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# CHANGES IN VISITORS' ENVIRONMENTAL FOCUS DURING AN APPRECIATIVE RECREATION EXPERIENCE

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ABSTRACT

Recreation that involves learning, viewing, observing, studying, identifying, or photographing nature (e.g., birds, plants, or wildlife) may be termed appreciative recreation. As appreciative wildland recreation participation continues to increase, an understanding of the development of on-site experiences for recreationists will be important for helping managers meet visitor needs, meet objectives for education during experiences, and managing social and ecological impacts related to the activity. The purpose of this study is to investigate the developmental nature of appreciative recreation experiences. Clawson and Knetsch (1966) are typically cited as the first researchers to identify that an outdoor recreation experience has multiple phases and changes over the course of an experience. Specifically, this study investigates the on-site phase of an appreciative recreation experience and seeks to determine the effects of time spent in the natural environment. The intent is to measure how time influences the appreciative qualities (environmental focus) of those who are participating in this form of recreation. Data were collected at Congaree National Park, where appreciative recreation opportunities are abundant. A version of the experiential sampling method (ESM) was used to measure dependent variables a number of times during a recreationist's experience. A sample of 158 visitors each completed four experience sampling forms. Data were then subjected to confirmatory factor analysis and multi-level modeling analysis. It was found that time does have a significant influence on the development of an appreciative recreation experience. Finally, it was found that there are three phases of an on-site, appreciative recreation experience (preparation, immersion, and separation).

Keywords: Wildland recreation, visitor experience, environmental focus, recreation phases

## Introduction

The number of people participating in outdoor/wildland recreation is increasing and is projected to increase through the year 2050 (Bowker et al., 2006). Moreover, studies suggest specific and dramatic increases in wildlife viewing and birdwatching activities. For example, the National Survey on Recreation and the Environment (NSRE) indicates that in 2000-2001 there were 95.2 million participants viewing/photographing wildlife; a 55.8% or 34.1 million increase from the 1994-1995 survey (Cordell, 2004). Viewing/photographing wildlife was ranked third in participant numbers only behind 'walking for pleasure' and 'family gatherings'. Interestingly, there were another 52.8 million participants who were specifically interested in viewing/photographing fish. Similarly, between 2004 and 2007 the NSRE found that 35.4% of all people 16 years and older in U.S. were birders or birdwatchers (Cordell, Eubanks, Betz, Green, Stephens, & Mou, 2008). Cordell et al. (2008) expect that the popularity of birdwatching will continue to increase in the near future. Yet another related study determined that sightseeing ranked second (visiting friends and relatives ranked first) amongst activities with the greatest level of interest among U.S. adults who are traveling (Travel Industry Association, 2010). Recreation that involves learning, viewing, observing, studying, identifying, or photographing nature (e.g., birds, plants, or wildlife) may be termed appreciative recreation.

A significant increase in any group of recreationists should warrant some level of investigation on its own. Given the large number of participants in appreciative recreation, a greater understanding of it may be needed to provide for high quality experiences. However, there has been little investigation into appreciative recreation experiences despite the potential environmental and managerial implications that may result from the growing number of participants.

Many questions regarding appreciative recreation remain unanswered or unexplored. For example, do appreciative recreation experiences evolve over the course of a day or a few hours? Does time influence the development of a sense of appreciation in natural settings? More specifically, as appreciative recreationists progress through their experience, does the amount of time spent in the natural setting influence this sense of appreciation? The purpose of this study is to help answer these questions by investigating the potential developmental nature of on-site experiences of appreciative recreationists, and specifically to learn about the role of time as an influence on the experience.

## Literature Review

### *Appreciative Recreationists*

'Appreciative outdoor recreation' is an elusive term. There are a number of characteristics that correspond with typical appreciative recreationists and the activities that they participate in (e.g., birding, photographing nature, viewing nature, identifying species). This term does not suggest that more active or adventure-type activities cannot have a component of appreciation. Moreover, this categorization does not exclude appreciative recreationists who have feelings of adventure. The purpose of the categorization is simply an attempt to describe a relatively large and homogeneous group of recreationists who take part in similar activities.

The subjective nature of recreation activity classification has allowed for a number of interpretations of appreciative recreation that do not completely agree. Clawson and Knetsch (1966) proposed three categories of outdoor recreation which included resource-oriented recreation, intermediate recreation, and user-oriented recreation. The resource-oriented recreation depends on use of natural resources and occurs in natural settings fundamental to the recreation experience. Unfortunately, this early classification may not be specific enough to

distinguish appreciative outdoor recreation as it is understood for this study. Bos, Brisson, and Eagles (1980) created a more specified classification of outdoor recreationists which characterized them by their attitudes and preferred activities. The 'aesthetic' and 'naturalistic' types included activities such as 'viewing', 'bird watching', and 'photography'. Moreover, some of the attitudes that correspond with these types of outdoor recreationists include interest towards nature, outdoors, and wildlife. Cordell (2004) suggests that these viewing activities are closely related to those which involve learning. Specifically, when discussing these activities, Cordell (2004) proposes that the "purpose of these visits would be to watch, study, identify, photograph, sample, observe, and learn about natural or cultural history" (p. 121). For the purpose of this investigation, learning, viewing, observing, studying, identifying, or photographing nature (e.g., birds or wildlife) are the activities that define appreciative recreation.

*Multiple Phases of Outdoor Recreation*

Clawson and Knetsch (1966) suggested that there were five necessary phases for any outdoor recreation experience. Specifically, each experience must consist of the anticipation, travel to the site, on-site, travel from the site, and recollection phases. Each phase is identifiable, needs to be considered as an individual entity, and results in contributing to or detracting from satisfaction within an entire outdoor recreation experience (Clawson & Knetsch, 1966).

In an early attempt to test Clawson and Knetsch's five phase model, Hammitt (1980) concluded that the fluctuation of students' moods during a fieldtrip in Michigan indicated a multiphasic nature of outdoor recreation experiences. This study was succeeded by a number of academic investigations that were also interested in the multiple phases of outdoor recreation. For example, Vogt and Stewart (1998) investigated how information can cognitively and affectively impact the five Clawson and Knetsch (1966) phases of a vacation. Most notably, length of stay was found to influence an individual's stability or instability of thoughts and

feelings over the course of their experience. Interestingly, this change in feelings showed some correlation with the level of experience at the chosen site of study. Also, Hultsman (1998) found that early parts of an individual's experience can have a significant influence on the perception of satisfaction in later phases of the experience.

Inevitably, heightened interest in the five-phase model forced research into more specific details of the phenomenon that it was attempting to explain. The five phases became individual concepts worthy of study with the on-site phase being most investigated and demanding the most attention by researchers (Tarrant, Manfredo, & Driver, 1994). Researchers began to claim that the on-site phase is dynamic, evolving, and warrants its own investigation (Borrie & Roggenbuck, 2001; Hull & Michael, 1995; Hull et al., 1992; Hull et al., 1996; McIntyre, 1998; McIntyre & Roggenbuck, 1998; Walker, Hull, & Roggenbuck, 1998). This claim was used to justify projects as well as develop study designs. For example, Hull, Michael, Walker, and Roggenbuck (1996) justified an investigation of eight experience dimensions by indicating that "the leisure experience changes from phase to phase, and... it likely changes within the on-site phase" (p. 300).

*The Multiphasic Nature of an On-Site Experience*

It is now generally accepted that the on-site phase is comprised of dynamic and evolving characteristics (Stewart, 1998). For example, in an exploratory study of recreation experience patterns, Hull et al. (1992) found that some hikers showed patterns that were "meaningfully distributed over the duration of a recreation experience" (p. 249). These researchers suggested that this meaningful distribution could be attributed to management action or site characteristics. In an attempt to measure the restorative qualities in an outdoor recreation experience (compared to an indoor recreation experience) Hull and Michael (1995) observed that time spent in an urban

park can change an individual's mood. Subsequent research by Hull et al. (1996) looked at four leisure conditions and assessed the change in eight dimensions of an experience. They observed that participants had "dynamic (e.g., change while on-site), multidimensional, and complex (e.g., the dimensions' ebbs and flows do not parallel one another)" on-site experiences (p. 312).

