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EXPLORING VISITOR ATTITUDES TOWARD THE PROPOSED GREATER
CANYONLANDS NATIONAL MONUMENT: A SURVEY IN
UTAH'S INDIAN CREEK CORRIDOR

by

Chase C. Lamborn

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Human Dimensions of Ecosystem Science and Management

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2014

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ABSTRACT

Exploring Visitor Attitudes Toward the Greater Canyonlands National Monument:

A Survey in Utah's Indian Creek Corridor

by

Chase C. Lamborn, Master of Science

Utah State University, 2014

Major Professor: Dr. Robyn Ceurvorst
Department: Environment and Society

In August of 2012, the Outdoor Industry Association (OIA) sent a letter to President Barack Obama asking him to designate the Greater Canyonlands National Monument (GCNM). The proposed 1.4 million acre national monument would surround the already present 337,570 acre Canyonlands National Park, and would include public lands/waterways from five Utah counties. The OIA's goal for the GCNM is to preserve the landscape for quality outdoor recreation by decreasing the amount of off-highway vehicle use and to eliminate the possibility of oil/gas drilling and mining. Given the proposal highlights outdoor recreation use benefits as the main catalyst for justification of additional conservation/protection of lands surrounding Canyonlands National Park, this study surveyed recreationists in the Indian Creek Corridor—an area within the boundaries of the proposed GCNM—to explore their attitudes toward the GCNM and the management of the area. This study examined how environmental orientation, place dependence, place identity, residential proximity, and recreational activity type related to

attitudes toward the GCNM. Environmental orientation and residential proximity were both good predictors of attitudes toward the GCNM and the management of the Greater Canyonlands area. More biocentric-oriented people, and people who lived farther away from the Greater Canyonlands area, were more likely to have favorable attitudes toward the GCNM and were more opposed to land uses such as mining and energy development. In addition, visitors were largely “unsure” if the GCNM should be designated. Visitors felt most strongly that if the GCNM is going to be designated, the process of designation, the land that would be included, and management of the GCNM should be agreed upon by stakeholders before the monument is designated. This suggests a quick designation via public proclamation under the Antiquities Act of 1906 could largely exacerbate the already present conflict over public land management in the region, which would create an even more difficult environment for federal land managers.

PUBLIC ABSTRACT

Exploring Visitor Attitudes toward the Proposed Greater Canyonlands National Monument: A Survey in Utah's Indian Creek Corridor

Chase C. Lamborn

In August of 2012, the Outdoor Industry Association sent a letter to President Obama that asked him to designate 1.4 million acres of federally owned land in southeastern Utah a national monument. The purpose of this national monument would be to preserve/enhance the quality of non-motorized recreation by eliminating the possibility of mining/drilling for oil/gas, and by increasing regulations on off-road vehicle use in the area. This proposed national monument has the support of many environmental interest groups, but past research and recent demonstrations have shown that the majority of southeastern Utah residents do not support the monument's designation. Because the proposed monument's purpose is to enhance/preserve non-motorized recreation, a survey of recreationists within the proposed boundary of the Greater Canyonlands National Monument was conducted in order to better understand recreationist's attitudes toward the proposed monument. Results showed that visitors were largely unsure if the national monument should be designated. Visitors highly agreed that if the monument is going to be designated, stakeholders should agree over what land would be included in the monument, the process in which the monument would be designated, and the management of the monument after it is designated. Given these findings, we suggest that if the Greater Canyonlands National Monument is going to be pursued, it should be done through a transparent and collaborative planning process that includes the diversity of stakeholder groups that are tied to the landscape.

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Chase C. Lamborn

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CHAPTER 1

INTRODUCTION

The Antiquities Act of 1906 (16 U.S.C. § 431-433) was passed by Congress and then signed into law by President Theodore Roosevelt. The purpose of the Antiquities Act is to protect areas that contain “historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest” (16 U.S.C. 431). The Antiquities Act gives the President the ability, by public proclamation, to proclaim any area of federal land as a national monument without the approval of Congress.

Since the Antiquities Act’s passage, 15 of the last 19 presidents have used the act to designate 128 national monuments, and these national monuments have ranged from less than one acre to 89 million acres (Vincent & Alexander, 2010). In the last 20 years, over 95 million acres of federal land have been given national monument status. One recent designation was President George W. Bush’s 87 million acre Papahānaumokuākea Marine National Monument, which is the largest national monument to ever be designated. President Bill Clinton designated 19 national monuments, which totaled 5.9 million acres (Vincent & Alexander, 2010). One of which—the 1.9 million acre Grand Staircase-Escalante National Monument in southern Utah—has been very controversial, and has been contested on multiple accounts by the state of Utah (e.g., H.R. 4651/S. 3016). President Barack Obama has currently designated ten national monuments: Chimney Rock National Monument, Cesar E. Chavez National Monument, Fort Ord National Monument, Fort Monroe National Monument, Charles Young Buffalo Soldiers National Monument, First State National Monument, Harriet Tubman Underground Railroad National Monument, Rio Grande del Norte National Monument, San Juan

Islands National Monument, California Coastal National Monument; and the Obama Administration is currently looking for additional national monument designations (Vincent & Alexander, 2010).

In August of 2012, the Outdoor Industry Association (OIA) sent a letter to President Barack Obama. The letter was endorsed by over 100 outdoor recreation businesses, and it asked the President to designate the Greater Canyonlands area a national monument. The OIA is the “leading trade association and voice of the outdoor recreation industry” and it works with “members to benefit the industry by advocating for issues critical to the future of the outdoor industry” (OIA, 2014, p.1). The Greater Canyonlands National Monument (GCNM) would be comprised of the 1.4 million acres that surround the already present Canyonlands National Park. In the letter, the OIA says, “...as people who make their living in the outdoor industry, we [...] want to stress that preserving landscapes like Greater Canyonlands makes good economic sense. Wildlands are the foundational infrastructure for our industry” (OIA, 2012). The letter goes on to say that the Greater Canyonlands area is “inappropriately open” to drilling and mining, and is unprotected from the “exploding off-road vehicle use that is damaging riparian areas, cultural sites, soils and solitude” (OIA, 2012). The OIA also says in its letter that “outdoor recreation is ‘an overlooked economic giant,’ generating \$646 billion in national sales and services in 2011 and supporting 6.1 million jobs, powering the economy in a manner comparable to the financial services and insurance industries, or outpatient health care” (OIA, 2012).

In addition to outdoor recreation businesses, the GCNM also has the support of many interest groups, and is one of the top three national monument designations

conservationists' are pushing for (Foster, 2014). Interest groups in support of the GCNM include the Sierra Club, Southern Utah Wilderness Alliance, Natural Resources Defense Council, Grand Canyon Trust, and Great Old Broads for Wilderness (SUWA, 2013).

The OIA's goal is to eliminate the impacts to public land from energy development and mining, and to reduce the amount of off-road vehicle use to enhance/preserve the quality of non-motorized outdoor recreation in the proposed GCNM area. Unlike the way the Clinton administration designated the Grand Staircase-Escalante National Monument with little warning, the OIA is in strong support of making the GCNM a collaborative effort that would include Utah and other stakeholders (Stonich, 2012). Currently, counties in southeastern are voicing their opposition toward the GCNM. For example, the Grand County Council, a county with landholdings included in the proposed GCNM boundaries, recently voted 7-0 to send a letter to President Obama urging him not to designate the monument because it would "severely limit [the] county's ability to benefit economically from [a diversity] of natural resource development" (Millis, 2013). Interest groups are also circulating petitions to gain support for/against the GCNM (e.g., Southern Utah Wilderness Alliance and The Blue Ribbon Coalition). However, it is unclear if any empirical research is being done to gain knowledge regarding the attitudes of people who are currently recreating on the land that would be included in the GCNM.

This study surveyed people recreating in Utah's Indian Creek Corridor, an area included in the proposed GCNM. The Indian Creek Corridor was chosen because it is a popular recreation destination for a diverse set of recreationists, including rock climbers, sightseers, people driving for pleasure, campers, hikers, and off-road vehicle enthusiasts

(BLM, 2008). This research explores the question, “How do people who are currently recreating in an area that may become a national monument feel about its designation?” In addition to exploring recreationists’ attitudes toward the proposed GCNM, this research examines a variety of variables that influence those attitudes. If the GCNM is going to be pursued, decision makers should have an understanding of (1) who is using the area, (2) how they feel about the area, and (3) what the perceived threats are to the area and surrounding communities. Furthermore, they should know (4) the preferred process of decision making, and (5) visitors’ management preferences. With the already present conflict over federal lands in southeastern Utah (Durrant & Shumway, 2004), it would be in the utmost interest of decision makers to use this information to better understand the people who recreate in Greater Canyonlands.

Study Area

The Greater Canyonlands area comprises a diverse landscape of sandstone canyons, high desert plains, and mountainous peaks. The proposed boundary of the Greater Canyonlands National Monument stretches over the five counties that make up southeastern Utah: Emery, Garfield, Grand, Kane, San Juan, and Wayne. The land that is within this boundary is currently managed by the Bureau of Land Management, USDA Forest Service, Utah’s School and Institutional Trust Lands Administration, and private land owners. Five towns surround the proposed the GCNM. On the west side of the proposed GCNM is Hanksville, UT. To the north is Green River, UT, and to the east are Moab, UT, Monticello, UT, and Blanding, UT.

Many land uses occur on the Greater Canyonlands' landscape. Much of the area is used for livestock grazing, and some of the area is being used for oil and gas drilling and exploration. Off-highway vehicle use is a popular activity, and the Abajo Mountains and Elk Ridge offer some of the best elk hunting in the state of Utah.

The Indian Creek Corridor (ICC) was the study location chosen to conduct this research because of the diverse use that occurs there. Much of ICC's valley floor is owned by the Indian Creek Cattle Company, which was founded in the late 1800s and is still in operation today. The Nature Conservancy (TNC) purchased the ranch from the Indian Creek Cattle Company in 1997, but the TNC is allowing the cattle ranch to operate after the purchase. The primary recreational activities that take place in the ICC include rock climbing, sightseeing, driving for pleasure, camping, hiking, and off-road vehicle use (BLM, 2008). The ICC also has one of the best-known rock art sites in the state of Utah—Newspaper Rock—which attracts many visitors.

The ICC is located in the eastern side of the proposed Greater Canyonlands National Monument. The main access to the ICC is by Utah Highway 211, which is also the same highway that is used to access the Needles District of Canyonlands National Park.

Below is a map of the proposed GCNM that shows the location of the ICC (Figure 1).

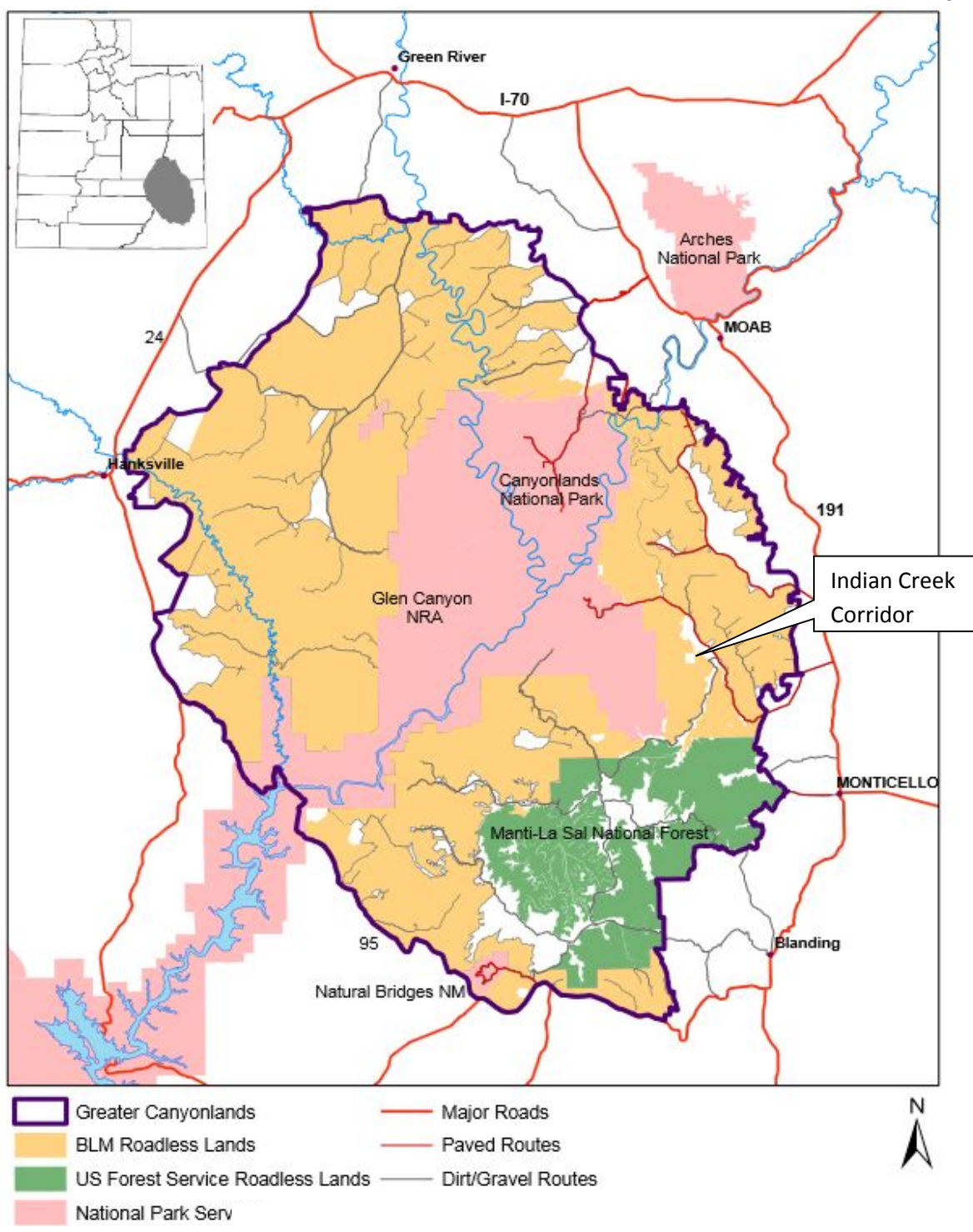


Figure 1. Proposed Greater Canyonlands National Monument and the ICC. Retrieved from: <http://moabdave.files.wordpress.com/2013/08/gc-map.jpg>

CHAPTER 2

REVIEW OF LITERATURE

This section begins with a brief overview of the Antiquities Act of 1906, the Act's recent usage, and the associated controversy. This section then provides a background of past research that is relevant to the five foci of this study. First, a review of attitudes toward protected areas; second, how residential proximity to a protected area affects attitudes toward protected areas; third, how place dependence and place identity affect attitudes toward protected areas; fourth, how environmental attitudes affect attitudes toward protected areas; and lastly, how recreational activity type affects attitudes toward protected areas.

