categories of activities. Combined, these findings show that benefits are more malleable to setting characteristics than are activities. The face validity of these findings make sense; physical benefits can be achieved in nearly any outdoor setting (although levels of satisfaction are highest in the back country) while non-motorized outdoor recreationists require a more precise setting than can generally be offered in urban and rural environments. From this, we suggest that land managers view outdoor recreation benefits as flexible to the environment rather than heavily dependent on it because, when it comes to benefits, outdoor recreationists will find comparable satisfaction levels in non-preferred outdoor recreation settings.

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[2] It should be noted, that the lack of statistical significance in all but one benefit factor may be the result of measurement issues rather than the simple lack of a relationship between benefit factors and outdoor setting type. As discussed earlier, benefit factors are a conglomeration of similar expectation items. It is possible that in calculating the benefit factors themselves we have watered down the concept of expectations in our analysis thereby decreasing their power in the model.

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