Independent variables in investigations of the evolving, dynamic, transitory, and/or multidimensional nature of on-site experiences seem limited to temporal and contextual influences or some combination of the two. Unfortunately, much of this research fails to specifically identify the independent variable, which makes it difficult to determine whether it is time spent at a site or the context (e.g., places visited, areas found, unique characteristics of areas, distance traveled, distance from an entry point) that is causing change in the dependent variable. For example, Hull and Michael (1995) admit that despite finding changes within the on-site activity, they could not determine "whether the better moods at the park were a consequence of site characteristics (i.e., nature vs. no nature) or due to some other quality (e.g., travel, planning, expectations, or symbolism)" (p. 11). McIntyre and Roggenbuck (1998) surveyed participants at "sites most likely to impact study variables of interest" and then suggested that it was the environmental context that was largely influencing the development of multiple phases (p. 407). Survey sites included a dressing area, a cave entrance, a waterfall, and a cave of glow-worms. However, it could be argued that the amount of time already spent inside the cave, the amount of time left in the cave, and other temporal factors may have had substantial influence on the dependent variables that were being tested. These temporal influences become more realistic when one considers that outdoor recreation activities (especially more active, nature-based activities) have been found to promote the development and acquisition of wilderness ideals and an overall appreciation of nature in brief (m = 1.6 days) recreation

experiences (McIntyre, 1998). Therefore, results of McIntyre and Roggenbuck's study may have been influenced by this relatively quick temporal development of nature appreciation.

The conceptualization of a multiphasic on-site experience has varied from study to study. However, for the most part, there is relative agreement that a multiphasic on-site experience is one that has evolving, dynamic, transitory, and/or multidimensional characteristics (Borrie & Roggenbuck, 2001; Hull & Michael, 1995; Hull, Michael, Walker, & Roggenbuck, 1996; Hull, Stewart, & Yi, 1992; Lee, Datillo, & Howard, 1994; McIntyre, 1998; McIntyre & Roggenbuck, 1998; Stewart, 1998; Walker et al., 1998). Dependent variables that have been used to examine these characteristics of the on-site experience include: mood (Hull & Michael, 1995; McIntyre & Roggenbuck, 1998), stress levels (Hull & Michael, 1995), fear and enthusiasm (Klausner, 1967), satisfaction (Hull et al., 1992), environmental experience (Borrie & Roggenbuck, 2001), wilderness experience (Borrie & Roggenbuck, 2001; McIntyre, 1998), focus of attention (McIntyre & Roggenbuck, 1998), feelings (e.g., anxiety, dullness, excitement, calmness) (Hull et al., 1996), and perceived competency and risk (McIntyre & Roggenbuck, 1998).

Although they may not explicitly state duration as an independent variable, researchers investigating the evolution of experiences have opted to use a wide range of trip lengths. Talbot and Kaplan (1986) conducted a lengthy research program where they concluded that annual extended wilderness trips may assist in the development and acquisition of durable perceptions of the environment. Similarly, Hultsman (1998) looked at changes in levels of satisfaction over the course of a multi-day leisure experience. Meanwhile, some studies have investigated shorter duration outdoor recreation experiences. For example, Hammitt (1980) found significant changes in mood at the five different phases of a one day, outdoor recreation experience. While these results may have been valuable at an exploratory level, Hammitt (1980) admits that there

are some limitations to his study including that the field trip may not qualify as a conventional recreation pursuit. Klausner (1967) found that fear and enthusiasm levels of parachutists undergo distinct changes depending on the phase of the activity (e.g., jumping out vs. after landing). Hull et al. (1992) were interested in recreationists who were taking part in a "strenuous dayhike." They concluded that recreation experiences are not static and may be influenced by specific features of the park (e.g., management). Hull and Michael (1995) studied mood as an indicator of stress and tested whether the presence of nature in an urban park has a restorative quality. They found changes in the mood of participants during a brief visit (averaging just 85 minutes). Also, McIntyre and Roggenbuck's (1998) study of students on a blackwater rafting trip was one day. This study supported the dynamic nature of on-site experiences, but there were a number of issues that could distinguish this trip from a traditional daytrip. For example, the presence of a supervisor (in the form of the researcher) and the extremely structured itinerary (because of the one-way nature of the river in the cave) may have reduced students' perceptions of freedom and ultimately influenced their on-site experience.

Despite being generally accepted, the notion that on-site wildland recreation experiences are dynamic and evolving is a generalization that is largely based on investigations of longer-term recreation experiences and more traditional recreation activities such as hiking, paddling, and camping. For the most part, the multiphasic nature of the on-site phase for appreciative forms of recreation has not been empirically demonstrated.

*Environmental Focus*

It seems logical that outdoor recreationists, especially those who are learning, viewing, observing, studying, identifying, or photographing nature are required to have some level of focus throughout their experience. The Environmental Focus Scale (originally titled the

Environmental Experience Scale) is a dependent variable that was used by Borrie and Roggenbuck (2001) in an investigation of the on-site phase of a recreation experience and is based on the work of Ittelson, Franck and O'Hanlon (1978). In the original proposition, Ittelson et al. (1978) suggest a number of modes or ways to experience the environment. Borrie and Roggenbuck (2001) analyzed this proposition and came up with five main modes including: focus on self or introspection, focus on others or social acceptance, focus on task or task orientation, focus on nature or environmental awareness, and focus of emotions or emotional intensity. Next, Borrie and Roggenbuck (2001) created a list of items for a measurement scale that were based largely on previous literature:

> "measures of 'focus on self – introspection' and 'focus on others – degree of socialness' [were] developed by Fenigstein, Scheir, and Buss (1975) and Samdahl and Kleiber (1989). For 'focus on task – task orientation' and 'focus on affect – emotional intensity' [they] adapted and supplemented items from Baldwin and Tinsley (1988). 'Focus on nature – environmental awareness' items are [their] own" (Borrie and Roggenbuck, 2001, p. 212).

Scale analysis (reliability and exploratory factor analysis) was conducted on the original set of items (Borrie & Roggenbuck, 2001). The factor analysis yielded four factors including: 'focus on self', 'focus on others', 'focus on task', and focus on the environment. These items comprised the dependent variable in this study.

*Hypotheses*

There are two hypotheses. The first hypothesis states that the four factors (e.g., 'focus on self', 'focus on others', 'focus on task', 'focus on environment') which were extracted from the Environmental Focus Scale using an exploratory factor analysis (EFA) by Borrie and Roggenbuck (2001) will be confirmed when applied to a different study population in a different setting. The hypothesized factors and their relationship to each other can be seen in Figure 1.

The second hypothesis states that factors within the Environmental Focus Scale will show changes over the course of an on-site, appreciative recreation experience.

## Methods

### *The Experiential Sampling Method*

The Experiential Sampling Method (ESM) was initially developed in the 1970's in an attempt to study and measure 'flow' (a psychological state of mind characterized by complete immersion into an activity) as the phenomenon was occurring (Csikszentmihalyi & Csikszentmihalyi, 1988). The original ESM procedure involved distributing pagers or beepers to participants along with a booklet of self-report forms. When the pagers indicated, the participants completed one of the self-report forms, also known as an Experience Sampling Form (ESF). These forms sought both objective and subjective information (Larson & Csikszentmihalyi, 1983). The objective questions often requested information about what the person was doing, who they were with, the time, and the date. The subjective items were typically presented in a Likert or semantic differential scale and sought information about participants' "thoughts; their cognitive, emotional, and motivational states; and their perceptions of their current social situation" (Larson & Csikszentmihalyi, 1983, p. 43). The text that describes the implementation of ESM suggested that a respondent fill out eight surveys each day (Csikszentmihalyi & Csikszentmihalyi, 1988) and one time in each 2 hour period (Larson & Csikszentmihalyi, 1983). In this study we distributed four ESFs because our participants were recreating primarily in daylight. This study used a variation of the ESM, as described below.

### *Study Site*

Congaree National Park (Congaree) was chosen as a study site. Up until the late 1960's, the old-growth forest in South Carolina where the park is located was subject to a variety of development and logging operations that threatened its existence. Early conservation efforts

resulted in the land being designated as a National Monument in 1976. Later in 2003, Congaree was designated as a National Park and it is now home to approximately 11,000 acres of old-growth floodplain forest.

The most popular feature of the park is a 2 mile boardwalk that ventures through the forest with culturally and/or historically significant areas signed along the way. For example, the damage done by 1989 hurricane Hugo and an oxbow lake can be found along the boardwalk. As of 2008, Congaree was home to over 20 state champion trees and six national champion trees. Also, prior to being labeled a National Park it was designated as an International Biosphere Reserve in 1983 and a Globally Important Bird Area in 2001. With such diverse and unique flora and fauna the park provided an appropriate site for an investigation of appreciative recreation. Located less than 20 miles southeast of Columbia in South Carolina, Congaree also provides daytrip opportunities to a relatively large population.