Antiquities Act of 1906

As mentioned above, in the last 20 years, over 95 million acres of federal land have been given national monument status; and since the passage of the Antiquities Act in 1906, 15 of the 19 presidents have used it to designate national monuments. Many of the national monuments that have been designated have been applauded, but some have been met with great controversy. Vincent and Alexander (2010), in a report to Congress, outlined the major controversies surrounding the designation of national monuments. Critics of the Antiquities Act say that it is not consistent with other laws used for land designation such as the Federal Land Policy and Management Act of 1976 (FLPMA), National Environmental Policy Act 1969 (NEPA), and the Wilderness Act of 1964, which all require public input and/or Congressional approval. Critics also argue that

national monument designation restricts some extractive (e.g., mining) and recreational (e.g., off-road vehicle use) uses. Lastly, critics debate the amount of land a president can designate as a national monument, such as George W. Bush's 89 million acre Papahānaumokuākea Marine National Monument.

Vincent and Alexander's (2010) report also outlines the reasons many people support the Antiquities Act. First, the Antiquities Act gives the President the ability to act quickly to protect resources that are in immediate jeopardy. There were concerns that the resource in the Grand Staircase-Escalante National Monument (GSENM) were in jeopardy because of potential energy development and mining. If left up to Congress, there was a high probability the GSENM would have not been designated given the partisan atmosphere and controversy around the designation. With the power granted by the Antiquities Act, President Clinton was able to designate the GSENM, just as President Obama would be able to designate the GCNM. Supporters of the Antiquities Act also argue that national monument designations that were met with controversy at first are later appreciated for their enhancement of non-motorized recreation, preservation, and economic benefits to surrounding communities.

Although some controversial monuments have later become appreciated, there have been attempts to revoke national monument designations, and/or take away the President's authority to designate future national monuments. One example of this happening was in Wyoming in 1950. The state passed a law that prohibits any president from designating national monuments without the support of Congress (16 U.S.C. § 431a). The state of Utah has attempted to pass the same law to prohibit the President from designating national monuments in the state (i.e., H.R. 4651/S. 3016). In addition,

President Jimmy Carter's monuments were met with opposition in Alaska in 1978. A law was passed in the state that reduced the size of a national monument that a president could designate to 5,000 acres, unless the designation has Congress's approval (16 U.S.C. § 3213). President Clinton's Grand-Staircase Escalante National Monument (GSENM) has been the center of many lawsuits in Utah, but none of the lawsuits have been successful to date (Vincent & Alexander, 2010).

These lawsuits are brought about because once a monument is designated, restrictions are put into place. The Papahānaumokuākea Marine National Monument's lawsuits were over lost fishing rights and the size of the designation. The reason the Grand Staircase-Escalante National Monument was met with so much opposition is because it eliminated the possibility of coal mining on the Kaiparowits Plateau (Brooke, 1996; Vincent & Alexander, 2010) and the decision was carried out in a heavy-handed manner that gave little to no warning to local residents that the monument was to be designated (Durrant & Shumway, 2004).

Attitudes toward Protected Areas and Management

What are visitors' attitudes toward the Greater Canyonlands National Monument and the management of the Greater Canyonlands area?

There are over 100,000 protected areas throughout the world, and these protected areas account for 12% of the world's total land area (World Conservation Monitoring Centre, 2004). Researchers have been working around the world exploring the relationships between protected areas and the people who live near them.

Past research has found that factors such as loss of traditional resource extraction and wildlife damage to crops and livestock have been attributed to negative attitudes towards protected areas (Allendorf, 2007; de Boer & Baquete, 1998; Gillingham & Lee, 1999; Heinen, 1993; Hough, 1988; Maikhuri et al., 2000; Nepal & Weber, 1995; Parry & Campbell, 1992; Straede & Helles, 2000; Studsrod & Wegge, 1995; Tisdell, 1995). In addition, negative attitudes toward protected areas have been attributed to loss of grazing lands, conflicts with people employed by the protected area, and people being relocated or losing their homes (Allendorf, 2007; Newmark, 1991). Studies have also suggested that lower levels of education often correlate with negative attitudes toward conservation efforts (Akama, Land, & Burnett, 1995; Harcourt, Pennington, & Weber, 1986; Infield, 1988; Newmark, 1991; Trakolis, 2001). Unfulfilled promises in economic opportunities such as jobs and development have also been predictors of negative attitudes toward protected areas (Allendorf, 2007; Boonzaier, 1996; Fiallo & Jacobson, 1995; Ite, 1996). People who are more involved in local economic activities have also shown negative attitudes toward protected areas (Bonaiuto, Carrus, Marthorella, & Bonnes, 2002). Largely, negative attitudes can be related to losses in economic opportunities and/or impacts to traditions and ways of life.

As stated above, negative attitudes can largely be related to losses in economic opportunities and livelihoods. This has resulted in a push for economic improvements (e.g., jobs and community development) in conjunction with protected areas in order to improve attitudes toward those protected areas (Abel & Blaikie, 1986; Bhatta, 1994; Dearden, Chettamart, Emphandu, & Tanakanjana, 1996; Durbin & Ralambo, 1994; Hough, 1988; Studsrod & Wegge, 1995; Tisdell, 1995). However, using economic

improvements to try and enhance attitudes toward protected areas is difficult because these improvements can be hard to deliver. If these economic enhancements are not delivered, people feel cheated, and as a result, have negative attitudes toward the protected area (Allendorf, 1999, 2007; Boonzaier, 1996; Fiallo & Jacobson, 1995; Ite, 1996). There are examples of this in southeastern Utah. For example, people who are advocating for protected areas in the region say these bring money from tourism visitation and spending. Moab, UT, is often used as an example of how economies can diversify and thrive from the increased tourism. Other towns in the region, that are still adjacent to protected areas, have not seen the same economic enhancements from the protected areas, and residents in these towns generally have more negative attitudes toward protected areas (Durrant & Shumway, 2004).

Positive attitudes toward protected areas are often present when the protected area has not negatively affected the people living near it. For example, positive attitudes have been found when the protected area provides resources necessary for survival (e.g., ecosystem services), environmental benefits, recreational opportunities, and when the protected area improves conditions that appeal to people's non-economic values (i.e., cultural, spiritual, and aesthetic values) (Allendorf, 2007). As mentioned above, Moab, UT, has experienced the benefits (e.g., recreation, revenue, environmental benefits, etc.) of having protected areas (e.g., national parks and Wilderness Study Areas) nearby. This could be one factor that contributes to Grand County—the county in which Moab is located—having the most positive attitudes towards protected areas in southeastern Utah (Durrant & Shumway, 2004).

A good source of data regarding attitudes towards protected areas in the United States comes from the study conducted by Rudzitis and Johansen (1991). They surveyed eleven counties in the United States that contained formally designated Wilderness, and found high support for Wilderness from the county's residents. More than 80% of respondents agreed that Wilderness areas were important for the counties in which they lived. Some data (Goodman & McCool, 1999) suggest that attitudes toward Wilderness in Utah are consistent with the generally positive attitudes in the nation found by Rudzitis and Johansen (1991). However, positive attitudes toward Wilderness and Wilderness Study Areas (WSA) in southeastern Utah do not follow the same trend.

Southeastern Utah, a region that has been riddled with public land use conflict since the passage of the Federal Lands Policy and Management Act in 1976, has far more negative attitudes toward Wilderness and WSAs than the nation as a whole (Durrant, 2001; Durrant & Shumway, 2004). Durrant and Shumway (2004) slightly modified the statements used by Rudzitis and Johansen (1991) to explore the attitudes of local residents of southeastern Utah, and the results between the two studies differed tremendously. An example of this contrast is that 53% of respondents agreed that Wilderness was an important reason for moving to the county (Rudzitis & Johansen, 1991), whereas Durrant and Shumway (2004) found that only 14% of their respondents agreed that WSAs were important for their moving. Furthermore, Durrant and Shumway (2004) found that between 64% and 66% of southeastern Utah residents believed there should be more access to WSAs, that WSAs should be open for energy and mineral development, and that there should not be any additional WSAs designated. Durrant and Shumway (2004) largely attribute these negative attitudes to the way decisions about

protected areas in the region have been “carried out in a heavy-handed manner and dominated by outside influences that have overwhelmed local ‘voices’” (p. 241). Given these findings, this study attempts to find out if visitors have attitudes consistent with the residents of southeastern Utah, or if they follow the generally positive national trend.

Decisions that have been carried out in a “heavy-handed manner” are often met with great public dissatisfaction; the Grand Staircase-Escalante National Monument is an example of this. These decisions are lacking what Lawrence, Daniels, and Stankey (1997) call *Procedural Justice*. Procedural justice is based on the hypothesis that participants in a decision-making process are more satisfied with the end result when the process in which the decision was made is perceived as fair (Lawrence et al., 1997).

Lawrence et al. (1997) use the example of a massive forest planning process that was conducted by the Forest Ecosystem Management Assessment Team (FEMAT) to illustrate the importance of procedural justice. FEMAT used the latest science and planning technology to produce their final report. However, the process and the final decision from the planning process were met with a great deal of backlash and public dissatisfaction. Lawrence et al. (1997) have argued it was not the final decisions that were made that created such dissatisfaction; rather, it was the process that was used to make the decisions. To create a plan that is seen as acceptable, the focus should be on creating a fair process, and the process FEMAT used was not seen as fair. The processes used to designate WSAs and the GSENM in southeastern Utah were also not seen as fair (Brooke, 1996; Durrant & Shumway, 2004), which could largely account for the negative attitudes toward these protected areas.

One area where data seems to be scarce is on visitors' attitudes toward designating the area they are visiting as a protected area. Subsequently, the research questions (RQ) this study focused on are listed below:

RQ: Is there support among visitors for the GCNM?

RQ: Are visitors in favor of a decision-making process that includes components of procedural justice, or do they prefer a quick designation?

Residential Proximity

How does residential proximity to the proposed Greater Canyonlands National Monument influence visitor attitudes toward the proposed monument?

Past research has found that people who live farther away from a protected area are more in favor of it because 1) they are less affected by its restrictions and 2) they are more opposed to the area's degradation (Badola, 1998; Heinen, 1993; Ite, 1996; Mehta & Heinen, 2001; Mkanda & Munthali, 1994;). In alignment with these findings, Bonaiuto et al. (2002) found that people who lived inside a newly designated protected area had negative attitudes toward the protected area, and people who lived in the region outside of the natural protected area had more positive attitudes. Additionally, Durrant and Shumway (2004) found that people living in southeastern Utah had highly negative attitudes toward nearby protected areas. In contrast, Rudzitis and Johansen (1991) found generally positive attitudes toward protected areas in people who lived in counties that contained designated protected areas across the United States, but their study did not include counties in southeastern Utah.

Given these past findings, this study posits more positive attitudes from visitors for two reasons: (1) visitors who travel from farther distances would not be as affected by new regulations and would be more opposed to the area's degradation, and (2) visitors who are traveling from outside of southeastern Utah would have attitudes toward protected areas that are more consistent with the positive attitudes that Rudzitis and Johansen (1991) found across the United States. Below are the hypotheses this study examines with regards to residential proximity:

H₁: People who live farther away from the ICC are more in favor of designating the GCNM.

H₂: People who live farther away from the ICC see land uses such as livestock grazing, hunting, mining, and energy development as bigger threats to the Greater Canyonlands area than people who live closer to the ICC.

Place Dependence and Place Identity

How does place attachment influence visitor attitudes toward the proposed Greater Canyonlands National Monument?

Place attachment is a term used to describe the interactions between humans and the environment, and there are many terms used to describe the specifics of this phenomenon, such as *place identity* (Proshansky, Fabian, & Kaminorr, 1983; Williams & Patterson, 1999), *place dependence* (Stokols & Shumaker, 1981; Williams & Roggenbuck, 1989), *place bonding* (Hammit, Backlund, & Bixler, 2004), and *sense of place* (Jorgensen & Stedman, 2001 and 2006), to name a few. This research will focus on

place dependence and place identity, and their effects on visitors' attitudes toward designating the GCNM and the management of the Greater Canyonlands area.

Place dependence, in outdoor recreation, is a measure of how dependent one is on a place for their recreational activity (Stokols & Shumaker, 1981; Williams & Roggenbuck, 1989). Stokols and Shumaker (1981) suggest that place dependence is determined by the quality of the particular place, and by the quality of alternative places that are comparable. Recreationists' degree of place dependence should increase if the quality of a place is high for their specific activity, and if the quality of alternative places is lower. In the case of the Indian Creek Corridor, the area offers a great density of superior quality cracks, which are utilized by rock climbers. Climbers travel from around the world to climb in Indian Creek. One would expect climbers who specialize in crack climbing to be more dependent on Indian Creek because of the high quality resource.

Place identity has been defined as a symbolic connection between a person and a place (Lalli, 1992; Stedman, 2002), a connection between a person and the natural environment (Clayton, 2003), and a psychological investment with a place that has developed over time (Bonaiuto, Aiello, Perugini, Bonnes, & Ercolani, 1999; Fried, 1963; Williams & Patterson, 1999). Place identity is different than place dependence in that it is an emotional attachment, rather than a utilitarian attachment, and it is generally developed over time (Williams & Patterson, 1999). Moore and Graefe (1994) suggest that in many cases individuals who are dependent on a place will, over time, develop a high degree of place identity because of their extensive interaction with it. The Indian Creek Corridor has a long and well-known history of recreationists coming to the area to climb, which started with the first ascent of "Luxury Liner" or "Super Crack" in 1976. The

popularity of the Indian Creek Corridor started growing in the mid-1990s (Bloom, 2004), and has grown steadily since then. One would expect to see a high degree of place identity among recreationists who have been visiting the area for many consecutive years.

Williams and Patterson (1999) suggested that place identity develops over time, and Moore and Graefe (1994) have suggested that place dependence can lead to an individual developing place identity because of their extensive interactions with the place. In support of these claims, White, Virden, and van Riper (2008) found strong evidence suggesting there is a relationship between a recreationist's prior experience (i.e., number of years visited) and their level of place identity and place dependence. Backlund and Williams (2004) analyzed ten studies in an effort to better understand the relationship between place dependence and place identity, and people's prior experience. They found a weak, but positive, relationship between prior experience and place identity, and place dependence.

Past research has found relationships between place identity and place dependence, and a variety of dependent variables. For example, Kyle, Absher, and Graefe (2003) found a relationship between place identity and support for a fee program. In their research, they found that as place identity increased so did the willingness to pay an entrance fee that would go toward environmental education, environmental protection, and facility development and services.

Kyle, Graefe, Manning, and Bacon (2004) found that place identity and place dependence also had effects on visitors perceptions of crowding. Visitors who had a higher degree of place identity were more likely to perceive the effects of crowding more negatively. In contrast, visitors who had a higher degree of place dependence viewed

setting density more favorably. Kyle et al. (2004) also found relationships between visitors' degree of place dependence and place identity, and their perceptions of environmental conditions. Visitors with a higher degree of place identity were more likely to perceive environmental conditions more critically than people who had a higher degree of place dependence.

In regards to understanding the relationship between place attachment and attitudes toward protected areas, Bonaiuto et al. (2002) examined how place attachment in local residents' (people who live within an Italian National Park) and non-local residents' (people who live in the same region but outside of the park) affected their attitudes toward natural protected areas. The authors found local residents displayed higher levels of place attachment and had negative attitudes toward natural protected areas in general, as well as negative attitudes toward specific natural protected areas. In contrast, non-local residents displayed lower levels of place attachment and positive attitudes toward general and specific natural protected areas.

