

# Human Dimensions of Natural Resource Management:

Emerging Issues and  
Practical Applications



# Human Dimensions of Natural Resource Management:

## Emerging **Issues** and Practical Applications

Workshop  
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# Priority Issues and Future Directions in Human Dimensions Research<sup>1</sup>

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## Introduction

Workshop goals were twofold: (1) to identify, describe, and begin to prioritize research issues related to social, or “human dimensions,” that confront managers and decision makers in Region 3—U.S. Fish and Wildlife Service (USFWS), and (2) to provide background information about human dimensions for USFWS employees and their colleagues from other federal and state natural resource and environmental management agencies.

Human dimensions research is the application of social science theory and methods to help understand the cultural, sociological, psychological, economic, biological, and physical aspects of natural resource management and environmental problem solving. During the past 30 years, there has been a growing interest in the human dimensions of natural resources due to fundamental changes in the management environment. For example, natural resource managers face an increasingly complex management environment that now includes many diverse public stakeholders who demand an active role in planning and decision-making. Also, natural resource agencies typically have a dual mission of protecting resources while providing benefits to the public. For such reasons, most natural resource managers are now aware that solving natural resource issues requires understanding the sociopolitical environment as well as understanding biological and ecological principles.

Despite the recognition that human dimensions information is important to managing natural resources, most natural resource professionals still lack specific answers to the practical question, “What can human dimensions information and research do for me?” The papers and other information presented in this volume begin to answer that

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<sup>1</sup>Fulton, D. C., K. C. Nelson, D. H. Anderson, and D. W. Lime, eds. 2000. Priority issues and future directions in human dimensions research. In *Human Dimensions of Natural Resource Management: Emerging Issues and Practical Applications*. St. Paul, MN: Cooperative Park Studies Program, University of Minnesota, Department of Forest Resources.

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question and provide future direction for natural resource professionals who want begin integrating social science information into planning and decision-making.

## Workshop organization

The workshop was organized around two thematic areas: *Human Dimensions of Visitors' Issues* and *Human Dimensions of Community Issues*. The first day of the workshop was devoted to the visitors' issues theme, while the second day focus community issues. Plenary presentations each morning focused on providing an overview of research and knowledge gaps related to each principal theme. These presentations provided a starting point for small group discussions facilitated thru a modified nominal group process to encourage discussion on the topic. The obj of these small group discussions was to identify USFWS research needs within e; workshop theme. Following each small group session, workshop participants wt reconvened and a representative of each small group presented a summary of the group's ideas.

The workshop afternoons were devoted to concurrent presentations that provided more in-depth discussion about topics introduced during the plenary presentation, While these sessions varied in format, each focused on issues and applications pertinent to that day's thematic area. The panel session on the final morning of the workshop focused on opportunities and constraints in pursuing research and prog related to the human dimensions of natural resource within the USFWS and other and federal agencies.

## Workshop products

These proceedings provide a means to distribute two products from the workshop:

1. State-of-knowledge papers from plenary and concurrent presentations
2. Set of recommendations for USFWS management and administration
  - Research needs
  - Research priorities

**An** evaluation of the workshop was performed and distributed earlier (Thompson4 2000).

## State-of-knowledge papers

The papers developed for the plenary and concurrent sessions are presented in the remaining sections of this report. These papers are organized around the two theme areas developed for the workshop and their titles and content are summarized below

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## ***Human dimensions: Visitor issues***

Six papers are presented addressing the general theme of the Human Dimensions of Visitor Issues. In the plenary paper, Joe Roggenbuck (Virginia Polytechnic Institute and State University) provides an overview of approaches and research for “Facilitating High-quality Visitor Experiences at National Wildlife Refuges.” This paper identifies the key approaches to understanding natural resource recreation and what characterizes high-quality recreation. In addition, the role refuge managers play in supporting quality recreation experiences is discussed and research and information needs on this topic are identified.

The remaining five papers (presented in concurrent sessions) focus on additional information concerning research and application on the human dimensions of refuge visitors. Bob Manning (University of Vermont) provides an overview of the role of defining and establishing indicators and standards for providing quality recreation opportunities. Alan Bright (Colorado State University) highlights the key aspects of communicating information concerning wildlife and wildlife recreation to the public via communications campaigns. John Davis (Southern Vermont College) summarizes the current knowledge and techniques used for estimating visitor numbers and use levels. David W. Lime, Dorothy Anderson (University of Minnesota) and Theresa Wang (West Virginia University) describe a process for maintaining quality visitor experiences as well as the biophysical resources that support such experience opportunities. David Fulton (University of Minnesota) presents an outcomes-based planning framework for implementing management of quality recreation opportunities and experiences.

## ***Human dimensions: Community issues***

Cornelia Flora, in her plenary paper, discusses the research issues involved with measuring the community dimensions of managing natural resources with a focus on what sociological research can contribute to understanding refuge management. She provides a concise review of the concept of capital and the role of refuges and refuge management in building or enhancing various forms of capital. Further, she describes how sociological research can be used in planning, increasing progress, assessing performance, and reaching potentials to increase our accountability in management.

Five additional papers (presented in concurrent sessions) focus on the human dimensions of community issues. Pat West (University of Michigan) develops an agenda for research about minorities, social justice, and natural resource management. Don Field (University of Wisconsin) provides the perspective of applied demography in examining social change along the upper Mississippi. Kristen Nelson (University of Minnesota) and Berry Steiglit (USFWS) provide a review of conflict management and community relations in the context of natural resource management. David Bengston (USDA Forest Service) examines environmental values related to fish and

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wildlife lands, and Stewart Allen (USFWS) provides a framework for conducting social impact assessments of actions on USFWS lands.

## Priority issues and future directions

**An** important product from the workshop is identification of priority human dimensions research needs within Region 3, USFWS. The modified nominal group sessions held after each plenary presentation were the primary means used to identify priority research needs for both of the workshop thematic areas. Results of the modified nominal group sessions identified priority research needs for both the human dimensions of visitor and community issues.

The five nominal groups considering research and information needs related to understanding visitors were asked to address the following question: “*What are the problems could be helped by knowing more about visitors?*”

Common themes emerged from the lists enumerated by these groups (Table 1). The common themes include:

- How do we improve communication about the refuge system and its function benefits?
- What research can help us improve the match between refuge services and products and visitor motivations, expectations and knowledge (aka Marketir)
- How can we balance use and visitor impacts on the resource?
- How can we address conflicts among users?
- How do we improve local community support?
- What can be done to increase use/access for diverse publics?
- How can we develop funding for facilities and staff?

To identify research and information needs and priorities concerning community issues, four separate nominal groups were asked, “*What information do we need enhance USFWS work with communities?*” Common themes that emerged from discussions (Table 2) include:

- How do we identify and define “community” relative to USFWS Refuges?
- Who are community opinion leaders (supporters/detractors) and what are their ideas and their influence on USFWS Refuge planning?