

ACTIVITY INVOLVEMENT AND PLACE ATTACHMENT OF FISH GIGGERS IN  
THE MISSOURI OZARKS

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By

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THE MISSOURI OZARKS

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# FISH GIGGERS IN THE MISSOURI OZARKS

## ABSTRACT

Despite being an integral part of Ozark culture for nearly 200 years, little is known about fish gigging and those who participate in this activity. A mail-back survey was administered to 1,011 licensed Missouri anglers who lived in one of seven zip codes adjacent to the Current and Jacks Fork Rivers. These rivers comprise the Ozark National Scenic Riverways (ONSR) and also represent prime locations for this fishing activity. The questionnaire measured demographics, activity style/preference, activity involvement (AI), place attachment (PA), and favorite fishing locations. A total of 404 fish giggers completed the survey, resulting in a 39.7% response rate. The purposes of this study were to obtain baseline information about fish giggers in the Missouri Ozarks, evaluate the efficacy of competing AI and PA scales, and interpret giggers' AI and PA scores in light of activity style/preference groupings. Interpretation of confirmatory factor analysis fit statistics suggested that further evaluation and refinement of the AI and PA scales is needed. Descriptive statistics and hypotheses tests both supported and contradicted previous research, suggesting that fish giggers are a unique segment of the angling population in Missouri. The nature of responses emphasized the importance of fish gigging and the ONSR to support meaningful social relationships. Furthermore, these findings lend support for using market segmentation techniques to evaluate recreational anglers. Managerial implications are discussed for state and federal resource management agencies.

## CHAPTER I

### Introduction

The “Ozarks” is a toponym thought to originate from the French abbreviation “aux Arks” meaning “toward Arkansas” (Stewart, 1967). This geographic term is often used to reference a highland region in the central United States, along with the culture of its settlers (Rafferty, 1985; USDA, 1999). Although no official boundaries exist, the Ozarks commonly refer to the area contained within the Mississippi River on the east, the Missouri River on the north, a line of Pennsylvanian era rocks to the west, and the Grand River on the southwest (Rafferty, 1985).

Spring-fed streams within the Ozarks provide outdoor enthusiasts with an ideal setting to participate in various water sports. Fishing is one of the most common activities. This study focused on sucker gigging, an activity that takes place during the fall and winter seasons. Gigging refers to the primitive technique of impaling fish with a metal prong attached to the end of a long pole (Everts-Boehm, 1996). It is an activity that is typically done at night using a johnboat outfitted with a gasoline powered engine and halogen lights. It is also performed within a social context. On a typical trip, roles of participation include a boat operator, giggers, and those preparing the catch for the impending fish fry. Targeted species include bottom dwelling “rough” fishes, namely the northern hogsucker (*Hypentelium nigricans*) and yellow sucker (*Moxostoma erythrurum*). Suckers are often located in the natural convergence of pools, riffles, steady currents, and rocky bottoms of Ozark streams (Harlan, Speaker, & Mayhew, 1987).

Species in the sucker family (*Catostomidae*) are soft-rayed fish with “toothless jaws, scaleless heads, smooth-edged cycloid scales, forked caudal fin, and a single,

continuous, fleshy dorsal fin” (Harlan et al., 1987). Their mouth is located on the underside of the head and is characterized by protrusive lips (Banister, 1998). Food sources, which include aquatic insects, small mollusks, algae, detritus, and minute crustaceans, are ingested through the mouth and then crushed by pharyngeal teeth located in the throat (Banister, 1998; Harlan et al., 1987). The suckers’ ability to utilize multiple senses (sight, touch, and taste) to locate potential food sources make them less susceptible to “hook and line” methods of angling, thus resulting in high population densities in some Ozark streams (Harlan et al., 1987).

The origin of fish gigging in the Ozarks is unclear based on limited historical evidence (Everts-Boehm, 1996; Hastings, 2008). The Osage Indians were the dominant tribe in the Ozarks prior to Euro-American settlement in the early 1800’s, but they did not fish or use the region’s rivers for travel (Sarvis, 2002). Instead, the Osage were dependent on hunting and agriculture for their food sources, and relied on horses for transportation (Rafferty, 1980). Additionally, no archaeological evidence indicates that gigging occurred in the area prior to this time period. This seems to suggest that Euro-American settlers were either self-taught fish giggers or acquired this skill from Indian tribes in the eastern United States prior to translocation (Bilger, 2000; Everts-Boehm, 1996; Hastings, 2008). According to Bilger (2000), Native Americans taught the early settlers some “primitive” fishing techniques, such as barehanded “guddling”, clubbing, and harpooning. Although sucker gigging was not mentioned, specifically, its adoption during this time period is possible.

Regardless of origin, by the mid-1800’s fish gigging in the Ozarks was commonly practiced by the Scott-Irish who dominated the region (Everts-Boehm, 1996).

The Scott-Irish were known to be resourceful people, whose culture was centered on subsistence farming, fishing, hunting, and gathering practices (Hastings, 2008; Price, 1991). Subsistence living was necessary for survival in an isolated, resource impoverished area. This independence promoted a way of life that placed little value on affairs occurring outside the region (Rafferty, 1980). One of the ways the Scott-Irish demonstrated this resourcefulness was through the use of a gig, which had been used primarily for hunting frogs and small game in southern Appalachia (Everts-Boehm, 1996). By the late 1800's, giggers had incorporated the use of flat-bottomed, wooden boats equipped with jack pine-fueled fire baskets to improve visibility at night (Everts-Boehm, 1991; Jenkins, 2008). Suckers are often spooked in the daylight, hence giggers prefer to fish at night.

During the early 1900's, fish gigging, or "fire fishing" as it was also known, saw a boom in popularity when many area lumber mills closed due to timber over-harvest (Hastings, 2008). Hundreds of men throughout the region suddenly found themselves without work and, as a result, many began practicing gigging as a means to provide for their families. Proficient giggers were able to harvest large quantities of fish in a relatively short time period. However, in 1937, Missouri's newly formed conservation agency outlawed fish gigging in an effort to protect game fish from being speared—either accidentally or on purpose (Fleener, 1974). This action caused giggers in the Ozarks to form fishing clubs and associations aimed at getting the ban repealed (Evert-Boehm, 1996). Although the sport was reinstated, it was relegated to a three-month fall and winter season to avoid conflict with rod and reel anglers. However, fish gigging continued to be a controversial practice and policies changed frequently (Fleener, 1974).

Currently, the fish gigging season on Missouri streams extends from September 15th to January 31<sup>st</sup>. Giggers are allowed to take up to 20 non-game fish per day, but cannot possess more than 40 at any given time. A valid fishing license is necessary to gig fish in Missouri, no special tag or stamp is required.

In the summer of 1964, the federal government established 134 miles of the Current and Jacks Fork rivers and 80,000 acres of adjacent lands as the Ozark National Scenic Riverways (ONSR) (Sarvis, 2002). This unit of the National Park Service (NPS) was created in the heart of fish gigging country—Shannon and Carter counties, Missouri. Although state officials supported ONSR in southern Missouri, some local citizens were opposed to federal intervention (Sarvis, 2002). One of the most controversial issues was land acquisition through eminent domain. This process resulted in low land valuations, causing the region's inhabitants to harbor negative feelings toward the NPS. The ensuing years have witnessed controversies over “canoe rental concessions, motorboat horsepower limitations, legalities of trapping game in the park, overcrowding, and disruptive and disrespectful visitors” (Sarvis, 2002). At times, these debates have become so heated that some area business owners have discouraged NPS employees from shopping at their stores (Sarvis, 2002). The result, at best, has been mixed support of the National Park Service's presence in the region. Presently, the NPS is considering some management alternatives that could affect fish gigging in this area (NPS, 2009). More discussion is likely as a result of proposed ideas and sanctions.

### **Need for Study**

Ozark fish giggers represent a segment of the fishing population in Missouri that has been marginalized, except for some creel studies. Despite being an integral part of

Ozark culture for nearly 200 years, little is known about the social aspects associated with this unique activity. Anecdotal evidence suggests this activity no longer serves the same role it once did. Contemporary fish giggers place a strong emphasis on social interaction, an opportunity for self-expression through skill display, and the opportunity to enjoy nature (Bure et al., 2008; Everts-Boehm, 1996). Personal observations reveal a significant meaning of participation for this activity, coupled with a strong attachment to the Current and Jacks Fork Rivers. This study will examine these aspects of gigging using established constructs, which could lead to valuable contributions in theory and practice.

Presently, the National Park Service (NPS) is updating the General Management Plan (GMP) for ONSR, a document that will provide direction for the next twenty years (NPS, 2009). Initially, the NPS proposed three alternatives to its current management strategy for the GMP. Each alternative addressed how the NPS would manage ONSR's resources in relation to recreational activities across seven zones: Developed, Resource-Based Recreation, Natural, Primitive, Mixed-Use, Seasonal Mixed-Use, & Nonmotorized. These classifications would be applied to land and water, according to the alternative selected to guide the GMP. Due to a range of public concerns and suggestions, the NPS is in the process of revising the planning alternatives (NPS, 2009). One aspect will be work to "better understand the impacts of these alternatives on the natural, cultural, social, and economic environment of the national riverways" (NPS, 2009, p. 1).

**Purpose of the Study**

The purpose of this study was three-fold: 1) to obtain baseline demographic and activity style/preference information about fish giggers in the Missouri Ozarks, 2) to evaluate the efficacy of two different conceptualizations of activity involvement and place attachment, and 3) to interpret giggers' activity involvement and place attachment scores based on activity style/preference groupings.

**Hypotheses.** The null hypotheses for the third objective of this study were:

- 1) There is no significant difference between the activity involvement scores of those who agree that fish gigging is their favorite type of fishing versus those who disagree.
- 2) There is no significant difference between the place attachment scores of those who agree that fish gigging is their favorite type of fishing versus those who disagree.
- 3) There is no significant difference between the activity involvement scores of those who agree that a successful trip means gigging their limit of suckers versus those who disagree.
- 4) There is no significant difference between the place attachment scores of those who agree that a successful trip means gigging their limit of suckers versus those who disagree.
- 5) There is no significant difference between the activity involvement scores of fish giggers and the number of gigging trips taken each season.
- 6) There is no significant difference between the place attachment scores of fish giggers and the number of gigging trips taken each season.

- 7) There is no significant difference between the activity involvement scores of fish giggers based on their years of experience in the activity.
- 8) There is no significant difference between the place attachment scores of fish giggers based on their years of experience in the activity.
- 9) There is no significant difference between the objective of a fishing trip and the activity involvement scores of fish giggers.
- 10) There is no significant difference between the objective of a fishing trip and the place attachment scores of fish giggers.

### **Delimitations**

The population for this study included residents who purchased a 2008 Missouri fishing license within one of seven zip codes adjacent to the Current and Jacks Fork Rivers. Only one person per household was asked to participate in the study to limit response bias.

### **Limitations**

Given this was a mail-based survey, there is no guarantee that targeted respondents were who actually completed returned questionnaires. Also, activity involvement and place attachment are complex, theoretical frameworks. Evaluations of these phenomena are limited to the conceptualizations used in this study. Finally, expressed “favorite locations” on the Current & Jacks Fork Rivers may not be accurate due to difficulties in relating these locales to a map.

### **Definitions**

*Activity Involvement:* refers to the cognitive attachments and meaning, or relevance, individuals develop toward particular activities (Kyle & Chick, 2002; McIntyre, 1989).

*Attraction*: depicts the combination of importance and pleasure one derives from an activity (McIntyre, 1989).

*Centrality*: is the significance of an activity within the context of an individual's lifestyle (Kyle et al., 2007).

*Cognitive Mapping*: is a process of psychological transformations by which an individual acquires, codes, stores, recalls, and decodes information about the relative locations and attributes of specified phenomena (Downs & Stea, 1973).

*Gigging*: refers to the primitive technique of impaling fish with a metal prong attached to the end of a long, wooden pole (Everts-Boehm, 1996).

*Place*: is a center of meaning formed through experience: "what begins as undifferentiated space becomes place as we get to know it better and endow it with value" (Tuan, 1977, p. 6)

*Place Attachment*: refers to the relationship, or bond, a person develops with a specific place (Altman & Low, 1992; Williams & Roggenbuck, 1989).

*Place Dependence*: is the functionality or ability of the resources to meet the needs or goals of individuals (Schreyer, Jacob, & White, 1981; Stokols & Shumaker, 1981; Williams & Roggenbuck, 1989).

*Place Identity*: refers to the emotional aspects of a person-place relationship and how place contributes to an individual's self-identity (Schreyer, et al., 1981; Williams & Roggenbuck, 1989).

*Self-expression*: addresses the degree to which a person sees an activity as a reflection of their personality and the impression they hope to make on others based on their style of participation (McIntyre, 1989).

*Social bonding*: a) is an activity involvement dimension aimed at “captur[ing] the extent to which a [participant’s] involvement is driven by their social ties” (Kyle, et al., 2007, p. 403); b) refers to the meaning an individual develops towards a place based on the social interactions the place supports (Kyle et al., 2007).

## CHAPTER II

### Literature Review

#### Fishing Literature

Before 1970, it was assumed that catching fish production would result in favorable fishing experiences because managers perceived the most important aspects dealt with harvest (Hunt & Ditton, 1995). However, Moeller and Engelken (1972) found that certain elements of the natural environment were actually more important to fishers than the size and number of fish they caught. Subsequent human dimensions studies supported these findings, while also noting that other factors (e.g., escape, family togetherness, exploring, releasing tension, etc.) played an important role in determining fisher participation motives (Ditton, Mertens, & Schwartz, 1978; Driver & Knopf, 1976; Hampton & Lackey, 1975; Hendee, 1974).

Bryan (1977) examined trout anglers and found they were not homogenous, thus providing the basis for his seminal study on “recreation specialization.” Recreation specialization was conceived as a “continuum of behavior from the general to the particular, reflected by the equipment and skills used in the sport and activity” (p. 175). An assumption of this framework was that anglers progressed through different stages of specialization (i.e., occasional, generalists, technique specialists, and technique-setting specialists) in a linear fashion over time to become “technique-setting specialists.”

Bryan believed this classification system would result in various management strategies to meet the needs of anglers. Although some researchers have challenged Bryan’s assumptions about the recreation specialization framework (Bricker & Kerstetter, 2000; Kuentzel & McDonald, 1992; McIntyre & Pigram, 1992), his effort to examine

variations within and among fisher types continues to resonate throughout the fishing literature (Ditton, Loomis, & Choi, 1992; Morgan, 2006; Scarnecchia, Stewart, & Lim, 1996; Wilde & Ditton, 1999).

Early studies on fishing participation were designed to aid resource managers in their efforts to provide optimal fishing opportunities for the public (Driver & Knopf, 1976; Moller & Erickson, 1972). However, some researchers have warned that overgeneralizations could create an “average” fisher profile that might not exist (Coney, Hawkins, & Roupe, 1981; Graefe, 1981; Falk, Graefe, & Ditton, 1985). For example, a case study at Matagorda Bay, Texas showed how managing for the average fisher can become problematic (Matlock, Saul, & Bryan, 1988). Use of generalized fisher profiles, which indicated retention and consumption of fish were not as important as recreational experiences, prompted managers to impose new catch-and-release regulations at this site. An unexpected outcome was strong opposition from local fishers. Graefe (1981) suggested that tailoring management policies for particular fisheries based on user preferences might produce better results.

Fedler and Ditton (1994) further examined fisher variation in their meta-analysis of 17 motivation studies. Studies in this analysis were selected because shared items on the questionnaires allowed for comparisons across various fisher populations (e.g., saltwater and freshwater) and subpopulations (e.g., catfish fishers, trout fishers, shark fishers, charterboat fishers, etc.). The authors found that when fisher responses were grouped according to fishing mode or species sought, the overall results were not representative of various subgroups. Furthermore, the context within their fishing mode also contributed to variation occurring among groups. The authors felt these results held

important implications for fisheries research and management. Fedler and Ditton (1994) encouraged researchers to develop consistent, standardized measures so that results could be compared to previous works. Another recommendation was to shift the focus of fisher studies to “market segments” based on species sought and fishing mode (Coney, Hawkins, & Roupe, 1981; Falk, Graefe, & Ditton, 1985; Graefe, 1981). Finally, they implored researchers to look beyond motivations to gain a better understanding of fisher behavior and decision-making processes that might be useful to fisheries managers (Fedler & Ditton, 1994).

The impact of Fedler and Ditton’s (1994) work led to a proliferation of studies targeting subgroups (Arlinghaus, 2005; Fisher, 1997; Hutt & Bettoli, 2007; Schramm, Forbes, Gill, & Hubbard, 2000; Sutton & Ditton, 2001). However, this literature primarily focused on rod and reel fishers, such as those pursuing trout (Hammit, Backlund, & Bixler, 2004; Hutt & Bettoli, 2007), bass (Wilde & Ditton, 1994; Wilde, Reichers, & Ditton, 1998), and catfish (Arterburn, Kirby, & Berry, 2002; Wilde & Ditton, 1999). For example, Reitz and Travnichek (2006) evaluated the characteristics and attitudes of catfish anglers in Missouri by grouping them according to species sought (i.e., flathead, channel, blue, or flathead). As a result, the authors argued against unified regulations, instead favoring the creation of diverse fishing experiences (p. 150). While these studies have provided valuable insights regarding prominent subgroups, other fishers continued to be marginalized.

Recognizing the potential importance that other modes of fishing might have for fishers, some researchers have examined unconventional subgroups (Grigsby, 2009; Morgan 2006; Salazar 2002). Hand fishers, or noodlers as they are commonly known,

are one such example. Noodling is the act of catching catfish using only one's hands (Bilger, 2000; Salazar, 2002). This practice is considered to be a folk tradition in Southern and Midwestern regions of the United States (Salazar, 2002). Elders teach young men about this practice through a patriarchal subculture emphasizing community solidarity, trust, respect, and reciprocity (Grigsby, 2009). Participants—predominantly rural males working blue-collar jobs—report that noodling provides them with thrill-seeking opportunities (Bilger 2000, Morgan 2006, Salazar 2002). This motivation is noteworthy because it diverges from studies that typically report relaxation as one of the most important reasons for fishing participation (Fedler & Ditton, 1994). Also, Morgan (2006) found that centrality (central life interest) of noodlers was more significant than trout anglers in Missouri. These findings indicate that noodlers are a unique subgroup that warrants further study (Morgan, 2006).

Paddlefish snaggers are another example of unconventional fishers who have received limited attention from researchers. An early creel study indicated that consumption was one of the primary motivations for snaggers' participation (Catchings, 1985). This finding was later supported by a study focused on recreational paddlefish snaggers on the Lower Yellowstone River in Montana (Scarnecchia, Stewart, & Lim, 1996). However, other primary motivations for this subgroup included “for the experience and thrill of hooking one,” “to be outdoors,” and “to be with friends.” Interestingly, the authors noted that paddlefish snaggers' motivations and attitudes were similar to other Montana anglers. However, “relaxation” was not as salient for snaggers as has been reported by other subgroups (Fedler & Ditton, 1994).

A study conducted on paddlefish snaggers at Lake of the Ozarks, Missouri found lower activity involvement scores than those reported by noodlers (Hayden, 2009). Of particular interest, snaggers rated “centrality” as the lowest factor of activity involvement (Hayden, 2009), while noodlers rated it the highest (Morgan, 2006). Therefore, it appears that the subculture of paddlefish snaggers is not as distinct as that for noodlers (Hayden, 2009; Morgan, 2006).

Despite strong evidence indicating that fishers are heterogeneous, some government agencies continue to manage fisheries for the average fisher (Jakus, Fly, & Wilson, 1996; Gilliland, 1998). When market segmentation techniques have been employed, the focus of many studies has been on rod and reel anglers (Fedler & Ditton, 1994; Reitz & Travnichek, 2006). These strategies often lead to compromises that are not likely to satisfy a broad-based constituency (Gilliland, 1998; Wilde, Ditton, Grimes & Reichers, 1996). While fisher preferences should not supplant resource considerations, a primary goal of modern fisheries management is Optimum Sustained Yield (OSY), a philosophy designed to maximize fishing benefits for diverse audiences (Ross, 1997). Fisheries professionals have indicated that the most important human dimensions finding is fisher support of management regulations (Simoës, Lupi, & Hayes, 2008). Therefore, researchers need to identify and evaluate fisher subgroups that could be affected by resource policies in order to garner their support (Chipman & Helfrich, 1988; Jakus et al., 1996).

### **Origins of Leisure Involvement**

Spurred by the desire to understand why individuals invest themselves in leisure activities, researchers have devoted a considerable amount of attention to the involvement

construct (Havitz & Dimanche, 1997). Closely related to commitment (Iwasaki & Havitz, 1998), involvement refers to the cognitive attachments and meanings that individuals develop toward particular activities (Kyle & Chick, 2002). In this context, involvement can be thought of as a psychological process leading to behavioral expressions of commitment (Iwasaki & Havitz, 1998).

The fundamental basis for conceptualizing involvement in leisure studies has relied heavily on contributions from consumer behaviorists (Hupfer & Gardner, 1971; Laurent & Kapferer, 1985). Early research in this field built upon Sharif's (1947) ego-involvement studies of voter behavior. Consequently, the involvement phenomenon was proposed to be a "general level of interest in or concern about an issue without reference to a specific position" (Freedman, 1964, p. 291). Using this definition of the construct, Hupfer and Gardner (1971) described involvement as a linear representation of the importance one places on proposed scenarios. This contribution was important because it depicted involvement at various levels—not simply as a dichotomous phenomenon (Laurent & Kapferer, 1985). Similar applications of the construct can be found in recreation literature.

### **Involvement in Early Leisure Constructs**

Bryan's (1977) study of trout anglers suggested one's level of involvement was a critical factor in determining their level of specialization. It was thought that involvement needed to be determined before activity participation could be understood. Bryan (1977) envisioned a continuum of angling specialization consistent with their level of involvement. Furthermore, he suggested that highly specialized anglers would create a social world consisting of attitudes and ideologies shared by its participants and it would

serve as a standard for those wanting to attain it. Therefore, recreation specialization can be thought of as a construct based on one's level of involvement in a particular activity (Scott & Shafer, 2001).