Kyle et al. (2004) found that higher degrees of place identity were related to more critical evaluations of ecological and social factors. Bonaiuto et al. (2002) found that higher levels of place attachment often produced negative attitudes toward natural protected areas. Given previous findings, it is unclear how to constructing hypotheses predicting how higher degrees of place attachment will influence attitudes towards the GCNM and the management of the Greater Canyonlands area. If higher degrees of place identity translate in to more critical evaluations of ecological and social conditions, one would think less tolerance for land uses might exists that have negative impacts on natural landscapes (e.g., mining or high densities of recreational use), and more support

would exist for protection of the area. However, Bonaiuto's study showed that local residents with high levels of place attachment had negative attitudes toward natural protected areas.

This study will attempt to expand the knowledge of place attachment (place dependence and place identity), and how it relates to attitudes toward protected areas and management by evaluating (1) how prior experience affects place attachment, (2) how residential proximity affects place attachment (local vs. nonlocal), and (3) how visitors' levels of place identity and place dependence affect attitudes toward the GCNM and the management of the Greater Canyonlands area. Below are the hypotheses this study examines in regards to place dependence and place identity:

H3: People who have been visiting the Indian Creek Corridor for a longer period of time will have a higher degree of place attachment.

H4: People with a higher degree of place dependence will also have a higher degree of place identity.

H5: People who live closer will have a higher degree of place attachment.

H6: Visitors with higher levels of place attachment will be more in favor of the GCNM.

H7: Visitors with higher levels of place attachment will be more critical of land uses that have larger negative impacts to the natural landscape.

Environmental Orientation

Is there a clear relationship between visitors' environmental orientation and their attitudes toward the proposed Greater Canyonlands National Monument?

In 1978, Dunlap and Van Liere developed the New Environmental Paradigm (NEP), in order to measure the environmental orientation of individuals (i.e., anthropocentric or biocentric). The terms anthropocentric and biocentric are used to define how people view nature. Gagnon-Thompson and Barton (1994) defined people who are biocentric as, “individuals [who] value nature for its own sake and, therefore, judge that it deserves protection because of its intrinsic value” (p. 1). In contrast, the authors defined people who are anthropocentric as individuals that feel “the environment... has value in maintaining or enhancing the quality of life for humans” (p. 1).

The NEP has been considered “the most widely used and...subject to the most mythological assessment” than any other scale of its kind (Stern, Dietz, Kalof & Guagnano, 1995, p.725). Past research has found higher scores on the NEP scale are often correlated with pro-environmentalism. One example is where researchers have used the NEP scale to test members of environmental interest groups. Members of these groups have consistently scored higher on the NEP scale than the general public or non-environmental interest groups (Edgell & Nowell, 1989; Pierce, Steger, Steel, & Lovrich, 1992; Widegren, 1998). In addition, the scale has been used to find links between pro-environmentalism and ‘environmentally friendly’ behaviors, i.e., purchasing products that are conservation-related and/or have Kind-to-Nature attributes (Ebreo, Hershey, & Vining, 1999) and recycling (Ebreo et al., 1999; Schultz & Oskamp, 1996).

This study uses the NEP scale to see if there is a relationship between higher scores on the NEP and positive attitudes toward the proposed Greater Canyonlands

National Monument. Below are the hypotheses this study examines with regards to environmental orientation and attitudes toward the GCNM.

H₈: Individuals with higher scores on the NEP (i.e., more biocentric oriented individuals) will have more positive attitudes toward the GCNM.

H₉: Individuals with higher scores on the NEP will be more critical of land uses that have larger negative impacts to the natural landscape.

Recreation Activity Type

Does a relationship exist between recreation activity and support for the proposed Greater Canyonlands National Monument?

Although the restrictions on recreational activities at this point of the Greater Canyonlands National Monument are unknown, if the monument is eventually designated, there is a high likelihood that some regulatory limits and/or restrictions will be put into place. For example, once Grand Staircase-Escalante National Monument was designated, more restrictions were put into place on off-highway vehicle use. In Cedar Breaks National Monument hunting is not permitted. Several off-highway vehicle clubs, such as the Blue Ribbon Coalition, have gained public momentum in opposition of the GCNM designation because they perceive potential losses in recreational opportunities due to road or trail closures (BRC, 2014).

Research has shown that negative attitudes toward a protected area are related to the perceived impacts a protected area has, or might have (Akama et al., 1995; de Boer & Baquete, 1998; Heinen, 1993; Ite, 1996; Lehmkuhl, Upreti, & Sharma, 1988; Newmark, Leonard, Sariko, & Gamassa, 1993; Oil, Taylor, & Rogers, 1994; Sekhar, 1998). This

study posits see some recreationists (e.g., off-highway vehicle users) having less favorable attitudes toward the proposed national monument. Below is the hypothesis this study examines regarding recreation activity type's effects on attitudes toward the GCNM.

H₁₀: Recreationists who are more at risk of losing recreational opportunities (e.g., off-highway vehicles) to conservation/protectionist style management actions, such as trail closures or restrictions to motorized recreation use, will be less in favor of the national monument's designation.

CHAPTER 3

RESEARCH METHODS

Sampling

Data were collected by interviewing recreationists in the Indian Creek Corridor (ICC) during the months of March and April 2013, coinciding with the peak spring recreation season. The ICC sees most of its visitation in the spring and fall because summer temperatures are often too high, and winter temperatures too low, for comfortable recreation. To account for the diverse use that occurs in the ICC, four locations were chosen to make visitor contacts: Newspaper Rock historical site, Super Crack/Donnelly Canyon/Battle of the Bulge parking lot, Cottonwood Canyon Road, and the Hamburger Rock Road.

Dates and times to survey at the four locations were chosen at random using a random number generator. Survey times were split into AM and PM shifts; AM shifts were from 9:00 AM - 1:00 PM, and PM shifts were from 2:00 PM - 6:00 PM. Survey times were chosen to catch visitors on either their way to their recreation destination or leaving their recreation destination. Each survey location was visited three times over the course of this study.

Visitors were intercepted at the four pre-designated survey locations and asked if they were willing to participate in a study on visitors' attitudes toward the management of the Greater Canyonlands area. Two factors excluded subjects' participation in the study: (1) declined to participate, or (2) under 18 years of age.

The target sample size for this study was 384, which is the number suggested by Salant and Dillman (1994) to make inferences on a large population when the actual number of the population is unknown—with a 95% confidence interval. This sample size was chosen to err on the side of safety because user data for the ICC is not available. However, this study only captured 339 respondents, which is 41 below the targeted sample population.

No chance of non-response bias exists when every subject participates (response rate of 100%); however, a response rate of 100% is highly unlikely. Response rates of 50-60% or greater are considered optimal because non-response bias is thought to be minimal (Fincham, 2008). No tests were conducted to check for nonresponse bias given this study's response rate was 94%.

Survey Instrument

The survey instrument covered the following topics: (1) respondents' place of residence; (2) respondents' visitation frequency; (3) respondents' recreational activity; (4) if they had prior knowledge of the proposed GCNM; (5) attitudes toward the GCNM; (6) attitudes toward management for the Greater Canyonlands area; (7) environmental attitudes; (8) place attachment and place dependence, and (9) who visitors thought should manage the GCNM if it were designated, along with some demographic characteristics (see Appendix for survey instrument).

Scales Used in the Survey Instrument

Scales Used to Measure Dependent Variables

To explore visitors' attitudes toward the GCNM, this study used a slightly modified set of questions that were used by Durrant and Shumway (2004) when they explored attitudes toward Wilderness Study Areas in southeastern Utah. These questions were originally developed by Rudzitis and Johansen (1991) to explore attitudes toward Wilderness, and Durrant and Shumway (2004) altered and added questions to explore attitudes toward Wilderness Study Areas. Believing these questions could be useful for exploring attitudes toward the GCNM, the set of statements were modified and additional statements were added to suit the needs of this study. Table 1 outlines the statements used in the survey.

The survey additionally included questioning to gain data on how people perceived threats and management of the Grater Canyonlands area. Topics covered were

Table 1

Statements Used to Explore Attitudes toward the Greater Canyonlands National Monument

-
- A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment
 - B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated
 - C. Local citizens should have more influence in the designation and management of national monuments
 - D. More national monuments should be established on federal lands
 - E. The GCNM should be designated
 - F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor
 - G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents
 - H. The GCNM would stimulate the economies of surrounding communities
-

Note: Responses were recorded using five-point Likert scales: 1 (Strongly Disagree), 2 (Disagree), 3 (Unsure), 4 (Agree), 5 (Strongly Agree)

off-road vehicle use, mining for minerals, livestock grazing, hunting, traditional energy development (i.e., drilling for oil and gas), and alternative energy development (i.e., solar and wind). Table 2 outlines the statements used in the survey instrument.

Scales Used to Measure Independent Variables

Place Dependence, Place Identity, and Environmental Orientation were all measured using multiple statement scales. Respondents recorded their responses using five-point Likert scales that ranged from one “strongly disagree” to five “strongly agree,” with 3 being “unsure.” Each respondent was given a mean score by adding the responses each respondent gave in each scale and dividing by the number of statements in the scale. All mean scores ranged from 1 to 5.

To measure recreationists’ degree of place dependence and place identity, this study used questions developed by Williams and Roggenbuck (1989), which were later used by Vaske and Kobrin (2001) (Table 3) to measure place dependence and place identity.

Table 2

Statements Used to Explore Attitudes toward Management

-
- A. There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area
 - B. Mining for minerals is a major threat to the Greater Canyonlands area
 - C. Livestock grazing is a threat to the Greater Canyonlands area
 - D. Hunting is a threat to the Greater Canyonlands area
 - E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area
 - F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area
-

Note: Responses were recorded using five-point Likert scales: 1 (Strongly Disagree), 2 (Disagree), 3 (Unsure), 4 (Agree), 5 (Strongly Agree)

Table 3

*Statements Used to Measure Place Identity and Place Dependence*Place Dependence Statements

- A. This area is the best place for what I like to do
- B. I get more satisfaction out of visiting this place than any other
- C. I would not substitute any other area for doing what I do here
- D. No other place can compare to this area

Place Identity Statements

- E. I think often about coming here
- F. I am very attached to this place
- G. I identify strongly with this place
- H. I feel like this place is a part of me

Note: Responses were recorded using five-point Likert scales: 1 (Strongly Disagree), 2 (Disagree), 3 (Unsure), 4 (Agree), 5 (Strongly Agree)

To measure environmental orientation, this study used a six-point, shortened version of the New Environmental Paradigm scale to make the survey instrument shorter and more convenient for respondents (Table 4). The six-point scale used in this study was developed by the same authors of the original NEP—Dunlap and Van Liere—for a national survey conducted by the Continental Group (1982).

Analytic Methods

Data were entered and analyzed in the Statistical Package for the Social Sciences (SPSS). Data screening techniques suggested by Warner (2013) were used before any hypothesis testing was done. Data were examined in histograms to check for normalcy, outliers, and data were checked in scatterplots to check for linear/non-linear relationships. All data were normally distributed except for the number of miles respondents lived from the ICC. This was because a portion of our sample came from other continents, and the

Table 4

Six-Point New Environmental Paradigm Scale

-
- A. The balance of nature is very delicate and easily upset
 - B. People must live in harmony with nature in order to survive
 - C. Pollution is personally affecting my life
 - D. Courses focusing on conservation of natural resources should be taught in public schools
 - E. The balance of nature is strong enough to cope with the impacts of modern industrial nations
 - F. Human ingenuity will insure that we do NOT make the Earth unlivable
-

Note: Responses were recorded using five-point Likert scales: 1 (Strongly Disagree), 2 (Disagree), 3 (Unsure), 4 (Agree), 5 (Strongly Agree)

number of miles traveled by these visitors created a non-normal distribution because they had to travel over oceans to reach the ICC. Therefore, when the variable “Miles” was used in our hypothesis testing, we excluded respondents that lived outside of the lower 48 United States.

Scales were also checked for internal reliability using Cronbach’s Alpha. The scales used to measure attitudes toward the GCNM ($\alpha = .753$), environmental orientation ($\alpha = .69$), place dependence ($\alpha = .836$), and place identity ($\alpha = .906$) all had an alpha level near or above the recommended $\alpha > .70$, which indicates all scales were generally reliable, and suitable for hypothesis testing. Note that items in the attitudes toward the GCNM and management of the Greater Canyonlands areas scales, and the NEP scale had items recoded to orient all measures in the same direction to run the Cronbach’s alpha. Also note, the NEP’s internal reliability could have been improved if an 8-point scale were used instead of the 6-point scale.

Hypotheses testing was split up in to two parts. First, each hypothesis was tested using Spearman’s Rank Correlations to examine the relationships between the independent and dependent variables individually. Spearman’s Rank Correlations were

chosen because *ordinal* and *interval* data were being compared to each other to test hypotheses. Pearson's *r* Correlations were used when examining only interval level data. For the second part of hypothesis testing, multiple regression models were used. The goal of using multiple regression models was twofold. First, to examine how well the entire set of independent variables accounted for the variance in the dependent variables. Second, to display how well each independent variable predicted scores in the dependent variables when controlling for the other independent variables. Figure 2 shows the independent variables used to explain the variance in attitudes toward the GCNM and the management of the Greater Canyonlands area.

Only respondents who reported themselves living in the United States were used

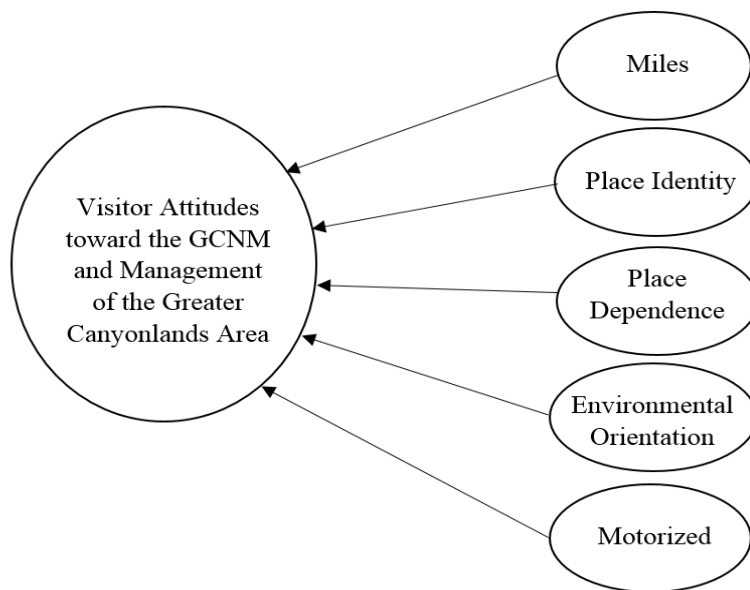


Figure 2. Regression model with the independent variables used to explain the variance in the dependent variables.

in the regression models. Respondents traveling from outside of the United States were excluded from the variable “Miles” because they traveled from another country and/or overseas that created a non-normal distribution in the data. Since the number of miles traveled to reach the ICC was not measured for these visitors, the regression models excluded them because these respondents did not have data for all independent variables. Consequently, 46 respondents were not used in regression.

