



Social Science Program

Expedited Approval for NPS-Sponsored Public Surveys

1. <b>Project Title   Submission Date:</b>	Assessing River Use Levels by User Groups at Ozark National Scenic Riverways	November 6, 2009
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2. <b>Abstract:</b>	Public input on the preliminary alternatives for the Ozark National Scenic Riverways general management plan (GMP) have made it necessary to collect additional data to support revisions and further analysis of the alternatives. Trend studies on use levels and visitor perceptions were conducted at the park for three decades. In order to better understand current use levels by the different river user groups, previously established methods can be replicated. This study will provide the park with recent data on use levels for activity types that can be compared to previous data to assess changes. Park visitors will be sampled during the months of May-September 2010. Two instruments will be used. Both instruments will share a core set of questions, and one elaborates on the motor boat experience on the river. The results of this study will support further consideration of visitor use management needs and strategies for the purposes of the GMP.
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(not to exceed 150 words)

3. **Principal Investigator Contact Information**

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## Project Information

5. **Park(s) For Which Research is to be Conducted:**

Ozark National Scenic Riverways

6. **Survey Dates:**

05/15/2010

(mm/dd/yyyy)

to

09/15/2010

(mm/dd/yyyy)

7. **Type of Information Collection Instrument (Check ALL that Apply)**

**Mail-Back  
Questionnaire**

**On-Site  
Questionnaire**

**Face-to-  
Face  
Interview**

**Telephone  
Survey**

**Focus  
Groups**

**Other (explain)**

8. **Survey Justification:  
(Use as much space as  
needed; if necessary  
include additional  
explanation on a  
separate page.)**

Social science research in support of park planning and management is mandated in the *NPS Management Policies 2006* (Section 8.11.1, "Social Science Studies"). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning, development, operations, management, education, and interpretive activities.

Public response to the preliminary alternatives presented by Ozark National Scenic Riverways (ONSR) highlighted a need for more research to better understand the use that is occurring within the park. Further, the 1989 River Use Management Plan mandates that the park monitor visitor use and recreational capacity on the Jacks Fork and Current rivers.

The GMP planning process will comply with the National Environmental Policy Act and assess a range of alternative visitor use management strategies. The information gathered in this project will inform those alternatives by assessing the current amount and type of use in the park and evaluating visitors' perceptions of their park experience. Also, this study will add to the long-term use monitoring data set at ONSR conducted between 1972 and 2002. The results of this study will be one of many sources of information (e.g., public and stakeholder comments, staff recommendations, other research, etc.) that management will use in evaluating alternatives.

The specific objectives include:

1. *Document current uses and use patterns.* This element of the study will provide park managers with descriptions of the type of use and the number of visitors currently using the rivers in ONSR.
2. *Describe visitors' perceptions of river use densities.* This element of the study will be used to assess if visitors encounter the amount of people they expected and if they have conflicts with other river users.
3. *Describe visitors' perceptions of change on the rivers.* This element

of the study will measure visitor's perceptions of how use and use levels have changed over time at ONSR.

### **Literature Review**

In 2008, ONSR received 1,243,507 visitors. This high use level, concentrated along the relatively narrow river corridors, present park managers with the challenge of providing a meaningful range of recreation experiences. Some users who are seeking to float peacefully down the river in non-motorized craft and experience a sense of solitude could experience conflict with other users in motor boats who are transporting their families up and down the river. This type of conflict is a strong contributor to some visitors' perceptions of crowding and can decrease their level of satisfaction (Manning, 1999). In order to continue to provide a range of quality experiences, managers have used monitoring systems to inform decision-making. Monitoring is important because it indicates if management objectives are being met; if changes are occurring in how resources are being used; and may suggest ways to improve the recreation experience for visitors (Brown and Chilman, 2002). This type of research also informs park planning by suggesting which types of recreational uses should be separated through zoning or other management strategies (Papageorgiou and Brotherton, 1999).

The park responded to this challenge by developing a River Use Management Plan in 1989. This plan states that monitoring will be designed to "identify degradation of the resource or quality of the visitor experience below acceptable levels and to improve knowledge in areas where existing information is considered inadequate" (NPS, 1989, p. 36).

The management plan's approach was based on three decades of existing monitoring efforts at the park, spurred by rapid growth in recreational use in the early 1970s. Park staff and researchers cited water quality and crowding concerns derived from this growth (Marnell et al. 1978). Early monitoring efforts appeared to confirm the concern: the proportion of visitors who perceived crowding as "more than desired" grew from 27.4% to 51.4% between 1972 to 1977 (Habermehl, 1973; Andrews, 1978). These and subsequent results were used by the NPS to successfully defend itself in court for decisions later that decade and into the 1980s to limit the number of canoes permitted on the rivers in the park (Sullivan, 1985; Chilman et al., 1996).

Monitoring activities ceased in 2001, creating a gap in available data needed for contemporary management decision-making. Consequently, this study will contribute to park managers' knowledge of current conditions to assist in the general management planning process now underway. This study replicates the historical survey and count instrumentation used to understand visitor experience conditions. However, in some cases wording of some questions has been updated to reflect current NPS standards and conditions on the Riverways.

### **References**

Andrews, M. (1978). Perceptions of crowding by canoe floaters in relation to the floating baseline concept. Technical Report, Ozark National Scenic Riverways. National Park Service, Van Buren, Missouri.

Brown, G. and Chilman, K. (2001). 2001 River use monitoring report for lower Current River. Ozark National Scenic Riverways. USDI National Park Service, Van Buren, MO.

Chilman, K., Foster, D. & Aley, T. (1996). River Management at Ozark National Scenic Riverways. In: W. L. Halvorson and G.E. Davis, eds. Science and ecosystem management in the national parks. Tucson: University of Arizona Press. 27 pp.

Habermehl, J. (1973). Determining visitor perceptions of crowding on the Ozark National Scenic Riverways, M.S. thesis, University of Missouri, Columbia. 53 pp.

Manning, R. (1999). *Studies in outdoor recreation: search and research for satisfaction*. Corvallis, OR: Oregon State University Press.

Marnell, L., Foster, D., & Chilman, K. (1978). River recreation research conducted at Ozark National Scenic Riverways, 1970-1977: a summary of research projects and findings. National Park Service, Van Buren, Missouri. 139 pp.

NPS, National Park Service (1989). River use management plan, Ozark National Scenic Riverways. Van Buren, MO.

Papageorgiou, K., & Brotherton, I. (1999). A management planning framework based on ecological, perceptual and economic carrying capacity: The case study of Vikos-Aoos National Park, Greece. *Journal of Environmental Management*, 56(4), 271-284.

Sullivan, A. (1985). Untitled paper prepared for River Use Management Plan meeting, Kansas City, Missouri. National Park Service. 16 pp.

9. **Survey Methodology:**  
**(Use as much space as needed; if necessary include additional explanation on a separate page.)**

(a) Respondent universe:

All adults, 18 years of age or older, visiting ONSR from 5/15/2001 to 9/15/2010

(b) Sampling plan/procedures:

Surveys will be administered along the Jacks Fork and Current rivers at 10 boater access sites. The sampling schedule will be targeting canoeists, rafters, tubers, and motor boaters. Sampling days will be stratified by weekdays vs. weekend days and holidays, months, and into geographic location based on ranger district (Upper Current, Lower Current, and Jack's Fork). The sampling schedule will be composed of the twelve weeks from May 17<sup>th</sup> to August 20<sup>th</sup>, and will be repeated after each of the three sets of four weeks are completed. Surveys will be administered onsite to visitor groups as they exit the riverways, from 12:00 p.m. to 7:00 p.m. The survey staff will wear NPS volunteer uniforms or Southern Illinois University logo clothing, to promote easy identification of staff by visitor groups.

Once the sampling period has begun for the day, the surveyors will approach the first group of visitors to exit the river at the intercept location. The group will be asked if they are willing to participate in the

survey. Refusals will be logged along with group size, craft type, the number of children under 18 in the group, the apparent language spoken, and field staff comments on the reason for refusal. These data will be used to assist in non-response bias analyses. If the visitors are willing to participate, the surveyors will ask the adult group member with the most recent birthday to serve as the individual respondent. The survey will be conducted as a face-to-face interview, with all responses recorded on the questionnaires by survey staff. At the conclusion of the interview, the group will be thanked for their participation and staff will approach the next group for participation, to complete a census of river users debarking at survey sites. Experience from past iterations of this monitoring effort suggests that the arrival rate of groups is infrequent enough that all groups arriving at study locations can be contacted for participation. This procedure is a replication of previous monitoring efforts to help ensure meaningful comparisons. This process will continue throughout the day, and a series of short rest breaks for survey staff will be included in the schedule.

(c) Instrument administration:

The questionnaires used in this study are comparable to ones used four times previously at ONSR, but incorporate updated, standardized language. Trained survey staff will be stationed at boater take-out sites such that they can conduct continuous counts of visitor use levels at the sites. Where take-out sites are not conducive to accurate counts of river use, nearby locations providing better count vantage points have been determined (e.g., a bridge crossing overlooking a take-out). Where this approach is necessary, “count-only days” have been developed using the same stratification approach as survey sampling, described earlier. One of two surveys will be administered in this study: a motor boater river use survey and a non-motorized river use survey (for canoeists, rafters and tubers), according to the activity type of the participating group. The questionnaires are virtually identical, with only minor changes in wording between the two versions (e.g., “float” vs. “boat”). Groups will be read the following script:

Hello, I am \_\_\_\_\_ and am working for the University of Southern Illinois in cooperation with Ozark National Scenic Riverways. We are doing a survey of visitors to the park this year. It takes about 10 minutes to complete and your answers are completely voluntary and anonymous. Would you be willing to answer some questions?

If YES: *We would like to talk to the person in your group 18 years or older who had the most recent birthday.*

If NO: I understand. I hope you enjoy your visit.

Participants will be thanked for their time. Groups that do not consent to participate will be thanked for their time and told, “I understand. I hope you enjoy your visit.”

(d) Expected response rate/confidence levels:

Previous iterations of this monitoring effort achieved over 90% response rate. However, response rates have been declining broadly in recent years. Thus, 60% of visitor groups are expected to participate in the

survey. Based on the previous Ozark surveys, we expect to contact approximately 800 visitor groups across 10 survey stations located along the riverways, stratified by weekend and weekday periods, and we expect 480 (or 60%), to agree to respond. With these anticipated sample sizes, we will be 95% confident that the true proportion in each population, motorized and non-motorized, is +/- 4 percentage points of the sample statistic.

(e) Strategies for dealing with potential non-response bias:

An interview log (attached) will be filled out by each survey administrator to record the disposition of each contact, including the characteristics of respondent groups and non-respondents groups. Non-response bias will be tested by comparing groups on these characteristics (e.g., group size, time of visit). Results of the analysis will be reported and any implications for interpretation of the results will be discussed in the final report.

(f) Description of any pre-testing and peer review of the methods and/or instrument (recommended):

The two instruments for this study have been used in the field four times, and we will be using the same instrument to compare past results to current results. The content of the surveys has been reviewed by the principal investigator, additional faculty at Southern Illinois University-Carbondale, and NPS officials.

10.	<b>Total Number of Initial Contacts   Expected Respondents:</b>	800	480	11.	<b>Estimated Time to Complete Initial Contact   Instrument (mins.):</b>	1 min	10 min	12.	<b>Total Burden Hours:</b>	93
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13.	<b>Reporting Plan:</b>	<p>A technical report will be submitted to ONSR. We will also conduct a workshop for park staff in the fall of 2010. A copy of the technical report will be submitted to the NPS Social Science Program for inclusion in the Social Science Studies Collection.</p> <p>Frequencies means, modes, and standard deviations will be used to describe visitor characteristics. Cross-tabulations, t-tests, or analyses of variance will be used to compare perceptions between motorized and non-motorized river users. In addition, repeated measures analyses will be used to test for trends in visitor responses over time, to the extent that historical datasets are available.</p>
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Interviewer: Name: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Place: \_\_\_\_\_

## Ozark River Use Visitor Survey

### Introductory Script for Ozark Visitor Survey

Hello, I am \_\_\_\_\_ and am working for the University of Southern Illinois in cooperation with Ozark National Scenic Riverways. We are doing a survey of visitors to the park this year. It takes about 10 minutes to complete and your answers are completely voluntary and anonymous. Would you be willing to answer some questions?

If YES: We would like to talk to the person in your group 18 years or older who had the most recent birthday.

If NO: I understand. I hope you enjoy your visit.

\*(Additional information provided upon request: The Paperwork Reduction Act requires approval of all federal government surveys by the Office of Management and Budget. This survey has been approved under this Act. The Office of Management and Budget control number and expiration date is available at your request. Additional information about this survey and its approval is available at your request.\* The questions on this survey will take about **10 minutes** to complete. All of your answers are voluntary and anonymous.)

1. What is your age? \_\_\_\_\_ [1. AGE2]
2. How many people are in your group, including yourself? \_\_\_\_\_ [1. GRP3]
3. Are you \_\_\_ Male \_\_\_ Female [ 1. GEND1]

### Visitor's Experience and Present Visit

4. How many times have you floated (boated) on the Ozark Riverways? \_\_\_\_\_ [1. variation VISITHIS1]
5. Year of first visit \_\_\_\_\_ (enter 2010 if this is their first visit) [1. variation VISITHIS4]
6. (non-motorized version) Where have you floated from today? \_\_\_\_\_ [3. variation ITIN3]
6. (motorized version). How many miles did you run UP RIVER? \_\_\_\_\_ DOWN RIVER? \_\_\_\_\_ [Topic Area 3 - Individual Activities and Uses of Park Resources]
7. On this visit, how long did you and your group stay at Ozark National Scenic Riverways? [3. TRIPC11]
 

Number of hours, if less than 24 hours \_\_\_\_\_

**OR**

Number of days, if 24 hours or more \_\_\_\_\_
8. On this visit, what activities did you and your group participate in? (List) [3. variation ACT18]

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**Visitor's Choice of Recreation Setting**

9. Have you visited other rivers for similar float (boat) trips? [Topic Area 1 - Individual Characteristics]

\_\_\_\_ Yes → Continue to Question 10

\_\_\_\_ No → Skip to Question 12

10. Could you name some? \_\_\_\_\_ [Topic Area 3 - Individual Activities and Uses of Park Resources]

11. Why did you choose Ozark Riverways today rather than one of the rivers you indicated above [Topic Area 6 - Individual Perceptions of their Park Experiences]

\_\_\_\_\_

12. Have you floated (boated) other sections of the Current or Jacks Fork? [Topic Area 3 - Individual Activities and Uses of Park Resources]

\_\_\_\_ Yes → Please name some \_\_\_\_\_

\_\_\_\_ No

13. Did you have a particular reason for choosing this section of the Ozark Riverways today? [Topic Area 6 - Individual Perceptions of their Park Experiences]

\_\_\_\_ Yes → Reason(s) \_\_\_\_\_

\_\_\_\_ No

**Visitor's Perceptions of Change Occurring**

14. Since your first visit to Ozark Riverways, have you noticed any changes in conditions? [Topic Area 6 - Individual Perceptions of their Park Experiences]

\_\_\_\_ Yes → Continue to Question 15

\_\_\_\_ No → Skip to Question 18

**OR**

\_\_\_\_ This is my first visit to Ozark Riverways → Skip to Question 18

15. What changes have you noticed? [Topic Area 6 - Individual Perceptions of their Park Experiences]

\_\_\_\_\_

16. Have these changes affected your use of this river? [Topic Area 3 - Individual Activities and Uses of Park Resources]

\_\_\_\_ Yes → How? \_\_\_\_\_

\_\_\_\_ No

17. Do you have any ideas about what the National Park Service might be able to do about these changes? [Topic Area 7 - Individual Opinions on Park Management] \_\_\_\_\_

\_\_\_\_\_

**Visitor’s Perceptions of River Use Densities**

18. On your visit today, did you encounter about the number of people that you expected? [5. variation CROWD3]

I didn’t know what to expect → Skip to Question 20

**OR**

Yes → Skip to Question 20

No → Continue to Question 19

19. If NO, was the number of people you encountered [5. variation CROWDATT12]

More than you expected

Less than you expected

20. In terms of an *ideal trip*, would you prefer (enter only one) [Topic Area 6 - Individual Perceptions of their Park Experiences]

The same number of people as you encountered today?

More than you encountered today?

Less than you encountered today?

No preference

21. Were other river users a problem for you during your float (boat) trip? [Topic Area 6 - Individual Perceptions of their Park Experiences]

Yes → How? \_\_\_\_\_

No

**Visitor’s Rating of Trip Conditions**

22. On a scale of 1 to 10 (with 1 being “not at all important” and 10 being “extremely important”), how important would it be to you to see less people during your float trip? [Topic Area 6 - Individual Perceptions of their Park Experiences] (non-motorized version only)

Not at all important Extremely important  
 1    2    3    4    5    6    7    8    9    10

23. If you had information about other sections of the Ozark Riverways that had fewer canoe floaters, would you plan to float these on your next visit? [Topic Area 6 - Individual Perceptions of their Park Experiences] (non-motorized version only)

Yes

No

It wouldn’t make any difference

24. Please rate the quality of each of the following from 1 – 4. [6. Variation EVALSERV21] (motorized version only)

	Excellent	Good	Average	Poor
NPS staff helpfulness	1	2	3	4
Overall quality of services and facilities	1	2	3	4
Weather on this trip	1	2	3	4
Your evaluation of this trip	1	2	3	4

25. Do you live in the United States? [1. RES3]

\_\_\_\_ Yes → What is your Zip Code? \_\_\_\_\_

\_\_\_\_ No → What country do you live in? \_\_\_\_\_

**Comments**

26. Is there anything else you would like to pass on to the National Park Service? [6. variation OPMGMT7]

\_\_\_\_\_

\_\_\_\_\_

**INTERVIEWER OBSERVE (motorized version only)**

Equipment Motor Type:      Prop\_\_\_\_\_      Jet\_\_\_\_\_      HP\_\_\_\_\_      Boat Size: \_\_\_\_\_X\_\_\_\_\_