Further applications of recreation specialization have also emphasized the importance of involvement to the construct. For example, Schreyer and Knopf (1984) suggested that those who identify with a particular activity are more specialized, and as such, will be more involved with the activity and the environments that support it than those who do not. Other studies found that anglers who placed a greater emphasis on achieving catch limits were likely to express lower activity involvement and setting attachments than those who do not (Ditton, Loomis, & Choi, 1992; Fedler & Ditton, 1994; Oh & Ditton, 2006).

Perhaps Stebbins (1982) connected some of Bryan's (1977) ideas about involvement into a construct labeled "serious" leisure. According to Stebbins, serious leisure is characterized by six distinct qualities: a) perseverance (overcoming adversity); b) a career pursuit (enduring, distinguished by personal history, stages and turning points); c) effort (based on knowledge skill and training); d) durable benefits (self-expression, self actualization, self-image, pleasure, social interaction; e) a unique ethos (developing subcultures or social worlds around the activity); and f) a tendency to identify strongly with their activity (closely associating self with the activity, impassioned, frequent talk and pride about the activity). Each of these qualities implies that individuals would need to be highly involved in an activity to be able to experience serious leisure (Siegenthaler & Gonzalez, 1997). Stebbins's (1982) description of serious

leisure is similar to what Bryan (1977) conceived as representing the upper level of recreational specialization (Tsuar & Lang, 2008).

### **A Multi-Dimensional Conceptualization of Involvement**

The years following Hapfur and Gardner's (1971) study found consumer behavior researchers proposing different ways to measure the involvement construct (Houston & Rothschild, 1977; Vaughn, 1980). These discussions led Laurent and Kapferer (1985) to a critical revelation about involvement. While they supported the notion that involvement is experienced in varying degrees, they also recognized that previous studies focused on a single aspect (e.g., importance). Using various interpretations of involvement from previous studies, Laurent and Kapferer (1985) argued that the involvement construct should be conceptualized as a profile consisting of several dimensions.

Facets chosen for the study included perceived importance, risk, sign value (the degree to which a product is an expression of oneself), and pleasure (Laurent & Kapferer, 1985). A key finding of their study was that a single facet was not a good indicator of one's level of involvement. Instead, a profile should be considered because each dimension reflects different aspects of a person's involvement (Laurent & Kapferer, 1985).

### **Involvement Operationalized in Leisure Research**

The shift to a multi-dimensional construct of involvement offered researchers a variety of applications, including those found in recreation and leisure settings (Havitz & Dimanche, 1997). McIntyre (1989) was one of the early scholars to recognize the role that involvement played in an individual's attachment to, and specialization in, specific

leisure activities. He re-conceptualized the construct by adding a centrality dimension to the measures of importance, sign value, and pleasure components derived from Laurent and Kapferer (1985). Based on the results of McIntyre's study, the dimensions were slightly modified to create three factors appropriate for leisure activities (Table 1). These components included *attraction* which measured the enjoyment and importance of an activity, *self-expression* was designated to address the degree to which a person sees the activity as a reflection of their personality, and *centrality* measured how much the activity is a part of one's lifestyle (McIntyre, 1989).

Table 1  
*McIntyre's (1989) activity involvement items and factor domains*

Activity Involvement items <sup>a</sup>	
<i>Attraction</i>	
A <sub>1</sub>	_____ offers me relaxation when life's pressures build up
A <sub>2</sub>	_____ is one of the most enjoyable things I do
A <sub>3</sub>	_____ is very important to me
A <sub>4</sub>	I have little or no interest in _____
A <sub>5</sub>	_____ is one of the most satisfying things I do
<i>Centrality</i>	
C <sub>1</sub>	I find a lot of my life is organized around _____
C <sub>2</sub>	I enjoy discussing _____ with my friends
C <sub>3</sub>	Most of my friends are in some way connected to _____
<i>Self-expression</i>	
SE <sub>1</sub>	When I am _____, others see me the way I want to be seen
SE <sub>1</sub>	When I am _____, I can really be myself
SE <sub>1</sub>	You can tell a lot about a person when you see them _____
SE <sub>1</sub>	_____ says a lot about who I am

<sup>a</sup> Activity Involvement items are typically measured using a scale of 1 = Strongly Disagree to 5 = Strongly Agree.

In the years since McIntyre's (1989) study, a considerable amount of attention has been given to leisure involvement, including no fewer than 50 data sets and five alternative conceptualizations (Havitz & Dimanche, 1997; Wiley, Shaw, & Havitz, 2000). Results from these studies produced some interesting, as well as mixed, results. For instance, researchers have advocated that frequency of participation is both related and unrelated to higher AI scores (Havitz & Howard, 1995; McIntyre, 1992; Wiley et al., 2000). Similarly, Havitz and Howard (1995) found a positive relationship between years of experience and activity involvement, although other studies found this relationship to be insignificant (McIntyre & Pigram, 1992; Wiley et al., 2000).

Despite sometimes-inconsistent findings, a few tentative conclusions have been established regarding activity involvement. First, use of the term implies that the referenced activity is important to the individual on a continual basis (Wiley et al., 2000). Second, involvement precedes and often leads to commitment (Kyle, Absher, Norman, Hammitt, & Jodice, 2007). Third, involvement is best represented as a multi-dimensional construct (Iwasaki & Havitz, 1998). To this end, the dimensions—centrality, attraction and self-expression—offered by McIntyre (1989) have been found to be the most salient factors (Havitz & Dimanche, 1997). However, some researchers believe that these dimensions are measuring something different from what McIntyre (1989) had intended (Havitz & Dimanche, 1990; Kyle et al., 2007).

### **Modified Involvement Construct**

Based on researcher observations, findings, and suggestions concerning the dimensions of activity involvement, Kyle et al. (2007) proposed and tested another conceptualization of the construct. The authors suggested five dimensions—attraction,

identity affirmation, identity expression, centrality, and social bonding—embedded in McIntyre’s (1989) involvement (Table 2). The *attraction* dimension, depicting the combination of importance and pleasure one derives from an activity, remained unchanged from McIntyre’s (1989) original interpretation. However, Kyle et al. (2007) changed the self-expression and centrality dimensions.

Table 2

*Kyle et al.’s (2007) activity involvement items and factor domains*

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Activity Involvement items <sup>a</sup>	
<i>Attraction</i>	
A <sub>1</sub>	_____ offers me relaxation when life’s pressures build up
A <sub>2</sub>	_____ is very important to me
A <sub>3</sub>	_____ is one of the most satisfying things I do
<i>Centrality</i>	
C <sub>1</sub>	I find a lot of my life is organized around _____
C <sub>2</sub>	_____ occupies a central role in my life
C <sub>3</sub>	To change my preference from _____ to another recreation activity would require major rethinking
<i>Social Bonding</i>	
SE <sub>1</sub>	I enjoy discussing _____ with my friends
SE <sub>1</sub>	Most of my friends are in some way connected with _____
SE <sub>1</sub>	_____ provides me with an opportunity to be with friends
<i>Identity Expression</i>	
IE <sub>1</sub>	When I am fish gigging, others see me the way I want them to see me
IE <sub>2</sub>	You can tell a lot about a person when you see them fish gigging
IE <sub>3</sub>	_____ says a lot about who I am
<i>Identity Affirmation</i>	
IA <sub>1</sub>	When I am _____, I can really be myself
IA <sub>2</sub>	I’m not concerned with the way I look when I _____
IA <sub>3</sub>	I identify with the people and image associated with _____

---

<sup>a</sup> Activity Involvement items are typically measured using a scale of 1 = Strongly Disagree to 5 = Strongly Agree.

Initially, self-expression was thought to be self-representation, or, the impression an individual hopes to make on others based on their style of participation (McIntyre, 1989). Some leisure researchers, however, have suggested this definition is incomplete and fails to account for personal expressions devoid of consideration from external audiences (Dimanche & Samdahl, 1992). In fact, the objective of some leisure activities is to escape external social pressure and judgments. Leisure participation, then, provides the opportunity to both affirm one's identity and to express oneself to an external audience (Wiley et al., 2000). Recognition of this distinction led Kyle et al. (2007) to expand self-expression to create *identity affirmation* and *identity expression* dimensions.

Kyle et al. (2007) also suggested that centrality (McIntyre, 1989; McIntyre & Pigram, 1992) may actually be referencing two distinct dimensions. Prior studies emphasizing the importance of social networks also support this suggestion (Choi, Loomis, & Ditton, 1992; Gahwiler & Havitz, 1998). Further, Kyle et al. (2007) argued that social relationships might be the most salient aspect of involvement for many participants. Based on this rationale, they proposed a *social bonding* dimension aimed at "captur[ing] the extent to which a [participant's] involvement is driven by their social ties" (p. 403). This enabled the *centrality* dimension to serve a clearer purpose by "examin[ing] the [importance] of the activity within the context of the individual's lifestyle" (p. 403)

### **Sense of Place**

The study of human-place connections is the result of research from many academic disciplines. For example, sociologists have focused on how symbolic meanings effect social interactions (Grieder & Garkovich, 1994), while anthropologists have

attempted to determine its significance in daily life (Gupta & Ferguson, 1997). However, the early works from human geographers and environmental psychologists laid most of the groundwork for outdoor recreation research (Altman & Low, 1992; Jacob & Schreyer, 1980; Kyle, Graefe, & Manning, 2005; Moore & Graefe, 1994; Williams & Roggenbuck, 1989).

Attempts to understand the human-place relationships can be traced to what most researchers refer to as a “sense of place” (Relph, 1977; Tuan, 1977), a concept that connects humans to geographic locales (Tuan, 1974). Tuan (1977) described place as a center of meaning formed through experience: “what begins as undifferentiated space becomes place as we get to know it better and endow it with value” (p. 6). In this light, space only becomes a place when it is infused with meaning (Relph, 1976; Steele, 1981). Therefore, place is the result of psychological processes created through real or imagined experiences (Tuan, 1977). Sense of place, then, is an experiential process based on “the collection of meanings, beliefs, symbols, values, and feelings that individuals or groups associate with a particular locality” (Williams & Stewart, 1998).

### **Place Attachment**

Building on early “sense of place” studies, environmental psychologists began to look specifically at the symbols and meanings that people often attach to physical locations (Brown, 1987; Altman & Low, 1992). This development led to the emergence of “place attachment.” Although place attachment is related to sense of place, these concepts have slightly different meanings (Stedman, 2003; Twigger-Ross & Uzzell, 1996). Sense of place provides an overarching representation of a locale and its significance to individuals (Tuan, 1974; Stedman, 2003). Place attachment, in contrast,

describes the bonds and meanings that individuals develop in response to outdoor settings (Altman & Low, 1992; Moore & Graefe, 1994). Originally, the bulk of place attachment literature focused on the meanings that people associate with their homes, neighborhoods, or communities (Feldman, 1990; Proshansky, Fabian, & Kaminof, 1983). From these works, two primary conceptualizations of place attachment emerged—place dependence and place identity (Brown, 1987).

Advanced by Stokols and Schumaker (1981), place dependence is rooted in transactional theory, which suggests that people tend to evaluate settings based on their utility (Backlund & Williams, 2003). Specifically, place dependence reflects the potential of a setting to support the functional needs of people in comparison to alternative locations (Stokols & Schumaker, 1981; Williams & Roggenbuck, 1989). This form of attachment is embodied in the attributes that enable or support the achievement of desired goals (Williams & Vaske, 2003). Furthermore, place dependence is subject to change as the person's needs may fluctuate over time (Smaldone, Harris, & Sanyal, 2005).

Jacob and Schreyer's (1980) study of activity conflict provided one of the earliest examinations of place dependence in relation to outdoor recreation. "Resource specificity", one of four principal factors suggested by the authors to cause activity conflict, is "the importance an individual attaches to the use of a particular recreation resource" (p. 373). One implication of specificity is that the functional meaning of settings is determined by the unique qualities that support recreational activities (Schreyer, Jacob & White, 1981). Key to the place dependence and resource specificity

concepts is the emphasis on environmental quality and how it satisfies user requirements (Jacob & Schreyer, 1980; Stokols & Schumaker, 1981; Williams et al., 1992).

Place identity provides an alternate means to evaluate the person-place relationship (Proshansky, 1978). It references “those dimensions of the self that define the individual’s personal identity in relation to the environment” (Proshansky, 1978, p. 155). As such, place identity is focused on the extent to which a setting represents oneself (Proshansky, Fabian, & Kaminoff, 1983). This bond may be shaped by cognitions such as one’s self-efficacy, memories, self-esteem, values, preferences, and continuity of visits (Korpela, 1989; Proshansky et al., 1983; Twigger-Ross & Uzell, 1996). Further, place identity can be based on personal, group, or societal values assigned to outdoor settings (Altman & Low, 1992; Williams et al., 1992). These values seem to be constructed through personal experiences or external symbolic meanings (Williams & Roggenbuck, 1989). However, place value may be assigned vicariously, without intimate knowledge of resources or physical attributes (Levi & Kocher, 1999; Williams et al., 1992). Similar to place dependence, place identity is likely to change over time (Korpela, 1989; Smaldone, Harris, & Sanyal, 2005; Twigger-Ross & Uzell, 1996).

Recognizing the complimentary nature of the place dependence and identity constructs, Williams and Roggenbuck (1989) conceptualized them as factors comprising a holistic attachment to place. Thus, place attachment can be thought of as functional values and emotional/symbolic meanings that individuals develop toward particular settings. This conceptualization has served as the theoretical basis for examining issues such as park use fees (Kyle, Absher & Graefe, 2003), environmentally responsible behavior (Vaske & Korbin, 2001), the effectiveness of interpretive programs

(Moore & Graefe, 1994; Morgan, 2009), and recreation specialization (Bricker & Kersetter, 2000). One of the most widely used measures of this two dimensional conceptualization of place attachment is William and Vaske's twelve item scale (Table 3).

Table 3

*William & Vaske's (2003) place attachment items and factor domains*

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Place Attachment items <sup>a</sup>	
<i>Place Identity</i>	
PI <sub>1</sub>	_____ is very special to me
PI <sub>2</sub>	I identify strongly with _____
PI <sub>3</sub>	Being at _____ says a lot about who I am
PI <sub>4</sub>	I feel that _____ is a part of me
PI <sub>5</sub>	_____ means a lot to me
PI <sub>6</sub>	I am very attached to _____
<i>Place Dependence</i>	
PD <sub>1</sub>	_____ is the best place for what I like to do
PD <sub>2</sub>	I wouldn't substitute any other area for what I like to do at _____
PD <sub>3</sub>	I get more satisfaction from being at _____ than at any other place
PD <sub>4</sub>	No other place can compare to _____
PD <sub>5</sub>	The things I do at _____ I would enjoy doing just as much at a similar site
PD <sub>6</sub>	Doing what I do at _____ is more important to me than doing it in any other place

---

<sup>a</sup> Activity Involvement items are typically measured using a scale of 1 = Strongly Disagree to 5 = Strongly Agree.

### **Alternative Conceptualizations of Place Attachment**

Although Williams and Vaske (2003) confirmed the validity and reliability of Williams and Roggenbuck's (1989) place attachment scale, some researchers have suggested that place should be expanded to include dimensions such as affective attachment, familiarity, belongingness, and/or rootedness (Hammitt et al., 2004; Jorgenson & Stedman, 2001; Kyle et al., 2004). Several authors have discussed the potential of places to facilitate social interactions (Hidalgo & Hernández, 2001; Low &

Altman, 1992; Mesch & Manor, 1998).

If a setting supports meaningful social relationships, then it is likely for places to reflect that value (Kyle et al., 2005). This assertion has been supported by studies examining the nature of place attachments in neighborhoods (Hildago & Hernández, 2001; Mesch & Manor, 1998), communities (Hay, 1998), and cafeterias (Milligan, 1998). In some cases, social bonds were reported as the primary influence on a person's attachment to a place (Hay, 1998). Building upon these findings, Kyle et al. (2005) expanded Williams and Vaske's (2003) conceptualization of place attachment to include a "social bonding" factor in a study of hikers on the Appalachian Trail (Table 4). Although their results were inconclusive, Kyle et al. (2005) suggested this new factor was a valid and reliable measure of place attachment.

Table 4

*Kyle et al.'s (2005) place attachment items and factor domains*

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Place Attachment items <sup>a</sup>	
<i>Place Identity</i>	
PI <sub>1</sub>	I identify strongly with this ____
PI <sub>2</sub>	____ means a lot to me
PI <sub>3</sub>	I feel no commitment to the ____
PI <sub>4</sub>	I am very attached to ____
<i>Place Dependence</i>	
PD <sub>1</sub>	I wouldn't substitute any other area for what I like to do at ____
PD <sub>2</sub>	I get more satisfaction out of visiting this park than from any
PD <sub>3</sub>	I enjoy what I do at ____ more than any other place
PD <sub>4</sub>	Doing what I do at CJF is more important to me than doing it in any other place
<i>Social Bonding</i>	
SB <sub>1</sub>	I have a special connection to ____ and the people who go there
SB <sub>2</sub>	I don't tell many people about ____
SB <sub>3</sub>	I have a lot of fond memories about ____
SB <sub>4</sub>	I will (do) bring my children to ____

---

<sup>a</sup> Activity Involvement items are typically measured using a scale of 1 = Strongly Disagree to 5 = Strongly Agree.

Lastly, some authors have proposed qualitative conceptualizations of place attachment, because empirical studies may not reflect the richness of person-place relationships accurately (Schroeder, 1991; Smaldone et al., 2005; Vining & Tyler, 1999). These researchers advocate that place meanings should be “mapped around and between the [three] poles of self, other and environment” (Gustafson, 2001, p. 12), instead of forcing them into discrete categories. This idea is supported by studies using a qualitative approach to evaluate attachments to places such as Jackson Hole, Wyoming (Smaldone et al., 2005), the north-central region of the United States (Schroeder, 1991), and National Forest lands (Vining & Tyler, 1999). Findings from these studies suggest the emergence of themes that expand our understanding of how and why places are meaningful to individuals. Some prominent themes include naturalness, beauty, serenity, escape, heritage and social ties (Schroeder, 1991; Smaldone et al., 2005; Vining & Tyler, 1999). Further, Smaldone et al. (2005) claim it is important to understand “how an individual’s life stages and life course affects perception of place” (p. 16) and “how places are used to regulate people’s emotions and self-identity” (p.16) when evaluating place attachment.

## **CHAPTER III**

### **Methods**

#### **Location**

On August 27, 1964, the federal government established the Ozark National Scenic Riverways (ONSR) as the nation's first protected wild river system (Sarvis, 2002). Located within Missouri's Shannon and Carter counties, this National Park Service (NPS) property encompasses 134 miles of the Current and Jacks Fork rivers and approximately 80,000 acres of adjacent lands (Sarvis, 2002). These rivers are fortified by some of the nation's most prolific springs, thus making ONSR a popular destination for canoeing, kayaking, tubing, boating, and fishing. Approximately one million visitors take advantage of these opportunities each year (Davenport, Leahy, Anderson, & Jakes, 2005; Everts-Boehm, 1996; Hastings, 2008).

#### **Population/Sample**

The true population of fish giggers in Missouri is unknown since the Missouri Conservation Department (MDC) only requires these fishers to have a valid fishing license. As a result, this study used a purposive sampling approach to gather some preliminary data about fish giggers confined to a specific area. The population consisted of adult fishers (18 or older) who purchased a Missouri fishing permit for the 2008 season and reported living within one of the seven zip codes (Table 5). However, only those fishers who have been fish gigging were asked to complete the questionnaire used in this study. Zip codes included in this survey were chosen because of their proximity to the Ozark National Scenic Riverways (ONSR), which includes the Current and Jacks Fork rivers. A list of licensed fishers was provided by MDC as an in-kind service.

Table 5  
*Study population information*

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Strata	Zip Code	City	Population
1	63937	Ellsinore	285
2	63941	Fremont	26
3	63943	Grandin	64
4	63965	Van Buren	290
5	65438	Birch Tree	283
6	65466	Eminence	104
7	65588	Winona	<u>237</u>
			1289 total

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### Research Design

This study used a modified version of the Tailored Design Method (TDM) (Dillman, 2007). The TDM is based on the belief that compliance is a result of the effort required to complete the questionnaire by the potential benefits derived from participation (e.g., respondents want to maximize benefits and minimize effort). The standard TDM schedule consists of the following elements: 1) a pre-notification letter, 2) questionnaire mailing, 3) thank you/reminder postcard, 4) a replacement questionnaire for non-respondents, and 5) a final reminder for non-respondents. Due to budgetary constraints, this study used a modified TDM approach that consisted of the following elements and schedule:

- August 14, 2009: Phase I survey packets (cover letter, questionnaire, and return envelopes) were mailed to half of the population.
- August 26, 2009: Phase I reminder postcards were mailed to non-respondents.
- September 11, 2009: Phase I replacement survey packets were mailed to individuals who had not returned a questionnaire.

- October 16, 2009: Phase II survey packets (cover letter, questionnaire, and return envelopes) were mailed to the remaining individuals in the population.
- October 28, 2009: Phase II reminder postcards were mailed to non-respondents.
- November 11, 2009: Phase II replacement survey packets were mailed to individuals who had not returned a questionnaire.

This schedule was chosen because it overlapped with the fish gigging season (September 15<sup>th</sup> to January 31<sup>st</sup>). It was thought that some giggers might respond best before the season started, whereas others might be more motivated to answer the questionnaire after the season was underway. The questionnaire used in Phases I and II were identical. Finally, all tasks incorporated personal touches as suggested by the TDM, such as the use of first class stamps, personalized cover letters, appropriate salutations, and original signatures written with contrasting ink.

The initial mailing for both phases included a cover letter (Appendix A), questionnaire (Appendix B), and a return envelope. The cover letter was a personalized one-page document, which informed fishers about the purpose and benefit of the study. Emphasis was placed on gaining useful information from fish giggers and transmitting it to the NPS for planning purposes. This letter briefly explained that participation was voluntary, all responses were confidential, instructions on how to return the survey, along with contact information for questions or concerns. Finally, a business reply only envelope was included in all packets for easy return of their questionnaires.

