A new recreation visitor inventory that parallels other resource inventories

Kenneth Chilman, Les Wadzinski, Andy West

Abstract — A Rapid Assessment Visitor Inventory (RAVI) has been developed for inexpensively obtaining representative samples of place-specific visitor numbers and perceptions of attributes of their visit experience. It has been tested in 13 studies on 7 federal and state parks and conservation areas in 4 states. The inventory data are used by field-level managers in decision meetings with other persons in the management organization and with individuals and groups external to the organization. Examples of the application and use of a RAVI study, and a repeat measurement for monitoring purposes are discussed.

Index Terms — Decision-making, management, public participation, visitor inventory.

1 Introduction

Monitoring and management of visitor flows in recreational and protected areas involves learning how many and what types of visitors are moving through outdoor recreation areas. Then management decisions can be made about desired conditions to be managed and maintained on the areas.

Often the parks and protected areas are large and diverse, and visitors are scattered and engaged in various activities. Visitor inventories have usually involved long and expensive studies of several months duration. A shorter-time-frame, less expensive inventory method is needed to provide specific data for management decision-making discussions.

K.C. Chilman is with the Department of Forestry, Southern Illinois University Carbondale, IL 62901. E-mail: plc1@siu.edu (attn Chilman).
L. Wadzinski is with the Hoosier National Forest, Bedford, IN 47421. Email: lwadzinski@fs.fed.us
K.A. West is with the Missouri Department of Conservation, P.O. Box 218, Puxico, MO 63960. E-mail: Andy.West@mdc.mo.gov.

2 Methods

Natural resource systems, such as forestry and wildlife management, have used field inventory methods to obtain place specific data for decision-making for many years (Avery 1975, Dasmann 1964). Wildland recreation, when viewed as renewable resources for visitors to repeat enjoyable experiences, has not had similar inventory procedures.

A place-specific, inexpensive Rapid Assessment Visitor Inventory (RAVI) has been developed to conduct visitor counts and surveys in a short (2 week) time frame. As in other resource management, management subunits with specific conditions are identified. Then sampling is done at a travel pattern concentration, junction, or a similar location - where most visitors to a land management subunit can be contacted. Counts of visitors, and one-page surveys (emphasizing questions thought important by managers) are conducted.

Because seasonal differences occur in recreational use of most areas, the RAVI system utilizes a 4-day sampling period (Thursday through Sunday) as a representative

sample of the weekends in a season (spring, summer, fall, winter). The two weekdays are used as a comparison to the weekend days. A short report of findings, emphasizing ease of management communications, is then written.

The RAVI system has been tested at various federal and state parks and forests in four states. A case study example is presented of how the RAVI system was administered and how the data was utilized by a federal land manager of horse riding trails on a national forest in 2005, and then remeasured for monitoring purposes in 2007.

3 Results

A case example of the application and use of the RAVI system will be discussed using steps identified in the RAVI model (Chilman, et.al. 1006). Applications have been done at forest, park, river, and lake areas with similar results.

Following telephone conversations and two visits to the Hoosier National Forest in southern Indiana, an agreement was reached to do a test of the RAVI system at Hickory Grove Church in the Hickory Ridge area of the national forest. The church area was at the confluence of some heavily used horse riding trails. It was an attraction point with a log church built in 1871. There were recently built hitch rails for the horses and a toilet facility, so many of the riders dismounted and rested in the area. The first RAVI study was done in September 2005, and the second study for monitoring purposes was in September 2007.

Step I. Design the Study

1. Identify concerns/questions. The basic questions addressed in this study were: What types of users (and how many) visit a central destination point in the Hickory Ridge trails area during a typical weekend in the fall use season? What are their perceptions and preferences for trail and use conditions? What changes (including increased use) had been observed by the riders?
2. Examine study area. Prior to the 2005 four-day RAVI study, the researcher traveled to the trails area and Hickory Grove Church area with the Hoosier National Forest recreation program manager. In addition, they visited four nearby horse rider campgrounds (3 private, 1 public) and talked with staff there.
3. Develop sampling plan. Sampling was done Thursday through Sunday, October 15 - 18, 2005. Counts and surveys were done at the Hickory Grove site from 9:00 a.m. to 4:00 p.m. The second study was done September 13 - 16, 2007.
4. Develop count forms and questionnaires. Count forms and one-page questionnaires from previous recreation visitor field studies were adapted for use.

Step II. Data Collection

1. Train data collectors. No training was necessary as the research was done by the researcher who has done field-level visitor studies for several years. One assistant was added to do counts while the researcher was surveying visitors.
2. Do counts and interviews. All trail users stopping or passing by were counted during the 7 hours each day. One person per group was surveyed when groups stopped for awhile in the hitchrail area.
3. Data coding and entry. Optional. In this case, the descriptive count and survey data were easily tabulated.