*Data Collection*

During the 2009 use season, the data collection process commenced as visitors approached the Harry Hampton Visitor Center. The visitor center was ideal because it is located immediately adjacent to the main, day-use parking lot, where almost all visitors began their experience. Each group of people arriving to Congaree was approached and asked to participate in the study. Only one person per group was invited to participate and if more than one person wanted to participate, the person with the most recent birthday was selected. Potential participants were greeted with a screening question. The purpose of the question was to determine if their intentions were to participate in appreciative recreation. In order to reduce potential group nested models, the study called for one survey per group of visitors. Pending confirmation of the screening question criterion and volunteered participation, visitors completed

ESF1. Participants were asked the length of time that they intended to stay in the park. A stopwatch was then set to alarm at 1/3 and 2/3 of the participant's visit duration. Upon completion of the ESF1, participants were issued a second and third ESF (ESF2 and ESF3) and a stop watch. These stopwatch alarms were used as prompts to complete ESF2 and ESF3, respectively. Upon the participant's return to the visitor center, a final ESF4 was completed. Completed ESFs and stopwatches were collected at the visitor center as the participant's experience was concluding and they were leaving Congaree.

*Data Instrument*

As suggested by previous literature, the ESFs in this study were used to obtain information via 9-point Likert type questions as well as open-ended questions. In total, there were ten pages of questions that took approximately 15 minutes to complete. Initial information from participants was obtained using the ESF1. This questionnaire requested information about the visitor's previous experiences at the site (if any), level of experience in appreciative recreation, and respondent's beginning level of focus (measured by the Environmental Focus Scale - see Table 1). After completing ESF1, participants were issued two more ESF's (described above) that were to be completed during the recreation experience and which requested information about the participant's surroundings and repeated the measure of focus.

Finally, ESF4 sought some supplementary information about the individual and their recreation experience. Participants completed questions about specific species encountered, number of people encountered during the visit, or level of satisfaction with the recreation experience. Also, a final measure of environmental focus was collected on this final ESF.

*Data Analysis*

<u>Data Preparation</u>

The original dataset (n = 202) was subjected to standard data cleaning procedures. Data cleaning helps identify outliers and is the first step towards verifying both univariate and multivariate normality of the dataset (Kline, 2005). Univariate and multivariate normality is important because many statistical procedures (including structural equation modeling (SEM) or inferential analysis) are extremely sensitive to outliers. Therefore, the first step in data analysis was to identify univariate outliers. Specifically, skew and kurtosis tests were conducted for all variables across all four measurement occasions. Skew is the literal shape of the distribution about its mean (e.g., symmetrical vs. asymmetrical) and kurtosis is a test of the peakedness of the distribution. Using z-score residuals, respondents who fell outside of three standard deviations from the mean were removed or further evaluated for multivariate normality (Tabachnick & Fidell, 2007).

The second step of data cleaning involved evaluating multivariate normailty. According to Kline (2005) it is often "difficult to assess all aspects of multivariate normality" (p. 49), and therefore, this analysis used Mahalanobis distance scores to assess multivariate normality (Kline, 2005). Mahalanobis distance is a statistic that "indicates the distance in standard deviation units between a set of scores (vector) for an individual case and the sample means for all variables (Kline, 2005, p. 51). A mahalanobis distance score that violated the critical value was further evaluated. Specifically, some respondents who exceeded the critical value were kept in the dataset. Since mahalanobis distance is only one indicator of multivariate normality, only scores with extreme violations were deleted. This is a generally accepted method (Kline, 2005). Moreover, Tabachnick and Fidell (2007) suggest that "if there are only a few multivariate outliers, it is reasonable to examine them individually" (p. 76). Overruling the mahalanobis

critical value was a decision made after reviewing the violating participant's responses to the survey in order to detect patterns.

After univariate and multivariate cleaning was conducted, missing data was subject to the Expectation Maximization (EM) algorithm. Kline (2005) suggests that this method involves imputing missing observations by conducting "a series of regressions where each missing variable is regressed on the remaining variables for a particular case" (p. 55). After data cleaning and application of the EM algorithm 202 original full cases (consisting of 808 measurement instances) were reduced to 158 full cases with no missing values. This cleaned sample dataset was then used for all subsequent analysis.

*Confirmatory Factor Analysis*

The Environmental Focus Scale was originally subjected to an EFA in 2001 by Borrie and Roggenbuck. Therefore, since four factors were initially identified, a confirmatory approach was used in an attempt to confirm the existence of the four factors. EQS version 6.1 was used to conduct a confirmatory factor analysis (CFA) on the four factors of the Environmental Focus Scale (e.g., 'focus on self', 'focus on others', 'focus on task', 'focus on environment') across each of the four measurement occasions. It was expected that these four factors which were extracted from the Environmental Focus Scale using an EFA by Borrie and Roggenbuck (2001) would be confirmed when applied to a different study population in a different setting. (The hypothesized projected model is displayed as Figure 1).

For this study, a CFA provided the opportunity to analyze the fit between responses to survey variables and the four hypothesized factors. The purpose of the CFA was to determine whether or not these four factors maintained validity and reliability when applied to a new population in a new setting (e.g., an appreciative recreationist who was visiting Congaree). The

original four factors explored by Borrie and Roggenbuck (2001) were confirmed in this study's sample. This was determined by evaluating various statistics used to measure the "fit" between responses and the hypothesized factors (Figure 1).

Specifically, the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) were evaluated (Table 2). According to Byrne (2008) and Kline (2005), an appropriate CFA model has a CFI ratio of 0.90 or greater and an RMSEA ratio of less than 0.08. Therefore, in order to improve the models so they met recommended criteria, two items were removed from the scale for each measurement occasion. The first item which read: "How much are you focusing on your own thoughts?" was removed because it had consistently low factor loadings across each of the four measurements. The second item which read: "I am reflecting on myself a lot." was removed because it was consistently correlating with other items in the scale, demonstrating a lack of measurement independence.

For measurement occasion one, three, and four the CFI (0.944, 0.953, 0.969) and RMSEA (0.080, 0.028, 0.065) displayed acceptable levels of fit. However, despite having an appropriate CFI (0.935), the second measurement occasion marginally violated the acceptable levels of RMSEA (0.082). However, Kline (2005) argues that even though an RMSEA score exceeding 0.08 may violate the standards of "reasonable error of approximation", it is only after the score exceeds 0.10 that the score is of "poor fit" (p.139). Therefore, the CFA provided a statistical validation of the four hypothesized factors across all four measurement occasions. The CFA (measurement occasion one) that was used for this study can be found in Figure 2.

Finally, each of the four confirmed factors ('focus on self', 'focus on others', 'focus on task', 'focus on environment') were transformed into composite scores for analysis across each

measurement occasion. Composite scores were evaluated using a multi-level modeling analysis in SPSS 17.1.

*Repeated Measures Analysis and Multi-Level Modeling*

This study used a repeated measures design. Specifically, study participants were asked to respond to the same instrument (e.g., Environmental Focus Scale) on four separate occasions. Using this type of research design may result in an inflated Type I error rate due to correlations between measurement times (Hox, 2002). For example, a respondent's score on the second measurement occasion may be influenced by a number of different reasons (e.g. knowledge of scale items) which may cause them to answer differently than the first measurement occasion. Further, Baricikowski (1981) reported that significance tests can be substantially altered with even small degrees of correlated errors. Due to the compounding correlations, a simple ANOVA test that does not account for any correlation of error is a less appropriate analysis tool for this study.

However, multi-level modeling (MLM) is an analysis tool that provides many advantages beyond using an ANOVA or applications in General Linear Models (GLM) to assess change in responses across measurement occasions. First, standard ANOVA assumes (unlike MLM) that errors are uncorrelated (e.g., spherecity assumed), an assumption that is most likely violated when respondents are measured more than twice (Tabachnick & Fidell, 2007). Second, MLM does not require that there is complete data over each measurement occasion, or that an equal number of cases exist at each measurement occasion. Finally, MLM does not require an equal interval between measurement occasions for each case, as is required in an ANOVA or a latent growth model (LGM) (Kline, 2005). The MLM is particularly important in this study because the time intervals between surveys for each participant varied and was dependent on the amount

of time they expected to stay at the park. This allowed time to be explicitly and specifically examined as an independent variable in this study. MLM using SPSS 17.1 was applied to assess the degree of change over time within the various factors of the Environmental Focus Scale.

After verifying normal distribution at each measurement occasion, and verifying the measurement of the hypothesized constructs through CFA (as previously described), the first step in MLM is to assess the degree of variance attributable to the repeated measures themselves. In other words, it was important to determine how much of the variance was attributed to respondent's answering the same questions on multiple occasions. This is performed through an assessment of the inter-class correlation (ICC) and results in an ICC ratio. If the ICC is nominal, measurements may be considered as independent of one another (e.g., errors not correlated), and may be treated without MLM (e.g., GLM, ANOVA). However, initial assessments of the data revealed ICCs for each dimension of environmental focus ranged between 0.33 and 0.63, indicating that as much as 63% of the variance was attributable to respondents being measured repeatedly. Therefore, it was important that MLM was used exclusively for the subsequent time series analysis to identify if respondents environmental focus changed significantly over time.