For a multiple regression model to give believable results, Tabachnick and Fidell (2007) recommend that the ratio between the sample size (N) and the number of predictor variables (k) needs to be “substantial.” Green (1991) has suggested using the following equations to determine if a sample is large enough to give “believable results.” The two equations are $N > 50 + 8k$ (k = number of independent variables in the regression model) and $N > 104 + k$. Green (1991) recommended using both equations and seeing which one produces a larger number, i.e., $N > 50 + 8(5)$ or $N > 104 + (5)$, and using the larger number as the minimum N given k to produce believable results. The sample for this study was $N = 293$ (excluding respondents living outside of the United States), and five predictor variables were used in regression models, which came out to $293 > 75$ and $293 > 109$. Therefore, the sample is still large enough to produce believable results.

CHAPTER 4

RESULTS

This chapter is divided into three sections. First, it begins with an overview of the sample population. Next the results of the hypotheses testing using Spearman's Rank Correlations are presented. Lastly, the results of further hypotheses testing using Ordinary Least Squared Regression models are presented.

Visitors to the Indian Creek Corridor

This study was conducted in the Indian Creek Corridor (ICC) because of the diversity in user groups, i.e., rock climbers, sightseers, people driving for pleasure, campers, hikers, and off-road vehicle enthusiasts (BLM, 2008). The study area was also chosen with hopes that the sample would capture recreationists from surrounding communities (e.g., Monticello, La Sal, Moab, and Blanding) to compare attitudes of people living directly adjacent to the proposed GCNM and people who live farther away (main highway connects to gateway entrance of the ICC).

Unfortunately very few respondents were from these surrounding communities. Of the 339 people surveyed, only 3.5% (12 people) reported themselves living in surrounding communities. Of the total sample, 86.4% (293 people) reported themselves living within the United States, and 13.5% (46 people) traveled to the ICC from outside of the United States. The study's sample contains nearly four times the number of respondents from outside the United States than from the surrounding communities (i.e., Monticello, La Sal, Moab, and Blanding).

Of the visitors from the United States (293 people) the average distance traveled to reach the ICC was 648 miles. The minimum distance traveled was from the nearby town Monticello, Utah (27 miles), and the maximum distance traveled was from Maine (2,559 miles). Only 9% (31) of the visitors surveyed were from Utah. Table 5 displays more detail about miles traveled to the ICC.

The sample was composed of a diverse set of users, but the sample was largely composed of rock climbers (55.2%). Hiking/Walking was the second largest user group (20.4%), followed by camping (8%), then ATV riding (4.9%) and driving for pleasure (4.6%). Table 6 presents the *primary* activities visitors identified participating in during their visit to the ICC, along with the number and percent of visitors within those activity groups.

Respondents were asked if they had previously visited the ICC before their current trip, and 51.9% said they had visited the ICC before. Respondents who had visited the ICC before were asked how many years they had been visiting the ICC. Just over a quarter of the sample (28.9%) had been visiting for one to two years, 31.8% had been visiting for three to five years, 20.2% had been visiting for six to ten years; 13.9%

Table 5

Distance Visitors Traveled to the Indian Creek Corridor

	Miles ^a
Mean	648
Median	428
Standard Deviation	515
Minimum	27
Maximum	2559

^aThis table only includes respondents living within the United States
N = 293

Table 6

Primary Recreation Activity in the Indian Creek Corridor

Activities	Number of Visitors	Percent
Rock Climbing	179	55.2
Hiking/Walking	66	20.4
Camping	26	8
ATV Riding	16	4.9
Driving for Pleasure	15	4.6
Sightseeing	12	3.7
Photography	6	1.9
Bicycling	2	.6
Total	324	100

had been visiting for ten to twenty years; and 5.2% had been visiting for over twenty years. Respondents were asked how many trips, on average, they made a year to the ICC. Just under three-fourths (70.1%) visited on average 1 to 2 times a year, 14.6% visited 3 to 4 times a year, 7% visited 5 to 9 times, 3.5% visited 10 to 19 times, and 4.7% visited 20 to 5 times a year. Table 7 presents respondents' visitation frequency.

Respondents were also asked questions regarding demographic information. The sample was largely composed of people from 20 to 40 years of age: 71.7%. The sample had a higher proportion of males than females: 200 males vs. 138 females. Many respondents (71.8%) had a 4-year college degree or graduate degree. The largest percentage of respondents grew up in city or a suburb of a city (42%), 16.4% grew up in rural areas, 22% grew up in small towns, and 18.8% grew up in large metropolitan areas. Table 8 presents the demographic information.

Table 7

Respondent Visitation Frequency to the Indian Creek Corridor

Variable	Number (percent)
First time visiting the Indian Creek Corridor?	
Yes, this is my first time	163 (48.1%)
No, I have visited before	176 (51.9%)
Total	N = 339
Number of years visited	
1-2	50 (28.9%)
3-5	55 (31.8%)
6-10	35 (20.2%)
10-20	24 (13.9%)
More than 20	9 (5.2%)
Total	N = 173
Average number of visits per year	
1-2	120 (70.1%)
3-4	25 (14.6%)
5-9	12 (7%)
10-19	6 (3.5%)
20-35	8 (4.7%)
Total	N = 171

Attitudes Toward the Greater Canyonlands National

Monument and Management

Visitors' attitudes toward the Greater Canyonlands National Monument and the management of the Greater Canyonlands area.

Seventy percent of respondents had visited a national monument before they were interviewed, but only 20% had prior knowledge of the GCNM before they filled out a survey. There was generally high agreement (63.7%) that designating the GCNM would be important for protecting the natural environment, and nearly half said there should be more national monuments on federal lands. However, visitors were highly unsure (47.6%) if the GCNM should be designated.

Table 8

Respondent Demographics

Variable		Number (percent)
Age	<20	3 (.9%)
	20-29	132 (39.6%)
	30-39	107 (32.1%)
	40-49	33 (9.9%)
	50-60	25 (7.5%)
	>60	33 (9.9%)
	Total	<i>N</i> = 333
Sex	Male	200 (59%)
	Female	138 (40.7%)
	Total	<i>N</i> = 339
Education Level	Less than high school	4 (1.2%)
	High school degree or GED	12 (3.6%)
	Some college	54 (16%)
	2 year technical or associate degree	25 (7.4%)
	4 year college degree (BA/BS)	153 (45.4%)
	Advanced degree (e.g., Master's, JD, MD, DO, Ph.D.)	89 (26.4%)
	Total	<i>N</i> = 337
Place Where Respondent Grew Up	Rural	55 (16.4%)
	Small town (under 10,000)	74 (22%)
	City or suburb of a city (under 200,000)	144 (42.9%)
	Large metropolitan area (greater than 200,000)	63 (18.8%)
	Total	<i>N</i> = 336

Visitors were also highly unsure of what kinds of effects the GCNM would have on recreation and local residents in the Greater Canyonlands area. Visitors did display a high level of agreement that local citizens should have more influence in the designation and management of national monuments. Visitors agreed most highly that there should be agreement between stakeholders regarding the process for designating the GCNM, the management of it, and the land that would be included in it before it is actually

Table 9

Percentage of ICC Recreationists Who Agree or Disagree with National Monument Statements

Statements	Agree ^a	Disagree ^b	Unsure
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	63.7	13.2	23
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	73.7	5.6	20.1
C. Local citizens should have more influence in the designation and management of national monuments	59.8	21.4	21.6
D. More national monuments should be established on federal lands	49.5	12.9	37.5
E. The GCNM should be designated	40.3	12.1	47.6
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	37.4	17.4	45.2
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	13.2	25.8	61.1
H. The GCNM would stimulate the economies of surrounding communities	40.9	11.4	47.8

^a“Agree” includes Strongly Agree and Agree

^b“Disagree” includes Strongly Disagree and Disagree

N = 336

designated. Table 9 presents the percent of respondents who agreed or disagreed with national monument statements.

Visitors had strong attitudes toward off-road vehicle use, mining, and traditional energy development. Seventy percent of respondents said there should not be fewer regulations on off-road vehicle use, 64.3% said mining for minerals is a major threat to the Greater Canyonlands area, and 69.1% said traditional energy development should not be allowed in the Greater Canyonlands area. Visitors expressed less strong views toward livestock grazing and hunting, and there was slightly higher agreement that alternative energy development should take place in the Greater Canyonlands area. Table 10 presents the percentages of people who agreed, disagreed, or were unsure with statements regarding management and threats.

Table 10

Percentage of ICC Recreationists Who Agree or Disagree with Management and Threat Statements

Statements	Agree ^a	Disagree ^b	Unsure
A. There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area	10.3	70	19.3
B. Mining for minerals is a major threat to the Greater Canyonlands area	64.3	7.5	28.3
C. Livestock grazing is a threat to the Greater Canyonlands area	32	32.6	35.5
D. Hunting is a threat to the Greater Canyonlands area	27.3	37.2	35.4
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	13	69.1	17.8
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	43.7	24.2	32.1

^a“Agree” includes Strongly Agree and Agree

^b“Disagree” includes Strongly Disagree and Disagree

N = 334

Visitors were also asked what level of government should manage the GCNM if it were designated. Forty-five (16.5%) said the GCNM should be managed at the county level, 109 (39.9%) said the GCNM should be managed at the state level, and 118 (43.2%) said the GCNM should be managed at the federal level.

Influence of Residential Proximity on Attitudes Toward the Greater Canyonlands National Monument and Management of the Greater Canyonlands Area

H₁: People who live farther away from the ICC are more in favor of designating the GCNM.

Data supports the above hypothesis: H₁. Even with such a small portion of respondents living in surrounding communities—12 people or 3.5% of the sample—identifiable relationships existed between attitudes and residential proximity. First, respondents who reported living farther away from the Greater Canyonlands area were more likely to agree that designating Greater Canyonlands a national monument would be

important for protecting the natural environment: $\rho = .136, p < .01$. Respondents who lived farther away were also more likely to agree with the statement that more national monuments should be established on federal lands: $\rho = .195, p < .01$. Furthermore, respondents who lived farther away from the Greater Canyonlands area were more likely to agree that the Greater Canyonlands National Monument should be designated: $\rho = .121, p < .05$. However, interestingly, people who lived farther away from the Greater Canyonlands area were more likely to disagree that there should be agreement among stakeholders before the GCNM is designated: $\rho = -.103, p < .05$. This suggests that people who live farther away from the Greater Canyonlands area are more likely to want the GCNM designated regardless of there being unanimous agreement. Table 11 presents the results of Spearman's Rank Correlations between Miles and the dependent variables.

Table 11

Spearman's Rank Correlation of Attitudes Toward the GCNM and Miles One Lives from the ICC

	Correlation Coefficient	N
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	.136**	293
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	-.103*	292
C. Local citizens should have more influence in the designation and management of national monuments	-.079	292
D. More national monuments should be established on federal lands	.195**	293
E. The GCNM should be designated	.121*	284
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	.096	288
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	-.088	288
H. The GCNM would stimulate the economies of surrounding communities	.05	289

Note: Only respondents living within the United States were used in this analysis

*Significant at the .05 level

**Significant at the .01 level (one-tailed)

H₂: People who live farther away from the ICC see land uses such as livestock grazing, hunting, mining, and energy development as bigger threats to the Greater Canyonlands area than people who live closer.

Data partially supports Hypothesis 2. People who lived farther away from the Greater Canyonlands area were slightly more likely to think that mining for minerals is a threat to Greater Canyonlands ($\rho = .114, p < .05$), and they were also slightly less likely to think traditional energy development should take place in Greater Canyonlands ($\rho = -.104, p < .05$). The strongest relationship was between Miles and Hunting. The farther a respondent lived from the Greater Canyonlands area the more likely they viewed hunting as a threat to Greater Canyonlands: $\rho = .202, p < .01$. A statistically significant relationship between livestock grazing and the number of miles one lives from the ICC was not apparent in the results. Table 12 presents the results of a Spearman's Rank Correlations between Miles and the dependent variables.

Table 12

Spearman's Rank Correlation of Miles and Attitudes Toward Management and Threat Statements of the Greater Canyonlands Area

Statements	Correlation Coefficient	N
A. There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area	-.037	291
B. Mining for minerals is a major threat to the Greater Canyonlands area	.114*	291
C. Livestock grazing is a threat to the Greater Canyonlands area	.004	290
D. Hunting is a threat to the Greater Canyonlands area	.202**	288
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	-.104*	291
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	-.015	290

*Significant at the .05 level

**Significant at the .01 level (one tailed)

Influence of Place Dependence and Place Identity on Visitors' Attitudes

Each respondent was given a mean score that identified their degree of *place identity* (PI) and *place dependence* (PD). The mean score for the total sample's degree of PI was 3.70 (this is on a scale of 1 = respondent does not have an emotional attachment to the "place," to 5 = the respondent has a strong emotional attachment to the "place"). The mean score for PD was 3.61 (this is on a scale of 1 = respondent does not depend on the "place" for their recreational activity, to 5 = the respondent does depend on the "place" for their recreational activity) (Table 13).

H₃: People who have been visiting the Indian Creek Corridor for a longer period of time will have a higher degree of place attachment.

As expected, results found a strong correlation between the number of years a respondent had been visiting the area and their degree of PI: $\rho = .439, p < .01, N = 336$. There was also a strong correlation between the number of years a respondent had been visiting the ICC and their degree of PD: $\rho = .323, p < .01, N = 336$. Table 14 shows the correlations between the number of years a respondent has been visiting the ICC and their degree of PI and PD.

Table 13

Visitors' Mean Score of Place Identity and Place Dependence

	Mean	<i>N</i>
Place Identity	3.70	336
Place Dependence	3.61	336

Table 14

Years Visited and Degree of Place Identity and Place Dependence

	Correlation Coefficient	N
Place Identity	.439**	336
Place Dependence	.323**	336

*Significant at the .05 level

**Significant at the .01 level (one tailed)

H₄: People with a higher degree of place dependence will also have a higher degree of place identity.

A Pearson's r correlation between PI and PD showed that respondents who had a stronger emotional attachment to the ICC were also more dependent on it for their recreational activity: $r = .721, p < .001, N = 332$. This supports the hypothesis that higher degrees of PD correlate with higher degrees of PI.

H₅: People who live closer will have a higher degree of place attachment.

Results from a Spearman's Rank Correlation found a negative correlation between the number of miles a respondent lives from the ICC and their degree of PI: $\rho = -.124, p = .018, N = .288$. This analysis suggests that people who live closer do have higher degrees of PI. The same analysis was run with PD, and there was not a statistically significant correlation: $\rho = -.069, p = .120, N = 287$. Therefore, this analysis supports that people who live closer to an area have a higher degree of PI. Findings do not support that people who live closer have higher degrees of PD.

H₆: Visitors with higher levels of place attachment will be more in favor of the GCNM.

People who have been visiting the ICC for a longer period of time showed higher degrees of PD and PI. People who were more dependent on the ICC for their recreational

activity (PD) were also more emotionally attached (PI) to it. People who live closer showed higher levels of PI. However, no statistically significant correlations resulted between PI and PD and attitudes toward the GCNM. Table 15 indicates the results of a Spearman's Rank Correlations examining the relationship between PD and PI and attitudes toward the GCNM.

Table 15

Spearman's Rank Correlation of PI and PD on Attitudes Toward the GCNM and Management

	Correlation Coefficient	
	Place Identity	Place Dependence
<u>GCNM statements</u>		
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	.003	-.051
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	.062	.093
C. Local citizens should have more influence in the designation and management of national monuments	-.056	.024
D. More national monuments should be established on federal lands	-.032	-.069
E. The GCNM should be designated	-.023	-.058
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	-.037	-.074
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	.037	.028
H. The GCNM would stimulate the economies of surrounding communities	.059	.079
<u>Management statements</u>		
A. There should be less regulations on off-road vehicle use in the Greater Canyonlands area	-.046	-.042
B. Mining for minerals is a major threat to the Greater Canyonlands area	.169**	.108*
C. Livestock grazing is a threat to the Greater Canyonlands area	.018	-.046
D. Hunting is a threat to the Greater Canyonlands area	-.081	-.058
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	-.090	-.084
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	-.090	-.029

*Significant at the .05 level

**Significant at the .01 level (one tailed)

Maximum $N = 339$ and minimum $N = 329$

H7: Visitors with higher levels of place attachment will be more critical of land uses that have larger negative impacts to the natural landscape.

Table 15 displays results of a Spearman's Rank Correlations on degree of PI and PD and their relationship with attitudes toward the management of the Greater Canyonlands area. Only one dependent variable had a statistically significant relationship with PD and PI. Respondents who had a higher degree of PI were more likely to think that mining was a major threat to the Greater Canyonlands area: $\rho = .169, p < .01$. Visitors with higher degrees of PD also felt that mining was a major threat to the Greater Canyonlands area: $\rho = .108, p = .025$.

Influence of Environmental Orientation on Attitudes Toward the Greater Canyonlands National Monument and Management of the Greater Canyonlands Area

Mean scores were given to each respondent that signified their orientation on the New Ecological Paradigm Scale. These scores ranged from 1 = anthropocentric to 5 = biocentric. The mean NEP for our sample was 4.01, meaning our sample is skewed toward the biocentric side. The standard deviation was .57: the minimum was 1.67 and the maximum was 5.

H8: Individuals with higher scores on the NEP (i.e., more biocentric oriented individuals) will have more positive attitudes toward the GCNM.

Data support the above hypothesis. Respondents who were more biocentric were more likely to agree with the following statements: (1) designating the GCNM would be important for protecting the natural environment ($\rho = .277, p < .01$), (2) more national

monuments should be established on federal lands ($\rho = .256, p < .01$), (3) the GCNM should be designated ($\rho = .285, p < .01$), (4) designating the GCNM would enhance the quality of outdoor recreation in the area ($\rho = .208, p < .01$), and (5) the GCNM would stimulate the economies of surrounding communities ($\rho = .175, p < .01$). However, interestingly, respondents who were more biocentric were more likely to disagree that local residents should have more influence in the designation and management of national monuments ($\rho = -.110, p < .05$), and were also more likely to disagree that the GCNM would negatively impact the lifestyles of local residents ($\rho = -.216, p < .01$).

Table 16 shows the results of a Spearman Rank Correlation between NEP scores and the dependent variables.

Table 16

Spearman's Rank Correlation of Attitudes and NEP Scores

Statements	Correlation Coefficient	<i>N</i>
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	.277**	330
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	.004	329
C. Local citizens should have more influence in the designation and management of national monuments	-.110*	329
D. More national monuments should be established on federal lands	.256**	330
E. The GCNM should be designated	.285**	324
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	.208**	327
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	-.216**	327
H. The GCNM would stimulate the economies of surrounding communities	.175**	328

*Significant at the .05 level

**Significant at the .01 level (one tailed)

H₉: Individuals with higher scores on the NEP will be more critical of land uses that have larger negative impacts to the natural landscape.

Data support the above hypothesis. Respondents who were more biocentric were more likely to disagree there should be fewer regulations on off-road vehicle use in the Greater Canyonlands area: $\rho = -.306, p < .01$. Respondents with higher NEP scores were also more likely to disagree traditional energy development (i.e., drilling for oil and gas) should still be allowed in the Greater Canyonlands area ($\rho = -.396, p < .01$), and agreed that mining for minerals is a major threat ($\rho = .332, p < .01$). In addition, respondents who were more biocentric were also more likely to think that livestock grazing ($\rho = .213, p < .01$) and hunting ($\rho = .144, p < .01$) were threats to the Greater Canyonlands area. Table 17 outlines the results of the Spearman Rank Correlation between NEP scores and the dependent variables.

Table 17

Spearman's Rank Correlation of NEP Scores and Management and Threat Statements

Statements	Correlation Coefficient	N
A. There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area	-.306**	330
B. Mining for minerals is a major threat to the Greater Canyonlands area	.332**	329
C. Livestock grazing is a threat to the Greater Canyonlands area	.213**	328
D. Hunting is a threat to the Greater Canyonlands area	.144**	326
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	-.396**	330
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	.057	330

*Significant at the .05 level

**Significant at the .01 level (one tailed)

**Recreation Activity Type and Its Effects on Attitudes Toward the
Greater Canyonlands National Monument and the Management of
the Greater Canyonlands Area**

H₁₀: Recreationists who are more at risk of losing recreational opportunities (e.g., off-highway vehicles) to conservation/protectionist style management actions such as trail closures or restrictions to motorized use will be less in favor of the national monument's designation

Results from a Pearson's r correlation support the above hypothesis. Respondents who participated in some form of motorized recreation during their trip to the ICC were slightly more likely to disagree that designating the GCNM would be important for protecting the natural environment: $r = -.114, p < .05$. People who participated in motorized recreation were also slightly more likely to disagree that the GCNM should be designated: $r = -.112, p < .05$. Table 18 presents the results of a Pearson's r correlation between motorized/non-motorized and attitudes toward the GCNM.

A Pearson's r Correlation was also conducted to see if there were differences in the way the motorized group and non-motorized group perceived management and threats to the Greater Canyonlands area (Table 18).

Respondents who participated in motorized recreation on their visit to the ICC were more likely to agree that there should be fewer restrictions on off-road vehicle use in the Greater Canyonlands area: $r = .162, p < .01$. Motorized recreationists were also more likely to disagree that mining for minerals is a threat to the Greater Canyonlands area ($r = -.129, p < .05$), and they were also more likely to agree that traditional energy development should still be allowed in the Greater Canyonlands area ($r = .201, p < .01$).

Table 18

Pearson's r Correlation of Motorized/Non-Motorized and Attitudes Toward the GCNM and Management of the Greater Canyonlands Area

	Correlation Coefficient	N
<u>GCNM Statements</u>		
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	-.114*	339
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	.056	337
C. Local citizens should have more influence in the designation and management of national monuments	-.004	338
D. More national monuments should be established on federal lands	-.092	339
E. The GCNM should be designated	-.112*	329
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	-.071	334
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	.041	334
H. The GCNM would stimulate the economies of surrounding communities	-.095	335
<u>Management Statements</u>		
A. There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area	.162**	337
B. Mining for minerals is a major threat to the Greater Canyonlands area	-.129*	336
C. Livestock grazing is a threat to the Greater Canyonlands area	-.098	335
D. Hunting is a threat to the Greater Canyonlands area	-.052	333
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	.201**	337
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	.058	336

*Significant at the .05 level

**Significant at the .01 level (one tailed)

Ordinary Least Squares Multiple Regression Models

To further test the hypotheses, and to see which independent variables were the best predictors of attitudes toward the Greater Canyonlands National Monument and management of the Greater Canyonlands area, Ordinary Least Squares (OLS) regression models were conducted on each dependent variable with all independent variables. The

independent variables were checked for multicollinearity. Multicollinearity refers to the amount of intercorrelation among the independent variables (Warner, 2013). Essentially, multicollinearity among independent variables indicates these are measuring the same thing. Collinearity Statistics were run in SPSS to check the variance inflation factor (VIF). As the VIF increases, so does the probability of multicollinearity among independent variables. The VIF threshold is three, i.e., VIF scores below three are good indicators that there is no multicollinearity occurring. All independent variables used in the regression models were below the threshold of three.

Only respondents who reported living in the United States were used in the OLS regression models. As previously mentioned, respondents who lived outside of the United States were excluded from the variable “Miles” because people traveling from overseas created a non-normal distribution in the data. Since the number of miles traveled to reach the ICC was not measured for visitors traveling from outside of the United States, the regression models excluded them because these respondents did not have data for all independent variables. Consequently, the sample size for the regression models were smaller than the sample size used in the Spearman’s Rank Correlations by about 46 respondents.

In this section, note that some independent variables (also referred to as predictor variables) become statistically significant, and some lose their statistical significance when using the OLS regression models compared to the previous analyses using Spearman’s Rank Correlations. Regression models are used to examine the total amount of variance in the dependent variable that is explained by the predictor variables.

Regression models are also used because they give a more “true” or “pure” correlation between the dependent variable and the predictor variables (Warner, 2013).

Because there were changes in the relationships between the independent and dependent variables, it was unclear if these changes were due to the reduction of the sample size or the regression models were providing more pure results. To test which of these were the case, Spearman’s Rank Correlations were repeated using only respondents who reported themselves living within the United States (same respondents used in the regression models). These analyses showed that the relationships between the independent and dependent variables differed only slightly, and these differences were not large enough to account for the changes that were seen in the regression models. This supports there were suppressing and confounding factors between the independent variables’ relationships with the dependent variables regression models controlled.

Table 19 shows the results of a regression on the dependent variable, “Designating Greater Canyonlands a ‘national monument’ would help protect the natural environment.” The model accounted for 11.7 percent of the variance in the dependent variable. The overall regression was statistically significant: $F = 8.474, p < .001$. Four of the five independent variables were statistically significant in predicting scores on the dependent variable: Miles $p = .01$, Place Dependence $p = .006$, Place Identity $p = .013$, and Environmental Orientation $p < .001$. Miles had a positive correlation with attitudes toward the national monument designation helping protect the natural environment, as did Place Identity and Environmental Orientation. However, Place Dependence had a negative correlation. The variable Motorized did not have a statistically significant correlation with the dependent variable.

Table 19

OLS Regressions of “Designating Greater Canyonlands a ‘National Monument’ Would Help Protect the Natural Environment” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.608	.501	—	.001*
Miles	.000	.000	.146	.010*
Place Dependence	-.302	.109	-.231	.006*
Place Identity	.262	.105	.210	.013*
Environmental Orientation	.494	.106	.268	.000*
Motorized	-.276	.203	-.078	.175
F value	8.474			.000*
Adjusted R ²	.117			
N	283			

* indicates findings were statistically significant at or above .05

The nature of the predictive relationship between Miles and Environmental Orientation was expected, and was seen in the previous analysis using the Spearman’s Rank Correlation, but the relationship between Place Identity and Place Dependence was not. The Spearman Rank Correlations in the previous section showed Miles and Environmental Orientation both having positive correlations with the dependent variable, but Place Dependence and Place Identity did not, nor did they have a statistically significant correlation with the dependent variable at all. When controlling for other variables using the regression model, higher scores in Place Dependence predicted lower scores in the dependent variable. In other words, people who were more place dependent were less likely to think that designating Greater Canyonlands a national monument would help protect the natural environment. When controlling for the other variables, higher scores in Place Identity had a positive correlation with the dependent variable. People who were more emotionally attached to the area were more likely to think that

designating Greater Canyonlands a national monument would help protect the natural environment.

In the regression model, the relationship between Miles and the dependent variable shows that people who live farther away are more likely to think that designating the area a national monument would be helpful in protecting the natural environment. Environmental Orientation also had a positive correlation with the dependent variable, which shows that people who are more biocentric also think that designating the area a national monument would help protect the natural environment. Therefore, the statistically significant and positive correlations between Miles and Environmental Orientation continue to support the hypotheses that people who live farther away from the Greater Canyonlands area and people who are more biocentric have more positive attitudes toward the GCNM.

The correlations between Place Dependence and Place Identity with dependent variables were not seen in the Spearman's Rank Correlations. This indicates one or more of the independent variables were suppressing Place Dependence's and Place Identity's correlations with the dependent variable, and the regression model controlled for the suppressor effect as described previously.

Table 20 shows the results of a regression on the dependent variable, "The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated." The model accounted for only .7% of the variance in the dependent variable. The overall regression was not statistically significant: $F = 1.39$, $p = .228$. None of the independent variables were statistically significant predictors of the dependent variable.

Table 20

OLS Regressions of “The Process of Designating the GCNM, the Management of It, and the Land That Would Be Included in It Should Be Agreed upon by All Stakeholders Before It Is Designated” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	4.106	.440	—	.000*
Miles	.000	.000	-.115	.058
Place Dependence	.104	.096	.096	.280
Place Identity	-.035	.092	-.034	.707
Environmental Orientation	-.068	.093	-.044	.470
Motorized	.133	.178	.045	.455
F value	1.390			.228
Adjusted R ²	.007			
N	282			

* indicates findings were statistically significant at or above .05

Even though respondents found this statement the most agreeable (73.7% agreed with the statement), none of the independent variables could explain the variance. The independent variable with nearly statistically significant results (although not significant) was “Miles.” Perhaps if a larger portion of the sample had come from the surrounding communities, the relationship would be stronger? “Miles” had a negative correlation with the dependent variable, which implies that people who live farther away agree less with the statement that there should be unanimous agreement before the GCNM is designated. In the Spearman’s Rank Correlations, analysis displayed a statistically significant correlation between the dependent variable and “Miles.” When controlling for the other independent variables in the regression model (Place Dependence, Place Identity, Environmental Orientation, etc.), the correlation decreased and was no longer statistically significant.

Table 21 shows the results of a regression on the dependent variable, “Local citizens should have more influence in the designation and management of national

Table 21

OLS Regressions of “Local Citizens Should Have More Influence in the Designation and Management of National Monuments” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	4.394	.524	—	.000*
Miles	-7.195E-5	.000	-.035	.561
Place Dependence	.222	.114	.172	.053
Place Identity	-.219	.110	-.178	.046*
Environmental Orientation	-.192	.111	-.106	.084
Motorized	-.038	.212	-.011	.857
F value	1.625		.153	
Adjusted R ²	.011			
N	282			

* indicates findings were statistically significant at or above .05

monuments.” The model accounted for only 1.1 percent of the variance in the dependent variable. The overall regression was not statistically significant: $F = 1.625$, $p = .153$. The independent variable Place Identity was statistically significant ($p = .046$), and Place Dependence was approaching statistical significance at $p = .053$.

Higher scores on Place Identity predicted lower scores on the dependent variable. The relationship indicated people who were more emotionally attached to the area were less likely to think local citizens should have more of an influence in the designation and management of national monuments. Place Dependence was not statistically significant at the $p = .05$ level, but because the correlation is negative and close to statistical significance, it is worth mentioning. Higher scores on Place Dependence predicted higher scores on the dependent variable. In other words, people who depended on the place more for their recreational activity were more likely to agree that local citizens should have more of an influence on the management and designation of national monuments.

Neither of these variables had a statistically significant correlation in the Spearman's Rank Correlations. This suggests that other predictor variables were suppressing the "true" relationship between PI and PD, and the regression controlled for the suppressing effect.

Unexpectedly, Miles did not correlate with the dependent variable. A negative correlation between the Miles and the dependent variable was expected, which would indicate that people who live closer agree that local citizens should have more of an influence in the designation and management of national monuments. If the sample of people who live closer to the ICC were larger, this correlation may have become stronger and statistically significant, but that is only speculation.

Environmental Orientation was statistically significant in the Spearman's Rank Correlations, but when controlling for the other variables in the regression model, that portion of the variance was explained by Place Identity. However, the regression model was largely unable to describe the variance in the dependent variable.

Table 22 shows the results of a regression on the dependent variable, "More national monuments should be established on federal lands." The model accounted for 11 percent of the variance in the dependent variable. The overall regression was statistically significant: $F = 7.989, p < .001$. Two of the five independent variables were statistically significant: Miles $p = .003$ and Environmental Orientation $p < .001$.

Higher scores in Miles predicted higher scores on the dependent variable; simply explained, people who lived farther away from the ICC were more likely to think that there should be more national monuments on federal lands. Higher scores on Environmental Orientation also predicted higher scores on the dependent variable, which

Table 22

OLS Regressions of “More National Monuments Should be Established on Federal Lands” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.441	.473	—	.003*
Miles	.000	.000	.169	.003*
Place Dependence	-.148	.103	-.121	.151
Place Identity	.085	.099	.072	.393
Environmental Orientation	.510	.100	.293	.000*
Motorized	-.082	.192	-.025	.669
F value	7.989			.000*
Adjusted R ²	.110			
N	283			

* indicates findings were statistically significant at or above .05

suggests that people who are more biocentric are more likely to agree that there should be more national monuments on federal lands.

The same two variables were statistically significant in the Spearman Rank Correlations, but when controlling for the other independent variables, Miles and Environmental Orientation became stronger predictors of scores on the dependent variable. The results of this regression model continue to support the hypotheses that people who live farther away and people who are more biocentric have more favorable attitudes toward national monuments than those who live closer and are more anthropocentric.

Table 23 shows the results of a regression on the dependent variable, “The GCNM should be designated.” The model accounted for 11.4% of the variance in the dependent variable. The overall regression was statistically significant: $F = 8.158$, $p < .001$. Similar to what we saw in the last regression model, the same two independent

Table 23

OLS Regressions of “The GCNM Should be Designated” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.452	.439	—	.001*
Miles	.000	.000	.137	.018*
Place Dependence	-.167	.094	-.149	.079
Place Identity	.136	.090	.128	.132
Environmental Orientation	.462	.094	.285	.000*
Motorized	-.304	.175	-.101	.082
F value	8.158			.000*
Adjusted R ²	.114			
N	278			

* indicates findings were statistically significant at or above .05

variables were statistically significant: Miles $p = .018$ and Environmental Orientation $p < .001$.

Both Miles and Environmental Orientation correlated positively with the dependent variable. Miles became a better predictor variable when controlling for the other variables in the regression model. Environmental Orientation stayed the same, but was the strongest predictor variable for scores on the dependent variable. Described plainly, people who were more biocentric were more likely to think the GCNM should be designated. Like the previous regression model, this also supports the same two hypotheses.

Table 24 shows the results of a regression on the dependent variable, “The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor.” The model accounted for only 3.9% of the variance in the dependent variable. The overall regression was statistically significant: $F = 3.381$, $p = .007$. Environmental Orientation was the only statistically significant variable in the regression model: $p = .0$

Table 24

OLS Regressions of “The GCNM Designation Would Enhance the Quality of Outdoor Recreation in the Indian Creek Corridor” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.955	.479	—	.000*
Miles	.000	.000	.094	.115
Place Dependence	-.129	.104	-.108	.218
Place Identity	.087	.100	.076	.386
Environmental Orientation	.329	.101	.195	.001*
Motorized	-.120	.194	-.037	.536
F value	3.381		.007*	
Adjusted R ²	.039			
N	281			

* indicates findings were statistically significant at or above .05

In the Spearman Rank Correlations, Environmental Orientation was the only statistically significant variable as well. Higher scores on Environmental Orientation predicted higher scores on the dependent variable, i.e., people who were more biocentric were more likely to think that designating the GCNM would enhance the quality of outdoor recreation in the area. This supports the hypothesis that people who are more biocentric have more favorable attitudes toward national monuments.

Table 25 shows the results of a regression on the dependent variable, “If the GCNM is designated, it will have a negative impact on the lifestyles of local residents.” The model accounted for only 2.8% of the variance in the dependent variable. The overall regression was statistically significant: $F = 2.610$, $p = .025$. Environmental Orientation was the only statistically significant variable in the regression model: $p < .001$.

Higher scores on Environmental Orientation predicted lower scores on the dependent variable, i.e., people who are more biocentric are less likely to agree that the

Table 25

OLS Regressions of “If the GCNM is Designated, it Will Have a Negative Impact on the Lifestyles of Local Residents” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	3.936	.410	—	.000*
Miles	-1.286E-5	.000	-.008	.894
Place Dependence	.005	.089	.004	.960
Place Identity	.034	.086	.035	.693
Environmental Orientation	-.309	.087	-.216	.000*
Motorized	-.032	.165	-.012	.848
F value	2.610		.025*	
Adjusted R ²	.028			
N	280			

* indicates findings were statistically significant at or above .05

GCNM will negatively affect the lifestyles of local residents. Environmental Orientation was also the only independent variable that had a statistically significant correlation with the dependent variable in the Spearman Rank Correlations.

In Table 26, Environmental Orientation was again the only statistically significant independent variable: $\beta = .197, p = .001$. The regression model only accounted for 4.8% of the variance in the dependent variable, but the regression model was statistically significant: $F = 3.844, p = .002$. Higher scores on Environmental Orientation predicted higher scores on the dependent variable, i.e., people who were more biocentric were more likely to think that the GCNM would stimulate the economies of surrounding communities.

Table 25 and Table 26 both show Environmental Orientation being the only statistically significant predictor of scores on the dependent variable. With the combination of these results, we can see that people who are more biocentric are less likely to think the GCNM will have a negative impact on local citizens and are more

Table 26

OLS Regressions of “The GCNM Would Stimulate the Economies of Surround Communities” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.869	.415	—	.000*
Miles	.000	.000	.083	.161
Place Dependence	-.033	.090	-.032	.713
Place Identity	.099	.087	.100	.253
Environmental Orientation	.288	.088	.197	.001*
Motorized	-.203	.167	-.072	.226
F value	3.844			.002*
Adjusted R ²	.048			
N	281			

* indicates findings were statistically significant at or above .05

likely to think the GCNM will stimulate the economies of surrounding communities. Not only are biocentric people more in favor of national monuments for the purpose of land protection, but they also see national monuments having a positive effect on local residents and surrounding economies.

Discussion of Regression Results on National Monument Statements

All of the regression models were statistically significant except for “The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated” and “Local citizens should have more influence in the designation and management of national monuments.” This study was largely unable to explain the variance in these two dependent variables.

In the Spearman Rank Correlations, Environmental Orientation was the best predictor of scores on the dependent variables, except for the two mentioned above. This supports the hypothesis that people who are more biocentric have more favorable

attitudes toward national monuments. People who were more biocentric were more likely to agree with the following statements: (1) designating the Greater Canyonlands a 'national monument' would be important for protecting the natural environment, (2) more national monuments should be established on federal lands, (3) the GCNM should be established, (4) the GCNM would enhance the quality of outdoor recreation in the Indian Creek Corridor, (5) the GCNM would NOT have a negative impact on the lifestyles of local residents, and (6) the GCNM would stimulate the economies of surrounding communities.

Miles was the next best at predicting scores on the dependent variables. People who lived farther away were more likely to agree with the following statements: (1) designating the Greater Canyonlands a 'national monument' would be important for protecting the natural environment, (2) more national monuments should be established on federal lands, and (3) the GCNM should be established. This supports the hypothesis that people who live farther away have more favorable attitudes toward national monuments and the GCNM than do people who live closer.

There were some strong similarities between the regression models and the Spearman Rank Correlations, and there were also some differences. When controlling for all of the independent variables in the regression models, Place Dependence and Place Identity became statistically significant predictors of two of the dependent variables. Place Dependence and Place Identity became statistically significant predictors of scores on the dependent variable, "Designating Greater Canyonlands a 'national monument' would help protect the natural environment." People with a higher degree of Place Dependence did not think a national monument designation would help protect the

natural environment, but with Place Identity it was the exact opposite: people with higher degrees of Place Identity thought the national monument designation would help protect the natural environment. Place Identity was the only statistically significant predictor of scores on the dependent variable, “Local citizens should have more influence in the designation and management of national monuments.” Respondents with a higher degree of Place Identity felt that local residents should not have more influence in the designation and management of national monuments.

Regression of Management/Threat Statements on Analytic Variables

Table 27 shows the results of a regression on the dependent variable, “There should be fewer regulations on off-road vehicle use in the Greater Canyonlands area.” The model accounted for 7.8% of the variance in the dependent variable. The overall regression was statistically significant: $F = 5.743, p < .001$. Environmental Orientation was the only independent variable that was statistically significant in predicting scores on the dependent variable: $p < .001$.

Environmental Orientation had a negative correlation with the dependent variable, which indicates that people who are more biocentric were more likely to think that there should not be fewer regulations on off-road vehicle use in the Greater Canyonlands area.

The independent variable Motorized was statistically significant in the Spearman Rank Correlations, but Motorized was no longer statistically significant in the regression model.

Table 28 shows the results of a regression on the dependent variable, “Mining for minerals is a major threat to the Greater Canyonlands area.” The model accounted for

Table 27

OLS Regressions of “There Should be Fewer Regulations on Off-Road Vehicle Use in the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	4.160	.486	—	.000*
Miles	-8.941E-5	.000	-.045	.435
Place Dependence	.016	.106	.013	.878
Place Identity	-.029	.102	-.024	.779
Environmental Orientation	-.477	.103	-.272	.000*
Motorized	.291	.197	.086	.140
F value	5.743			.000*
Adjusted R ²	.078			
N	283			

* indicates findings were statistically significant at or above .05

Table 28

OLS Regressions of “Mining for Minerals is a Major Threat to the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.064	.432	—	.014*
Miles	.000	.000	.158	.005*
Place Dependence	.002	.094	.002	.985
Place Identity	.160	.090	.145	.078
Environmental Orientation	.522	.091	.320	.000*
Motorized	-.253	.175	-.081	.149
F value	11.681			.000*
Adjusted R ²	.159			
N	283			

* indicates findings were statistically significant at or above .05

15.9% of the variance in the dependent variable. The overall regression was statistically significant: $F = 11.681$, $p < .001$. Miles ($p = .005$) and Environmental Orientation ($p < .001$) were both statistically significant predictors of scores on the dependent variable.

Miles ($\beta = .158$) and Environmental Orientation ($\beta = .320$) both correlated positively with the dependent variable, which indicates that people who live farther away

and people who are more biocentric are more likely to see mining for minerals as a threat to the Greater Canyonlands area.

Table 29 shows the results of a regression on the dependent variable, “Livestock grazing is a threat to the Greater Canyonlands area.” The model accounted for 7.1% of the variance in the dependent variable. The overall regression was statistically significant: $F = 5.288, p < .001$. Place Dependence ($p = .024$) and Environmental Orientation ($p < .001$) were both statistically significant predictors of scores on the dependent variable, and Place Identity ($p = .055$) was approaching statistical significance.

Environmental Orientation had a positive correlation, and correlated most strongly with the dependent variable, i.e., people who were more biocentric were more likely to think that livestock grazing was a threat to the Greater Canyonlands area. Place Dependence correlated negatively with the dependent variable, i.e., people who are more dependent on the area for their recreational activity were more likely to disagree that livestock grazing is a threat to the Greater Canyonlands area.

Table 30 shows the results of a regression on the dependent variable, “Hunting is a threat to the Greater Canyonlands area.” The model accounted for 6.8 percent of the variance in the dependent variable. The overall regression was statistically significant: $F = 5.058, p < .001$. Miles ($p = .001$) and Environmental Orientation ($p = .002$) were both statistically significant predictors of scores on the dependent variable.

Miles and Environmental Orientation both correlated negatively with the dependent variable. People who lived farther away from the ICC were more likely to

Table 29

OLS Regressions of “Livestock Grazing is a Threat to the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.343	.530	—	.012
Miles	1.548E-5	.000	.007	.901
Place Dependence	-.262	.115	-.194	.024
Place Identity	.213	.111	.166	.055
Environmental Orientation	.459	.112	.241	.000
Motorized	-.297	.217	-.080	.173
F value	5.288			.000
Adjusted R ²	.071			
N	283			

Table 30

OLS Regressions of “Hunting is a Threat to the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	1.336	.477	—	.005
Miles	.000	.000	.203	.001
Place Dependence	-.102	.103	-.085	.323
Place Identity	.099	.099	.086	.320
Environmental Orientation	.313	.101	.185	.002
Motorized	-.120	.192	-.037	.534
F value	5.058			.000
Adjusted R ²	.068			
N	280			

think hunting was a threat to the Greater Canyonlands area, and people who were more biocentric were also more likely to think hunting was a threat to the Greater Canyonlands area.

Table 31 shows the results of a regression on the dependent variable, “Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area.” The model accounted for 14.7% of the variance in the dependent variable.

Table 31

OLS Regressions of “Traditional Energy Development (Drilling for Oil and Gas) Should Still be Allowed in the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	4.946	.520	—	.000
Miles	.000	.000	-.151	.007
Place Dependence	.115	.113	.083	.312
Place Identity	-.205	.109	-.156	.061
Environmental Orientation	-.563	.110	-.289	.000
Motorized	.564	.211	.150	.008
F value	10.696			.000
Adjusted R ²	.147			
N	283			

dependent variable. The overall regression was statistically significant: $F = 10.696$, $p < .001$. Miles ($p = .007$), Environmental Orientation ($p < .001$), and Motorized ($p = .008$) were all statistically significant predictors of scores on the dependent variable

Miles and Environmental Orientation both correlated positively with the dependent variable, and Motorized had a negative correlation with the dependent variable. People who lived farther away and people who were biocentric were more likely to disagree that traditional energy development should take place in the Greater Canyonlands area. People who participated in motorized recreation on their visit to the ICC were more likely to think that traditional energy development should still take place in the Greater Canyonlands area.

Table 32 shows the results of a regression on the dependent variable, “Alternative energy development (solar and wind) should take place in the Greater Canyonlands area.” The model only accounted for .4 percent of the variance in the dependent variable. The

Table 32

OLS Regressions of “Alternative Energy Development (Solar and Wind) Should Take Place in the Greater Canyonlands Area” on Analytic Variables

Variables	Unstandardized coefficients		Standardized coefficients	
	b	SE	β	Sig.
Constant	2.867	.545	—	.000
Miles	-8.224E-5	.000	-.039	.522
Place Dependence	.001	.119	.001	.990
Place Identity	-.115	.114	-.090	.314
Environmental Orientation	.204	.116	.108	.078
Motorized	.302	.221	.083	.172
F value	1.208		.306	
Adjusted R ²	.004			
N	283			

overall regression was not statistically significant: $F = 1.208$, $p = .306$. None of the independent variables could account for the variance in the dependent variable.