Twelve days after the initial packets were sent, postcards (Appendix C) were mailed to non-respondents. This reminder simply asked recipients to complete and return

their questionnaires promptly. It included some information about the importance of the study and information for those needing a replacement questionnaire.

Approximately two weeks after reminder postcards were mailed, replacement survey packets were sent to those who had not responded to the previous requests. The gap between mailings provided ample time to establish the pool of non-respondents. A follow-up packet consisted of the same elements as the initial mailing. However, the cover letter (Appendix D) was used to reinforce the fact that their questionnaire had not yet been received, others had responded, and their participation was important to the success of the study. The letter also focused on the social utility of the study and gave assurances that data would remain confidential. Other elements of the packet were similar to those included in the initial mail-out.

### **Questionnaire**

This study used a four-page questionnaire (Appendix B) consisting of the following sections: activity style and preferences, activity involvement, cognitive place-based mapping, and place attachment. A qualifying item was used to determine if respondents had been fish gigging before. If their response was “no”, fishers were instructed to simply return the questionnaire uncompleted. If a respondent indicated “yes”, they were encouraged to complete and return the survey. The back cover provided some space for open-ended comments.

The first section of the questionnaire was designed to measure the activity style and preferences of fish giggers. This section was modeled after a study of hand fishers in Missouri that was designed by Morgan (2006). A total of fifteen items were used, such as initial exposure to fish gigging, whether gigging was their favorite type of fishing

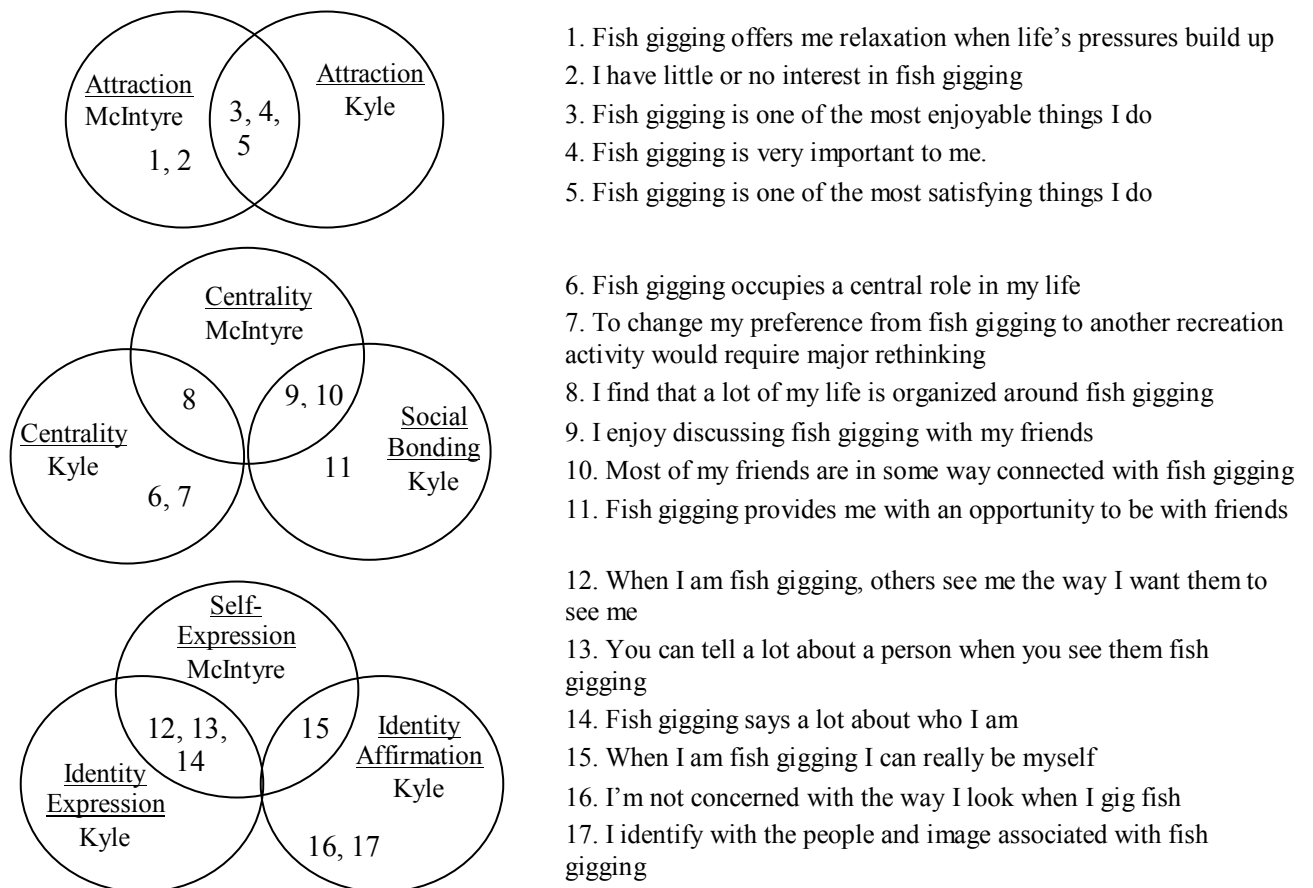
activity, the best time for a fish gigging trip, and how they learned about fish gigging.

Preference items asked respondents to either “check all that apply” or “check only one”

response. Other items gathered information such as group size and trips per season.

Finally, two dichotomous items were included to determine gender and to examine if respondents had taught anyone else about fish gigging.

The next section of the questionnaire combined all items used in McIntyre’s (1989) and Kyle et al.’s (2007) scales for measuring activity involvement. As depicted in Figure 1, ten of the items are common for both scales, two items are unique to McIntyre’s (1989) scale, and five items are unique to Kyle et al.’s scale (2007). McIntyre’s scale is



**Figure 1.** Items and factors for McIntyre (1989) & Kyle et al.’s (2007) activity involvement scales. This figure illustrates which items are common between, and unique to, each scale and the factors they have been attributed to.

based on twelve items measuring three factors (attraction, self-expression, and centrality). Kyle et al. used a five-factor (attraction, identity affirmation, identity expression, centrality and social bonding), fifteen-item scale to measure activity involvement. Both scales used a 5-point Likert Scale to measure the extent that fishers agreed or disagreed—ranging from “Strongly Agree” to “Strongly Disagree”—with each of the statements (Arreola, 2006).

The third section of the questionnaire began by asking respondents, “Why do you participate in fish gigging?” The second item asked if they had ever been fish gigging on the Current or Jacks Fork Rivers. Those responding “no” were instructed to skip the next item, while those responding “yes” were asked to place an ‘X’ on a map—see Figure 2—to indicate their favorite fish gigging location.

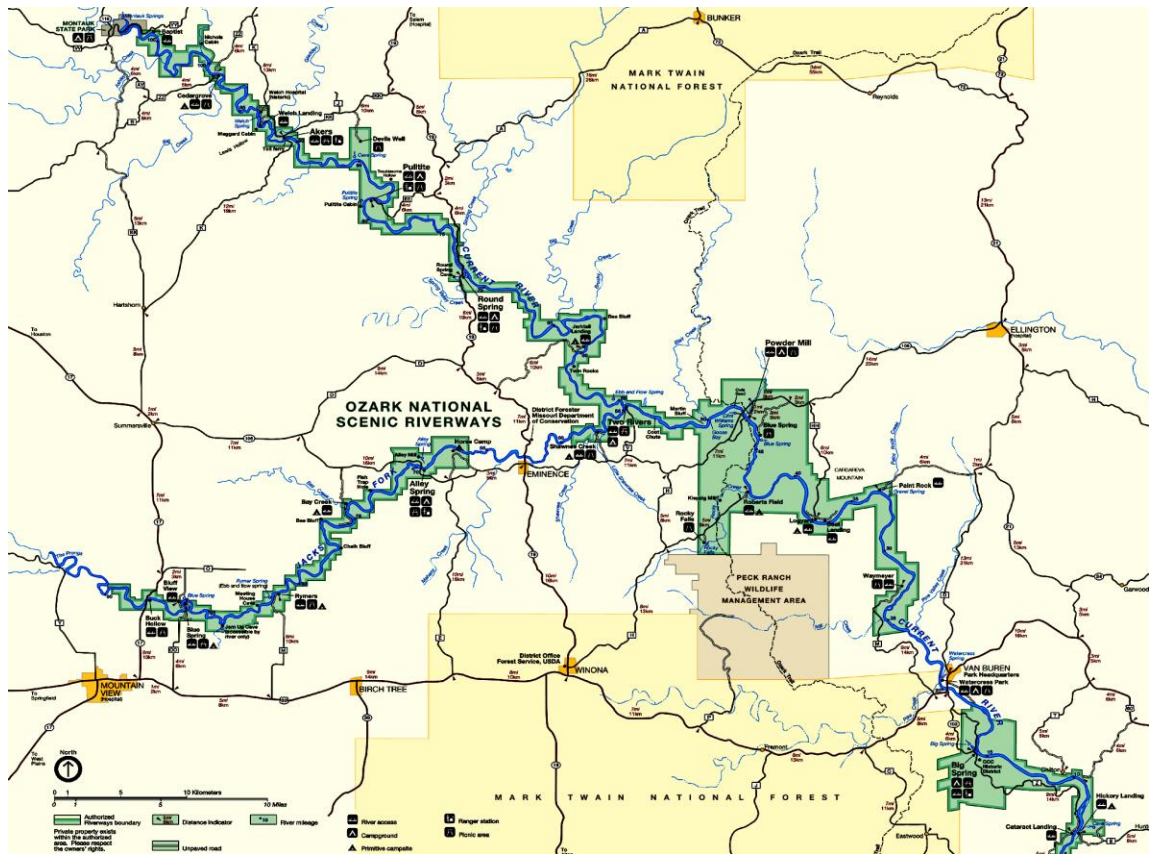
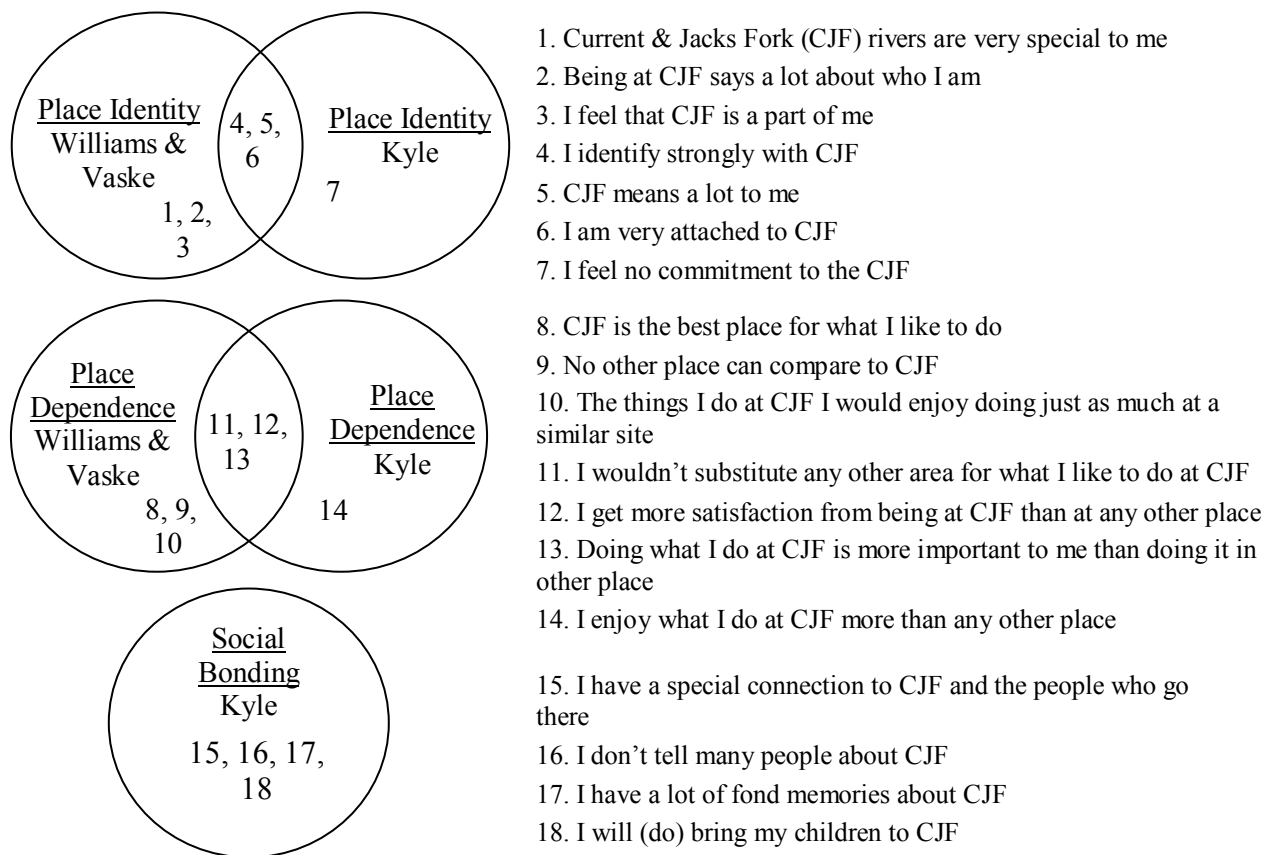


Figure 2. Map of Current and Jacks Fork Rivers--Ozark National Scenic Riverways (NPS, 2009).

The final section of the questionnaire was designed to measure fish giggers' place attachment to the Current and Jacks Fork rivers. This person-place relationship was measured using both Williams and Vaske's (2003), and, Kyle et al.'s (2005) place attachment scales. As shown in Figure 3, a total of eighteen items were included—six items are used in both scales, six are unique to each scale. Williams and Vaske's scale is based on twelve items measuring place dependence and place identity dimensions. Kyle et al.'s scale used twelve items to measure place attachment as a three-factor model (place dependence, place identity, and social bonding). Both scales used a 5-point Likert Scale to measure the extent that fishers agreed or disagreed—ranging from “Strongly Agree” to “Strongly Disagree”—with statements (Arreola, 2006).



*Figure 3.* Items and factors for Williams & Vaske's (1989) & Kyle et al.'s (2007) activity involvement scales. This figure illustrates which items are common between, and unique to, each scale and the factors they have been attributed to.

### **Data Analysis**

The Statistical Package for the Social Sciences (SPSS) version 17.0 and Analysis of Moment Structures (AMOS) version 17.0 were used to analyze the data collected for this study. Descriptive statistics were used to calculate the means, medians, standard deviations, frequencies and percentages for demographic and activity style/preference items. Confirmatory factor analyses (CFA) were performed (using AMOS) on the competing (non-nested) activity involvement (AI) and place attachment (PA) scales to identify the most appropriate ones for use in this study. CFA is used to determine if observed indicator items loading to specified latent variables confirm expectations through several tests that assess the adequacy of model fit to the data (Byrne, 2010). Selected scales were then used for hypothesis testing.

Scale selection criteria were consistent with previous theory and research, parsimony, and empirical indicators of fit (Byrne, 2010; Garson, 2009; Kline, 2005). All scales were analyzed as “correlated factors models” based on the theoretical underpinnings of each conceptualization (Kyle et al., 2007; Kyle et al., 2005; McIntyre, 1989; Williams & Vaske, 2003). This suggests that each model’s factors examine different elements of their related construct and that these factors will correlate with one another. Missing data was handled using maximum likelihood estimation, the preferred method when using confirmatory factor analyses (Arbuckle, 1994; Garson, 2009; Peters & Enders, 2002).

Selection of CFA tests used in this study were based on Garson’s (2009) recommendations and include: (a) chi-square and level of significance, (b) root mean square error of approximation (RMSEA), (c) two baseline fit measures—incremental fit

index (IFI) and comparative fit index (CFI), (d) one parsimony measure—parsimony comparative fit index (PCFI), and (e) one information theory measure—Akaike information criteria (AIC). Brief definitions for these measures are given in Table 6.

Table 6  
*Definitions for selected CFA indices used in this study*

Index	Shorthand	Brief Definition
Model chi-square	$\chi^2$	measure evaluating whether the predicted covariance matrix is equivalent to the observed sample covariance matrix; rejection of the null hypothesis means that model estimates do not sufficiently reproduce sample covariance (Albright & Park, 2009)
Root mean square error of approximation	RMSEA	takes into account the error of approximation in the population and asks the question “how well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available”; expressed per degree of freedom (Browne & Cudeck, 1993; Byrne, 2010)
Incremental fit index	IFI	based on the comparison of the fit of a target model with that of a null model, relatively independent of sample size (Garson, 2009)
Comparative fit index	CFI	it compares the covariance matrix predicted by the model to the observed covariance matrix, and compares the null model (covariance matrix of 0's) with the observed covariance matrix, to gauge the percent of lack of fit which is accounted for by going from the null model to the researcher's model (Garson, 2009)
Parsimony comparative fit index	PCFI	the ratio of the degrees of freedom in your model to degrees of freedom in the null model times CFI; the closer your model is to the saturated model, the more CFI is penalized (Garson, 2009)
Akaike information criterion	AIC	adjusts model chi-square to penalize for model complexity (that is, for lack of parsimony and over parameterization) and reflects the discrepancy between model-implied and observed covariance matrices (Garson, 2009)

Also, no post hoc modifications were performed to improve fit scores because the goal of performing the analyses was to select one of two existing AI and PA scales (Byrne, 2010; Garson, 2009). Additionally, respecified models might not fit new data due to alterations performed on the initial dataset (Garson, 2009). As such, a new data set would be required for cross-validation.

This study recognized model chi-square  $p$  values  $< .05$  as representing a poor fitting model (Garson, 2009). However, many researchers have noted the following problems with model chi-square: (a) it may be unrealistic to expect models to have a perfect population fit, (b) it is sensitive to sample size, (c) it is sensitive to the size of correlations, and (d) may also be invalid when distributional assumptions are violated, leading to the rejection of good models or the retention of bad ones (Albright & Park, 2009; Byrne, 2010; Garson, 2009; Kline, 2005). As a result, many researchers have suggested model chi-square should be considered in light of other fit statistics (Albright & Park, 2009; Byrne, 2010; Garson, 2009; Kline, 2005).

The value guides for the remaining goodness-of-fit indices used in this study were: (b) RMSEA values below 0.06 indicate a good fit, while those between 0.06 and 0.08 indicate an acceptable fit, with 0.10 considered the upper limit (Hu & Bentler, 1999; Byrne, 2000), (c) IFI and CFI values greater than 0.95 (Hu & Bentler, 1998), and (d) PCFI and AIC scores alone have little substantive value, but are used to compare scales with lesser values signifying a better fit (Garson, 2009). Statistics such as standardized regression weights (factor loadings) will also be used to inform decision-making. This study recognized loadings above 0.6 as high, those between 0.6 and 0.4 as moderate, and below 0.4 as low (Hair, Anderson, Tatham, & Black, 1998). However, all value cut-offs

should be interpreted in light of theory given that some researchers consider them to be arbitrary (Bollen, 1998; Garson, 2009). Instead, a more effective, and simple, approach may be to compare models that measure the same phenomenon (Bollen, 1998). Using this method, progress is represented by higher fit scores that may or may not achieve established “good” fit values.

After selecting the appropriate AI and PA scales, Cronbach’s alpha was used to measure their internal consistency. Scale items were dropped if the total item correlation was  $< .3$  (Field, 2005) and reliability improved after their deletion. Scales were measured using a five-point scale ranging from “Strongly Disagree” to “Strongly Agree”.

Hypotheses one through six evaluated the relationship between selected scales and activity style/preference items using independent samples t-tests, while hypotheses seven through ten evaluated these relationships using one-way analysis of variance (ANOVA) tests. Tukey’s post-hoc test was used to determine which groupings were significantly different from each other. The activity style/preference items used in hypotheses one through four were originally measured using a five-point scale ranging from “Strongly Agree” to “Strongly Disagree.” However, these items were dichotomized for the hypotheses tests by grouping “Strongly Agree” and “Agree” responses together to create an “Agreed” group, while “Strongly Disagree” and “Disagree” responses were combined to create the “Disagreed” category. “Neutral” responses were excluded from evaluation for these hypotheses. The activity style/preference item used in hypotheses five and six was originally measured as continuous data, but was dichotomously grouped using a median divide. The activity style/preference item used for hypotheses seven and eight was also originally measured as continuous data, but was grouped using a quartile

division for these tests. Lastly, the activity style/preference item used for hypotheses nine and ten was grouped by the three provided choices (respondents were instructed to select only one). Responses comprised of multiple choices were not included in this analysis.

For the mapping item, respondents' favorite gigging spots were aggregated onto one map using ArcGIS 9.2 to determine micro or "niche" place attachments. Then, three map layers were created to designate use areas (nonmotorized, seasonal mixed-use, mixed-use, and outside ONSR boundaries) based on the proposed alternatives for the new General Management Plan (GMP) at Ozark National Scenic Riverways (OSNR). Respondents' favorite gigging spots were then evaluated in light of each of the proposed alternatives to determine the effect they would have on fishers' ability to access their expressed favorite gigging locales. These determinations were made by considering favorite spots that fell within "nonmotorized" zones as inaccessible, "seasonal mixed-use" zones were considered potentially inaccessible, and "mixed-use" zones were interpreted as accessible.

Finally, the open-ended question, "Why do you participate in fish gigging", and additional comments were not analyzed, but are provided for review in Appendices E and F.

## Chapter IV

### Results

#### Response Rate

Results from questionnaires mailed to licensed fishers in seven zip codes in southern Missouri are reported here. The population for this study began with 1,289 fishers, but was adjusted to 1,011 due to duplicate and undeliverable addresses. When multiple fishers had the same address, only one fisher was asked to participate so as to minimize response bias. Selection criterion was based on gender (alternatively selected), which led to the removal of 121 duplicate addresses (61 male, 60 female) from the mailing list. In addition, the U.S. Postal Service returned 157 mailers, further reducing the population. Of the potential 1,011 respondents, 404 questionnaires were returned for an overall response rate of 39.7% (Table 7). Of those returned, 254 (62.9%) were completed by fishers who had participated in fish gigging, 148 (36.6%) were from those who had not, and 2 (0.05%) were not usable because respondents did not follow directions. Results of this study are based on the 254 questionnaires completed by respondents who had been fish gigging.