## Results

### *Description of the Sample*

A total of 202 of 239 visitors approached participated in the study yielding a response rate of 84.5%. Participants devoted an average of 33.4 (*SD = 70.*8) days per year and spent $991.17 (*SD = $3,823.26*) per year on appreciative recreation activities. The majority of respondents (62.7%) were first time visitors to Congaree. Moreover, 82.5% of returning visitors

had been to the park fewer than 4 times with the average group size being 2.9 people. The average length of visit was 2 hours and 12 minutes.

On the ESF1 there were a number of questions that determined participant expectations. For example, participants were asked to list the types of wildlife, plants or birds that they *expected* to see on their visit. The top four categorical responses to this question included 'Birds' (48.5%), 'Trees' (45%), 'Reptiles/Amphibians' (38.6%), and 'Large Mammals' (17.8%). In comparison, when asked to list the types of wildlife, plants, or birds that they did see on their visit, the top four categorical responses included 'Reptiles/Amphibians' (66.3%), 'Insects' (57.9%), 'Birds' (56.4%), and 'Trees' (55%).

*The Environmental Focus Scale*

The four factors that constitute the Environmental Focus Scale were evaluated for change across measurement occasions. This was done to test the hypothesis that factors within the Environmental Focus Scale will show changes over the course of an on-site, appreciative recreation experience. It was found that there was a significant change for the overall scale between the third and fourth scale measurement occasions ($p < 0.01$). The changes in the overall scale are displayed graphically in Figure 3. The complete set of scale items and their corresponding scores for individual items can be found in Table 1.

The variance of initial scores across respondents was significant ($p < 0.001$). In other words, initial scale scores on the ESF1 were not similar. The rate of change (slope) varied significantly across respondents ($p < 0.001$). This suggests that respondents' level of Environmental Focus changed differently across persons over the course of their visit to Congaree. Initial scale scores (low vs. high) also influenced the rate at which respondent's changed their environmental focus (slope) ($p = 0.02$). Specifically, on average, people with

lower focus scores at measurement occasion one (ESF1) showed a faster increase in focus than did those with higher focus scores at measurement occasion one.

An assessment for the overall change in the Environmental Focus Scale using time as a predictor revealed that individuals do not change significantly over measurement occasions. Since visitors' change in this dimension was not significant, further analysis using the amount of time spent in the park as a predictor was not entertained.

*Focus on Self*

The 'focus on self' factor was the first of four factors making up the Environmental Focus Scale. For this factor, a significant change in responses was found between the first and second measurement occasions ($p < 0.001$). This is displayed graphically in Figure 3.

The variance of initial scores across respondents was significant ($p < 0.001$). More specifically, the initial scores for 'focus on self' on the ESF1 were not similar. The rate of change (slope) for this factor does not vary significantly across individuals. This suggests that respondents showed similarities in how their 'focus on self' changed over the course of their visit. Also, the rate of change (slope) is not influenced by whether the initial 'focus on self' score was low or high. In other words, the changes observed in 'focus on self' were not significantly influenced by the value of the initial score.

An assessment for the overall change in the 'focus on self' factor using time as a predictor revealed that individuals do not change significantly over measurement occasions. Since visitors' change in this dimension was not significant, further analysis using the amount of time spent in the park as a predictor was not entertained.

*Focus on Others*

No significant changes in responses between measurement occasions for the 'focus on others' factor were detected. This is displayed graphically in Figure 3. However, the variance in initial scores was significant across all respondents ($p < 0.001$). In other words, the initial scores for 'focus on others' on the ESF1 were not similar. Further, the rate of change (slope) also varied significantly for this factor ($p < 0.001$). This suggests that respondents' level of 'focus on self' changed differently across persons over the course of their visit to Congaree. Finally, the rate of change is not influenced by the respondent's initial score. In other words, the changes observed in 'focus on others' were not significantly influenced by whether the initial score was high or low.

An assessment for the overall change in the 'focus on others' factor using time as a predictor revealed that individuals do not change significantly over measurement occasions. Since visitors' change in this dimension was not significant, further analysis using the amount of time spent in the park as a predictor was not entertained.

*Focus on Task*

No significant changes in responses between measurement occasions for the 'focus on task' factor were detected. This is displayed graphically in Figure 3. Further, for this factor there was a significant amount of variance in the initial scores across all respondents ($p < 0.001$). In other words, the initial scores for 'focus on task' on the ESF1 were not similar. Similarly, the rate of change (slope) does not vary significantly and people generally change their 'focus on task' in the same way. Initial scores (low vs. high) on this factor did not show a significant influence on an individual's rate of change.

An assessment for the overall change in the 'focus on task' factor using time as a predictor revealed that individuals do not change significantly over measurement occasions. Since visitors' change in this dimension was not significant, further analysis using the amount of time spent in the park as a predictor was not entertained.

*Focus on Environment*

For the 'focus on environment' factor, there were significant changes between the first and second measurement occasions as well as the third and fourth measurement occasions. This is displayed graphically in Figure 3.

Unlike the other three factors, the initial scores for 'focus on environment' do not vary significantly across respondents ($p = 0.21$) and all respondents answered the 'focus on environment' factor questions in a similar fashion. However, the rate of change (slope) does show significant variation suggesting that visitors change their focus on the environment in different ways. Initial scores on 'focus on environment' (low vs. high) do not influence an individual's rate of change. The most drastic observation that was found for this factor occurred between measurement occasion three and measurement occasion four. Specifically, the factor score dropped from 7.7 to 6.8 respectively between the two occasions.

Finally, it was determined that the amount of time spent at Congaree does influence one's 'focus on environment' ($p < 0.001$). An initial investigation reveals that as more time passes, a visitor will focus less on the environment. More specifically, for people with an average time spent between measurement occasions (i.e. holding time spent constant at 62.7 minutes between measurement occasions), focus on the environment decreased by 0.35 ($p < 0.01$). However, a more detailed investigation reveals an immediate and significant increase ($p < 0.001$) in 'focus on environment' followed by a late and significant decrease ($p < 0.001$).

## Discussion and Implications

Some of the results from the Environmental Focus Scale are quite similar to those found in previous literature. An investigation of a wilderness recreation experience at Okefenokee National Wildlife Refuge concluded that the on-site experience was "dynamic, complex, and evolving" (Borrie & Roggenbuck, 2001; p. 225). At first glance, it seems as though the current study has revealed two significantly different phases of an on-site appreciative recreation experience as well. The first phase is statistically evident through the consistency of the first three measurement occasions while the second phase seems to occur between the third and fourth measurement occasion. However, a more thorough investigation of the scale and specifically the individual factors that make it up may offer a very different point of discussion.

There was no significant change between ESF1 and ESF2 in the overall scale. However, because the Environmental Focus Scale is simply a composite of all the factors within it, this lack of significant change between the first and second measurement occasion may not accurately represent the phenomenon that is occurring. Reviewing the factor scores between ESF1 and ESF2 for the 'focus on self' factor and the 'focus on environment' factors may provide evidence of yet a third phase in the experience. Specifically, the 'focus on environment' factor shows an immediate and significant increase between ESF1 and ESF2. Also during this time, there was a significant decrease in 'focus on self'. In short, these two factors show a potentially inverse relationship. Therefore, it could be argued that the changes occurring within an individual during an appreciative recreation experience between ESF1 to ESF2 were simply cancelled out and not recognized in the statistical analysis of the overall scale. Understood in this way, this study has found three phases of an appreciative recreation experience. The first phase occurs between the ESF1 and ESF2 (or from the beginning of the visit to 1/3 of the visit).

The second phase occurs between ESF2 and ESF3 (or from 1/3 of the visit to 2/3 of the visit) and the third phase occurs between ESF3 and ESF4 (or from 2/3 of the visit to the end of the visit). These phases conceptually align with the need to prepare for on-site activities, the immersion into these activities, and a need to separate from the activities (Figure 4). It should be noted however, that the phases revealed in this study and the curve that is displayed in Figure 4 may partially be influenced by the study design. Additional measurement occasions during a visitor's experience could alter the findings. Further, because there were only 4 measurement occasions, it is very difficult to determine where one phase ends and another starts. For example, a measurement every 10 minutes may reveal that the preparation phase ends much earlier than at 1/3 of the on-site experience. Therefore, it is important to recognize that Figure 4 is a conceptual model of an on-site appreciative recreation experience.

*Factor Changes In On-Site Phases*

The first and most complicated on-site phase is the preparation phase. This on-site phase is not observed by the overall scale but its existence can be argued with support from changes found within the individual factors. Interestingly, Borrie and Roggenbuck's (2001) study found an increase in the factor 'focus on environment' from the entry phase to the immersion phase of the wilderness experience. Although this immediate increase was not tested for significance, the entire factor (three measurements) was subjected to an F-test which yielded a p-value of 0.04. In short, it was statistically evident that there were differences within the 'focus on environment' factor measurements. This increase appears to have been duplicated in this investigation of appreciative recreation. In addition, our study found a significant decrease in 'focus on self' during this same time period; a finding that went undetected by Borrie and Roggenbuck. This comparison with previous findings within the on-site experience of outdoor recreationists

provides an important validity check for the results reported in this study. However, the difference in sample sizes between studies (23 versus 158), types of recreation (wilderness experience versus appreciative experience), analytic methods (ANOVA versus MLM and EFA versus CFA) suggest a need for caution in drawing a comparison between these studies.

