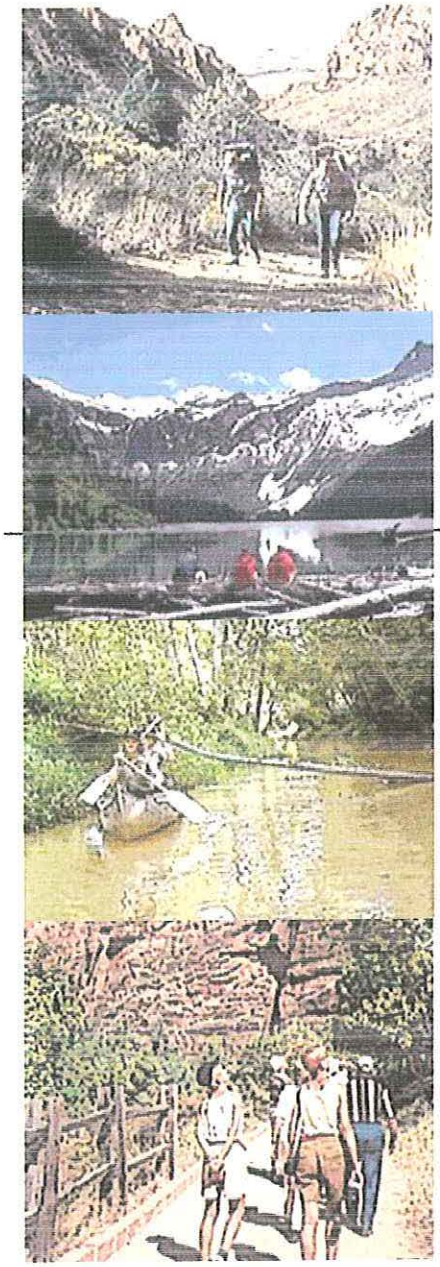

05-15 yr. 2

Visitor Voices Project 2005

Final Report

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Assessing Interpretive Outcomes in the Intermountain Region

WESTERN NATIONAL PARKS ASSOCIATION

Abstract

REPORT CONTENTS

Since 1996, the National Park Service's (NPS) Interpretive Development Program (IDP) has established standards for effective interpretive performance that emphasize providing opportunities for visitors to form intellectual and emotional connections to the meanings and significance of park resources. However, few studies have examined the outcomes visitors obtain through exposure to interpretive programs at NPS sites. In this study, which represents the first year of a proposed four-year study, visitor interpretive outcomes were examined with respect to four levels: neither intellectual nor emotional connections, only intellectual connections, only emotional connections, or both intellectual and emotional connections. During the summer of 2005, written questionnaires were distributed at four national parks in the Intermountain Region. Researchers employed purposive sampling to obtain 1526 valid surveys, with an overall response rate of 61.0%. Through the application of stepwise multinomial logistic regression and a post-hoc chi-square analysis, thirteen factors were identified that are significant at the $\alpha=0.05$ level in explaining observed interpretive outcomes. These factors were divided into six categories related to park interpretative offerings, survey logistics, respondent group composition, reasons for the respondent's park visit, respondent life experiences, and respondent demographics. The report concludes with a summary of research findings, possible applications for research results, and avenues for future research.

Project Narrative

Introduction

This project seeks to answer one key question: *Do visitors benefit from park interpretive offerings in ways that are consistent with the stated goals and objectives of park interpretive programs?* The NPS Interpretive Development Program (IDP) trains and certifies NPS interpretive rangers in 10 benchmark competencies. The IDP establishes national standards for interpretive performance, linking interpretive effectiveness to cohesively developed, audience appropriate interpretive offerings that provide opportunities for visitors to form intellectual and emotional connections to the meanings and significance of park resources. Interpreters invest time and money to provide training, deliver programs, conduct program audits, and establish coaching relationships with the stated intent of helping visitors connect to resource meanings. To date, however, no study has measured visitor interpretive outcomes, defined as "connections," at a broad cross-section of NPS sites, or determined whether significantly different outcomes occur with respect to key socio-demographic variables. To address this knowledge gap, researchers worked with the NPS and NPS partners to launch a 4-year, 16-park visitor survey. During the summer of 2005, the first survey period of the proposed 4-year study, surveys were collected at four NPS sites, including Carlsbad Caverns National Park (CAVE), Lyndon B. Johnson National Historical Park (LYJO), Petrified Forest National Park (PEFO), and Timpanogos Cave National Monument (TICA).