Table 7  
*Summary of response rates for fish gigging mail survey*

Mailer	Sent	Received		
		Total	Gigger	Not a Gigger
<i>Phase I</i>	545	213 (39.1%)	136 (63.8%)	77 (36.2%)
1 <sup>st</sup> Wave	545	155 (28.2%)	109 (70.3%)	46 (29.7%)
2 <sup>nd</sup> Wave	390	58 (14.9%)	27 (46.6%)	31 (53.4%)
<i>Phase II</i>	466	191 (41.0%)	118 (61.7%)	73 (38.2%)
1 <sup>st</sup> Wave	466	120 (25.7%)	85 (70.8%)	35 (29.2%)
2 <sup>nd</sup> Wave	377	71 (18.8%)	33 (46.5%)	38 (53.5%)
Total	1,011	404 (39.7%)	254 (62.9%)	148 (36.6%)

### Demographic & Activity Preferences

Fish giggers were predominately males (71.5%) in their early forties ( $M = 42.5$ ) who began this activity in their late teens ( $M = 18.8$ ), however some of the respondents started before grade school (Table 8). The average fish gigger has participated in this activity for nearly 25 years ( $M = 23.7$ ). They learned about the sport from both family and friends, and are likely to have taught someone else about the activity (74%) (Table 9). Due to their extensive history with fish gigging, participants know many others like them ( $M = 84.5$ ). Based on these results, fish gigging can be considered as a social sporting activity.

Table 8

*Current age, start age, years fish gigging, and number of giggers known*

Item	<i>N</i>	<i>M</i>	SD
Current age	253	42.45	13.36
Start age	251	18.81	11.22
Years fish gigging	251	23.74	14.26
How many fish giggers do you personally know?	230	84.47	183.93

Table 9

*Learning and teaching about fish gigging*

Item	Attribute	<i>n</i>	%
How did you learn about fish gigging? (n=253)	Self-taught	31	12.4
	Friend(s)	117	46.2
	Grandparent(s)	37	14.6
	Sibling	29	11.5
	Parent(s)	103	40.7
	Aunt/Uncle	33	2.4
	Other	33	6.7
Have you ever taught anyone else about fish gigging? (n=246)	Yes	182	74.0
	No	64	26.0

According to the respondents, the best time to take a sucker gigging trip was in September (24.4%) or October (26.0%), rather than in November (17.2%), December (20.0%), or January (4.4%); (Table 10). Giggers take approximately 11 trips per season for about four hours each trip—usually consisting of five to six friends and/or family members (Table 11). While on these trips, participants preferred gigging yellow suckers (47.6%) and northern hog suckers (35.7%) to other fish species (Table 11). Only one-third of respondents believed that a successful trip meant gigging their limit of suckers. In fact, fish giggers favored socializing (34.9%) and being outside (33.7%) over catching fish (28.9%) when asked to select what was most important on a typical trip (Table 12). A chi-square goodness-of-fit test revealed that each attribute (socializing, being outside, & catching fish) was equally preferred,  $X^2(2, N = 243) = 1.56, p = .46$ . Finally, nearly 44% ( $n = 109$ ) of respondents indicated that fish gigging was their favorite type of fishing experience (Table 12).

Table 10  
*Best time for a fish gigging trip*

Item	Attribute	<i>n</i>	%
The best time for a fish gigging trip is: (check only one) ( <i>n</i> =250)	Opening Day	36	14.4
	In September (not opening day)	25	10.0
	In October	65	26.0
	In November	43	17.2
	In December	50	20.0
	In January	11	4.4
	Multiple	20	8.0

Table 11  
*Trip characteristics for fish giggers*

Item	<i>n</i>	<i>M</i>	SD
Trips per season (individual)	234	11.31	16.06
Hours spent (per trip, per individual)	240	3.86	1.73
Group size (per trip)	249	5.53	4.48

Table 12  
*Activity preferences*

Item	Attribute	<i>n</i>	%
When fish gigging, which species do you prefer? (check only one)	Yellow Sucker	120	47.6
	Redhorse Sucker	16	6.3
	Northern Hog Sucker	90	35.7
	Other	15	6.0
	Multiple	11	4.4
A successful trip means gigging my limit of suckers.	Yes	102	57.0
	No	77	43.0
On a typical fish gigging trip, which one is more important? (check only one)	Catching Fish	72	28.9
	Being Outside	84	33.7
	Socializing	87	34.9
	Multiple	6	2.4
Fish gigging is my favorite type of fishing.	SD*	13	5.2
	D	31	12.4
	N	96	38.6
	A	62	24.9
	SA	47	18.9

\*SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

### Scale Selection

**Activity Involvement.** Items for both scales loaded reasonably well to their respective factors, with McIntyre's (1989) version (Scale B) performing slightly better overall (Tables 13 & 14). Scale B produced 11 items with high factor loadings (ranging from .64 to .87) and one item with a moderate loading (.53). Kyle et al.'s (2007) scale (Scale A) produced 11 items with high factor loadings (ranging from .67 to .90), three items with moderate loadings (.60, .60, & .59), and one item with a low loading (.36). A review of factor correlations revealed that identity affirmation and identity expression (.948) were highest for Scale A, while attraction and centrality (.912) were highest for Scale B. All factor correlations for Scale A are provided in Table 15, while

Scale B produced remaining correlations of .850 for attraction and self-expression, and, .748 for self-expression and centrality. The model chi-square, RMSEA, IFI, and CFI scores for both scales fell outside accepted value ranges (Table 16). Given the poor fit of both scales, selection was determined by comparing the two scales' fit statistics (Bollen, 1989). Using this approach, Scale B outperformed Scale A on all indices except for RMSEA. The results of this analysis suggest that McIntyre's scale fit best with this data set and, thus, was selected for hypotheses testing.

Table 13

*Standardized regression weights & variances for Scale A (Kyle et al., 2007)*

Activity Involvement items		Loading	R <sup>2</sup>
<i>Attraction</i>			
A <sub>1</sub>	Fish gigging offers me relaxation when life's pressures build up	.735	.540
A <sub>2</sub>	Fish gigging is very important to me	.856	.732
A <sub>3</sub>	Fish gigging is one of the most satisfying things I do	.847	.717
<i>Centrality</i>			
C <sub>1</sub>	I find a lot of my life is organized around fish gigging	.747	.558
C <sub>2</sub>	Fish gigging occupies a central role in my life	.808	.652
C <sub>3</sub>	To change my preference from fish gigging to another recreation activity would require major rethinking	.688	.473
<i>Social Bonding</i>			
SE <sub>1</sub>	I enjoy discussing fish gigging with my friends	.665	.442
SE <sub>1</sub>	Most of my friends are in some way connected with fish gigging	.590	.348
SE <sub>1</sub>	Fish gigging provides me with an opportunity to be with friends	.600	.360
<i>Identity Expression</i>			
IE <sub>1</sub>	When I am fish gigging, others see me the way I want them to see me	.697	.484
IE <sub>2</sub>	You can tell a lot about a person when you see them fish gigging	.679	.461
IE <sub>3</sub>	Fish gigging says a lot about who I am	.902	.813
<i>Identity Affirmation</i>			
IA <sub>1</sub>	When I am fish gigging, I can really be myself	.740	.547
IA <sub>2</sub>	I'm not concerned with the way I look when I gig fish	.355	.126
IA <sub>3</sub>	I identify with the people and image associated with fish gigging	.601	.361

Table 14

*Standardized regression weights variances & for Scale B (McIntyre, 1989)*

Activity Involvement items		Loading	R <sup>2</sup>
<i>Attraction</i>			
A <sub>1</sub>	Fish gigging offers me relaxation when life's pressures build up	.623	.388
A <sub>2</sub>	Fish gigging is one of the most enjoyable things I do	.751	.564
A <sub>3</sub>	Fish gigging is very important to me	.841	.707
A <sub>4</sub>	I have little or no interest in fish gigging	.642	.412
A <sub>5</sub>	Fish gigging is one of the most satisfying things I do	.857	.734
<i>Centrality</i>			
C <sub>1</sub>	I find a lot of my life is organized around fish gigging	.667	.444
C <sub>2</sub>	I enjoy discussing fish gigging with my friends	.645	.416
C <sub>3</sub>	Most of my friends are in some way connected to fish gigging	.531	.281
<i>Self-expression</i>			
SE <sub>1</sub>	When I am fish gigging, others see me the way I want to be seen	.740	.547
SE <sub>1</sub>	When I am fish gigging, I can really be myself	.751	.564
SE <sub>1</sub>	You can tell a lot about a person when you see them fish gigging	.673	.452
SE <sub>1</sub>	Fish gigging says a lot about who I am	.871	.758

Table 15

*Factor correlations for Scale A (Kyle et al., 2007)*

Factors	Centrality	Social Bonding	Identity Expression	Identity Affirmation
Attraction	.882	.831	.756	.795
Centrality		.753	.858	.757
Social Bonding			.775	.937
Identity Expression				.948

Table 16

*Fit statistics for activity involvement scales*

Models	$\chi^2(df)$	<i>p</i>	RMSEA	IFI	CFI	PCFI	AIC
Scale A (Kyle)	234.97 (80)	.000	.088	.917	.916	.610	352.40
Scale B (McIntyre)	168.91 (51)	.000	.096	.923	.921	.602	246.91

*Note.* PA=Place Attachment;  $\chi^2$ =chi-square; *p*=probability; RMSEA=Root Mean Square Error of Approximation; IFI=Incremental Fit Index; CFI=Comparative Fit Index; PCFI=Parsimony Comparative Fit Index; AIC=Akaike Information Criteria.

**Place attachment.** Items for both scales appeared to load well onto their respective factors, with only reverse-coded items failing to produce high loadings (Tables 17 & 18). Kyle et al.'s (2005) scale (Scale C) produced 10 items with high factor loadings (.72 to .92), one item with a moderate loading (.52), and one item with a low loading (.23). Williams and Vaske's (2003) scale (Scale D) produced 11 items with high factor loadings (.73 to .91) and one item with a moderate loading (.57). A review of factor correlations revealed that Scale C produced scores of .989 (social bonding and place identity), .909 (place identity and place dependence), and .855 (social bonding and place dependence), while Scale D produced a score of .934 (place dependence and place identity).

The model chi-square scores indicate that neither scale fit very well with this data set (Table 18). However, as previously noted, many researchers have noted problems with model chi-square and recommend it be considered in light of other fit statistics. Examination of the remaining fit indices showed an acceptable fit for Scale C with RMSEA = .076, IFI = .966, and CFI = .966 (Table 19). Scale D achieved acceptable fit on the two baseline fit measures (IFI = .951, CFI = .950), but demonstrated a poorer RMSEA fit (RMSEA = .098). Also, Scale C outperformed Scale D on the PCFI and AIC measures. These results suggest that Kyle et al.'s was the better fitting scale and, as such, was selected for use in the hypotheses testing.

Table 17

*Standardized regression weights & variances for Scale C (Kyle et al., 2005)*

Place Attachment items	Loading	R <sup>2</sup>
<i>Place Identity</i>		
PI <sub>1</sub> I identify strongly with this park	.881	.776
PI <sub>2</sub> CJF means a lot to me	.824	.678
PI <sub>3</sub> I feel no commitment to the CJF	.518	.268
PI <sub>4</sub> I am very attached to CJF	.916	.839
<i>Place Dependence</i>		
PD <sub>1</sub> I wouldn't substitute any other area for what I like to do at CJF	.780	.608
PD <sub>2</sub> I get more satisfaction out of visiting this park than from any	.867	.751
PD <sub>3</sub> I enjoy what I do at CJF more than any other place	.826	.682
PD <sub>4</sub> Doing what I do at CJF is more important to me than doing it in any other place	.867	.751
<i>Social Bonding</i>		
SB <sub>1</sub> I have a special connection to CJF and the people who go there	.850	.722
SB <sub>2</sub> I don't tell many people about CJF	.231	.053
SB <sub>3</sub> I have a lot of fond memories about CJF	.834	.695
SB <sub>4</sub> I will (do) bring my children to CJF	.723	.522

Table 18

*Standardized regression weights & variances for Scale D (Williams & Vaske, 2003)*

Place Attachment items	Loading	R <sup>2</sup>
<i>Place Identity</i>		
PI <sub>1</sub> CJF is very special to me	.863	.744
PI <sub>2</sub> I identify strongly with CJF	.884	.781
PI <sub>3</sub> Being at CJF says a lot about who I am	.731	.534
PI <sub>4</sub> I feel that CJF is a part of me	.865	.748
PI <sub>5</sub> CJF means a lot to me	.804	.646
PI <sub>6</sub> I am very attached to CJF	.907	.822
<i>Place Dependence</i>		
PD <sub>1</sub> CJF is the best place for what I like to do	.844	.712
PD <sub>2</sub> I wouldn't substitute any other area for what I like to do at CJF	.811	.657
PD <sub>3</sub> I get more satisfaction from being at CJF than at any other place	.870	.756
PD <sub>4</sub> No other place can compare to CJF	.849	.720
PD <sub>5</sub> The things I do at CJF I would enjoy doing just as much at a similar site	.572	.327
PD <sub>6</sub> Doing what I do at CJF is more important to me than doing it in any other place	.846	.751

Table 19

*Fit statistics for place attachment scales*

Models	$\chi^2(df)$	<i>p</i>	RMSEA	IFI	CFI	PCFI	AIC
Scale C (Kyle)	124.55 (51)	.000	.076	.966	.966	.632	202.55
Scale D (Williams & Vaske)	182.09 (53)	.000	.098	.951	.950	.646	256.09

*Note.* PA=Place Attachment;  $\chi^2$ =chi-square; *p*=probability; RMSEA=Root Mean Square Error of Approximation; IFI=Incremental Fit Index; CFI=Comparative Fit Index; PCFI=Parsimony Comparative Fit Index; AIC=Akaike Information Criteria

### Selected Scales

**Activity Involvement.** Results from the CFA of competing AI scales led to the selection of McIntyre's (1989) three-factor, twelve-item scale. Descriptive statistics for this scale are given in Table 20. The attraction ( $M = 3.80$ ) aspect of fish gigging experiences resonated strongest for respondents. Cronbach's alpha was used to determine the overall reliability for McIntyre's AI scale, as well as each of the subscales comprising it—attraction (.87), centrality (.64), and self-expression (.85).

**Place Attachment.** Kyle et al.'s (2005) three-factor, twelve-item place attachment scale was selected for further testing (Table 21). The total item correlation (.26) of the reverse-coded item "I don't tell many people about CJF" suggested it did not fit well with the other items comprising the social bonding subscale. Further, Cronbach's alpha procedure revealed that deleting this item would create a more reliable social bonding factor (increasing from .72 to .84). Therefore, this item was omitted from all remaining calculations. The statistical output for each factor that resulted from this change is depicted in Table 22. Interestingly, the strongest factor comprising

respondents' place attachments was the Current and Jacks Fork Rivers ability to support meaningful social relationships (social bonding).

Table 20

*McIntyre's (1989) activity involvement descriptive statistics*

Activity Involvement items <sup>a</sup>	<i>n</i>	<i>M</i>	SD	Total item correlation	$\alpha$ if item deleted
<i>Attraction</i> ( $\alpha=0.865$ )	244	3.80	.74		
Fish gigging offers me relaxation when life's pressures build up	254	3.96	.90	.595	.859
Fish gigging is one of the most enjoyable things I do	251	3.68	.88	.701	.834
Fish gigging is very important to me	253	3.60	.99	.745	.822
I have little or no interest in fish gigging <sup>b</sup>	251	4.37	.87	.787	.811
Fish gigging is one of the most satisfying things I do	250	3.38	.98	.612	.855
<i>Centrality</i> ( $\alpha=0.644$ )	246	3.34	.71		
I find a lot of my life is organized around fish gigging	250	2.53	1.02	.473	.526
I enjoy discussing fish gigging with my friends	251	3.85	.79	.482	.524
Most of my friends are in some way connected to fish gigging	253	3.62	.92	.423	.588
<i>Self-expression</i> ( $\alpha=0.849$ )	249	3.26	.81		
When I am fish gigging, others see me the way I want to be seen	252	3.40	1.05	.737	.805
When I am fish gigging, I can really be myself	253	3.62	.96	.760	.809
You can tell a lot about a person when you see them fish gigging	253	3.08	.96	.534	.832
Fish gigging says a lot about who I am	251	2.95	.95	.832	.788
<i>Total Activity Involvement</i> ( $\alpha=0.853$ )	254	3.47	.65		

<sup>a</sup> Activity Involvement items were measured on a scale of 1 = Strongly Disagree to 5 = Strongly Agree.

<sup>b</sup> Item was reverse-coded.

Table 21

*Kyle et al. 's (2005) place attachment descriptive statistics & reliability measures*

Place Attachment items	<i>n</i>	<i>M</i>	SD	Item total correlation	$\alpha$ if item deleted
<i>Place Identity</i> ( $\alpha=0.857$ )	244	4.19	.78		
I identify strongly with this park	241	4.26	.85	.737	.806
CJF <sup>a</sup> means a lot to me	241	4.44	.75	.760	.799
I feel no commitment to the CJF <sup>b</sup>	242	4.05	1.09	.534	.902
I am very attached to CJF	243	4.19	.95	.832	.760
<i>Place Dependence</i> ( $\alpha=0.904$ )	244	3.87	.96		
I wouldn't substitute any other area for what I like to do at CJF	244	3.91	1.12	.738	.738
I get more satisfaction out of visiting this park than from any	244	3.96	1.10	.818	.818
I enjoy what I do at CJF more than any other place	241	3.82	1.02	.785	.785
Doing what I do at CJF is more important to me than doing it in any other place	242	3.79	1.14	.798	.798
<i>Social Bonding</i> ( $\alpha=0.721$ )	244	4.26	.60		
I have a special connection to CJF and the people who go there	243	4.30	.86	.621	.586
I don't tell many people about CJF <sup>b</sup>	244	3.78	.99	.256	.843
I have a lot of fond memories about CJF	244	4.46	.68	.621	.609
I will (do) bring my children to CJF	243	4.51	.66	.665	.582
<i>Total Place Attachment</i> ( $\alpha=.851$ )	244	4.11	.71		

<sup>a</sup> CJF = Current & Jacks Fork rivers.<sup>b</sup> Item was reverse-coded prior to analysis.

Table 22

*Descriptive statistics for the place attachment factors with items removed*

Place Attachment factors <sup>a</sup>	<i>n</i>	<i>M</i>	SD	Cronbach's $\alpha$
<i>Social Bonding</i>	244	4.42	.64	.843
<i>Place Identity</i>	244	4.19	.80	.857
<i>Place Dependence</i>	244	3.87	.96	.904
<i>Total Place Attachment</i>	244	4.16	.74	.890

### Hypothesis Testing

*H<sub>10</sub>: There is no significant difference between the activity involvement scores of fishers who agree that sucker gigging is their favorite type of fishing versus those who disagree.*

This hypothesis examined whether there was a difference in activity involvement scores between fish giggers who agreed that sucker gigging is their favorite type of fishing and those who disagreed using independent samples t-tests (Table 23). The terms ‘Disagreed’ and ‘Agreed’ described fish giggers’ responses to the statement “fish gigging is my favorite type of fishing.” The overall scores between the ‘Disagreed’ and ‘Agreed’ groups were significantly different ( $p < .01$ ). All subscale scores were significantly different as well. The null hypothesis was rejected.

Table 23

*T-tests comparing the activity involvement of those who agreed that fish gigging was their favorite form of fishing with those who did not*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Attraction	Disagreed	44	3.26	151	-7.15	.000***
	Agreed	109	4.17			
Centrality	Disagreed	44	2.96	151	-5.72	.000***
	Agreed	109	3.65			
Self-Expression	Disagreed	44	2.96	151	-3.95	.000***
	Agreed	109	3.51			
Total Activity Involvement	Disagreed	44	3.06	151	-6.47	.000***
	Agreed	109	3.59			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on responses to “Fish gigging is my favorite form of fishing”.

*H<sub>20</sub>: There is no significant difference between the place attachment scores of those who agree that fish gigging is their favorite type of fishing versus those who disagree.*

This hypothesis examined if there was a difference in place attachment scores between fish giggers who agreed that fish gigging was their favorite type of fishing and those who disagreed using independent samples t-tests (Table 24). The terms ‘Disagreed’ and ‘Agreed’ described fish giggers’ responses to the statement “fish gigging is my favorite type of fishing.” The overall scores between the ‘Disagreed’ and ‘Agreed’ groups were significantly different ( $p < .01$ ). This effect appears to have resulted from the influence of the place dependence ( $p < .001$ ) and social bonding ( $p < .01$ ) factors. The null hypothesis was rejected.

Table 24

*T-tests comparing the place attachment of those who agreed that fish gigging was their favorite form of fishing with those who did not*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Place Dependence	Disagreed	42	3.49	146	-4.09	.000***
	Agreed	106	4.17			
Place Identity	Disagreed	42	4.08	146	-1.61	.109
	Agreed	106	4.31			
Social Bonding	Disagreed	42	4.20	146	-2.96	.004**
	Agreed	106	4.56			
Total Place Attachment	Disagreed	42	3.92	146	-3.16	.001**
	Agreed	106	4.35			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on responses to “Fish gigging is my favorite form of fishing”.

*H<sub>30</sub>: There is no significant difference between the activity involvement scores of those who agree that a successful trip means gigging their limit of suckers versus those who disagree.*

The third hypothesis tested whether there was a difference in activity involvement scores between fish giggers who believed that a successful trip means gigging their limit of suckers and those who disagreed using independent samples t-tests (Table 25). The terms “agreed” and “disagreed” described fish giggers’ responses to the statement “A successful trip means gigging my limit of suckers.” The overall scores between agree and disagree groups were significantly different ( $p < .000$ ), as well as each of the subscales. The null hypothesis was rejected.

Table 25

*T-tests comparing the activity involvement of fish giggers who agreed that a successful trip means catching their limits of versus those who disagreed*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Attraction	Disagreed	77	3.62	177	-3.38	.001**
	Agreed	102	3.99			
Centrality	Disagreed	77	3.13	177	-3.35	.000***
	Agreed	102	3.56			
Self-Expression	Disagreed	77	2.92	177	-4.74	.000***
	Agreed	102	3.51			
Total Activity Involvement	Disagreed	77	3.23	177	-4.69	.000***
	Agreed	102	3.69			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on whether respondents felt “A successful trip means gigging my limit suckers”.

*H<sub>40</sub>: There is no significant difference between the place attachment scores of those who agree that a successful trip means gigging their limit of suckers versus those who disagree.*

The fourth hypothesis examined if there was a difference in place attachment scores between fish giggers who believed that a successful trip means gigging their limit of suckers and those who disagreed using independent samples t-tests (Table 26). The terms ‘Disagreed’ and ‘Agreed’ described fish giggers’ responses to the statement “A successful trip means gigging my limit of suckers.” The overall scores between ‘Disagreed’ and ‘Agreed’ groups were not significantly different ( $p = .283$ ). The null hypothesis was accepted.

Table 26

*T-tests comparing the place attachment of fish giggers who agreed that a successful trip means catching their limits of versus those who disagreed*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Place Dependence	Disagreed	75	3.71	171	-1.78	.076
	Agreed	98	3.99			
Place Identity	Disagreed	75	4.18	171	-.29	.773
	Agreed	98	4.21			
Social Bonding	Disagreed	75	4.38	171	-.68	.499
	Agreed	98	4.45			
Total Place Attachment	Disagreed	75	4.09	171	-1.18	.283
	Agreed	98	4.22			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on whether respondents felt “A successful trip means gigging my limit of suckers”.

*H<sub>50</sub>: There is no significant difference between the activity involvement scores of fish giggers and the number of gigging trips taken each season.*

The fifth hypothesis tested the relationship between activity involvement scores based and the number of gigging trips taken each season using independent samples t-tests (Table 27). The terms ‘few’ and ‘many’ described fish giggers below and above the median number of trips per season (median = 6 trips). Overall scores between the few ( $M = 3.09$ ) and many ( $M = 3.76$ ) groups were significantly different ( $p < .01$ ), as well as each of the subscales. The null hypothesis was rejected.

Table 27

*T-tests comparing fish giggers based on the number of gigging trips taken each season and their activity involvement*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Attraction	Few (<6)	104	3.35	216	-9.88	.000***
	Many (>6)	114	4.18			
Centrality	Few (<6)	104	2.96	216	-8.12	.000***
	Many (>6)	114	3.64			
Self-Expression	Few (<6)	104	2.96	216	-4.77	.000***
	Many (>6)	114	3.47			
Total Activity Involvement	Few (<6)	104	3.09	216	-8.84	.000***
	Many (>6)	114	3.76			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on the median number of trips taken each season.

*H<sub>0</sub>: There is no significant difference between the place attachment scores of fish giggers and the number of gigging trips taken each season.*

The sixth hypothesis examined if there was a difference in place attachment scores based on the number of gigging trips taken each season using independent samples t-tests (Table 28). The terms ‘few’ and ‘many’ described fish giggers below and above the median number of trips per season (median = 6 trips). Overall scores between the few ( $M = 3.94$ ) and many ( $M = 4.31$ ) groups were significantly different ( $p < .001$ ). Additionally, the place dependence and social bonding produced significant differences at the .001 alpha level, while place identity was significant at the .01 level. The null hypothesis was rejected.

Table 28

*T-tests comparing the importance fish giggers place on reaching their limit of suckers and their place attachment*

Variable	Group <sup>a</sup>	<i>n</i>	<i>M</i>	<i>df</i>	<i>t</i>	<i>p</i>
Place Dependence	Few (<6)	100	3.60	209	-3.66	.000***
	Many (>6)	111	4.07			
Place Identity	Few (<6)	100	4.00	209	-2.65	.009**
	Many (>6)	111	4.29			
Social Bonding	Few (<6)	100	4.23	209	-3.85	.000***
	Many (>6)	111	4.56			
Total Place Attachment	Few (<6)	100	3.94	209	-3.67	.000***
	Many (>6)	111	4.31			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

<sup>a</sup> Groups are based on the median number of trips taken each season.

*H<sub>70</sub>: There is no significant difference between the activity involvement scores of fish giggers based on their years of experience in the activity.*

This hypothesis examined if there was a difference in activity involvement scores based on fish giggers' years of experience using one-way ANOVA (Table 29). Fish giggers' years of experience was divided into quartiles. The resultant groups were: 1) 0-11 years, 2) 12-22 years, 3) 23-33 years, and 4) 34+ years. The overall test value ( $F = 4.88$   $p < .01$ ) indicated a significant difference in activity involvement scores among the four groupings of experience. A post-hoc Tukey's test (Table 28) showed giggers with 12-22 years experience reported significantly higher activity involvement scores than the least (0-11) and most (34+) experienced groups, but was not significantly different from those with 23-33 years of experience. All other comparisons were non-significant.

Table 29

*ANOVA comparing years of experience with activity involvement*

AI Factors	0-11	12-22	23-33	34+	<i>F</i>	<i>p</i>
Attraction	3.54 <sup>a</sup>	4.06 <sup>b</sup>	3.78 <sup>a, b</sup>	3.76 <sup>a</sup>	5.80*	.001**
Centrality	3.09 <sup>a</sup>	3.58 <sup>b</sup>	3.37 <sup>a, b</sup>	3.25 <sup>a</sup>	6.14*	.000***
Self-Expression	3.21	3.42	3.20	3.17	1.30	.276
Total Activity Involvement	3.28 <sup>a</sup>	3.69 <sup>b</sup>	3.45 <sup>a, b</sup>	3.40 <sup>a</sup>	4.88*	.003**

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

Means that do not have a superscript in common are significantly different from each other (Tukey's HSD,  $P < 0.05$ ).

*H<sub>80</sub>: There is no significant difference between the place attachment scores of fish giggers based on their years of experience in the activity.*

This hypothesis examined if there was a difference in place attachment scores based on fish giggers' years of experience using a one-way ANOVA (Table 30). Fish giggers' years of experience were divided into quartiles. The resultant groups were: 1) 0-11 years, 2) 12-22 years, 3) 23-33 years, and 4) 34+ years. The overall test value ( $F = 7.18, p < .000$ ) indicated that there was a significant difference in activity involvement scores among the four groupings of experience. The null hypothesis was rejected. Tukey's post-hoc comparisons of the four groups showed that fish giggers with 0-11 years of experience reported significantly lower place attachment scores than the other three groups (Table 29). All other comparisons were non-significant.

Table 30  
*ANOVA comparing years of experience with place attachment*

PA Factors	0-11	12-22	23-33	34+	<i>F</i>	<i>p</i>
Place Dependence	3.46	4.03 <sup>a</sup>	4.04 <sup>a</sup>	3.96 <sup>a</sup>	5.32	.001**
Place Identity	3.81	4.29 <sup>a</sup>	4.37 <sup>a</sup>	4.29 <sup>a</sup>	6.92	.000***
Social Bonding	4.12	4.55 <sup>a</sup>	4.50 <sup>a</sup>	4.52 <sup>a</sup>	6.53	.000***
Total Place Attachment	3.79	4.29 <sup>a</sup>	4.30 <sup>a</sup>	4.26 <sup>a</sup>	7.18	.000***

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Means that do not have a superscript in common are significantly different from each other (Tukey's HSD,  $p < 0.05$ ).

*H<sub>90</sub>: There is no significant difference between the activity involvement scores of fish giggers and what they selected as being most important on a typical fish gigging trip.*

This hypothesis examined whether there was a difference in activity involvement scores of fish giggers based on their selection of what is most important on a typical fishing trip (catching fish, being outside, and socializing) using a one-way ANOVA test (Table 31). The overall test value ( $F = 2.04$ ;  $p = .133$ ) indicated there was no significant difference among the means for overall activity involvement and responses—catching fish, being outside, and socializing—to the question “On a typical fish gigging trip, which is most important”? The null hypothesis was accepted.

Table 31  
*ANOVA comparing what is most important on a typical fishing trip with activity involvement*

AI Factors	Catching Fish	Being Outside	Socializing	<i>F</i>	<i>p</i>
Attraction				.582	.560
Centrality				2.80	.063
Self-Expression				1.97	.141
Total Activity Involvement				2.04	.133

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Means that do not have a superscript in common are significantly different from each other (Tukey's HSD,  $p < 0.05$ ).

*H<sub>10</sub>0: There is no significant difference between fish giggers' place attachment and what they selected as being most important on a typical fish gigging trip.*

This hypothesis examined the difference in place attachment scores of fish giggers based on their primary objective of a typical trip (catching fish, being outside, and socializing) using a one-way ANOVA test (Table 32). The overall test value ( $F = 1.020$ ;  $p = .165$ ) indicated there was no significant difference among the means for overall activity involvement and responses—catching fish, being outside, and socializing—to the question “On a typical fish gigging trip, which is most important?” The null hypothesis was accepted.

Table 32  
*ANOVA comparing the objective of a fish trip with place attachment*

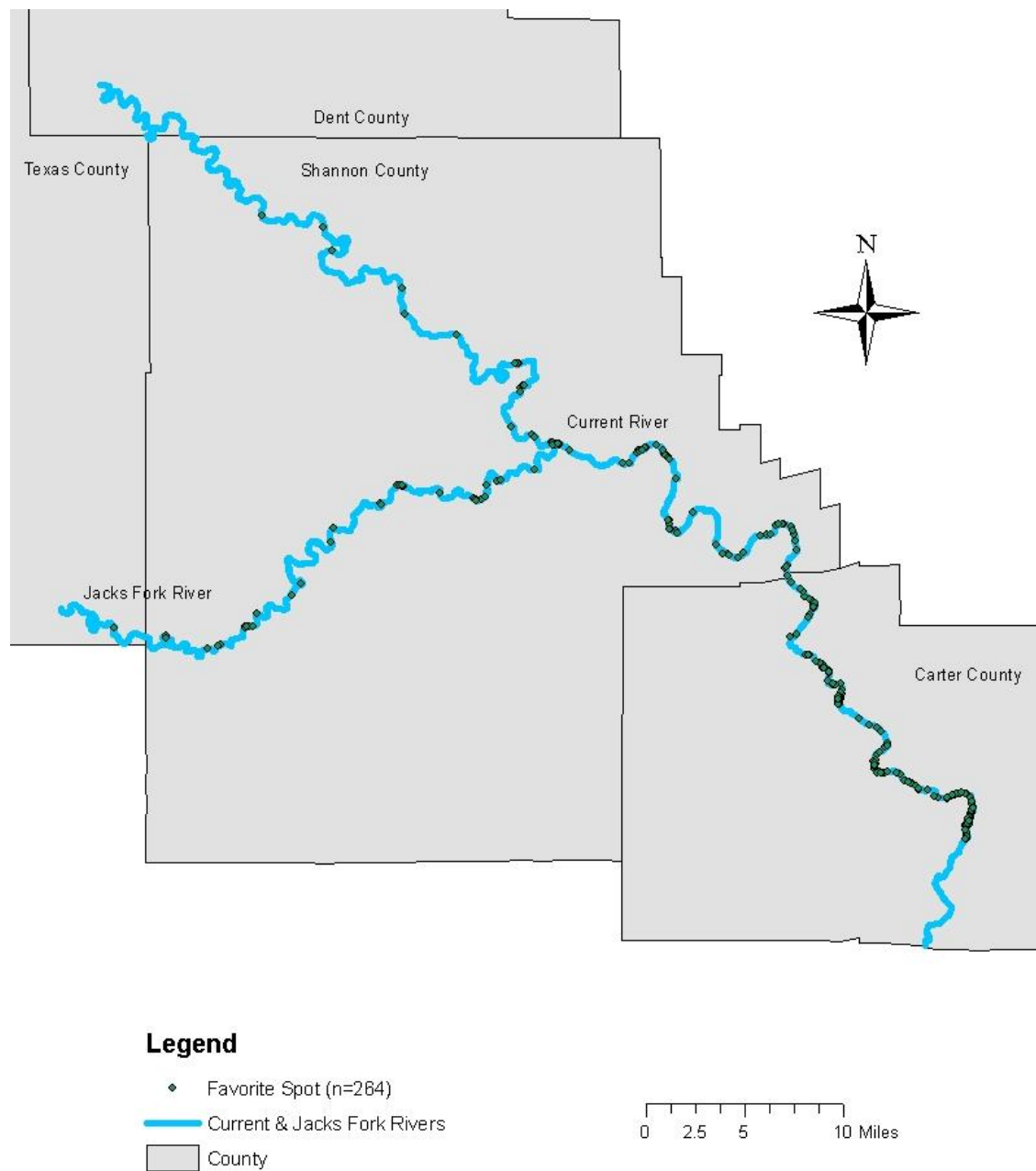
PA Factors	Catching Fish	Being Outside	Socializing	<i>F</i>	<i>p</i>
Place Dependence	3.86	3.76	3.98	1.07	.344
Place Identity	4.13	4.06	4.31	2.38	.095
Social Bonding	4.37	4.38	4.47	.62	.538
Total Place Attachment	4.12	4.01	4.26	1.44	.239

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

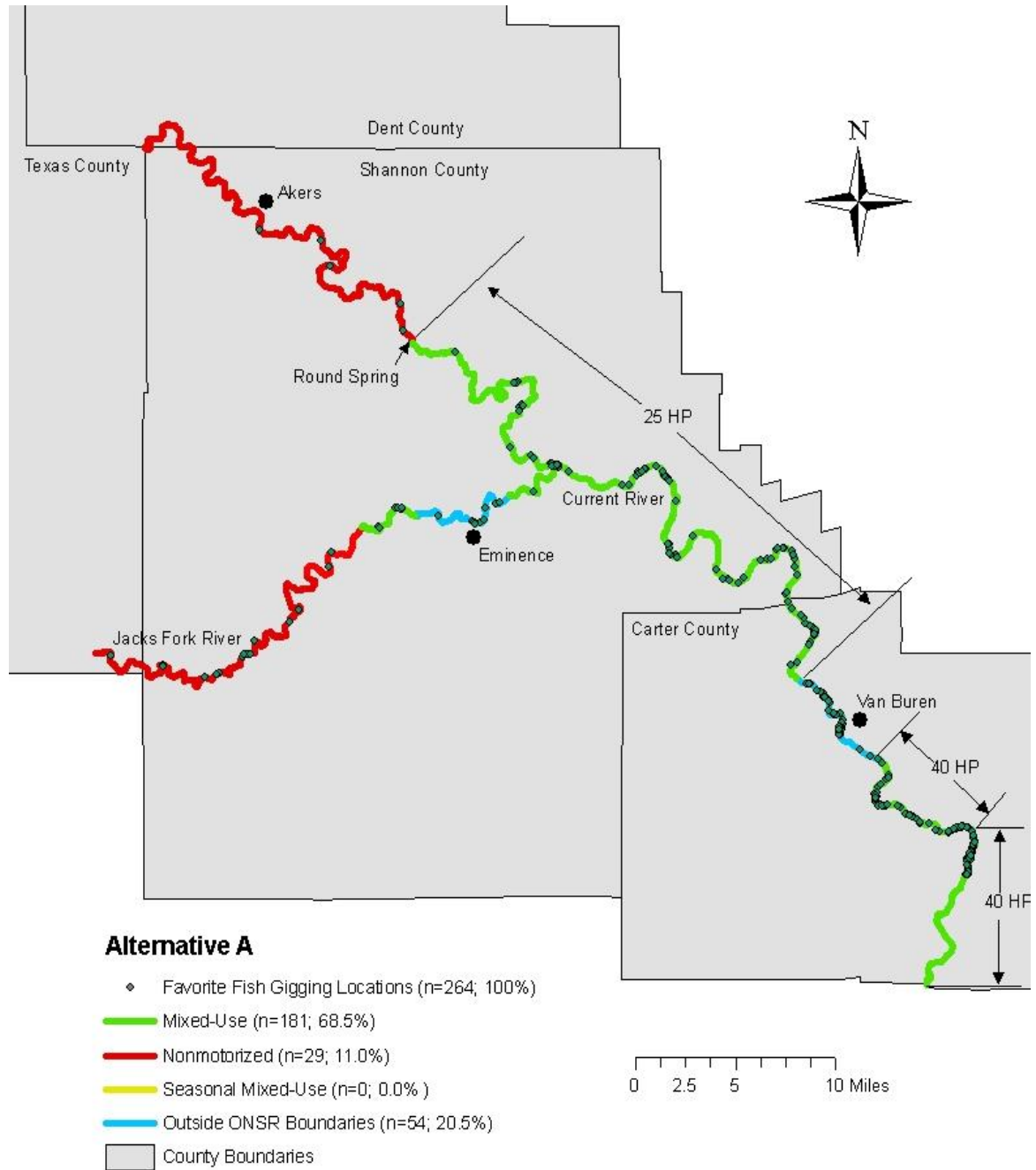
Means that do not have a superscript in common are significantly different from each other (Tukey's HSD,  $p < 0.05$ ).

**Favorite Locations for Fish Gigging**

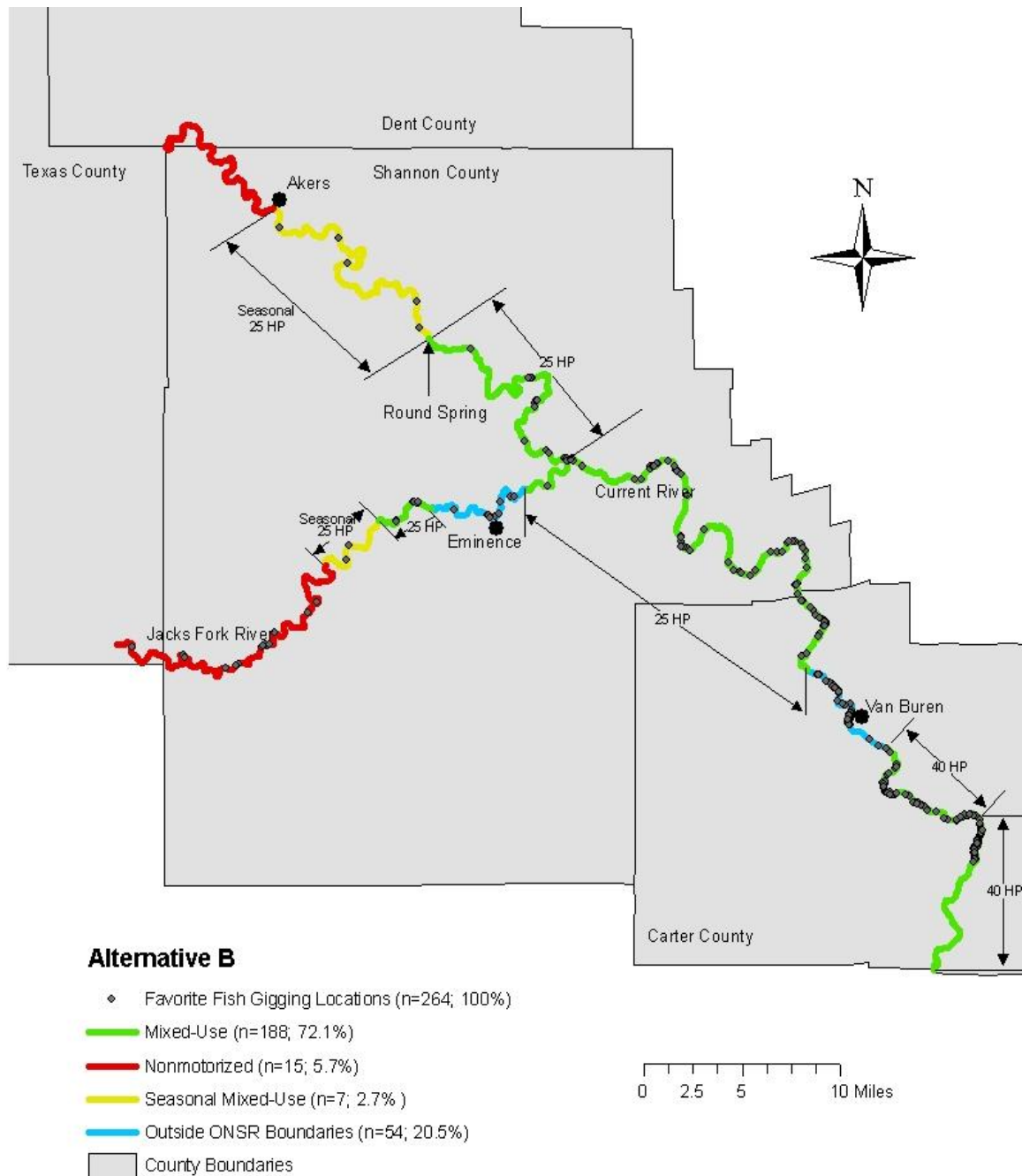
The mapping portion of the study asked respondents to indicate if they had ever been fish gigging on the Current or Jacks Fork Rivers. If so, they were then requested to place an 'X' on the map (Figure 2) to indicate their favorite location. A total of 237 (93.3%) fishers indicated they had been fish gigging on the Current or Jacks Fork Rivers. Of this number, 221 of them revealed 264 favorite fishing locations on the map (Figure 4). Figures 5, 6, and 7 represent the three map layers created to designate use areas (nonmotorized, seasonal mixed-use, mixed-use, and outside ONSR boundaries) based on the proposed alternatives for the new General Management Plan (GMP) at Ozark National Scenic Riverways (OSNR). Designated use areas should be interpreted as follows: a) nonmotorized use areas (red) are likely to be the sections that would most adversely affect fish giggers ability to access their favorite fishing locations, b) seasonal mixed-use areas (yellow) could potentially restrict fish giggers access to their favorite fishing locations, depending on what seasons the NPS includes, c) mixed-use areas (green) will likely not effect fish giggers access to favorite locations, and d) outside ONSR boundaries (blue) areas are not affected by NPS regulations. Based on the dispersion of fish giggers' favorite spots in relation to the use areas, it appears that Alternative A would most adversely affect fish gaggers' ability to access their favorite gigging locations. However, the majority of spots would remain accessible under all three alternatives.



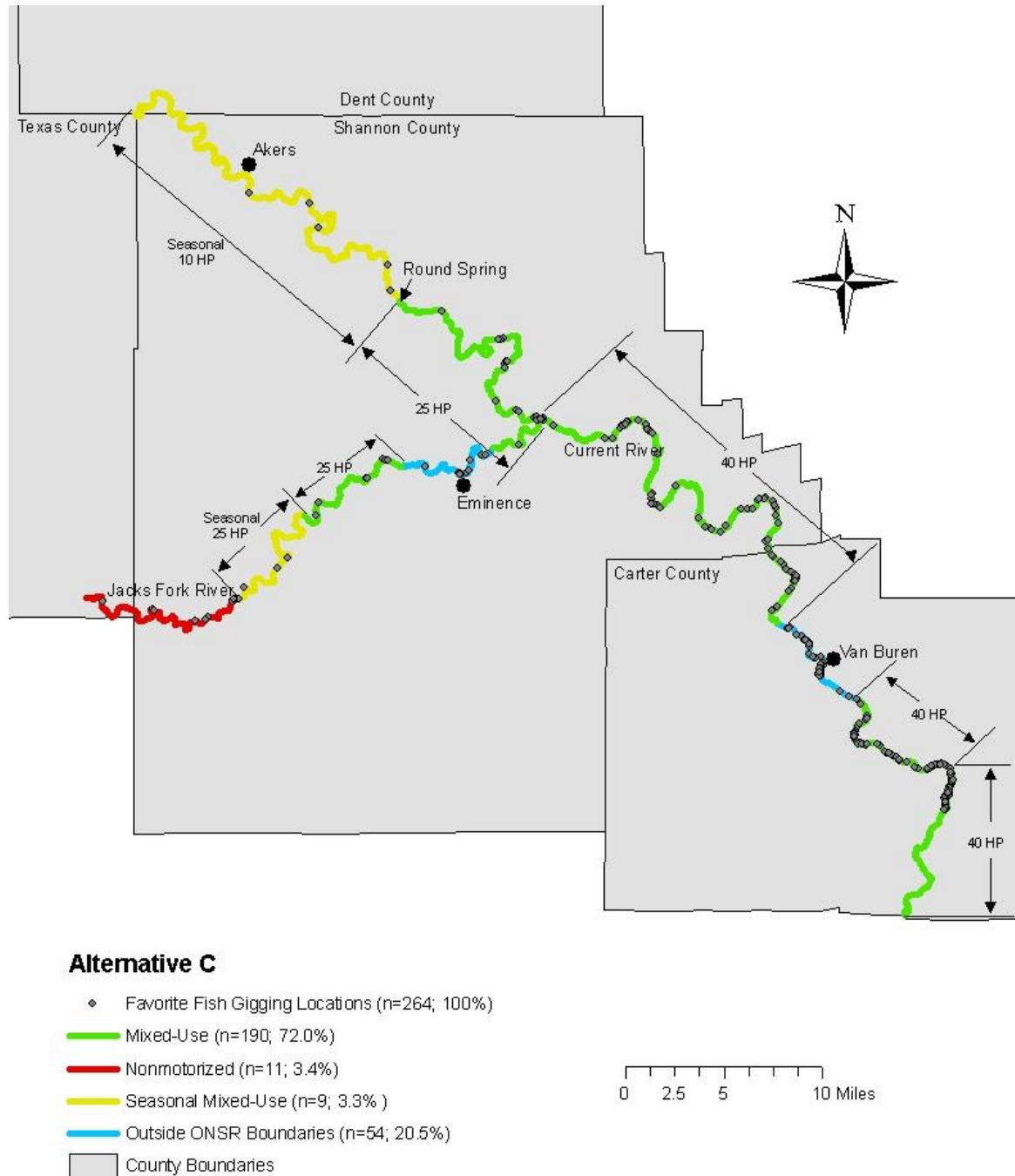
*Figure 4.* Favorite fish gigging locations: Dispersion along the Current & Jacks Fork Rivers.



*Figure 5.* Favorite fish giggling locations in relation to Alternative A: General Management Plan, Ozark National Scenic Riverways.



*Figure 6.* Favorite fish gigging locations in relation to Alternative B: General Management Plan, Ozark National Scenic Riverways.



*Figure 7.* Favorite fish gigging locations in relation to Alternative C: General Management Plan, Ozark National Scenic Riverways.

## **Chapter V**

### **Discussion**

#### **Descriptive Information**

Results of this study suggest that fish giggers in the Ozarks share some similar characteristics with other “primitive” forms of fishing in Missouri, such as paddlefish snaggers and catfish noodlers. These fishers provide logical reference groups for fish giggers in this study because they, too, represent unique forms of fishing that do not rely on lures or bait. Hayden (2009) described snagging as a “continuous process of yanking a weighted line affixed with large treble hooks in the hopes of ‘foul hooking’ an unsuspecting paddlefish” (p. 1), while noodling represents the practice of catching catfish using only one’s hands (Morgan, 2008).

Giggers, snaggers, and noodlers were predominantly men in their early forties—although a wide range of ages was reported for each subgroup—who learned about the activity primarily from parents or friends. Also, they know many members from their subgroup and were likely to have taught someone else about the activity. These results suggest fish gigging in the Ozarks, like Missouri paddlefish snagging (Hayden, 2009) and noodling (Morgan, 2008), are cultural activities, heavily influenced by socialization through parents and/or friends. Nearly two-thirds of the fishers responding to this survey expressed that they have been fish gigging previously.

The nature of fish gigging implies a strong consumptive orientation. That is, unlike most other forms of fishing, suckers impaled by a metal gig stand little chance of survival, even if released. Therefore, it was expected that fish giggers would express a strong consumptive orientation. This belief was supported by the majority (57%) of

respondents who indicated that a successful fishing trip meant catching their limit of suckers. However, when asked to choose which motive was most important on a typical fish gigging trip, socializing (34.9%) and being outdoors (33.7%) received more support than simply catching fish (28%). Given the linkage between motives, expected outcomes, and satisfaction (Graefe & Fedler, 1986), it would seem that a fishing trip could be unsuccessful (due to not catching their limit of suckers), but still satisfying because of the importance they placed on non-catch motives. Perhaps, these results show that consumptive motives are processed and valued differently from non-catch motives, rather than being a contradiction (Fedler & Ditton, 1994).

The activity involvement scores of fish giggers were not as high as expected given the history and uniqueness of the sport in relation to other fishing subgroups such as paddlefish snaggers (Hayden, 2009) and noodlers (Morgan, 2006). In fact, giggers scored lower than noodlers on all three dimensions (attraction, centrality, & self-expression) of McIntyre's (1989) activity involvement scale. Paddlefish snaggers are a more comparable fisher subgroup, since their attraction and centrality scores mirrored those of fish giggers. However, giggers scored much lower than snaggers on the self-expression factor. Interestingly, a closer examination of the centrality dimension reveals that the social items "I enjoy discussing fish gigging with my friends" and "Most of my friends are in some way connected to fish gigging" yielded two of the highest scores overall, while the third item "I find a lot of my life is organized around fish gigging" produced the lowest score. Therefore, it would seem that giggers' participation is driven by socialization and enjoyment, rather than being an extension or expression of who they are.

Another important element of this study was to evaluate fish giggers' place attachment to the Current and Jacks Fork rivers. Data collection focused on the seven zip codes adjacent to these two rivers because they were believed to be the "epicenter" of fish gigging activity in the state. These results showed that the affective aspects of giggers' place attachment (social bonding and place identity) to the Current and Jacks Fork rivers were more important to them than the rivers' ability to support their functional needs (place dependence). In particular, social bonding ( $M = 4.42$ ) was the most salient factor comprising giggers' place attachment to the Current and Jacks Fork Rivers. This could be interpreted to mean that the activity is secondary to what the rivers mean to them and their ability to support social relationships.

### **Scale Selection**

**Activity Involvement.** Traditionally, empirical testing of involvement scales has relied on inductive processes (Kyle et al., 2007). Researchers select items to test using a specific population, perform an exploratory analysis, and report the factor solutions. This process, in conjunction with the contextual nature of observed activities, typically leads to differing combinations of items and factor solutions (Kyle et al., 2007). However, the result may provide a limited understanding of the construct. One solution to this dilemma would be to utilize confirmatory analyses based on theory and observations (Kyle et al., 2007). Therefore, a goal of this study was to use confirmatory factor analysis to compare activity involvement scales to determine if one conceptualization is empirically better than the other.

The findings from this study suggested that neither McIntyre's (1989) nor Kyle et al.'s (2007) scales adequately fit the data. Scale selection was determined by simply

comparing the two scales' fit results (Bollen, 1989). As a result, McIntyre's (1989) scale achieved better fitting scores and, therefore, was selected for hypothesis testing.

However, given the poor overall fit of both scales, it does not necessarily mean that McIntyre's three-factor (attraction, centrality, and self-expression) conceptualization is superior to Kyle et al.'s five-factor (attraction, centrality, social bonding, identity expression, and identity affirmation) offering since the results should be considered in relation to theory. It may mean that more work is needed to measure Kyle et al.'s (2007) factor structure adequately.

Conceptually, Kyle et al. provide some compelling evidence for modifying McIntyre's (1989) activity involvement scale. By integrating existing theory and logic, the authors disentangled social bonding from centrality (Choi et al., 1994; Gahwiler & Havitz, 1998) and refined self-expression to include identity expression and identity affirmation factors (Dimanche & Samdahl, 1994). However, the results of this study suggest that more, or at least different items, should be added to each of the proposed factors. Presently, only three items are used to measure each of Kyle et al.'s proposed factors. Garson (2009) suggests having more than three items per factor "tends to yield a model with more reliability, greater validity, higher generalizability, and stronger tests of competing models" (p. 23). Also, Kyle et al.'s model had four items that loaded either moderately or poorly to their proposed factors, indicating these items may not be adequately measuring what was suggested, although this finding may be unique to this data set. With only three items per factor, the effect (both positive and negative) of these items on the scale's fit measures is more significant than a similarly structured scale possessing more items per factor.

The population being measured is another possible explanation for the poor performance of Kyle's scale. Vlachopoulos, Theodorakis, and Kyle (2008) applied Kyle et al.'s (2007) scale to a similarly sized ( $n = 260$ ) sample of exercise participants in Greece. A confirmatory factor analysis did not clearly support Kyle et al.'s hypothesized five-factor structure. The poor performance of Kyle et al.'s (2007) scale was attributed to the incongruence in meaning ascribed by participants to the activity and item wording. It is possible that the scale items answered by fish giggers in Missouri were also misinterpreted. However, it could be that the poor performance of the scale in both examples indicates a need for further refinement of these items.

Further support for Kyle et al.'s scale can be found in the descriptive results from McIntyre's scale. As discussed in the previous section, closer examination of McIntyre's centrality factor revealed that the items measuring the social aspects of the activity provided two of the highest scores overall. However, the remaining item, "I find a lot of my life is organized around fish gigging", produced the lowest mean score of all activity involvement items. This result seems to suggest that these items might be measuring different aspects of a common factor, or, perhaps, represent measures of different factors. Therefore, this result could be construed as support for measuring a social bonding factor separate from centrality.

Alternatively, the results presented here could mean that McIntyre's scale is more effective than Kyle et al.'s. Despite strong theoretical support for modifying McIntyre's conceptualization of involvement, it is possible that McIntyre's scale possesses a more parsimonious factor structure. In their meta-analysis of involvement studies, Havitz and Dimanche (1997) found the attraction, centrality, and self-expression factors were the

most salient among the six reported measures. As such, it is possible that these three factors may provide an adequate representation of an individual's activity involvement. That is, other factors might contribute to the formation of one's involvement, but do not resonate strongly enough with individuals to warrant their inclusion or are too complex to measure using a standardized scale.

Suggestions for future research include further exploration of the discussion points presented here, replication of this study's design on other populations, and the incorporation of more qualitative methods to address the adequacy of quantitative measures.

**Place Attachment.** The goal for comparing Williams and Vaske's (2003) and Kyle et al.'s (2005) place attachment scales was fundamentally similar the one stated for activity involvement, which was to determine if one conceptualization is empirically superior to the other. Williams and Vaske's (2003) scale represents the widely accepted and utilized two-factor structure (place identity and place dependence) first operationalized by Williams and Roggenbuck (1989). In their study, Williams and Vaske (2003) confirmed and validated this factor structure across multiple populations, thus, corroborating Williams and Roggenbuck's conceptualization. Although Kyle et al.'s (2005) scale is steeped in Williams and Roggenbuck's theoretical work; it also attempts to advance the construct by introducing a social bonding factor. The authors justify this addition by drawing upon a growing body of research that suggests if outdoor settings support meaningful social relationships then it is likely that individuals will reflect that in their assessments. Therefore, the goal for comparing Williams and Vaske's and Kyle et

al.'s scales was to determine which conceptualization was empirically superior based on respondents' place attachments to the Current and Jacks Fork rivers.

The results presented here suggest Kyle et al.'s three-factor conceptualization of place attachment is superior to Williams and Vaske's. While both scales failed to achieve desirable model chi-square scores, many researchers suggest these results should be considered in light of other fit statistics due to widely acknowledged problems with the measure (Albright & Park, 2009; Byrne, 2010; Garson, 2009; Kline, 2005). As a result, it was determined that Kyle et al.'s place attachment scale achieved acceptable fit scores across the remaining indices (RMSEA, IFI, & CFI), while also outperforming Williams and Vaske's scale on both comparative measures (PCFI & AIC). Therefore, results presented in this study appear to confirm the adequacy of Kyle et al.'s scale. Additionally, social bonding proved to be the most salient factor for the fish giggers evaluated in this study, thus, lending further evidence to support Kyle et al.'s three-factor scale.

Although the results presented in this study support Kyle et al.'s three-factor conceptualization, this endorsement is not without some concern. Upon review of correlations, it appears Kyle et al.'s scale may not discriminate properly between the place identity and social bonding factors. While this does not necessarily indicate these factors are measuring the same phenomenon, it does raise some important questions about the factor structure of Kyle et al.'s scale.

One suggestion for future research is to examine if social bonding is actually a sub-dimension of the place identity factor. Given the nature of these factors, it is plausible to consider place identity as a general feeling one has toward a locale, while

social bonding is a specific aspect of one's place identity. If this is the case, then it seems logical that social bonding was highly correlated with place identity because it comprises part of its formation. Furthermore, given the significance people attach to settings that support meaningful relationships (Hay, 1998; Hildago & Hernandez, 2001; Milligan, 1998), it seems that social bonding would be one of the stronger aspects of a person's place identity in these types of settings. That is, if a setting supported relationships that are highly meaningful to an individual, it seems logical that the place identity of that setting would also be highly meaningful. Conversely, there might be some scenarios where an individual could have a strong emotional attachment to a setting that is not based on its ability to support meaningful relationships. These possibilities seem to indicate that further exploration of the relationship between place identity and social bonding is needed.

Additional suggestions for future research involving Kyle et al.'s scale include further exploration of the scale's factor structure, comparisons of the scale with alternative instruments sharing a similar theoretical basis, and to examine place attachment results in light of alternative methods of measurement (e.g., cognitive mapping, interviews, etc.).

### **Hypotheses**

Hypotheses testing for this study focused on how fish giggers' activity style and preferences related to their activity involvement (AI) and place attachment (PA) scores. The first two hypotheses grouped respondents according to whether or not they agreed that gigging was their favorite type of fishing. Schreyer and Knopf (1984) suggested that those who identify with a particular activity are more specialized, and as such, will be

more involved with the activity and the environments that support it than those who do not. Results of these tests revealed that there was a significant difference between the AI and PA scores for those who agreed and disagreed that gigging was their favorite form of fishing. In fact, there was a significant difference between the groups across all factors for both constructs. This finding lends credibility to the AI items because it makes sense that those who considered gigging to be their favorite type of fishing would be more involved than those who do not. Comparing the two groups based on PA scores were a bit more surprising because feelings toward the Current and Jacks Fork rivers could have been formed through other types of interactions with the area (including consumptive and non-consumptive activities). However, the place dependence scores ( $p < .001$ ), which can also be thought of as the rivers' ability to support fish gigging opportunities, was the strongest factor distinguishing the two groups. This result seems to suggest that fish gigging plays an important role in the formation of the place attachments expressed by those fishers who indicated that gigging was their favorite type of fishing activity.

The next evaluations were based on whether or not fish giggers believed a successful trip meant harvesting their limit of suckers. Previous research has indicated that fishers who place a greater emphasis on achieving catch limits are likely to express lower activity involvement and place attachment scores than those who do not (Ditton, Loomis, & Choi, 1992; Fedler & Ditton, 1994; Oh & Ditton, 2006). The activity involvement scores for the two groups were significantly different across all factors, thus indicating that those agreeing with the statement were highly involved with gigging than those who did not. However, the groupings did not produce significantly different place attachment scores. This finding indicates that the attachments giggers' formed toward

the Current and Jacks Fork Rivers are unrelated to their ability to gig a limit of suckers at this location. Presumably, this is due to the prevalence of suckers in nearby rivers, thus resulting in resource substitutability.

Another aspect of the activity involvement and place attachment constructs that researchers have explored is their connection to commitment (Havitz & Dimanche, 1997; Kyle & Mowen, 2005). It has been suggested that involvement represents the cognitive processes that lead to behavioral expressions of commitment (Havitz & Dimanche, 1997). One way to measure this relationship is based on frequency of participation (Wiley et al., 2000). Previous research has indicated that frequency of participation is both related and unrelated to higher AI scores (Havitz & Howard, 1995; McIntyre, 1992; Wiley et al., 2000). For place attachment, research supports a consistent positive relationship between visitation frequency and the construct (Moore & Graefe, 1994; Morgan, 2009).

This study explored the effect of gigging frequency on activity involvement and place attachment scores by grouping fishers above and below the median number of trips taken each year. Results showed there was a significant difference between the groups across all factors for both activity involvement ( $p < .001$ ) and place attachment ( $p < .01$ ). Based on these results, it can be determined that fishers who take many trips each season are more involved with the activity than those who go less frequently. Equally, more frequent giggers also expressed a greater attachment to the Current and Jacks Fork Rivers. These results lend support to the idea that activity involvement may be an indicator of commitment. Also, they suggest that gigging may be part of the formation of place attachments at the Current and Jacks Fork Rivers.

An alternative way to examine commitment is by years of experience. Havitz and Howard (1995) found a positive relationship between this form of commitment and activity involvement, although other studies have found this relationship to be insignificant (McIntyre & Pigram, 1992; Wiley et al., 2000). A relationship similar to that found by Havitz and Howard was discovered in this study after grouping fish giggers based on years of experience (0-11, 12-22, 23-33, & 34+). Significant differences were found in the attraction and centrality factors of activity involvement. The results indicate that giggers' activity involvement follows an arc, with the largest (positive) change occurring between groups with 0-11 years of experience and their peak at 12-22 years. Giggers' place attachment to the Current and Jacks Fork Rivers revealed a significant increase in scores between the first and second groups before leveling off across the remaining groups. This increase is seen across all three place attachment factors, indicating this change is due to both functional and affective reasons.

Finally, the activity involvement and place attachment constructs were evaluated according to the primary objective of a fishing trip (catching fish, being outside, and socializing). Previous research suggests that highly involved giggers would select non-catch motives, while less involved giggers would be more likely to value catching fish (Ditton, Loomis, & Choi, 1992; Fedler & Ditton, 1994). However, the results did not show a significant difference between giggers' activity involvement scores and their primary trip objective. Perhaps this is due to the interconnectedness of the choices. For example, a highly involved gigger may have selected 'catching fish' because it would provide the opportunity to socialize. For place attachment, it was anticipated that giggers selecting non-catch motives would score significantly higher on the affective measures

(place identity and social bonding). Conversely, it was believed that those most interested in catching fish would place greater emphasis on the place dependence factor. Similar to activity involvement, there was no significant difference found in giggers' place attachment scores based on their primary objective of a fishing trip. One possible explanation for these results may be that giggers' most important objective for a typical trip was not significantly stronger than other reasons.

### **Management Implications**

Gigging is one of the most unique ways to catch a fish. Once practiced mainly for subsistence, fish gigging also provides fishers with opportunities to socialize, enjoy nature, and to participate in a time-honored, Ozark folk custom. Despite its popularity in the region, management of this activity is secondary to "traditional" forms of fishing (i.e., rod and reel angling). As a result, the Missouri Conservation Department's (MDC) management strategy for fish giggers has been based primarily on creel inventories and anecdotal information. Studies on the social and cultural aspects of the sport are lacking.

MDC could require special tags or permits in order to gather more information about fish giggers. A nominal charge could be assessed and the revenue used to fund social and biological research. This mechanism would enable MDC to easily gather important social and cultural information from fish giggers.

Surprisingly, the results of this study suggest that many fishers in the Ozarks are likely to participate in fish gigging and maintain their involvement in this activity for over two decades. This is likely due to factors such as their age when started, teaching/learning, knowing other fish giggers, frequency of participation, and harvest mentality. This finding is bolstered by the social bonding factor associated with PA. At

a time when fishing participation is declining, gaining a better understanding of this subgroup could provide MDC with useful insights that could be used for fisher recruitment and retention programs. Specifically, the social and cultural factors addressed in this study could form the basis for sustained fishing involvement. Typically, fish gigging trips culminate with a fish fry on the gravel bar—a prominent finding of the open-ended responses (Appendix E). As this study has shown, successful fishing means more than getting a limit of fish. Fish gigging underscores the importance of socialization and being outdoors.

Presently, the National Park Service (NPS) is updating the General Management Plan (GMP) for Ozark National Scenic Riverways (ONSR), a document that will guide their management efforts for the next twenty years. As part of this effort, the NPS has proposed three alternatives for the new GMP. One goal of this process is to “better understand the impacts of these alternatives on the natural, cultural, social, and economic environment of the national riverways” (NPS, 2009).

Previous research indicates that the NPS should identify, acknowledge, and involve important stakeholders when making management decisions, especially those who reside within close proximity to the resource (Fedler & Ditton, 1994; Graefe, 1981; Matlock, Saul, & Bryan, 1988). This is a particularly important strategy when management changes are likely to affect subgroups that may have strong activity or place-based attachments (Matlock, Saul, & Bryan, 1988; Moore & Graefe, 1994). This should be very important at ONSR given the strained relationship between the NPS and some local citizens over the years (Sarvis, 2002). For example, many respondents expressed distrust and skepticism toward NPS presence in the region (Appendix F).

However, upon review of the NPS website and brochures concerning the planning process for the new GMP, no mention is made of specific stakeholders or how the new alternatives might affect them.

The proposed management alternatives will not affect the majority of fish giggers, however, some might be displaced due to motor limit restrictions or zoning changes. The NPS should consider how the new GMP will affect important ONSR stakeholders, such as fish giggers, and how they will communicate this information to them. The finding that fish giggers are important stakeholders may come as a surprise to the NPS since those fishers are non-traditional visitors. For example, the NPS could specifically list how Alternatives A, B, and C will impact fish giggers, as well as other user groups. One solution is to impose motor limit restrictions during daylight hours only. Since fish gigging is primarily done at night, this group would not be affected by any of the proposed changes.

Lastly, suggestions for future research could build upon these findings and ideas. For example, researchers could examine what factors contribute to giggers being involved with the activity for long periods of time and, potentially, integrate similar opportunities into fisher recruitment and retention programs. Another possibility would be to perform a comprehensive evaluation of Missouri fishers in order to determine demographic and geographic characteristics of sucker giggers. This information could then be used to aid government agencies' management and communication efforts regarding fish giggers. Also, further examination and comparisons of fisher subgroups in Missouri could be done to determine the best segmentation procedure. Is it more efficient to manage fishers according to the type of equipment being used, species sought,

based on specific resource locations, or some combination of these and/or other factors?

These and other considerations should be examined.

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## Appendix A

Date

Name

Address

City, State Zip Code

Personalized Salutation,

Fish gigging is one of the oldest and most unique types of fishing in the Missouri Ozarks. Despite its long history, little is known about this popular fall / winter sport. We want to study the social and cultural aspects of fish giggers, including your reasons for participation. This study is *not* sponsored by the National Park Service (NPS) or the Missouri Department of Conservation. Instead, it is a graduate student project from the University of Missouri.

The enclosed questionnaire has been designed especially with fish giggers in mind. If you are not a participant, then simply return the survey after answering the first question. Only a few fish giggers in Shannon and Carter counties have been asked to participate in this study. A high response rate ensures that the results will accurately represent fish giggers along the Current and Jacks Fork Rivers. However, your compliance is strictly voluntary.

All information obtained in this survey will remain completely confidential. Each questionnaire is numbered, but this is for our record-keeping. After the surveys have been returned, all names will be deleted from the mailing list. You will not be connected to your responses in any way - only totals and summaries will be used in the final report. Results will be shared with the NPS to help them understand the meaning and significance of fish gigging.

Please complete the questionnaire at your earliest convenience. It will only take about 10-15 minutes to finish the survey. Upon completion, please seal the questionnaire in the postage-paid envelope and put it in any U.S. Postal Service mailbox.

If you have any questions or comments about our study, please contact us by phone, email, or simply use the letterhead address above to reach us by mail. Thanks for your time and thoughts in helping us with this important study. We look forward to hearing from you soon.

Sincerely,

Dr. Mark Morgan, Associate Professor  
University of Missouri-Columbia  
markmorgan@missouri.edu

Bryon Rochon, Graduate Student  
University of Missouri-Columbia  
bgrrh2@mail.mizzou.edu

## Appendix B

# SUCKER GIGGING

## *Missouri Ozarks*



**Department of Parks, Recreation & Tourism**  
**105 Natural Resources Bldg.**  
**University of Missouri**  
**Columbia, MO 65211**

**Although fish gigging is a popular fall / winter sport in the Missouri Ozarks, little is known about it. Our purpose is to learn more about this activity from you, regardless of your previous experience. This study will measure the social aspects of fish gigging – something that has not been done before.**

**Have you ever been fish gigging in your life?** ☐ No *OR* ☐ Yes

**If NO, then please return the survey unanswered. If YES, please answer the following questions.**

1. My first gigging trip was in: \_\_\_\_\_ enter the year
2. At what age did you first start fish gigging? \_\_\_\_\_ years old
3. My current age is: \_\_\_\_\_
4. My gender is: ☐ Male OR ☐ Female
5. Fish gigging is my favorite type of fishing.  
☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
6. About how much time do you spend on a typical gigging trip? \_\_\_\_\_ trips per season  
\_\_\_\_\_ hours per trip
7. The best time for a fish gigging trip is: (check only one)

- ☐ On opening day                      ☐ In October                      ☐ In December  
☐ In September (not opening day)    ☐ In November                  ☐ In January
8. A successful fishing trip means gigging my limit of suckers. (check only one)
- ☐ Strongly Disagree    ☐ Disagree    ☐ Neutral    ☐ Agree    ☐ Strongly Agree
9. When fish gigging, which species do you prefer? (check only one)
- ☐ Yellow Sucker                      ☐ Northern Hog Sucker  
☐ Redhorse Sucker                  ☐ Other (please list: \_\_\_\_\_)
10. On a typical fish gigging trip, which one is more important? (check only one)
- ☐ Catching fish                      ☐ Being outside                  ☐ Socializing
11. My group of fish giggers usually consists of: (check only one)
- ☐ Family members                  ☐ Both family & friends              ☐ Friends
12. Normally, how many people go with you each time? \_\_\_\_\_ group size per trip
13. How many fish giggers do you personally know? \_\_\_\_\_ number of participants
14. How did you learn about fish gigging? (check all that apply)
- ☐ Self-taught                      ☐ Friend(s)                      ☐  
 Grandparent(s)  
☐ Brother/sister                      ☐ Parent(s)                      ☐ Aunt/uncle  
☐ Other (please list: \_\_\_\_\_)
15. Have you taught anyone else about fish gigging?                  ☐ No    OR    ☐ Yes
16. Please rate each of the following statements based on your interest in fish gigging...

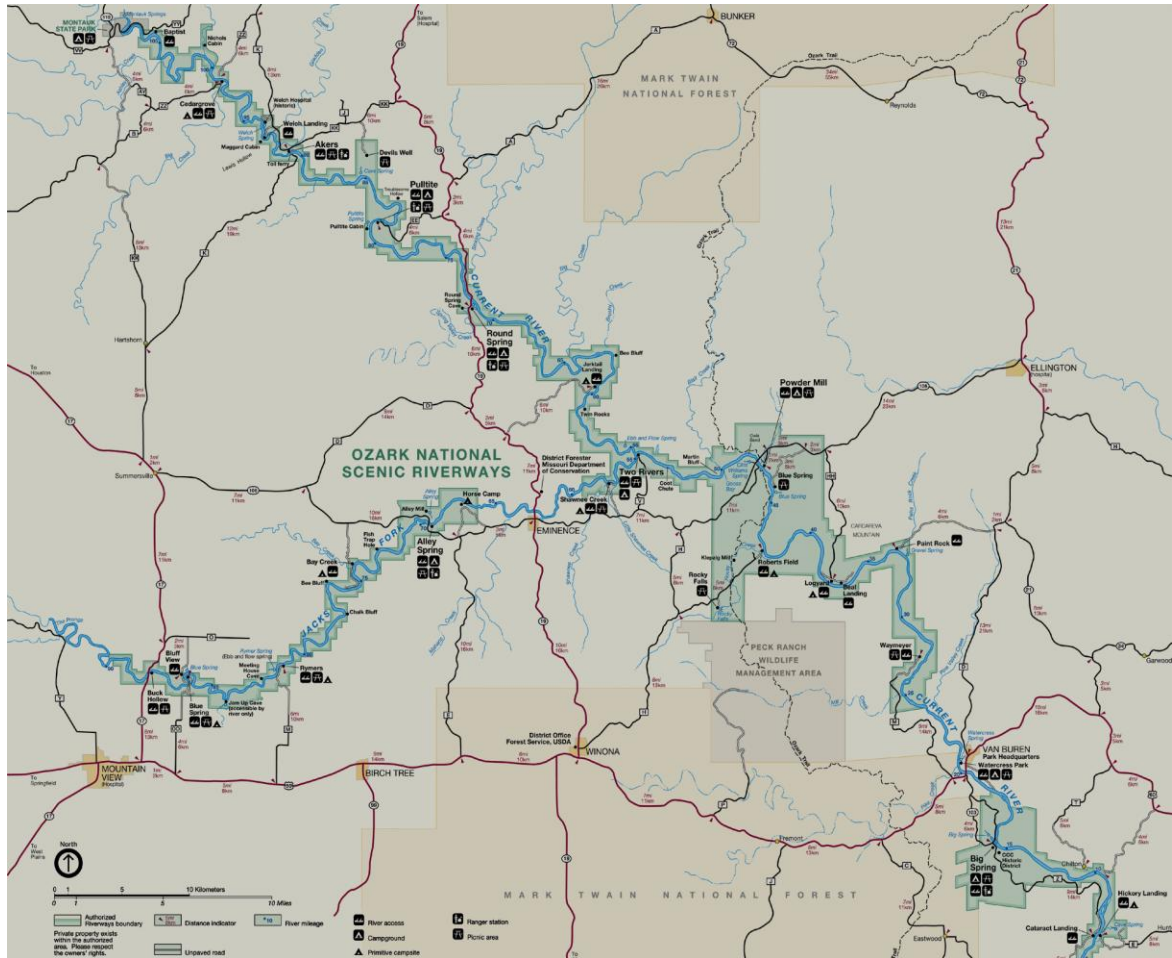
ACTIVITY-BASED STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Fish gigging offers me relaxation when life's pressures build up	SD	D	N	A	SA
Fish gigging is one of the most enjoyable things I do	SD	D	N	A	SA
I find that a lot of my life is organized around fish gigging	SD	D	N	A	SA
I enjoy discussing fish gigging with my friends	SD	D	N	A	SA
When I am fish gigging, others see me the way I want them to see me	SD	D	N	A	SA
Fish gigging is very important to me	SD	D	N	A	SA
Most of my friends are in some way connected with fish gigging	SD	D	N	A	SA
When I am fish gigging I can really be myself	SD	D	N	A	SA
You can tell a lot about a person when you see them fish gigging	SD	D	N	A	SA

<b>I have little or no interest in fish gigging</b>	SD	D	N	A	SA
<b>Fish gigging is one of the most satisfying things I do</b>	SD	D	N	A	SA
<b>Fish gigging says a lot about who I am</b>	SD	D	N	A	SA
<b>Fish gigging occupies a central role in my life</b>	SD	D	N	A	SA
<b>I'm not concerned with the way I look when I am fish gigging</b>	SD	D	N	A	SA
<b>Fish gigging provides me with an opportunity to be with friends</b>	SD	D	N	A	SA
<b>To change my preference from fish gigging to another recreation activity would require major rethinking</b>	SD	D	N	A	SA
<b>I identify with the people and image associated with fish gigging</b>	SD	D	N	A	SA

**17. Why do you participate in fish gigging?**

**18. Have you ever been fish gigging on the Current or Jacks Fork rivers?** ☐ No *OR* ☐ Yes

**18a. If YES, then place an 'X' on the map to indicate your favorite spot.**



*OVER, PLEASE...*

19. Please tell us about your feelings towards the **CURRENT & JACKS FORK (CJF)** rivers...

PLACE-BASED STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
CJF is the best place for what I like to do	SD	D	N	A	SA
I wouldn't substitute any other area for what I like to do at CJF	SD	D	N	A	SA
CJF is very special to me	SD	D	N	A	SA
I have a special connection to CJF and the people who go there	SD	D	N	A	SA
I identify strongly with CJF	SD	D	N	A	SA
I get more satisfaction from being at CJF than at any other place	SD	D	N	A	SA
I don't tell many people about CJF	SD	D	N	A	SA
Being at CJF says a lot about who	SD	D	N	A	SA

<b>I am</b>					
<b>I feel that CJF is a part of me</b>	SD	D	N	A	SA
<b>No other place can compare to CJF</b>	SD	D	N	A	SA
<b>CJF means a lot to me</b>	SD	D	N	A	SA
<b>The things I do at CJF I would enjoy doing just as much at a similar site</b>	SD	D	N	A	SA
<b>I feel no commitment to the CJF</b>	SD	D	N	A	SA
<b>I enjoy what I do at CJF more than any other place</b>	SD	D	N	A	SA
<b>I have a lot of fond memories about CJF</b>	SD	D	N	A	SA
<b>I am very attached to CJF</b>	SD	D	N	A	SA
<b>Doing what I do at CJF is more important to me than doing it in any other place</b>	SD	D	N	A	SA
<b>I will (do) bring my children to CJF</b>	SD	D	N	A	SA

***THANKS FOR YOUR COOPERATION!***

***PLEASE RETURN THIS QUESTIONNAIRE IN THE POSTAGE-PAID ENVELOPE***

***ADDITIONAL COMMENTS ARE WELCOME***

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## Appendix C

Date

Recently, a questionnaire about fish gigging was mailed to you. If you have already completed and returned the survey, please accept my thanks. If not, please finish it soon. Your opinions about fish gigging are important for me to better understand your participation in this unique activity. Plus, I need your information so I can finish my thesis and graduate on time. ☺

Questions? Concerns? Need a new questionnaire? Call me at (573) 882-7086 or send me an email at [bgrrh2@mizzou.edu](mailto:bgrrh2@mizzou.edu).

Thanks for your help!

Bryon Rochon, Graduate Student  
University of Missouri-Columbia

## Appendix D

Date

Name

Address

City, State Zip Code

Personalized Salutation,

Sucker gigging season is finally here! A few weeks ago, we sent you a survey requesting some information about your participation in this activity. According to our records, your questionnaire has not yet been returned. Please forgive us if there has been a mistake or if our letters happen to cross in the mail.

The comments made by those who have returned their questionnaire include a variety of insights regarding the social and cultural aspects of fish giggers in the Missouri Ozarks. These surveys were sent only to fishers in Shannon and Carter counties. It is important that everyone in the sample return their questionnaire so the results will adequately represent fish giggers from this area. Your response is needed.

We are NOT affiliated with the National Park Service. This is a M.S. thesis designed to learn more about fish gigging. However, we will inform the NPS of our results. If you participate in the study, then we can give you an opportunity to influence park policy.

Some people have told us that they have never participated in fish gigging. If this describes your situation, then simply answer the first question on the survey and then return it to us using the postage-paid envelope.

Lastly, we would like to remind you about our survey procedures. Once your questionnaire has been returned, your name will be deleted from the mailing list and you will not be contacted again. Furthermore, responses will never be linked to individual names. Protecting your confidentiality is vital to maintaining the integrity of this study.

We hope that you will complete and return the questionnaire soon. In case it was lost or misplaced, a replacement is enclosed.

Sincerely,

Dr. Mark Morgan, Associate Professor  
Dept. of Parks, Recreation & Tourism  
University of Missouri-Columbia

Bryon Rochon, Graduate Student  
Dept. of Parks, Recreation & Tourism  
University of Missouri-Columbia

## Appendix E

Responses to question #17

It is fun, social and outdoors.

I love the outdoors.

It is really fun in wintertime and it is something to do in the outdoors a little different and they are really good if you know how to cook them.

Fun, sport, food, solitude, accomplishment, and tranquility.

Being with friends and having a fish fry on the riverbank.

Because it's fun and relaxing at the same time.

I love the time spent with family and friends and I love the cool air and the relaxation it provides. The isn't too bad either.

To be with friends and family, and to enjoy the outdoors. It is a long time tradition in this area and provides an outing as well as socializing.

To relax and have good time being out on the river in cold weather.

I enjoy gigging fish, eating the fish I gig. I enjoy being with family and friends, being on the river in the fall of the year. The sport is challenging.

I enjoy gigging in the early part of the season, but not when it is below freezing.

Family tradition, enjoy the sport of it.

I like most anything to do with outdoors whether it be hunting or gigging. Being with family and friends. It is also might good eating.

Outdoors, spend time with friends, enjoy the river, eat fish and relax in a world so many don't understand or ever see.

I have the privilege to spend time with my children (ages 17 & 18) during a time of year that doesn't permit us to do much else. We also enjoy the fish to eat with friends and relatives during an occasional fish fry.

It is fun.

I like eating fish and I enjoy going with my friends.

I like the socializing—the sport itself. I like eating the fish.

I love it!

No particular reason—seldom do it! Initially, it was to be with parent and father.

Its fun and they are great to eat.

For the fun and being with family and friends. Being outside and the fish fry afterwards.

Because its fun. I like to spend time with my dad or my friends, depends on who I go with. It also requires some skill so you feel accomplished after you stab a sucker. Oh, all suckers are good, you need to allow more than one check on that question.

It is a long standing tradition in the Ozarks that incorporates different styles and techniques between groups and families. No one group or family does things the exact same way, so it takes a certain amount of compatibility to create a smooth experience.

To be on the beautiful rivers and enjoy my family's heritage.

I like it. Its fun and gives me a chance to be with my friends.

I grew up hunting and gigging. I have passed this on to my son. My husband and I go gigging with my dad. Dad is the one who taught me.

I enjoy being outdoors and on the river with my family and friends. My oldest son went gigging at age 5 years old and he gigged his first sucker. My youngest gigged his first at age 6 years old. We love to eat fish together. When family and friends are together, our on river a lot, knowing that when we are together, our kids are staying out of trouble cause we are together on the river. There is nothing better than being on the river, sitting in front of a fire, eating fish and taters and telling stories. Everyone should try it!

It is fun. Love to socialize with other giggers.

Because I enjoy it and it's a family heritage. I grew up on Current River.

Its fun.

It's a way of life where I live—a family activity that we all share in. But in the past it has proven pointless to explain an Ozark tradition to city folks that have little interest in understanding the way we live.

I enjoy the sport with friends and family. I also enjoy the fish fries and love the taste of deep fried suckers and fixins!

Friends.

I enjoy being outdoors with family and friends. Also it is a challenge to gig fish and they are good to eat.

I gig only during the daylight and find it very enjoyable. I don't gig CJP, very difficult in daytime. I gig the Eleven Point which is more suitable for daytime gigging.

I like being outdoors at night. And enjoy being with family and friends.

It is something I have always grown up with.

Its something to do with my family and friends to have a good time and I like being on Current River.

It's fun and it brings home food.

To have a good time with my friends and family and get a good mess of fish to have a fish fry.

Because I love to eat fish and gig.

It's something we can do as a family together, outside enjoying the outdoors. It's also a challenge to gig a fish, so that keeps me wanting to go back and try to do better each time. It's so neat to see the fish, turtles, and beavers under water. And last but certainly not least we love eating fish.

To be good at it.

Current River.

It is fun, the food is good afterwards. There is usually a good mix of friends. It's a tradition for the time of year, it's a sport and it's a challenge to be successful and developing a skill. Plus, its usually in a very beautiful setting, Current River.

When I was younger, I really enjoyed gigging for myself. Now, I enjoying watching the younger generations. My children and their children enjoy gigging. I enjoy the socialization with family and friends. My husband still enjoys gigging and does a wonderful job the boat.

Relaxation, being with friends and meet new giggers on the river and compare spots and stories. Lots of fun and show your skills.

It is a family sport that I love passing on to my kids—boy and girl.

Tradition!

I like to eat them, and I like being outside and the actual challenge of gigging.

It is a family tradition—time with family and friends having a beer and eating some fish is a favorite social activity in the Ozarks—besides it's a hell of a good time.

It is relaxing and enjoyable to go get some fish and have a fish fry with family and friends. I also really enjoy getting out on the river. It is so clear in the winter and just a joy to be able to do this.

I grew up on the lower Current River. My entire family enjoys gigging and having fish fries. Gigging is not only a sport, but it provides the opportunity for me to spend time with my dad and other family members. I also love being outdoors. Nothing beats frying fish out on a gravel bar and looking up at the stars, while you're sitting near the campfire.

The challenge to not only gig a fish but to do so as well as the guys. Also, my sons enjoy gigging (even going in boat) so it's good family time. And I love outdoors!

Mostly it's a once a year thing for me. My pastor invites me out of love and respect for him I go. I'm not real good at it.

It is a time you can all just have a good time. Being with family and friends and it makes for great stories later on. I love hearing older people talk about the adventures they have had while gigging. You know the boat quit running or the generator or something its just great.

Good time out with friends. Also after 2 or 3 weeks its challenging fish get faster and smarter. Also they eat really well.

It's fun.

The joy of being outdoors and being with family and friends.

It is a great time to meet and socialize with friends and family. I took my grandkids 2 weeks ago and some of their friends and they loved it. My 6 year old grandson lives away from here. He says he wants to again. He loved it!

Suckers taste great.

B/c it is fun.

I love fish, being with friends.

I participate in fish gigging for its unique local historic value that requires skill and self control. I enjoy gigging from my wooden johnboat and old fashioned electric lights. I enjoy the fellowship and taste of fresh cooked suckers and fixins on the bank of the river on a cool fall night.

For gigging fish and eating with family and friends.

To be with family and friends and I enjoy eating suckers.

Good food and lots of fun.

I love Current River and spending time with friends and family. We usually go bow hunting in the afternoon and gig after dark. What a way to spend your time. Eating fish with family and friends on a gravel bar and eating fried suckers like our parents and grandparents did back in the day on a cool fall night. It doesn't get any better. Especially on Current River.

I enjoy the sport for the fun of it. I also like eating the fish we kill usually on the riverbank.

Sport.

I like to eat and catch fish. It is a fun sport and I enjoy being outdoors and on the water at night. Furthermore, I enjoy being with my friends and family, teaching my boys how to

gig and then cook fish on the bank and roast marshmallows. Its enjoyable and challenging.