Nonetheless, the first on-site phase (the preparation phase) could be an indication of visitor expectations and assumptions about Congaree and what it has to offer. More specifically, the park is advertised as a unique natural environment with a variety of viewing and observing opportunities. This identity may contribute to a general increase in 'focus on environment' shortly after visitors' arrival. For example, as visitors (especially first time visitors) arrive to the park, they may be under the impression that they will inevitably witness some notable display of wilderness and wildlife. As the visitor experience begins to progress closer to the trailhead, a visitor may begin to focus on the environment around them.

The second on-site phase (the immersion phase) seems relatively stable. Even after a review of the individual factors, there is no supporting evidence that suggests changes were measured by this scale. However, it is possible that there are changes taking place within the individual that are going undetected. Further scale development and a greater sampling frequency may help explore the immersion phase of an on-site appreciative recreation experience.

The third and final phase of an on-site appreciative recreation experience (the separation phase) can be identified by a significant decrease in the overall Environmental Focus Scale. However, a more thorough investigation of the scale factors suggests that the decrease found in the overall scale may be largely attributable to a highly significant decrease in the 'focus on environment' factor. Similar to the first phase, this separation phase may be initiated for a

number of reasons. For example, the decrease in focus on the environment near the end of the on-site experience could be caused by a shift in focus from the unique environment that a visitor may have come to appreciate to oneself. Some other explanations for this include fatigue, a need to plan or organize prior to leaving a site, and tending to family or personal needs.

*The Preparation Phase – The Inverse Relationship*

As mentioned above, the most complicated of the three on-site phases found in this study was the preparation phase. It goes undetected when investigating the results of the Environmental Focus Scale and is only found when a deeper analysis of the individual factors is conducted. Specifically, the preparation phase is distinguished by a significant increase in focus on environment and a significant decrease in focus on self. This inverse relationship not only supports the original hypothesis by providing evidence of change within the appreciative recreation experience but it suggests that, upon arrival to Congaree National Park, people are stimulated to focus more on the environment at the expense of focusing on themselves. Further, it could be argued that this exchange in focus is evidence of the restorative characteristics of Congaree's environment.

*Directed Attention Fatigue and Restoration Theory*

"Any prolonged mental effort leads to directed attention fatigue" (Kaplan, 1995, p.170). For example, a student near the end of a semester or an employee at the end of a long project may be experiencing directed attention fatigue. Kaplan (1995) states that there "are theoretical grounds for suspecting that directed attention fatigue can, and often does, have devastating impacts" on human thought and human effectiveness (p.171). Further, Kaplan (1995) argues that directed attention fatigue can be reduced (while simultaneously increasing effectiveness) through exposure to natural environments, especially environments that provide opportunities for

fascination, “getting away”, extent (provide feelings of being in a different world), and compatibility (often associated with the natural environment). With such a unique environment Congaree likely provides opportunities for all four of these requirements to be realized. Therefore, it should not be unsettling to suggest that the findings in the preparation phase are at least partially influenced by a reduction of directed attention. More specifically, the decrease in focus on self and increase in focus on the environment may be an effort by the individual to reduce the directed attention fatigue that was being imposed on them from some other aspect in their life.

A similar relationship was found by Hammitt (1980) when he measured negative and positive moods across the five-phase model of outdoor recreation. Hammitt (1980) found that an increase in mean scores on positive moods were associated with a decrease in mean scores on negative moods and vice versa. The absolute difference in mean scores between positive and negative moods was then graphed and provided a measurable level of satisfaction at each of the five phases (Figure 5). Although this study only investigates the on-site phase of the outdoor recreation experience, a similar result was found. Specifically, the absolute difference between focus on self and focus on the environment across all four measurement occasions was graphed in Figure 6. This graph provides a measurable level of restorative benefit provided by Congaree. As the difference between the two factors increases, it could be argued that the natural environment is potentially reducing directed attention fatigue while increasing overall effectiveness for visitors.

Although Hammitt’s (1980) study measured the five-phases of the outdoor recreation experience and this study only measured the on-site phase, there are some distinct similarities between the two graphs. For example, both graphs begin with an immediate increase and then

end with a decrease near the end of the measurements. One explanation for this could be that the on-site graph may be a scaled-down or reduced version of the five-phase graph. This becomes more understandable when one considers that the on-site phase itself has necessary components that, by default, mimic the components of the five-phase model; even if they are at a smaller scale. For example, while on-site there is a need to plan, anticipate, travel, and recollect. This study's findings suggest these on-site events may parallel the five-phases of the overall recreation experience.

## Conclusion

This research has found support that with time as an independent variable, appreciative outdoor recreation experiences – specifically the focus that one has on the environment versus oneself – changes over the course of a visit. These changes suggest that there are three on-site phases of an appreciative outdoor recreation experience. The first on-site phase represents a period of preparation, marked by an increased focus on the environment and a decreased focus on oneself. The second on-site phase is more static and represents what is conventionally thought of as the true on-site experience where an individual is immersed in their intended activity. The third on-site phase is a separation phase, marked by a decrease in focus on the environment. These on-sites phase were not all observed in a scale used to investigate other on-site experiences, but by examining factors that make up this scale these phases were evident for the on-site appreciative recreation experience at Congaree National Park.

An enhanced focus on the environment seems like an important component of any appreciative recreation experience. This study demonstrated that an increased focused on the environment does occur during the on-site experience of appreciative recreationists at Congaree National Park. Also, the concurrent decrease in the focus on oneself during this time suggests

that visitors to Congaree National Park are being provided an opportunity to reduce their fatigue from directing and concentrating their attention towards other aspects of their life. This important benefit of appreciative recreation may be a means of restoring one's mind and improving the overall effectiveness of visitor once they leave a park.

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Table 1. Environmental Focus Scale descriptive results (N =158).

| | *ESF1* | | *ESF2* | | *ESF3* | | *ESF4* | |
|---|---|---|---|---|---|---|---|---|
| | *Mean* | *SD* | *Mean* | *SD* | *Mean* | *SD* | *Mean* | *SD* |
| * How much are you focusing on your own thoughts? | - | - | - | - | - | - | - | - |
| * I am reflecting on myself a lot | - | - | - | - | - | - | - | - |
| I am thinking about my place in the world. | 5.4 | 2.2 | 4.7 | 2.4 | 5.0 | 2.3 | 5.0 | 2.4 |
| How much are you focusing on your feelings and emotions? | 6.0 | 1.9 | 5.3 | 2.2 | 5.5 | 2.4 | 5.9 | 2.2 |
| I am very aware of my feelings. | 6.4 | 1.8 | 5.8 | 2.2 | 5.6 | 2.4 | 6.0 | 2.3 |
| The feelings I am experiencing are more intense than usual. | 5.6 | 1.8 | 5.5 | 2.1 | 5.7 | 2.3 | 5.6 | 2.3 |
| I feel a special closeness with others in my group. | 7.2 | 1.8 | 7.1 | 2.0 | 7.2 | 2.2 | 7.2 | 2.0 |
| Other group members are accepting me for who I am. | 7.1 | 2.0 | 7.3 | 2.0 | 7.3 | 1.9 | 7.3 | 1.9 |
| How much are you focusing on the task you are carrying out? | 6.3 | 1.8 | 6.4 | 2.2 | 6.4 | 2.2 | 6.3 | 2.1 |
| I am focused on achieving the next goal of my trip. | 5.9 | 2.0 | 5.7 | 2.3 | 5.9 | 2.4 | 6.0 | 2.2 |
| I am concentrating on doing my activity right. | 6.1 | 2.0 | 6.1 | 2.3 | 6.4 | 2.4 | 6.3 | 2.2 |
| How much are you focusing on the natural environment around you? | 7.6 | 1.3 | 8.2 | 1.0 | 8.1 | 1.1 | 6.9 | 2.0 |
| I notice the little things of nature more than before. | 7.1 | 1.5 | 7.4 | 1.8 | 7.4 | 1.8 | 6.8 | 2.1 |

**Item deleted to improve model fit*

Table 2. Confirmatory Factor Analysis results.

| Measurement Occasion | S-B$\chi^2$ | CFI | RMSEA | df |
|---|---|---|---|---|
| 1 | 76.45 | 0.944 | 0.080 | 38 |
| 2 | 77.65 | 0.935 | 0.082 | 38 |
| 3 | 74.33 | 0.953 | 0.028 | 38 |
| 4 | 62.93 | 0.969 | 0.065 | 38 |

Figure 1. Hypothesized Confirmatory Factor Analysis model.