Recently interpreters have proposed ways to define, operationalize and measure onsite interpretive outcomes. These outcomes can be examined with reference to the increasingly important concept of intellectual and emotional *connections* to resource meanings. The concept of connections, however,

were the dependent variable. Connection data were obtained through participant self-report via two yes-no questions contained in the survey. The variable took on the following levels: neither intellectual nor emotional connections, only intellectual connections, only emotional connections, or both intellectual and emotional connections.

Results

Researchers collected 1,526 valid surveys which were distributed across the four study units as follows: Carlsbad Caverns NP (454 completed surveys), Lyndon B. Johnson NHP (224 completed surveys), Petrified Forest NP (416 completed surveys), and Timpanogos Cave NM (432 completed surveys). Visitation levels were lower at Lyndon B. Johnson NHP during the sampling period. This was no doubt due, in part, to the fact that Hurricane Katrina had ravaged the Gulf Coast the week before and gas prices had undergone a temporary spike.

Visitor Voices survey respondents can be characterized with reference to key demographic variables. Respondents were approximately half male (45.3%) and half female (53.3%). Respondents ranged from age 18 to over 75, with most falling into the 35 to 54 age bracket. There were more older visitors at Lyndon B. Johnson NHP (LYJO), fewer at Timpanogos Cave NM (TICA). Thirty-eight percent of respondents at Petrified Forest NP (PEFO) had masters, doctoral or professional degrees; 26% and 23% of respondents held advanced degrees at LYJO and Carlsbad Caverns NP (CAVE) respectively. Only 12% of the sample had not attended college. Approximately 10% of those surveyed were Hispanic. Seven percent of the sample were non-white, and most of those respondents were of Asian (4.0%), American Indian or Alaskan Native (1.3%), or of mixed racial background (1.8%). A small proportion of respondents were of African American (0.6%) or Native Hawaiian or other Pacific Islander (0.3%) descent. Twenty-nine percent of respondents were in the $40,000-70,000 income bracket for total household annual income, and a roughly equal proportion made over $100,000 per year. The top six states of residence for respondents were, in rank order: Texas, Utah, California, Arizona, New Mexico and Florida. Approximately 9% of the respondents were international visitors.

With respect to the formation of intellectual and emotional connections, respondents reported the following interpretive outcomes:

	Neither	Intellectual Only	Emotional Only	Both	Total
CAVE	39 (28.3%)	109 (29.1%)	21(25.6%)	284 (30.6%)	453 (29.7%)
LYJO	16 (11.6%)	51 (13.6%)	12 (14.6%)	145 (15.6%)	224 (14.7%)
PEFO	31 (22.5%)	98 (26.1%)	18 (30.0%)	268 (28.9%)	415 (27.2%)
TICA	52 (37.7%)	117 (31.2%)	31 (37.8%)	231 (24.9%)	431 (28.3%)
Total	**138 (9.1%)**	**375 (24.6%)**	**82 (5.4%)**	**928 (60.9%)**	**1523 (100%)**

The Visitor Voices survey helped pinpoint specific factors that explain the interpretive outcomes reported by respondents. Researchers attempted to measure the amount of time respondents spent onsite, the amount and type of interpretive offerings to which the respondents were exposed, which interpretive offering respondents found most meaningful, respondent motivations for visiting the site, the number of similar sites respondents visited each year, respondent experiences with natural and cultural areas as a youth, the meanings respondents attached to the site, group size and composition, as well as respondent age, income, education, race, ethnicity, and place of residence.

Table 2 summarizes data presented in Table 1 and is found on page 10 of the report. The table highlights specific factors that resulted in an increased (or decreased) likelihood of respondents obtaining various interpretive outcomes.

Conclusion

Research findings are only as useful as the questions that guided the research process. Therefore, it is important to consider whether an understanding of visitor onsite interpretive outcomes examined with respect to the concept of intellectual and emotional connections to resource meanings is critical to improving interpretive practice in the Intermountain Region and within the NPS as a whole. The authors believe an examination of visitor outcomes is necessary for several reasons. First, assessing interpretive outcomes represents a first step toward programmatic and fiscal accountability. Second, if an analysis of interpretive outcomes is tied to specific interpretive programs and media, managers can determine whether these offerings are performing according to stated objectives. Such an analysis is essential to (a) making program-specific improvements, and (b) refining our current articulation of interpretive best practices, leading to the further professionalization of the field. Third, by examining whether significantly different outcomes occur with respect to key socio-demographic variables, the NPS can assess whether existing interpretive programs and services provide opportunities for all visitors to understand park significance and connect with resource meanings. Thus, to ensure public accountability, improve programs, advance professionalism, and promote equity, understanding visitor interpretive outcomes is a critical next step.

Research results for 2005 suggest that interpretive outcomes are a function of visitor onsite experience and who the visitor is. There are some factors over which managers have no control (e.g., respondent motivations, demographics, and life experiences). However, since these factors can influence interpretive outcomes, managers must ensure that target audiences have access to interpretive offerings that meet their needs and interests. The research also identified factors over which managers can exert tremendous influence. Three significant factors relate directly to park interpretive programs. Results suggest that it is not simply a matter of how many or what type of interpretive offerings visitors are exposed to—though these aspects *do* matter—but that there is a separate and significant effect related to what visitors evaluate as their "most meaningful" onsite interpretive experience. Ranger-led programs far surpassed any other program type as respondents' most meaningful onsite interpretive experience. Ranger-led programs were also statistically significant in *decreasing* the formation of neither type of interpretive connection and *increasing* the formation of both types of connections. Other types of programs were associated with favorable results as well (e.g., park film). If these results hold up over the 4-year study period, managers may want to consider how they allocate budget dollars to support park interpretive objectives.

Finally, race and ethnicity represent factors that were significant in explaining observed interpretive outcomes. However, results from the first round of data collection should be considered preliminary due to small sample sizes in several key categories. Further, the effect of missing data may be noteworthy with respect to these two variables, since a decision to omit one's race or ethnicity on a survey may not be a characteristic that is randomly distributed across all survey respondents. Over the proposed 4-year study period, researchers will generate a database with results from more than 6,000 respondents. This should enable researchers to clarify the effects of such variables as gender, race, and ethnicity. Alternately, a parallel study could be launched that examines the effect of these factors at sites that focus on cross-cultural themes and/or that attract diverse audiences.

onsite Df=7 P-value=0.0380	meaningful, including: speaking informally with a park employee or volunteer (9.7%), park films and other audiovisual media (8.3%), park brochures and other printed materials (including Jr. Ranger booklets) (7.2%), exhibits and waysides (6.5%), and other park programs (5.0%). Approximately 23% of respondents did not answer this question, perhaps because it is difficult to assess a most meaningful interpretive experience. Chi-square analysis revealed a significant relationship between the most meaningful program or media respondents experienced onsite and observed interpretive outcomes (χ^2=81.501, df=21, p-value <.0001). Specifically: • Those who identified ranger-led programs as most meaningful were *less* likely to form neither type of connection (χ^2=9.292). They were also *more* likely to form both types of connections (χ^2=3.739). • Those who identified the park brochure as most meaningful were *more* likely to form intellectual only connections (χ^2=5.491). • The significance of this variable is affected to some extent by missing data. That is, respondents who did not answer this question were *more* likely to form neither type of connection (χ^2=35.454). They were also *less* likely to form both types of connections (χ^2=9.535).

Survey Logistics

Survey location Df=6 P-value=0.0104	Surveys were administered at a variety of onsite locations, including: visitor centers (44.5%), outdoor seating areas (36.5%), seating areas within a cave (7.3%), amphitheatres (5.8%), trails (3.9%), and parking areas (1.6%). Chi-square analysis revealed a significant relationship between the survey administration location and observed interpretive outcomes (χ^2=28.591, df=18, p-value=0.0536). Specifically: • Those who completed the survey at a seating area within a cave were *less* likely to form neither type of connection (χ^2=6.513). *Note*: The only respondents who completed surveys at seating areas within a cave were those who had just attended the King's Palace cave tour at CAVE. Thus, in this case, "location" effects are likely related to program-specific attributes. This observation forms the basis for how this factor is included in Table 2.

Respondent Group Size & Composition

Visiting park with myself and one or more children Df=1 P-value=0.0427	Respondents recorded their group size and whether they visited the site alone, with a spouse, with family, with friends, with or without children, as part of an organized group, or some combination of the above. Approximately 9.6% of the respondents visited the site as the only adult accompanied by one or more children. Chi-square analysis revealed a significant relationship between those who visited the site as the only adult accompanied by one or more children and observed interpretive outcomes (χ^2=30.778, df=6, p-value <.0001). Specifically: • Those who visited the site as an adult accompanied by one or more children were *more* likely to form intellectual only connections (χ^2=5.309). • The significance of this variable is affected to some extent by missing data. That is, although only 14 people did not answer this question, they were shown statistically to be *more* likely to form neither type of connection (χ^2=10.868). Regression analysis, however, suggests that not visiting the park as the only adult with one or more children contributed to explaining interpretive outcomes (p=0.0745). Thus, this factor is complex and may require additional data to make conclusive determinations.
Visiting park	Some respondents (2.3%) indicated that they visited the site with a group that did not

Exposure during youth to natural and cultural areas

Df=4
P-value=0.0003

Respondents indicated whether they had frequent contact with natural areas (19.4%), cultural areas (7.0%), both natural and cultural areas (56.7%), or neither natural nor cultural areas (15.4%) during their youth. Chi-square analysis revealed a significant relationship between exposure during youth to natural and/or cultural areas and observed interpretive outcomes (χ^2=39.932, df=12, p-value <.0001). However:

- The significance of this variable may be strongly influenced by missing data. That is, although only 22 people did not answer this question, they were shown to be *more* likely to form neither type of connection (χ^2=24.399). They were also *less* likely to form both types of connections (χ^2=5.267).

On the other hand, regression analysis suggests that frequent exposure to (a) cultural areas or to (b) both natural and cultural areas during youth contributed significantly to explaining interpretive outcomes (p=0.0180 and p=0.0007 respectively). Thus, this factor is complex and may require additional data to make conclusive determinations.

Respondent Demographics

Gender

Df=2
P-value=0.0011

Respondents were approximately half male (45.3%) and half female (53.3%). Chi-square analysis revealed a significant relationship between gender and observed interpretive outcomes (χ^2=19.719, df=6, p-value=0.0031). Specifically:

- Men were *less* likely to form both types of connections (χ^2=3.242).
- Women were *more* likely to form both types of connections (χ^2=3.188).

The reported chi-square values are of borderline significance; however, nothing else within the regression analysis or the chi-square analysis begins to explain the significance of this variable. Thus, this factor is complex and may require additional data to make conclusive determinations.

Race

Df=6
P-value=0.0140

Respondents were asked to indicate their racial background, checking all (OMB approved) categories that applied. Respondents were distributed across six racial categories as follows: Native American or Alaskan Native (1.3%), Asian (4.0%), Black or African American (0.6%), White (88.5%), Native Hawaiian or Pacific Islander (0.3%), or Mixed (1.8%). Chi-square analysis revealed a significant relationship between race and observed interpretive outcomes (χ^2=29.633, df=18, p-value=0.0412). However:

- The significance of this variable may be strongly influenced by missing data. That is, although only 55 people did not answer this question, they were shown to be *more* likely to form neither type of connection (χ^2=4.961). They were also *less* likely to form both types of connections (χ^2=5.444).

On the other hand, despite the small sample sizes in two categories, regression analysis suggests that being of (a) Black or African American or (b) Native Hawaiian or other Pacific Islander descent contributed significantly to explaining interpretive outcomes (p=0.0546 and p=0.0424 respectively). Thus, this factor is complex and may require additional data to make conclusive determinations.

Hispanic ethnicity

Df=2
P-value=0.0250

Respondents were asked whether or not they were Hispanic—9.8% of respondents indicated that they were Hispanic, 87.9% of respondents indicated that they were non-Hispanic,. Chi-square analysis revealed a significant relationship between Hispanic ethnicity and observed interpretive outcomes (χ^2=19.702, df=6, p-value=0.0031). However:

- The significance of this variable may be strongly influenced by missing data. That is, although only 35 people did not answer this question, they were shown to be *more* likely to form neither type of connection (χ^2=10.581). They were also *less* likely to

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