It's a fun sport that me and my family and friends love to get together and do. It also helps regulate the population of suckers in the river.

Because its my heritage and I enjoy fish frys and socializing with friends and family.

To be with family and friends, and to eat the fish with these people.

I enjoy the sport and spending time with friends. Plus, the fish are delicious!

Because I enjoy being outside with family and friends. My family enjoys eating the fish and I enjoy gigging them.

I disapprove of gigging because suckers aren't the only thing they gig. I think fish gigging should be illegal.

Gigging is fun & exciting. It gives me the opportunity to spend more time with family and friends. It's just a natural pastime where I grew up.

I grew up in St. Louis, never heard of it before I moved to Van Buren Current River area. Seeing the river bottom at night is what got me the deep blues and underwater world!

I like the sport.

Because I enjoy all forms of fishing.

The food.

It is a gift from God to be outdoors enjoying all the little things in life.

Enjoy family and friends, teach the kids about the outdoors and eat some good fish.

The fish is good. Its fun, and it's a good way to spend time with friends and family.

I like to eat fish.

It is fun and enjoyable thing to do on the weekend.

It gives us food for the winter months when my work is slow. I'm a logger. It is a family tradition we have done for many years. Last, but not least, its fun! Black river is the river I gig.

To be with family and friends and have fun.

It's a fun and safe (drugs and alcohol) way to spend my free time. It's about tradition and quality time.

It is a good time to spend with friends in the outdoors.

I participate in gigging cause it makes me complete and I love to eat suckers with bread and squeezed butter. I also met my soulmate while gigging.

Time to spend with my brother. He strongly loves to gig. It is also an enjoyable sport that is lots of fun.

Gigging is very enjoyable and relaxing while fulfilling my hunter/gatherer instincts.

Have you ever been gigging? You have to feel the rush it gives you plus the taste of them.

For recreation and food.

For recreation, food.

Because I enjoy it. It's nice to be on the river at night, gig some fish, then have a fish fry on the gravel bar.

I feel the people that live here have a respect for the river and the beauty. My family goes—even my wife gigs once in a while. Both of my sons enjoy. The people that trash our river are not the people that live here.

Socializing and getting a fresh mess of fish. The cookout on the gravel bar is the most enjoyable part.

It's a good time to get with friends have a few beer, eat some fish and have a good time.

Enjoyable, relaxing, good eating.

Because I love it.

Well I enjoy getting out at night with my family and friends and we'll all enjoy eating suckers. And getting together.

I enjoy the sport and enjoy eating the fish.

I like to gig.

The pure enjoyment of it when you find a good hole of suckers.

It is fun to hang out with family and friends while doing something enjoyable.

For the sport but also because being on the river where the water is so clear you can see the bottom is amazing! At night with the sound of the generator and people laughing and talking with the lights shining on the water is like nothing else.

I enjoy gigging, however I enjoy being on the river with my boys mostly.

Our church group goes once a year. We enjoy the time together doing something outside. We also like for the youth to learn something that is fun.

I enjoy the sport and the fish provides great food.

I have only been once. It was fun but I can think of better thing to do.

It's fun.

It's a very enjoyable sport that you share with family and friends.

To go have a good cookout on the river and socialize with family and friends. Nothing better than a fried sucker.

It's enjoyable, relaxing, a great way for family and friends to get together and do something together and they are very good for eating.

It is a family recreation activity, have done it for the past 22 years and take my two bays and wife now. We love being outdoors, on the river and eating suckers. It just an Ozark heritage, social activity, set around fire tell stories and enjoy the benefits of living in the country.

It is a time honored tradition in Carter county that both joyful and relaxing. It is one of the best stress relieving activities on Earth. It is a break from reality. Good quality time with family and friends.

Because I enjoy it. It is fun. Provides food for family and friends.

I enjoy the outdoors and the fish fries on the river.

Gigging is a resourceful way to lower the number of rough fish. Gigging is a family outing. Gigging fish provides for fish fries which is very enjoyable. Gigging provides for a nighttime sport which is a very relaxing sport. Friends, fun, fish.

Fun.

My husband's family...Ozark tradition.

There is no better fish than a fried hog sucker.

Fish gigging was something I grew up doing. It is something I love and I want to pass the tradition on to my kids. I also love the sense of community that comes with nights on the river with family and friends.

Enjoy the sport of fishing and being out on the river and the fish fry that comes with it.

Gives me and the husband something to do with the kids at the place we love most, Current River.

Fish fry. Family-Friends.

It is a lot of fun and I enjoy being on the river with my family and friends. Nothing better than eating fresh fish around a bunch of family and friends.

The calm of the river, the crisp night air, the fish fries on the bank, the stories told while the fish are cooking and being there with old friends and family.

It's fun, and gives me a chance to hang out with family and friends. And drink some beer.

Be with friends and family.

Relaxation. Enjoy eating.

It's fun.

Socialization, food, companionship, fun, being outdoors and on the river.

I gig with my dad for years. It's good years to remember.

Fun competition shows your skill. Just a fun sport, thing to do. PS What we could use is more and better access.

To get away, be with friends and last to try to gig a fish.

It's a fun family outing and another way to enjoy the outdoors. Plus we are able to teach our children about respecting mother nature and we like to eat fresh fish.

It is a family tradition that gives me an additional opportunity to be with family and friends. It is also an opportunity to get on the Current River which is always a pleasure whatever activity takes me there.

Enjoying being on the river with friends.

Because I love doing it and spend time with friends and family.

Because it is a chance to be with my family and it is fun.

I enjoy the outdoors and the fish that I catch are always a good meal. Being with family and friends is very important to me and is a healthy part of life I do believe.

Opening night is a big celebration. Families wait on the riverbank, while 3 or 4 boats go down the river. The young folks take turns going out. Then we cook fish on the river! Some years we have all taken our campers and spent the week! It's a very special time.

CJF is a nice place but the whole state of Missouri has a lot of pretty places in it. I enjoy being out in the whole state doing different things.

Gigging is a way life for many hundreds living in the Ozarks. I moved from the big city to the country in the early 1990's. I've camped in the Ozarks since I was five but never

gigged till later in life. Gigging is an awesome way to reminisce, catch up and continue life with old and new friends and family.

I enjoy being on the river at night finding the fish. And there is nothing better than fresh suckers cooked in hot fat. Don't tell the doctor.

I was introduced to gigging by my in-laws when I moved to Shannon County. Loved it from the git-go. Almost all my friends can't wait for the season. Nowadays my wife and children invite their friends to come along and enjoy the fun. After the guys gig enough to eat I take the girls out so they can have a turn. But watching the kids learn and enjoy is the best.

Fun, relaxing, sport, hogsuckers are good to eat.

I love the outdoors and I love teaching traditions to my son and teaching all that I can about outdoors and conservation, Gigging fish is another activity where I can spend time with family and friends doing what we love "Enjoying the outdoors" and enjoying time spent together.

For my family and friends to enjoy fish frys and to visit.

I enjoy eating fish. And I also enjoy the challenge.

Its fun, tasty, and good exercise.

It gives me the opportunity to be on the river when I don't have to fight canoes and tubes wall to wall or bank to bank. It also lets me or helps me to relax and be with family and friend to enjoy that time together just gigging enough fish for a fry on the river bank.

I would like for the park service to leave the rivers like they are now. No new changes are needed.

It's a family tradition. And part of my heritage.

I enjoy the sport and spending time with family and friends. I also enjoy eating suckers.

Little to no tourists. Nothing better than eating suckers hot out of the cooker on the river bank!

It's fun to spend time with friends doing something we all enjoy.

Gigging provides myself and daughter the opportunity to enjoy a sport together, and with family or friends. It also allows us to enjoy the beauty and peace of the river without subjecting ourselves to the vileness of the summer tourist.

I started gigging when I was young and it has become a tradition with my family and friends. I also love deer hunting, but no other sport or hobby I do compares to gigging. Every year on September 15<sup>th</sup> my stomach actually flutters all day just waiting to go. Gigging is one of the funnest things I've done!

I like to eat and visit.

Because it gives me a good pastime and hobby to take part in with family and friends.

Because I like gigging and being on the river.

Relaxation, good food, outdoors, socializing, and challenge of fishing.

I like it a lot.

I like fish gigging and being outside with friends.

Its fun and I love to be outdoors.

Because I like to fish, eat, socialize, appreciate the river.

It is an enjoyable family and friend tradition that we have enjoyed for many years. Gigging is like owning guns, it is freedom we would not give up without a fight.

I like it.

Its fun to socialize with family and friends. We always take our cooking utensils. As soon as we get enough to feed everybody we'll go in and start cooking fish, potatoes, hush puppies and sometimes fried biscuits. We'll eat then we're miserable. Load up and do it again. We'll go 2 to 3 times a week before it starts getting cold. Look forward to it every year.

1. I love to eat fish. 2. I usually go with a bunch of guys fro church. Giggig is one of the few activities I know where the old guys and the young guys enjoy it.

To have good food to eat and be with friends and family outside around a campfire enjoying life.

It is relaxing, fun, the fish are good to eat. Not everyone know how to prepare them. Being with family and friends. Being on the river at night.

Enjoy eating the fish and socializing with my friends.

It's something I've done all my life. I don't go because I'm addicted to giggig. I go because I usually go with my 3 sons. It's a good way to spend on evening and have a good fish dinner.

Friends, family.

I haven't gone very many times, however I enjoyed being out on the river after dark. I was intrigued at seeing all of the many species of fish that are in CJF. I would probably go gig more if I had the set-up. Not many of us do I will go if given an invite from someone. I would love to be on the CJF giggig at night with a friend or relative. However, I think I would do well practice.

The socialization and food, and the fun of it.

I am 51 and disabled right now. I don't go no more, but I used to gig a lot with family and friends. They giggered the fish and I help clean and eat the fish. I used to have a lot of fun doing it.

It the sport and fun.

I am a float and wade fisherman. Giggering is just part of river sports. Jet boats should be for national park enforcement officers only.

The sport and challenge. Good to eat. Socializing.

Because it is fun and enjoyable and spending time with friends.

It is fun and challenging. You get to be outdoors with your friends and family. Also usually everyone gets together after your done giggering for fish fry so they can visit and families can all gather.

I enjoy outdoor sports. It is also a way to spend time with my father. I try to learn as much from him as possible; giggering is one thing I learned from him.

I enjoy the opportunity to view the river ecosystem at night with light—reminiscent of scuba diving which I also enjoy—like a giant pristine aquarium.

I enjoy it.

Like being on the water.

My opinion is that giggering season is too long. Suckers take care of algae and algae has appeared in last few years. My theory is too much pressure on river. Giggering season should be shorter.

Try it, you'll be hooked!

It's a good chance to get out on the river be with friends and family. Also some pretty good eating.

I was raised into it. My grandpa and my dad made gigs, and now my brother makes them.

Went one time, have not been since.

Because I love eating suckers and it feels really nice to be able to catch and prepare your own feast right there on the riverbank come on down!

My family does it.

Because I enjoy it. Also I love to eat them and also it has been a tradition in my family a long time.

I enjoy the fish the time with family, the sport, the outdoors.

Fun—being with friends and getting fish.

It's fun, like being on the water and seeing how big a sucker I can gig.

To spend time with friends.

I really haven't since I was young, but I like anything to do with recreation on the river.

Fish for a fish fry.

I enjoy spending time with my friends and the outdoors. I also enjoy eating fish with my friends and family on the banks of the river. The smell of the river on a cold night, and the night sky, and the river as it flows over the rocks.

I started at an early age and continued once a week during the season for about 40 years. I enjoy being out on the river at night and I enjoy successfully taking fish the same way my great grandfathers did. It's a more social activity than fishing.

Fun and I like to eat fish fresh cleaned and fried.

I have great time, like to eat fish on the river. Love be on the water or around the river.

It is a sport that my whole family can participate in.

I enjoy the traditional heritage and the fish fry.

I like to eat yellow suckers and hog suckers.

For the recreation, socialization, and the fish. After gigging we usually fry fish with family and friends.

The enjoyment of the sport on the most beautiful river in the U.S. That is just my opinion.

Family enjoyment and tradition.

Have fun with friends.

I just like doing it.

Gigging has been here a lot longer than I have. It's a tradition here in the Ozarks. Suckers are some the best eating fish there are when prepared and cooked right. Most people don't go to kill as many fish as they can. They usually go just to get enough to cook at the river for dinner.

It's lot of fun, good eating, get to visit with friends.

Cause it is fun. But I almost feel it is a dying sport because of the lack of fish in Rymes and Current River.

Yellow suckers have the best flavor of all fish. I enjoy being outside and the camaraderie of friends. It is an inexpensive sport that all the family can enjoy.

Fun, family, friends, and environment.

I like it!

It's fun for me and my family.

Because I enjoy gigging ad love doing it. Its fun and a way to connect with friends and family.

To be on the river, with family and friends, and to catch fish.

I love it. The sport! I love eating fish!

Social.

Fun & relating with others.

It involves the whole family. My son, son-in-laws, and friends bond during these times. We prepare ahead for a fun time and plan a cookout (fish fry) for everyone usually the same night.

I participate in fish gigging because I enjoy the activity and enjoy the taste of fish.

Area needs more enforcement officers to deter poachers and excessive drinking. When, a gigging permit is issued, said applicant should take a short instructional course explaining the importance of not gigging non-game fish.

I also like to gig at Eleven Point River. Mostly gig on the Eleven Point River, but frequent CJF as well.

Gigging is a strong part of (are) the people who live in Carter, Shannon, Reynolds, and Ripley counties. It is a part of our heritage and a way of life we live, we protect and help to clean the trash out of the rivers after the tourists are gone. We should protect this right as our forefathers would.

In the Army—won't be available in the future! Good luck!

Hope you graduate on time! And giggers don't really look at this the questionnaire makes it seem. Like all this stuff about Current and Jacks Fork, just seems kind of corny to me.

If you have any control over the NPS please have them to leave the people and the rivers alone. They are perfect the way they are. The NPS is the worst thing for our community and the rivers!

I remember as a young girl my dad having me to sit on a tire in the back of his boat to help hold it down while he was standing on the front gigging. Both my grandpas giggered also and my husband's grandpa too. We wanted to pass this down to our son too so he could see there's more to life than TV, video games, and material things. This is enjoying God's creations and making memories that will last a lifetime. Our most favorite fishing is sucker grabbing starting in April. It's addictive!

Born in Salem, raised in Van Buren, most relatives on father's side from Eminence, married to family from Winona, so the six degrees of separation for me from people and the rivers is more like 2 degrees.

I think gigging should start in October.

When I am gigging with my 20 year old son it is one of very few times we don't argue.

I found that your questions were basically repetitive. In the future, you need to get direct and not ask the same questions. To be honest, I do a lot of gig fishing with a light flyrod, you ought to try that, you'd never gig again. Never the less, I do appreciate your interest in the Current River, it's a wonderful place to live.

I have grown up on the Jacks Fork River. My husband and me our two grown daughters have grown up on our river—now we have the joy of showing our granddaughter the love and beauty and wonder of the Jacks Fork River to her—so she can pass it along to her blood when the time comes/ too many otters are in our rivers eating the fish.

Parts of Current River need to be closed for gigging to restore the game fish.

I am a lifelong resident of the area containing CJF. I hold a BS degree in wildlife conservation/ mgmt. I have seen this drainage area basically destroyed in the past 40 years by outsiders and park service. Too bad!

I think the Current River is going down hill, the fish are not as common, especially bass, and the river is filling up with trash and what has happened to the soft shell turtle population? Something needs to be done. As much as I like gigging, I think the season is too long.

I don't gig Current much, but I do go there when Black River is muddy. Fish and deer are a staple in the winter. Country boy can survive. Thank you for letting me share this with you and if this can preserve this time honored tradition then I'm honored.

Long live the Current River and the big boats that run on it! Hoorah!

Keep the 40 HP the way it is. If it wasn't for us in boats there would be 70% more injuries on the Current River in Van Buren.

Gigging is very enjoyable. We now live in northern Minnesota, so we are not able to gig anymore. Until we get back.

1. Like eating fish. 2. Like being outdoors. 3. Like being with friends.

I enjoy the sport and being with my friends. My dad and I used to go.

My family and friends all get together we have a good time we cook the fish after and we all like fish. Good time good food!!

Fish gigging was taught to me by my dad. So I taught my son and daughter and wife about gigging. We don't take advantage of this sport. All we do each night we go, we figure about how many fish it will take to feed all of us. That is just all we kill. We don't kill all our limits just what we need to eat. I'm a person who this mean a great deal to me and my family.

Thank you for taking interest in these rivers.

Anybody trying to put and end to gigging because obviously has not ever been in their life and would not truly understand the sport and everything that goes with it.

These rivers are a part of our heritage, and should be enjoyed, and respected, and enjoyed. Gigging is a very important part of the rivers. My family gigged Current River before lanterns, and electric lights were used. A pine knot fire was built on the front of the johnboats for light, but we have advanced to better lighting now. Its more fun and far more easier to breath and cleaner.

But what about Eleven Point? Another beautiful river!

I grew up on the river, my kids are growing up on the river and we wouldn't want to go anywhere but Current River.

My family all was raised on Shawnee Creek. I belong there.

Current River is why we have lived here for many generations.

From the age of a child. The Current has a huge part of my life. Both parents were raised at Powder Mill and Blue Springs. Started gigging with my dad and my kid's go and grandkids go gigging too. I hope it stay the same, my grandson's teenager. I have 2 granddaughters go too. It's exciting fun and very tasteful.

## Appendix F

Additional Comments

Opening gigging season on Sept. 15<sup>th</sup> is too early in my opinion. I also feel that the season is too long, resulting in overharvest. I preferred the traditional season and sucker abundance. As an avid smallmouth bass fisherman I am concerned that some smallmouth are taken by giggers who are too quick to wait for a sure identification.

I suggest that if you really want to know about fish gigging...forget this survey...load your family in the RV and meet us on the Current River September 15<sup>th</sup>...Show up around dark...we'll be there.

I like and its fun to do be with my friends and family. I like to gig but I don't have to be on the boat. I like to sit on the beach and talk and eat with my friends.

Those who live in the Ozarks take care of the Ozarks. City folk come here and tear up this beautiful country. We don't feel city folks who don't live here 24/7/365 yearly should have any say about our rivers and lands. Country folk respect the Ozarks city folk have no respect for God's country and it keepers (country folk). City folk need to straighten up their own living areas before they ever try fixin or changing ours. Leave us country folk alone, straighten your own backyards, we'll take care of ours.

The fact that they are trying to restrict motors on the rivers during the summer months infuriates me and my friends. I can't see where out of town tourist should have more rights to our waterways than we do. The DNR screwed Ozarkers when they took the river bottoms unmorally without any discretion. Then they shut the larger horsepower motors out of the parks, which is a bunch of B.S. Now they are saying the people are want smaller motors or even no motors. The only ones that wants that are the people who are trying to suck up for tourist oney like canoe rental places. Which think they already own the waterways. You don't see us telling people in D.C. what to do with their rivers.

Eleven Point River is better for me because it is more laid back!

My family seldom goes to Current River in the summer unless it is below Big Spring Park. We never go to the river on the weekend. The drunken and lewd behaviors exhibited by the majority of the tourist floating Current River has broken my heart—it is no longer a place I wish to take my children. My children will never get to experience the river during the summer as I did as a child. Current River in the summer is now just a place to party. So sad!

You need to mind your own business leave us alone.

Please tell ONSR to leave the Current and Jacks Fork Rivers along. Both rivers have been around for a long time, they heal themselves. Please just leave them alone.

Black River is also a very good place to gig.

I have not always lived on the Current River, but since moving to Van Buren. I have enjoyed it many years now, also with our children, family and friends. But sometimes during summer, it gets a little crowded with the tubers, which I also love to float but when they come to visit a lot the don't understand the problems they cause the boaters, which has kept us from going to the river to enjoy it with our children many times.

I enjoy the CJF very much but I think those who visit CJF should take care of the resource we all enjoy. There is far too much garbage on the CJF. The CJF fall short of being "scenic rivers" because of the trash especially from "giggers" the remains of their catch on the beach.

The people who were raised around these two rivers will always have a place in their hearts for them.

Its unfortunate to see you didn't research your subject enough to realize that it would impossible to gig a fish from the bottom ass is depicted in the cover illustration.

It is a very special sport. Friends and family gather. People go out on the boat in shifts, so no one is left out. The typical gigging trip includes a bonfire at the shoreline. Fish and fixin's fried at the site. Everyone pitches in to help. From cleaning fish, preparing food, something cooking the whole time. Children playing and enjoying each others company, as well as the adults.

I feel that there are too many regulators on CJF. The park service has started to change over the past 10 years and we have seen the negative results of the changes. People in St. Louis and Columbia believe that they understand what the CJF need, and they think they know what is happening. The only chance to understand what is happening is to spend your life there. The local people like us spend 20 to 30 ??? there seeing the good and bad.

My family and friends continually do our part and more to clean up Current River. We have placed 1<sup>st</sup> in social events to pick up trash deposited by tubers. We are disgusted by the “lack of respect” for Current River displayed by these people. Yet little is done about littering. Read the local paper, more attention is paid towards MIPS, marijuana, etc. Hardly ever is a violation cited for litter!

There aren't very many places around that I know of that you can gig fish, it's pretty unique to this area. We're not just a bunch of dumb hillbillies who kill all the fish we can every time we go. My family has been in this area for five generations, a lot of them lived and owned on what now is Mill Creek, CA at Peck Ranch, CA. I've seen in my lifetime what the Forest Service, NPS, and MDC have done like closing roads that were there long before they were. It seems to me that usually its their way of or no way. Our opinion doesn't seem to count.

I work for canoe rental at Round Springs. I tell a lot of people about the CJF past and present. It's fun to go out and get just enough fish to eat at the boat landing when you get done gigging. I hope you can read my writing.

Activity based statements portion of survey—I'm sure you lost most rednecks at that point. Probably why you've had to send this survey out twice.

There is not another place like it to do all the activities we enjoy here. Once you experience it you will love it and want to live here.