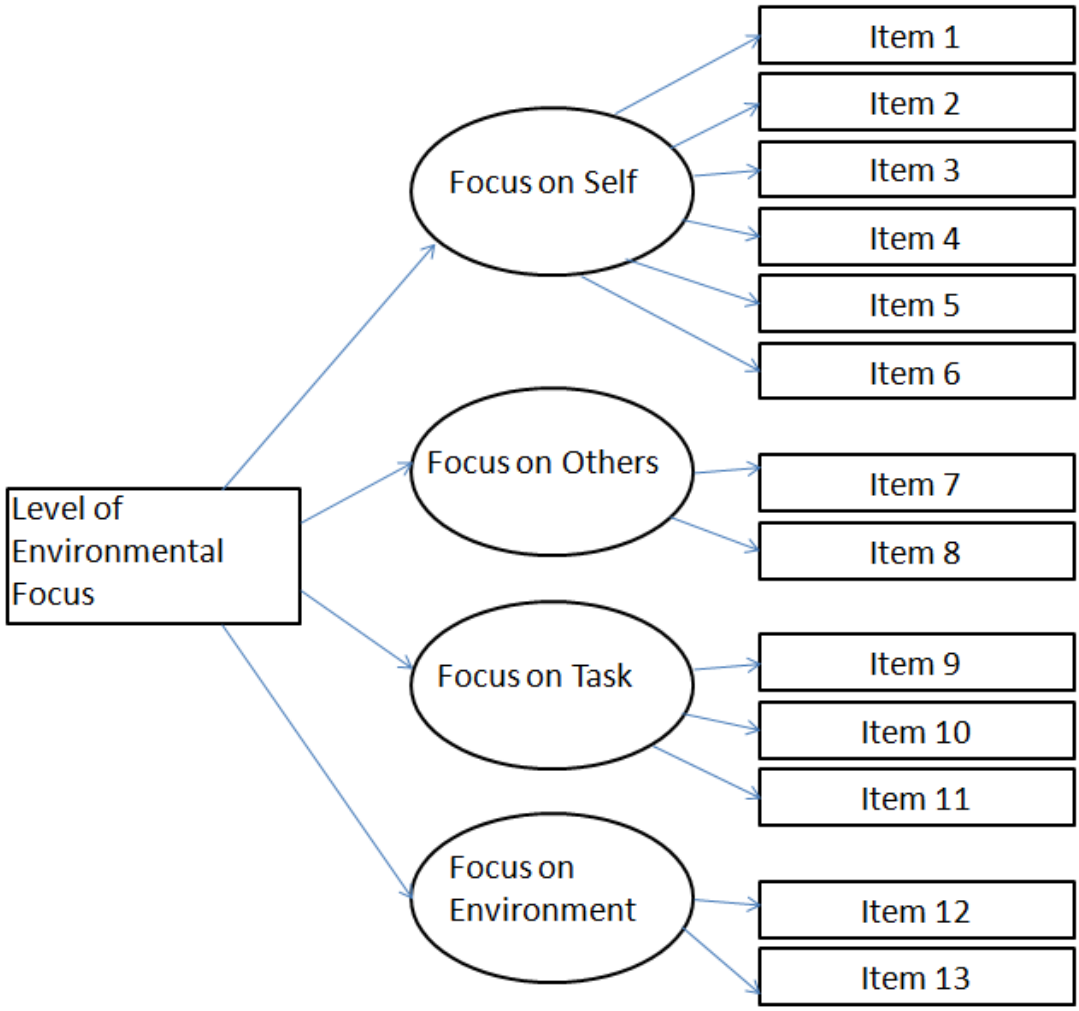


Figure 2. Confirmed Factor Analysis Model – Measurement occasion one (Factor loadings are shown for each factor item).

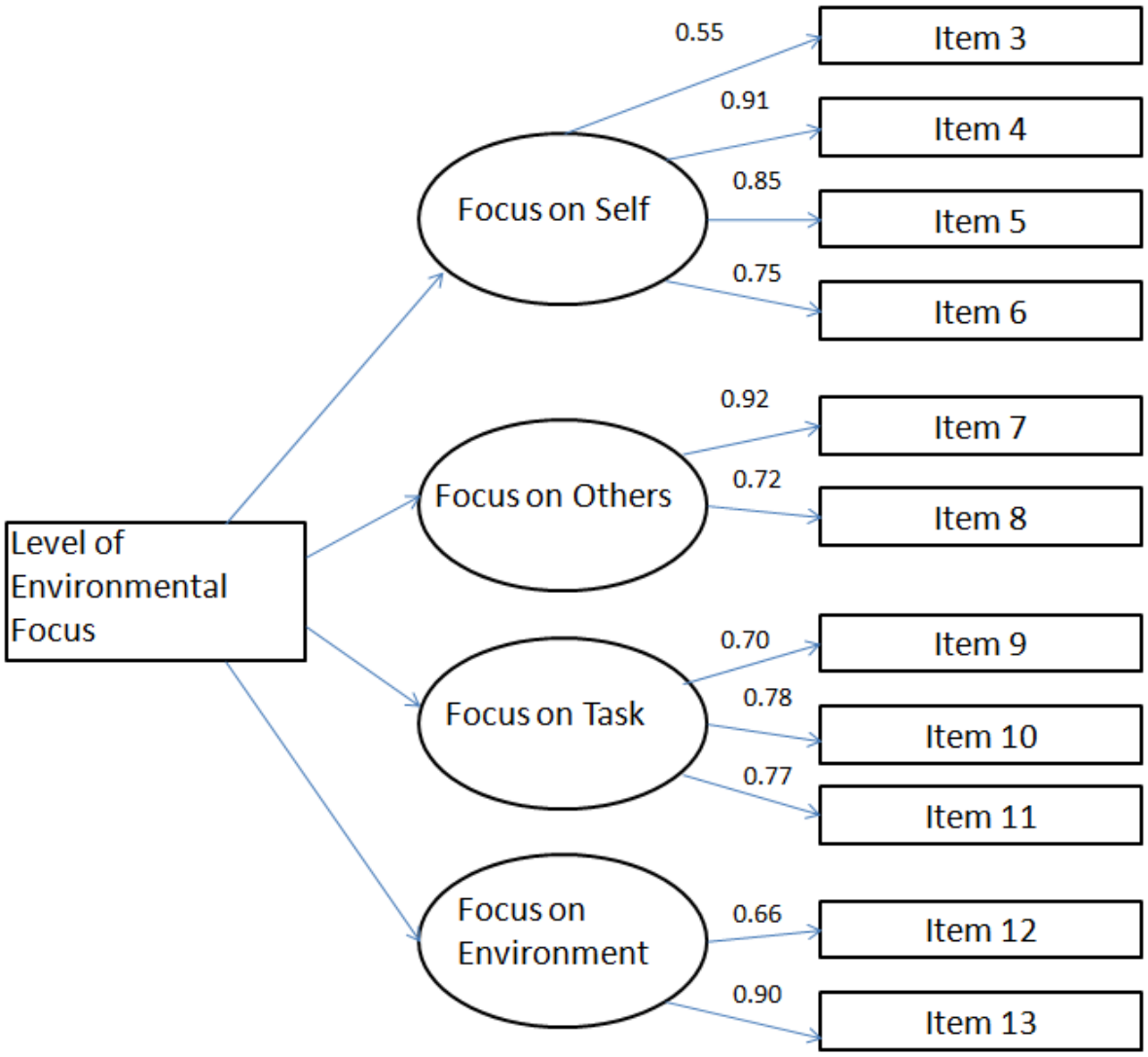
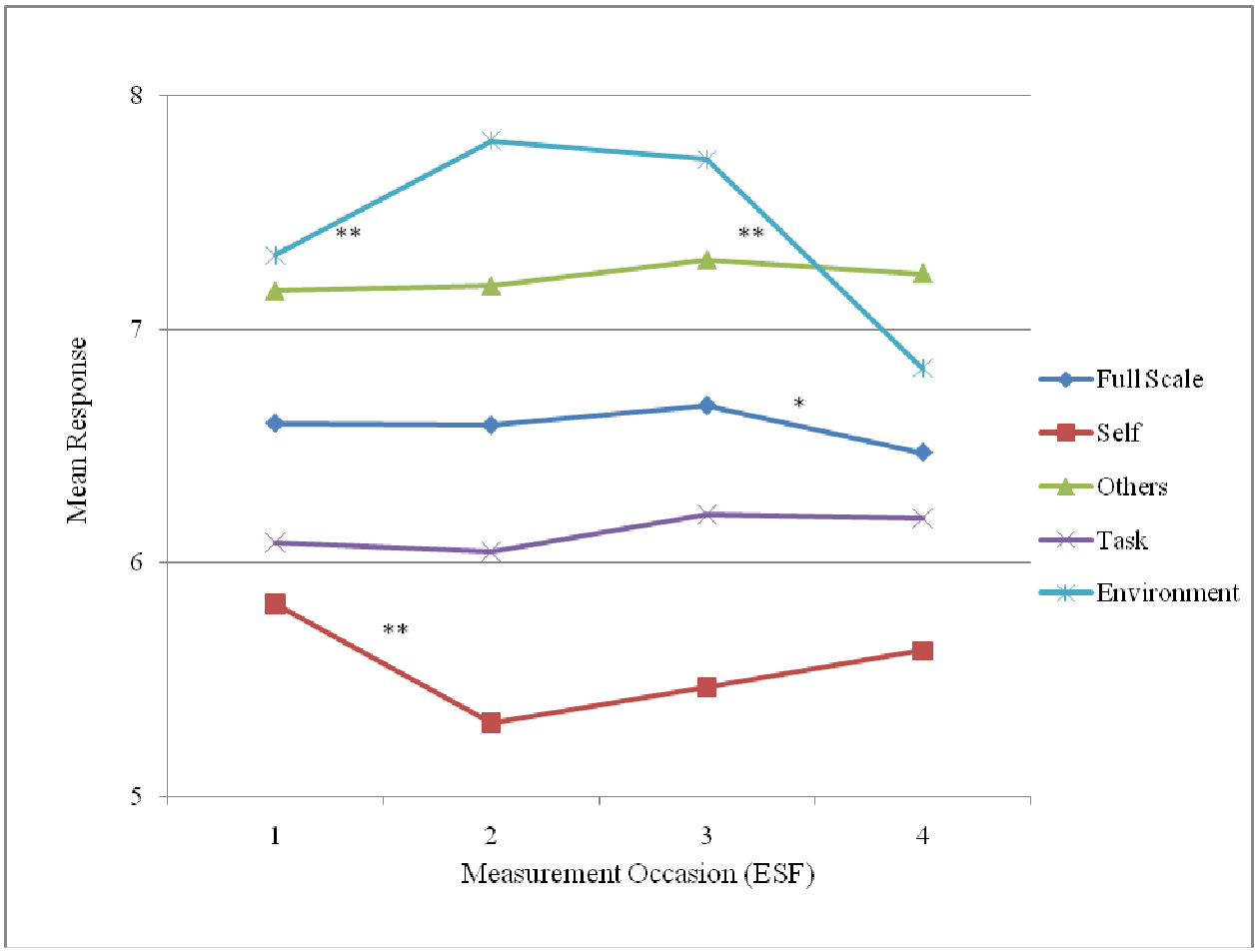