Discussion of Regression Results on Management/Threat Statements

In the regression models on national monument statements, Environmental Orientation was the best predictor of outcomes in the dependent variables. This was also the case in the management/threat statements. The dependent variable, “Alternative energy development (solar and wind) should take place in the Greater Canyonlands area” was the only dependent variable that could not be partially explained by the independent variables. Miles was the next best predictor of scores on the dependent variables, and Motorized explained a portion of the variance on the dependent variable, “Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area.”

People who were more biocentric were more likely to disagree with the statements (1) there should be fewer regulations on off-road vehicle use in the Greater

Canyonlands area, and (2) traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area”; and were more likely to agree that (3) mining, (4) livestock grazing, and (5) hunting are all threats to the Greater Canyonlands area. People who lived farther away were more likely to see (1) mining and (2) hunting as threats to the Greater Canyonlands area, and were more likely to disagree that (3) traditional energy development should still take place in the Greater Canyonlands area.

People who participated in motorized recreation on their visit to the ICC were more likely to think that traditional energy development should still be allowed in the Greater Canyonlands area.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter will discuss the major findings of this study, and also discuss the hypotheses concerning residential proximity, place dependence, place identity, environmental attitudes, and recreational activity type.

Visitors' Attitudes Toward the Greater Canyonlands National Monument and the Management of the Greater Canyonlands Area

There was a high level of agreement among visitors that designating the Greater Canyonlands area a national monument would be important for protecting the natural environment. However, visitors were highly unsure if the GCNM should be designated. The GCNM could be designated very quickly via executive order—just as President Clinton designated the Grand Staircase-Escalante National Monument—but the highest amount of agreement among visitors was that if the GCNM is going to be designated, there should be agreement among stakeholders over the decision-making process, the land that would be included in it, and the management of it before it is designated. There was also a high level of agreement that local citizens should play a larger role in the designation and management of national monuments.

Half of the visitors interviewed thought there should be more national monuments on federal lands. Visitors were mostly unsure what impacts designating the GCNM would have on surrounding communities, and they were also unsure what impacts designating the GCNM would have on their recreational experience in the Greater Canyonlands area.

In regards to management of the Greater Canyonlands area, visitors felt most strongly about off-road vehicle use, mining, and traditional energy development. Visitors highly agreed that there should not be fewer regulations on off-road vehicle use. Mining for minerals in the Greater Canyonlands area was viewed as a major threat to the Greater Canyonlands area by visitors, and visitors disagreed that traditional energy development should still be allowed in the Greater Canyonlands area.

**Influence of Residential Proximity on Attitudes Toward the Proposed
Greater Canyonlands National Monument and Management
of the Greater Canyonlands Area**

Past research has found that people who live farther away from a protected area are more in favor of it because they are less affected by its restrictions, and they are more opposed to the area's degradation (Badola, 1998; Bonaiuto et al., 2002; Heinen, 1993; Ite, 1996; Mehta & Heinen, 2001; Mkanda & Munthali, 1994). In contrast, many researchers have found negative attitudes toward protected areas from the area's residents because of losses in traditional land use and the restrictions that come with the protected area (Allendorf, 2007; de Boer & Baquete, 1998; Gillingham & Lee, 1999; Heinen, 1993; Hough, 1988; Maikhuri et al, 2000; Nepal & Weber, 1995; Parry & Campbell, 1992; Straede & Helles, 2000; Studsrod & Wegge, 1995; Tisdell, 1995). To test if this were the case with visiting recreationists, two hypotheses were tested:

H₁: People who live farther away from the ICC are more in favor of designating the GCNM.

H₂: People who live farther away from the ICC see land uses such as off-road vehicle use, livestock grazing, hunting, mining, and energy development as bigger threats to the Greater Canyonlands area than people who live closer.

Results from the Spearman Rank Correlations and the OLS Regression models supported the hypothesis that people who live farther from the ICC are more in favor of designating the GCNM. People who lived farther away were more likely to think that designating the GCNM would be important for protecting the Greater Canyonlands area. People who live farther away from the ICC also thought that the GCNM should be designated.

Rudzitis and Johansen (1991) found generally positive attitudes toward protected areas in people who lived in counties that contained designated protected areas across the United States, but their study did not include counties in southeastern Utah. Durrant and Shumway (2004) found that people living in southeastern Utah had highly negative attitudes toward protected areas. The results from this study also showed that the farther a visitor traveled from outside of southeastern Utah, the more likely they were to think more national monuments should be established on federal lands. This supports the contrasting results between the two studies (i.e., Durrant & Shumway, 2004; Rudzitis & Johansen, 1991), and supports the notion that people who live in the region outside of southeastern Utah (e.g., western and central Colorado—remember, this study was unable to capture residents living in the communities surrounding the proposed GCNM) have generally more negative attitudes toward protected areas than the rest of the United States.

Results from the Spearman Rank Correlations and the OLS Regression models also support the hypothesis that people who live farther away from the proposed GCNM are more opposed to land uses that have an impact on landscapes. The land uses identified in this study have both traditional and economic importance to the people of southeastern Utah. People who live farther away from the ICC saw mining for minerals and hunting as threats to the Greater Canyonlands area, and were more likely to think that traditional energy development should no longer be allowed in Greater Canyonlands. There were no statistically significant relationships between how far a respondent lived from the ICC and attitudes toward off-road vehicle use, livestock grazing, and alternative energy development.

**Influence of Place Dependence and Place Identity on Attitudes Toward
the Proposed Greater Canyonlands National Monument and
Management of the Greater Canyonlands Area**

Consistent with past research (Backlund & Williams, 2004; White et al., 2008; Williams & Patterson, 1999) and the hypothesis, there was a positive relationship between prior experience and place identity and place dependence. Place dependence had a weaker relationship with prior experience, which was expected given that place dependence is a utilitarian use of the place that can develop in a very short amount of time. Place identity, however, had a stronger relationship with prior experience, which is exactly what was expected because of the time it takes to build a deeper emotional attachment with the *place*.

There was also strong support for the hypothesis that there is a relationship between place dependence and place identity. Moore and Graefe (1994) suggested that place dependence can lead to place identity because of the visitor's extensive interaction with the place. Data from this study presented a very strong relationship between place dependence and place identity, which supports the argument that place dependence can lead to place identity.

There was also support for the hypothesis that people who live closer to the *place* will be more attached to it than people who live farther away; however, there were differences in place identity and place dependence. Data support that people who live closer to the ICC have higher degrees of place identity, which supports the findings by Bonaiuto et al. (2002) that people who live closer, or who actually live in the *place*, have more of an emotional attachment to it. There was no evidence to support that people who live closer also have higher degrees of place dependence.

When attempting to find relationships between place dependence/place identity and attitudes toward the GCNM, no statistically significant relationships were found when using the Spearman Rank Correlation. However, when controlling for the other independent variables using the OLS regression models, there were some statistically significant relationships. The relationships between dependent variables and place dependence and place identity were exactly opposite. For example, people who had higher degrees of *place dependence* were less likely to agree that designating the GCNM would help protect the natural environment. In contrast, people with higher degrees of *place identity* were more likely to think that designating the GCNM would help protect the natural environment. Furthermore, people with higher degrees of *place dependence*

were more likely to think that local residents should have more of an influence in the designation and management of national monuments, and people with higher degrees of *place identity* thought that local residents should have less influence.

Kyle et al. (2004) found that people with higher degrees of place identity were more critical of environmental conditions, and perceived the effects of social crowding more negatively. The data from this study showed that people with higher degrees of *place identity* thought designating the GCNM would protect the natural environment, and that local citizens should have less of an influence in the designation and management of national monuments. Kyle et al. (2004) found the people with higher degrees of place dependence were less critical of environmental conditions and were not as affected by social crowding. The data from this study showed that people with higher degrees of *place dependence* were less likely to think that designating the GCNM would help protect the natural environment, and were more likely to think local residents should have more of an influence in the designation and management of national monuments.

Bonaiuto et al. (2002) found that people who lived in a natural protected area had higher degrees of place attachment and had negative attitudes toward natural protected areas. Results from this study show that people who were more dependent on the place (i.e., place dependence) were less likely to think that designating the GCNM would protect the natural environment, and thought local citizens should have more of an influence in the designation and management of national monuments. However, people who had a stronger emotional attachment to the area (i.e., place identity) were more likely to think designating the GCNM would protect the natural environment, and they

were less likely to think local residents should have more influence in the designation and management of national monuments.

Overall, the contrasting relationships of place identity and place dependence with the dependent variables were consistent with the findings of Kyle et al. (2004). Bonaiuto et al. (2002) used the variable “place attachment” which was defined as “the affective relation or emotional bonds that people have with a place” (p. 636). This definition for place attachment is closely related to the variable used in this study—*place identity*; however, the finding of the variable *place dependence* are more consistent with the findings seen by Bonaiuto et al. (2002). What is obvious is that emotional nature of place identity and utilitarian nature of place dependence affect the way people perceive places differently.

This study hypothesized that visitors with higher degrees of place attachment would have negative attitudes toward land uses that have a high impact on the landscape. In the Spearman Rank Correlations, mining was the only land use that had a statistically significant relationship with place dependence/identity. Visitors with higher degrees of place identity and place dependence were more likely to agree that mining was a major threat to the Greater Canyonlands area. However, when controlling for other variables in the OLS regression models, this relationship was no longer statistically significant. Out of the independent variables, Miles and Environmental Orientation accounted for the majority of the variance in the dependent variable “Mining.” In the OLS regression, place dependence did have a statistically significant relationship with livestock grazing. People who were more dependent on the place (i.e., place dependence) were less likely to think livestock grazing was a threat to the Greater Canyonlands area. In contrast, people who

had a stronger emotional attachment (i.e., place identity) were more likely to think livestock grazing is a threat (note: the relationship between place identity and livestock grazing was only approaching statistical significance at $p=.055$).

The relationships between place dependence/identity are interesting given their contrasting nature; however, their relationships with the dependent variables are generally weak and do not account for a large portion of the dependent variables' variance. More research is needed to better understand the nature of place dependence/place identities' relationship with attitudes toward protected areas. In this study, other independent variables such as Miles and Environmental Orientation are much better predictors of scores on dependent variables, and account for much more variance in attitudes.

Influence of Environmental Orientation on Attitudes Toward the Proposed Greater Canyonlands National Monument and Management of the Greater Canyonlands Area

Past research has shown that people who have been part of environmental interest groups have scored higher on the NEP than the general public (Edgell & Nowell, 1989; Pierce et al., 1992; Widegren, 1998). In addition, researchers have found connections between higher scores on the NEP and “environmentally friendly” behaviors like purchasing products that are conservation-related and/or have Kind-to-Nature attributes (Ebreo et al., 1999) and recycling (Ebreo et al., 1999; Schultz & Oskamp, 1996). Therefore, this study hypothesized that higher scores on the NEP would also predict more favorable attitudes toward the GCNM, and less favorable attitudes toward land uses that

have impacts on landscapes. Results from the Spearman Rank Correlations and the OLS regression models support both of these hypotheses. NEP scores were the best predictors of both attitudes toward the GCNM and attitudes toward management, and NEP scores also accounted for the largest portion of the variance in the dependent variables.

Respondents who scored higher on the NEP (i.e., were more biocentric) were more likely to agree with the following statements: (1) designating the GCNM would be important for protecting the natural environment, (2) more national monuments should be established on federal lands, and (3) the GCNM should be designated. Not only did individuals with a biocentric orientation have strong attitudes toward the GCNM, they also had strong attitudes toward the impacts the GCNM would have on recreation and local residents. For example, people who were more biocentric were more likely to think that (4) designating the GCNM would enhance the quality of outdoor recreation in the area, (5) the GCNM would stimulate the economies of surrounding communities, and (6) they disagreed that the GCNM would have a negative impact on local residents.

Results from the Spearman Rank Correlations and the OLS regression models also support the hypothesis that individuals with higher scores on the NEP will be more critical of land uses that have impacts to the natural landscape. People who were more biocentric were more likely to disagree that (1) that there should be fewer restrictions on off-road vehicle use and (2) traditional energy development should still be allowed in the Greater Canyonlands area. In addition, people who were more biocentric were more likely to agree that (3) mining for minerals, (4) livestock grazing, and (5) hunting were all threats to the Greater Canyonlands area.

**Influence of Motorized Recreation on Attitudes Toward the Proposed
Greater Canyonlands National Monument and Management
of the Greater Canyonlands Area**

Past research has shown that negative attitudes can be related to the perceived impacts a protected area has, or might have (Akama et al., 1995; de Boer & Baquete, 1998; Heinen, 1993; Ite, 1996; Lehmkuhl et al., 1988; Newmark et al., 1993; Oil et al., 1994; Sekhar, 1998). Given several off-road vehicle groups are taking measures to generate opposition (e.g., petitioning) to the GCNM designation, this study hypothesized that off-highway vehicle users would have less favorable attitudes toward the proposed GCNM. Results from the Spearman Rank Correlation did show some weak support for this, however when controlling for the other independent variables in the OLS regression models, there were no longer any statistically significant correlations. Results from this study do not support the hypothesis that motorized and non-motorized recreationists have different attitudes toward the GCNM.

When examining the relationships between motorized and non-motorized recreationists' attitudes towards the management of the Greater Canyonlands area, there were some statistically significant relationships. Although, again, when controlling for other independent variables in the OLS regression models, the independent variable Motorized was only a statistically significant predictor of scores on the dependent variable, "Traditional energy development should still be allowed in the Greater Canyonlands area." People who participated in motorized recreation on their visit to the ICC were more likely to think that traditional energy development should still be allowed in the Greater Canyonlands area.

CHAPTER 6

IMPLICATIONS AND SUGGESTIONS

Many researchers have stated if a protected area is going to be successful over the long-term, the management of the protected area must incorporate the values and concerns of the local residents (Brandon & Wells, 1992; Dasmann, 1984; Fiallo & Jacobson, 1995; Furze, de Lacy, & Birckhead, 1996; Machlis & Tichnell, 1985; Newmark et al., 1993; Zube, 1986;). In alignment with this, Rudzitis and Johansen (1991) recommended that if public land management “agencies do not embrace the values of the public, conflicts surely will increase, and both the public and agencies will be worse off.”

The social environment around the GCNM is complex. It is hard to know how to “embrace the values of the public” when the public’s values and attitudes toward management decision are very diverse. There are a variety of variables that influence people’s attitudes, and this study found that the number of miles a person lived from the ICC and a person’s environmental orientation were good predictors of attitudes toward the GCNM and management of the Greater Canyonlands area, but a large portion of the variance in people’s attitudes was left unexplained by the independent variables. Overall, this study found a lot of agreement among visitors that designating the Greater Canyonlands area a national monument would be important for protecting the natural environment. However, visitors were mostly unsure whether or not the GCNM should be designated. The GCNM could be designated very quickly via public proclamation—just as President Clinton designated the Grand Staircase-Escalante National Monument—but

the highest amount of agreement among visitors was that if the GCNM is going to be designated, stakeholders should agree over the decision-making process, the land that would be included in it, and the management of it before it is designated. Given these findings, it is recommended that if decision makers pursue the GCNM, they do it by implementing a planning process that takes a collaborative approach before any decisions are made.