Step III. Data Analysis and Reporting

1. Tabulation of counts and interviews. Data from the trail user counts and interviews were displayed in descriptive enumerative paragraphs.
2. Prepare maps of user distribution. Although not done for purposes of the Hoosier report, map displays of distribution of visitor types and numbers are often a useful communication tool.
3. Prepare preliminary report. A very basic format was used in the draft report: Introduc-

tion, Methods, Results, Discussion. Sixty groups totaling 251 riders were counted in 2005: 51 groups totaling 181 riders were counted in 2007. Twenty-seven interviews were conducted during the four days in 2005: 38 in 2007. Visitor satisfaction ratings in 2005 were quite high, with sixteen respondents giving the highest rating of 10, nine respondents giving a rating of 9, and two respondents rating their visits an 8. In 2007, 28 respondents gave a rating of 10, 6 rated it 9, and 2 ratings of 8.

Step IV. Discussion of Data with Managers

1. Are data, methods clearly understood. Because travel distance was approximately 250 miles between the researcher's office and the manager's office, no face-to-face discussions took place after the reports were written. However, several telephone conversations were used to discuss the methods and data.
2. Implications for management issues.

The Hoosier manager in his 2005 presentation indicated that they found out that most riders there were horse riders, use is fairly high, satisfaction ratings were high, most riders started form a particular campground, and riders were unsure about fees. He indicated that they used the information to determine that is was appropriate to spend money to enhance the site, and confirmed that trail maintenance techniques were working and acceptable to the users.

3. Develop a plan for monitoring remeasurements. A follow-up study to examine changes in use conditions was conducted in 2007.
4. Prepare the final report. In the case of the 2005 and 2007 Hoosier RAVI studies, no corrections or revisions were requested in the final reports.

4 Discussion

High quality recreation experiences occur on many outdoor areas, but managers usually do not have place-specific data to describe the visitors and their experiences. The RAVI method enables managers to obtain visitor data rapidly and inexpensively to describe and discuss specific visitor experiences on key management areas.

Managers of the 13 areas where RAVI's have been done expressed an interest to know more about visitors to their areas, so that high quality recreation experiences could be maintained or improved. Because of management budget limitations, they wanted to be able to obtain the information for a low cost.

As well as learning about visitors and their visits, managers used the RAVI study data in various ways: as information for capacity planning (Niobrara National Scenic River, Nebraska), to evaluate visitors' responses to trail improvements (Hoosier National Forest, Indiana), for information about visitors to a new visitor center (Cache River State Natural Area, Illinois), as input on controversial duck hunter management proposals (Duck Creek Conservation Area, Missouri), and in other similar ways. Four of the managers found the RAVI method useful enough to have the researchers return for studies on other parts of their areas. One study currently underway is evaluating visitors' experience on four major use areas on Mingo National Wildlife Refuge in Missouri. The Corps of Engineers lake manager at Table Rock Lake has discussed the new trail visitor data at various meetings in Branson, Missouri, a highly developed entertainment travel destination.

5 Conclusion

The three innovations of RAVI as a place-specific inventory method appear to be 1. the identification of travel pattern concentrations (TPC's) for sampling, 2. the sampling strategy of doing one weekend (plus 2 weekdays) in a season (spring, summer, fall, winter) as a known population, and 3. short, straightforward easy-to-read study reports as recognition of the importance of communications

(both internal and external to the management organization) for effective management decision-making.

RAVI appears to be a useful tool to provide managers with specific information for meetings with individuals and groups. During RAVI at two areas, management interns at the areas were trained to do data collection and write study reports. A training session for Missouri Department of Conservation employees in southeast Missouri was conducted in April 2008 to demonstrate the procedures involved.

Managers who have used the visitor inventories report increased credibility in their local communities and with area visitors. And this is the basic purpose of the RAVI: to help managers, and visitors, maintain high quality recreation visit opportunities.

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K. C. Chilman, Degrees: BS Forestry, Purdue University, 1956, MF University of Michigan, 1959, Ph.D. University of Michigan, 1972. Employment: U.S. Forest Service, California, 1956 - 1965; Teaching Assistant, Instructor, University of Michigan, 1965 - 1968; Assistant Professor, University of Missouri, 1968 - 1972, Associate Professor, Southern Illinois University Carbondale, 1973 - 1995; Adjunct Professor / Researcher, Southern Illinois University Carbondale, 1996 - present.

L. Wadzinski, Degrees: BS Recreation, Indiana University, 1973; MS Recreation Resource Management, 1983, Slippery Rock University. Employment: Recreation Program Manager, Hoosier National Forest, 1991-present; Adjunct Faculty, Indiana University School of Public and Environmental Affairs, 2002-present; Park Manager, US Army Corps of Engineers, 1980-1991.

K. A. West, Degrees: B.A. 1971 and M.A. 1975 Botany, PhD 2002 Zoology (Interdisciplinary Studies) Southern Illinois University Carbondale. Employment: 30 years as biologist and land manager for Illinois Dept of Natural Resources (1975-2005), botanist/ecologist with Shawnee National Forest (Illinois); currently Wildlife Management Biologist for the Missouri Dept. of Conservation, Puxico MO.