Figure 3. Changes in mean scores for overall scale and individual factors (9-point scale but only range of mean responses is shown).




*$p < 0.01$*

** $p < 0 .001$*

Figure 4. Conceptual phases of an on-site appreciative recreation experience.

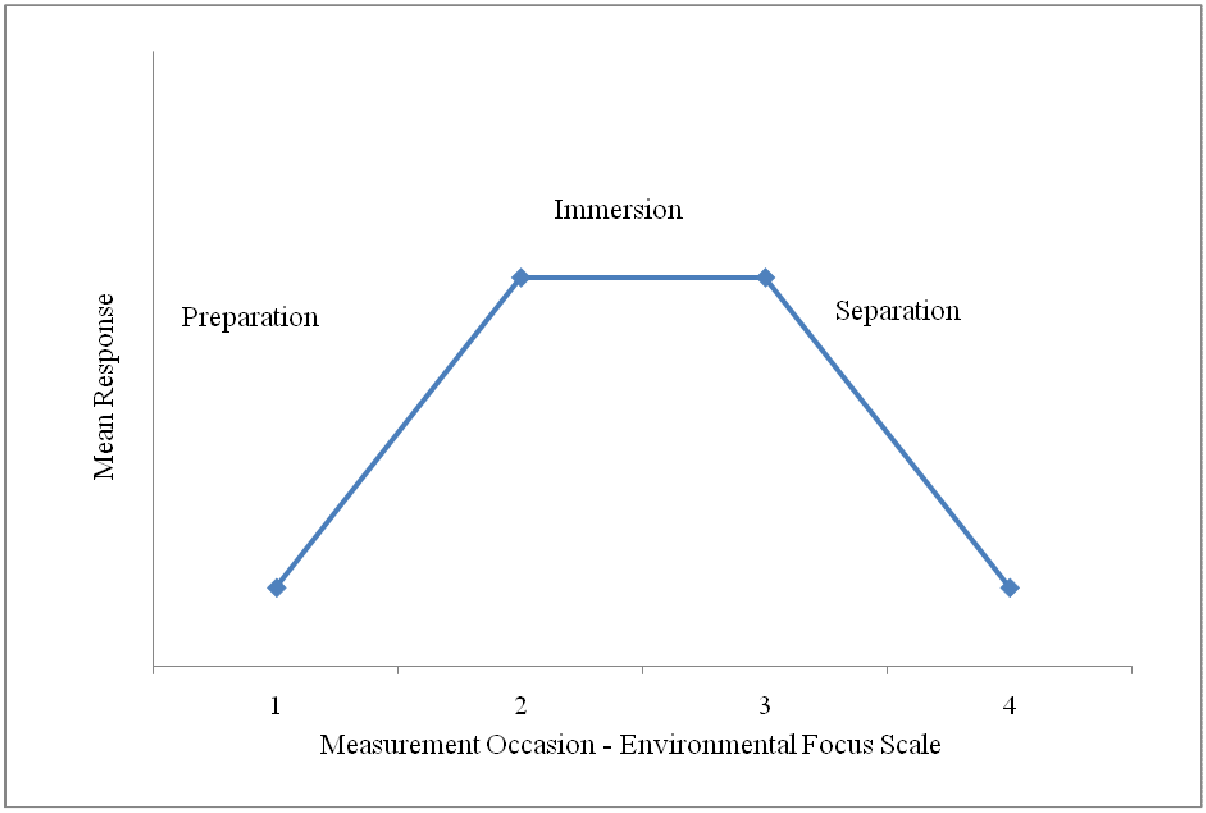


Figure 5. Absolute differences between positive and negative mood means for the Clawson and Knetsch (1966) five-phase model of outdoor recreation (adapted from Hammitt, 1980).