There is a lot of support for protected area designations in southeastern Utah, but there is also a lot of opposition. Conflicts around large-scale management decisions, like designating protected areas, are costly. There are not only monetary costs in lengthy legal battles, but there are emotional and efficiency costs as well. The more hostility there is toward a federal land management agency, the harder it is for the agency to implement management actions and receive compliance with new regulations. It is also harder for agency personnel living in local communities.

Tainter and Patzek (2012) said that it is human nature to respond to conflict with complexity, and when a system takes on more complexity it increases costs. The 1996 designation of the Grand Staircase-Escalante National Monument (GSENM) in southeastern Utah is an example of the conflict-complexity-cost relationship. When the monument was designated, President Clinton signed the document on the south rim of the Grand Canyon outside of the state of Utah, perhaps because both he and Secretary of Interior Bruce Babbitt knew it was extremely controversial. Citizens from local communities that surrounded the newly designated GSENM burned effigies of President Clinton for his decision (Brooke, 1996). Since its designation, the GSENM has been a major source of contention in Utah, and it is frequently mentioned when Utah

representatives are voicing their opposition toward the GCNM proposal. There have been multiple attempts to remove the GSENM. The most recent example was House Bill 148—Utah’s Transfer of Public Lands Act—which is an attempt to transfer 20 million acres of federal land to the state of Utah. This transfer would include the GSENM. There is now a large amount of background activity in the legality of HB 148, and researchers are examining the economic impacts HB 148 would have if it were to pass.

What should be done with Greater Canyonlands? We know there are differing views over protected areas and management decisions in the region, in the nation, and among the people who visit the area for recreation. We also know that heavy-handed management decisions in southeastern Utah—like Grand Staircase-Escalante National Monument and a variety of WSAs—are met with a great deal of local dissatisfaction, and the conflict around these decisions are still increasing costs and making management difficult for agencies and agency personnel. Therefore, if pursuing an increase in the protection of federal lands, the goal should be to do it in a way that minimizes conflict and increase the acceptance of any decision that is made.

The collaborative approach incorporates a very important component known as *Procedural Justice*. Procedural justice is based on the hypothesis that participants in a decision-making process are more satisfied with the end result when the process in which the decision was made is perceived as fair (Lawrence et al., 1997). To create a plan that is seen as acceptable, the focus should be on creating a fair process. There are two key elements that define a fair process: (1) participants must have the opportunity to express their views (Lind & Tyler, 1988; Thibaut & Walker, 1975; Tyler, Rasinski, & McGraw, 1985), and (2) participants must receive quality feedback and explanations for decisions

(Folger & Martin, 1986). In the end, if the process is perceived as fair, there are higher levels of acceptance and compliance with the final outcome (Gibson, 1989; Tyler, 1987).

Even if a good, thorough plan is created for the GCNM, if the process in which the plan was conceived is not perceived as fair, there is a great chance that it will be met with great dissatisfaction. The concept of procedural justice could largely account for the objection of the GSENM. The process in which the monument was designated lacked the involvement of the communities, and local residents had little to no knowledge of the monument before it was designated. Therefore, if the stakeholders involved in the GCNM are included in the decision-making process, and they view the planning process as fair, there could be a high amount of acceptance for the GCNM.

In addition to the planning process, the conflict around the GSENM could also be attributed to the fact that it largely sided with biocentric values. As seen in this study, the best predictor of attitudes toward the GCNM and the management of the Greater Canyonlands area was environmental orientation. To reach a higher level of agreement on the GCNM, it seems reasonable to assume that if the overall decision incorporated aspects that sided with both anthropocentric and biocentric orientations, there would be more acceptance.

One recent example of a planning process that incorporated aspects of procedural justice and the spectrum of environmental orientations was the Washington County Lands Bill (WCLB). This WCLB is a combination of 170 separate bills, and its aim was to create a “clear land-use policy [that is] supported by environmental activists, developers, recreationalists, miners and local officials” (Canham, 2009). Before the bill

was signed by President Obama in the spring of 2009, Rep. Bob Bennett, sponsor of the bill, said:

Parties on all sides of this debate have repeatedly told me it would be impossible to broker a deal on this emotional issue which, for decades, has caused people to dig in their heels. The persistence we've applied now appears to be paying off as our bill has gained extremely diverse support and a very good chance of passing. (Hendershott, 2008)

The bill took five years to pass, and included many revisions. This bill largely put an end to the contentious atmosphere around land use and planning in southwestern Utah, and the inclusive nature of the planning process has been accredited to the bill's success (see WCLB, 2009 in references for a link to the full WCLB).

For the GCNM designation to be widely supported among Indian Creek visitors and others, policy makers should consider an approach that incorporates the components of procedural justice. The decision should also appease the spectrum of environmental orientations just as the Washington County Lands Bill did. Utah residents of Emery County, Grand County, and San Juan County have been in the process of collaborating with stakeholders to create lands bills similar to the Washington County Lands Bill. It is important to remember that 83.1% of respondents said that if the GCNM were designated, it should be managed at the state and/or federal level. Even though Indian Creek visitors expressed very high agreement that there should be collaboration between stakeholders before the GCNM is designated, the majority of visitors did want the state and/or federal levels of government to manage the Greater Canyonlands area.

Future research on this topic should focus on gaining more information from visitors and local residents. The geographical scope of the research should be expanded to include more areas within the proposed GCNM, and it should also be expanded into the

region outside of the proposed GCNM to include surrounding communities. Research foci should also be on attitudes toward decision making procedures and management preferences, and it should explore areas/topics that might be viable avenues for compromise in order to reach general consensus based on procedural justice. This information would be very useful in the decision-making process because it is incorporating the ideas and values of a diverse public who all have stake in the Greater Canyonlands area. It would also be valuable because it would provide insight to what the decision-making process should look like, what visitors' and local residents' management preferences are, and it could provide ideas about where compromises could be made.

Public land management agencies, in regards to large management decisions, will never escape conflict. Therefore, it should be their goal to minimize conflict so it does not reach a point where management objectives are unreachable. Given the long history of public land conflict in southeastern Utah, the quick designation of the GCNM could be a catalyst for even more conflict. Based on this, it is recommended that President Obama not designate the GCNM quickly using the presidential authority of the Antiquities Act of 1906. Instead, a better approach would be to include stakeholders in a transparent planning process that was focused on reaching compromises that reflected the diverse uses and values that are strongly tied to the southeastern Utah landscape.

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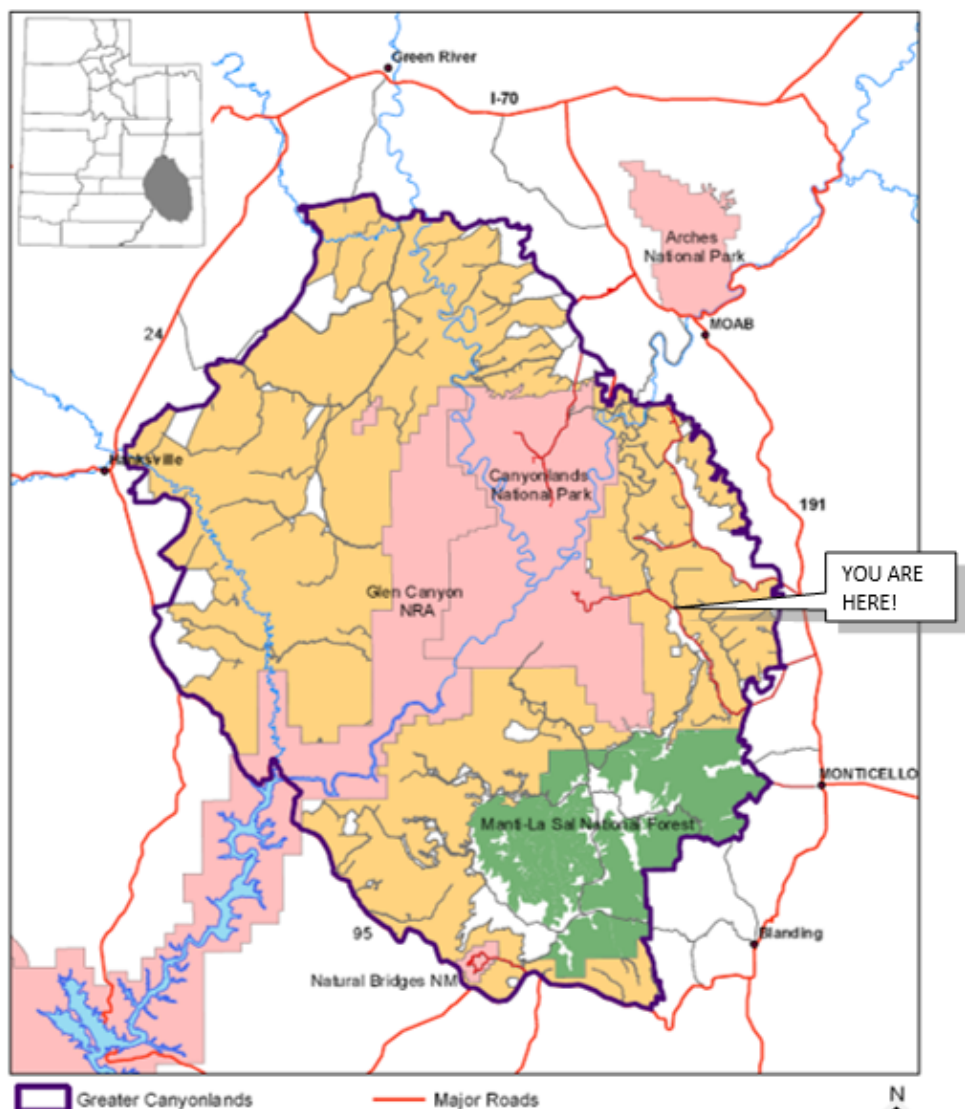
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APPENDIX


SURVEY COVER PAGE AND SURVEY INSTRUMENT

2013 INDIAN CREEK CORRIDOR SURVEY



Hello! I'm from Utah State University, and we are conducting a survey of visitors to this area. If you are willing, we would like to ask you a few questions. All of the information that you provide will only be used for this research, and all answers will be kept confidential. Are you willing to participate in this survey?

 If yes, please continue the survey.

 If no, please return the form to the surveyor.

Date: _____	Day: M Tu W Th F S Su
Time: _____	Location: _____

1. Where are you from? (city, state, **OR** country):

2. What is your zip code? _____

3. Is this the first time you have visited the Indian Creek Corridor? Yes No

If Yes, skip to question 6.

4. Approximately, how many years have you been visiting the Indian Creek Corridor?

1-2 years

10-20 years

3-5 years

more than 20 years

6-10 years

5. How many times do you visit the Indian Creek Corridor in a typical year? _____

6. Please check all of the activities that you plan on participating in during this trip to Indian Creek?

Rock Climbing

Scenic Driving for pleasure

Hiking/walking

Camping

Sightseeing (historical/natural features/etc)

Bicycling

ATV riding or other off-highway vehicle riding

Not recreating in the Indian Creek Corridor

Photography

Other _____

7. Of the activities you checked above, which is the **main** activity you will be participating in while in Indian Creek?

The Indian Creek Corridor is an area that is included in the proposed Greater Canyonlands National Monument (GCNM). The Antiquities Act of 1906 gives the President the ability to proclaim national monuments on federal land. The purpose of national monuments are to protect federal land and its resources from activities that may be damaging. We now want to ask you a few questions regarding the designation of the Greater Canyonlands National Monument. (The laminated page has a map of the proposed GCNM).

8. Before now, have you heard of the Greater Canyonlands National Monument proposal? **YES** or **NO** (circle one)

9. Have you visited a National Monument before? **YES NO UNSURE** (circle one).

If so, which

one(s)? _____

10. The following questions are intended for you to express your attitudes toward the GCNM. There are NO 'right' answers, so please answer all questions in line with how you feel.

*Greater Canyonlands National Monument=GCNM	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
A. Designating Greater Canyonlands a 'national monument' would be important for protecting the natural environment	1	2	3	4	5
B. The process of designating the GCNM, the management of it, and the land that would be included in it should be agreed upon by all stakeholders before it is designated	1	2	3	4	5
C. Local citizens should have more influence in the designation and management of national monuments	1	2	3	4	5
D. More national monuments should be established on federal lands	1	2	3	4	5
E. The GCNM should be designated	1	2	3	4	5
F. The GCNM designation would enhance the quality of outdoor recreation in the Indian Creek Corridor	1	2	3	4	5
G. If the GCNM is designated, it will have a negative impact on the lifestyles of local residents	1	2	3	4	5
H. The GCNM would stimulate the economies of surrounding communities	1	2	3	4	5

11. The following questions are intended to help us understand how you feel about the management of Greater Canyonlands.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
A. There should be less regulations on off-road vehicle use in the Greater Canyonlands area	1	2	3	4	5
B. Mining for minerals is a major threat to the Greater Canyonlands area	1	2	3	4	5
C. Livestock grazing is a threat to the Greater Canyonlands area	1	2	3	4	5
D. Hunting is a threat to the Greater Canyonlands area	1	2	3	4	5
E. Traditional energy development (drilling for oil and gas) should still be allowed in the Greater Canyonlands area	1	2	3	4	5
F. Alternative energy development (solar and wind) should take place in the Greater Canyonlands area	1	2	3	4	5

12. The following questions are intended to help us understand how you view the natural environment. There are NO 'right' answers, so PLEASE just tell us how you feel.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
A. The balance of nature is very delicate and easily upset	1	2	3	4	5
B. People must live in harmony with nature in order to survive	1	2	3	4	5
C. Pollution is personally affecting my life	1	2	3	4	5
D. Courses focusing on conservation of natural resources should be taught in public schools	1	2	3	4	5
E. The balance of nature is strong enough to cope with the impacts of modern industrial nations	1	2	3	4	5
F. Human ingenuity will insure that we do NOT make the Earth unlivable	1	2	3	4	5

13. Please answer the following questions in regards to the place(s) you like to recreate in while visiting the Indian Creek Corridor.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
A. This area is the best place for what I like to do	1	2	3	4	5
B. I get more satisfaction out of visiting this place than any other	1	2	3	4	5
C. I would not substitute any other area for doing what I do here	1	2	3	4	5
D. No other place can compare to this area	1	2	3	4	5
E. I think often about coming here	1	2	3	4	5
F. I am very attached to this place	1	2	3	4	5
G. I identify strongly with this place	1	2	3	4	5
H. I feel like this place is a part of me	1	2	3	4	5

14. If the Greater Canyonlands National Monument is designated, what level of government do you think should manage it? County State Federal or other_____

15. What is your gender?

- Male
 Female

16. In what year were you born? _____

17. What is the highest level of formal education that you have completed?

- Less than a high school degree
 High school degree or GED
 Some college
 2 year technical or associate degree
 4 year college degree (BA/BS)
 Advanced degree (e.g., Master's, JD, MD, DO, Ph.D.)

18. Which of the following best describes where you grew up?

- Rural
Small Town (under 10,000)
City or Suburb of a City (under 200,000)
Large Metropolitan Area (greater than 200,000)

19. Political affiliation? Democrat Republican Independent or
Other _____

Do you have any additional comments or concerns about issues regarding the management or development of this area? Please use the space below to write down additional comments.