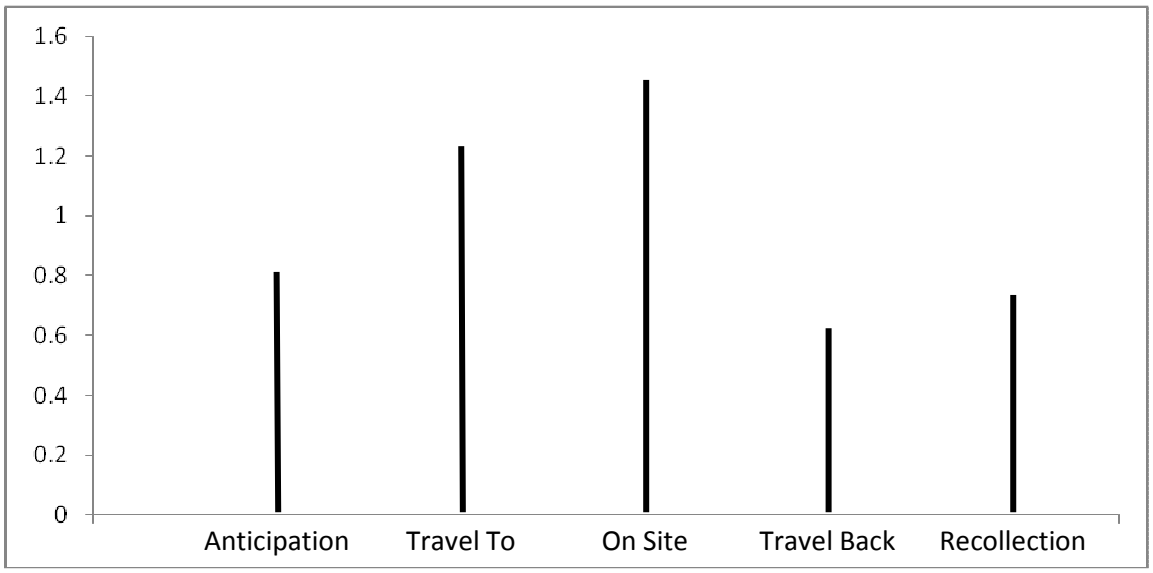
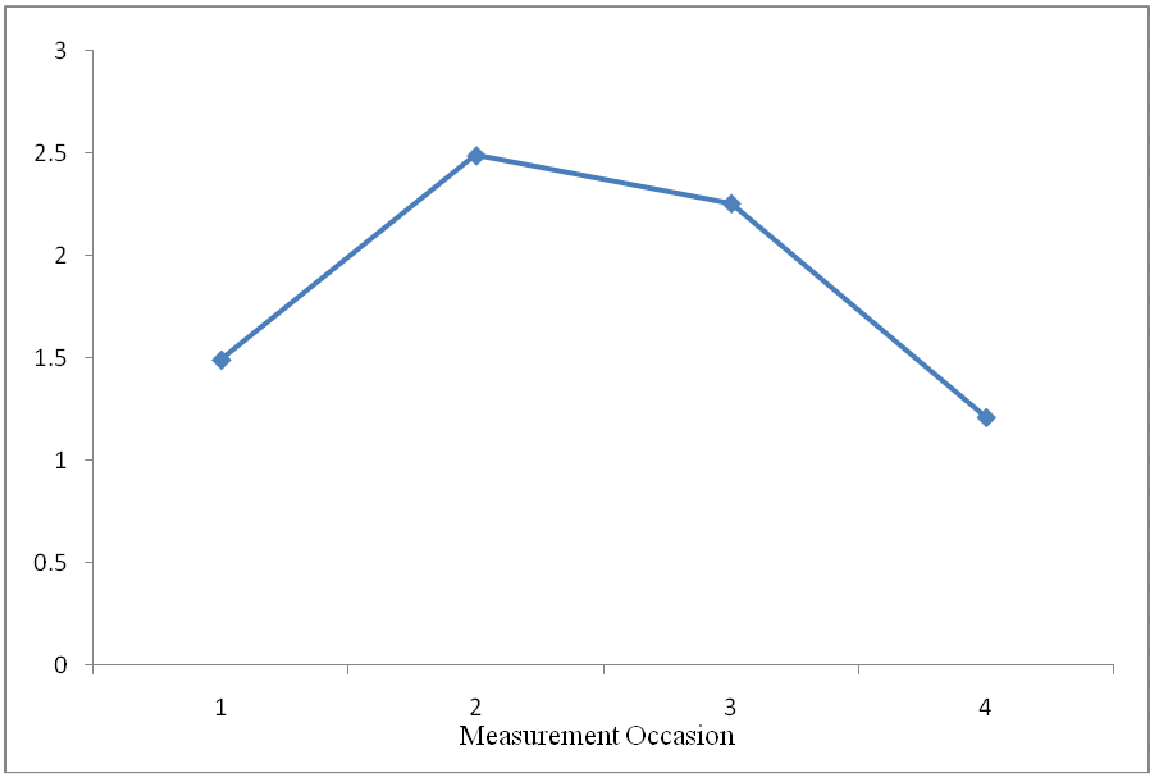


Figure 6. Absolute differences in mean responses between ‘focus on self’ factor and ‘focus on the environment’ factor across four measurement occasions.



# Appendices

## Appendix A

## Questionnaire

The following questionnaire was provided to participants in four sections. The first 'pre-experience' ESF ranges from page 42-45. ESF2 and ESF3 were the same survey (which ranges from page 46-47). Finally, the 'post-experience' ESF was provided to the participant (pages 48-49).

You have been selected to participate in this survey because you are visiting Congaree National Park to learn, view, observe, study, identify, or photograph nature (e.g., wildlife, plants, or birds). **Please answer all questions in this survey as accurately as possible.** If you are uncertain of any of these questions, please ask the survey administrator. Thank you for your help with this survey.

1. Have you visited Congaree National Park before today? (*Please check one*)

   ☐ Yes → How many times in the past 2 years? _____ Times
   ☐ No

2. Please list the types of wildlife, plants or birds that you expect to see today.

   _____

   _____

   _____

3. List the places or sites that you expect to see today.

   _____

   _____

   _____

4. How many people do you expect to encounter on your visit today? _____ Number of people

5. How many days away from home per year do you devote to learning, viewing, observing, studying, identifying, or photographing nature (e.g., wildlife, plants, or birds)? _____ Days per year

6. How much money do you spend on learning, viewing, observing, studying, identifying, or photographing nature (e.g., wildlife, plants, or birds) per year? Please include all expenses associated with these activities (e.g., transportation, lodging, entrance fees, equipment, membership fees etc.)

   Dollars spent: _____

7. Please circle your level of experience in learning, viewing, observing, studying, identifying, or photographing nature (e.g., wildlife, plants, or birds).

   Beginner Average Expert

8. a. Have you ever experienced a sense of awe while learning, viewing, observing, studying, identifying, or photographing nature (e.g., wildlife, plants, or birds)? (*Please check one)*

   ☐ Yes
   ☐ No (*Please skip to Question 9*)
   ☐ Don't know (*Please skip to Question 9*)

   b. Please describe in as much detail as possible the most memorable event or instance when you experienced a sense of awe during these activities.

   _____

   _____

   _____

   _____

   _____

c. What, in particular, made this event or instance awe-inspiring?_____

_____

_____

_____

9. Please circle one number for each of the following statements about how you feel <u>at this moment</u>.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| How much are you focusing on your own thoughts? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am reflecting on myself a lot. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am thinking about my place in the world. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a special closeness with others in my group. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Other group members are accepting me for who I am. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the task you are carrying out? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am focused on achieving the next goal of my trip. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am concentrating on doing my activity right. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the natural environment around you? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I notice the little things of nature more than before. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on your feelings and emotions? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am very aware of my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| The feelings I am experiencing are more intense than usual. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

10. Again, please circle one number for each of the following statements about how you feel at this moment.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| I feel as though I am in the presence of a higher power or something greater than myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a sense of wonder caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel surprised by or unaccustomed to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel struck by the beauty of my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a positive, overwhelming sensation caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel small compared to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

11. .Do you feel a sense of awe at this moment?

☐ Yes
☐ No (*Please skip Question 11b)*

b. Please describe in as much detail as possible why you feel a sense of awe at this moment?

_____

_____

_____

_____

_____

_____

Please answer all questions in the survey based only on your visit to Congaree National Park today. Thank you again for participating in this study.

1. What is the current time? _____ a.m. or p.m.

2. Please circle one number for each of the following statements about how you feel <u>at this moment</u>.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| How much are you focusing on your own thoughts? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am reflecting on myself a lot. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am thinking about my place in the world. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a special closeness with others in my group. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Other group members are accepting me for who I am. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the task you are carrying out? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am focused on achieving the next goal of my trip. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am concentrating on doing my activity right. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the natural environment around you? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I notice the little things of nature more than before. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on your feelings and emotions? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am very aware of my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| The feelings I am experiencing are more intense than usual. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

3. Again, please circle one number for each of the following statements about how you feel <u>at this moment</u>.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| I feel as though I am in the presence of a higher power or something greater than myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a sense of wonder caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel surprised by or unaccustomed to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel struck by the beauty of my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a positive, overwhelming sensation caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel small compared to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

4. Please list any special characteristics of your surroundings at the time that you are completing this form.

_____

_____

_____

_____

5. Do you feel a sense of awe at this moment?

☐ Yes

☐ No (*Please skip Question 5b)*

b. Please describe in as much detail as possible why you feel a sense of awe <u>at this moment</u>?

_____

_____

_____

_____

_____

_____

Please answer all questions in the survey based only on your visit to Congaree National Park today. If you are uncertain about anything on the survey please ask the survey administrator. Thank you again for participating in this study.

1. Please list the types of wildlife, plants or birds that you observed today.

_____

_____

_____

2. List the places or sites that you observed today.

_____

_____

_____

3. How many people did you encounter on your visit today? _____ Number of people

4. Do you feel a sense of awe at this moment?

☐ Yes
☐ No (*Please skip to Question 5)*

b. Please describe in as much detail as possible why you feel a sense of awe at this moment?

_____

_____

_____

_____

5. Please circle one number for each of the following statements about how you feel at this moment.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| How much are you focusing on your own thoughts? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am reflecting on myself a lot. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am thinking about my place in the world. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a special closeness with others in my group. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Other group members are accepting me for who I am. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the task you are carrying out? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am focused on achieving the next goal of my trip. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am concentrating on doing my activity right. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on the natural environment around you? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I notice the little things of nature more than before. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| How much are you focusing on your feelings and emotions? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I am very aware of my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| The feelings I am experiencing are more intense than usual. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

6. Again, please circle one number for each of the following statements about how you feel at this moment.

| | Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|---|
| I feel as though I am in the presence of a higher power or something greater than myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a sense of wonder caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel surprised by or unaccustomed to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel struck by the beauty of my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel a positive, overwhelming sensation caused by my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I feel small compared to my natural surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

7. How satisfied were you with your experience today? Please circle one number.

| Not at all | | | | Neutral | | | | Very Much |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |