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HUMAN DIMENSIONS OF WILDLIFE MANAGEMENT

More than 4 decades ago, King (1948:10) identified a need for research into the human dimension of wildlife management (HDW) when he wrote, "A research program on man himself! Why not? We are not sociologists it is true, but we should at least be able to study man's relationship with our game management problems. . . ." But it was not until the mid-1960's that reports of HDW research became available; 11 HDW articles appeared in the first 3 volumes of the *Wildlife Society Bulletin* (1973–1976). Since that time a steady stream of HDW articles, 162 in total, has appeared in the *Bulletin*.

A great surge of interest in HDW research has occurred during the past 10 years. In 1982 a small cadre of scientists who were heavily immersed in HDW research gathered to form the Human Dimensions in Wildlife Study Group. In just 6 years that group had grown to approximately 300 members (Brown 1988). Significantly, the group has broadened in composition to include managers and researchers as well as a growing contingent of international members. Additionally, the group is represented by a diversity of HDW interests and research perspectives.

In that regard, it is important to note that the 15 articles that follow are not a comprehensive compilation of HDW research, but illustrate the types of contemporary issues, conceptual approaches, and applications evident in the HDW arena. In a broader context, they help identify how our "research program on man himself" is progressing and help set the direction for future research.

One might view the articles in this issue as moving toward the fulfillment of research needs identified by Hendee and Potter (1971). They provided an overview of potential HDW contributions and set the direction for many of us in this area of research. The top priority identified by Hendee and Potter involved the examination of hunter satisfaction. Indeed, the greatest concentration of articles in the current issue deals with the satisfaction of hunters. Decker and Connelly (1989) examined hunter satisfaction in evaluating the use of special-permit deer hunts and conclude that permit hunts are not an effective management tool. Peyton (1989) evaluated motivations of bear hunters and their attitudes toward hunting restrictions. Rollins and Romano (1989) demonstrate how satisfaction criteria were used in evaluating Ontario moose hunting programs. Applegate (1989) examined reasons why hunters desert the sport and presents findings that suggest bagging game is a more important component of hunter satisfaction than previously thought. Manfredo et al. (1989) examine the unique considerations in providing opportunities for hunters with disabilities. Their paper suggests the need for measuring how hunting contributes to human values, as does the article by Purdy and Decker (1989). Purdy and Decker propose the Wildlife Attitudes and Values Scale, which can be used in measuring wildlife values as perceived by different segments of the public.

The second priority identified by Hendee and Potter (1971) was research on nonconsumptive uses of wildlife. This is an area that has received increased attention in the past decade. In addition to a case study presented by Purdy and Decker (1989), Hvenegaard et al. (1989) describe the substantial economic contribution resulting from bird watching at Point Pelee National Park, Ontario. Also, Schreyer et al. (1989) present results of a study of Utah residents which reveals strong public support for wildlife programs, particularly those dealing with nongame.

A third area of priority was economic studies. A considerable amount of recent economic research has been conducted in an effort to measure wildlife values, and articles in this

issue reflect the emerging trend that focuses on the importance of wildlife to tourism and commercial recreation. In addition to Hvenegaard et al.'s (1989) article on the economic impacts of bird watching, Jordan and Workman (1989) provide an indepth documentation of the status of fee hunting in Utah.

The final priority identified by Hendee and Potter (1971) was for research that would be useful in making legal and political decisions. Within that context, 2 articles in this issue deal with the highly visible and controversial topic of wolf reintroduction. Bath and Buchanan (1989) examined attitudes of Wyoming residents toward reintroduction of wolves in Yellowstone National Park, and Tucker and Pletscher (1989) studied attitudes of hunters and residents around Glacier National Park toward wolf reintroduction in that region. Both articles indicate the polarity of opinions on this topic and the complexity in understanding people's responses toward large predators.

As noted by Hendee and Potter (1971), legal and political issues in wildlife management arise in part because of the public's level of understanding of the problem, suggesting a strong need for educational efforts. Tucker and Pletscher (1989) suggest public involvement and education techniques useful in dealing with the issue of wolf reintroduction. In another paper, Morgan and Gramann (1989) provide a useful review of attitude-change theories which might guide educational efforts. They use the elaboration-likelihood model of persuasion in evaluating educational programs about snakes. Also, McCool and Braithwaite (1989) examine beliefs about bears and make suggestions about how communication efforts might mitigate encounters between humans and bears. Furthermore, Bromley et al. (1989) determined that a high proportion of dove hunters in Virginia were observed to handle firearms in unsafe ways. Improvements in hunter education programs were recommended.

Finally, Fisher and Grambsch (1989) describe the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. That survey provides most of the baseline information about wildlife recreation in the U.S. and has been invaluable in deliberations about wildlife policy.

As for future HDW research, the areas identified by Hendee and Potter (1971) still stand today, to a large extent, even though we might debate their priorities. For example, given the number of studies that have been conducted on hunter satisfaction and the apparent convergence of findings, this subject may no longer be a priority for future research.

I foresee 2 major challenges for future HDW research. Most important is that we improve the development and application of theory in our research. We are told that theory is the aim of science and yet have been negligent in that area. As McGuire (1981:42) noted, "Theory isn't everything, Vince Lombardi might have said, but no theory isn't anything at all." Theory is important because it extends the generalizations of our findings, it improves the rigor and confidence with which research is conducted, it provides a structure for integrating and building upon previous findings, and it extends us beyond the endless, repetitive cycle of purely descriptive research. In short, it will improve the integrity and credibility of this area of study.

Ironically, increased emphasis on theory will necessitate an increased focus on the applicability of our research for managers. The broadness of theories "provides guidance for coping with a wide spectrum of reality but their abstractness further removes them from the thing they represent, aggravating the oversimplification and distortion of reality" (McGuire 1981: 42). Our second challenge, therefore, is to assist in implementing our research and narrow the gap of understanding that exists between managers and researchers. We must demonstrate how human dimensions research can be used.

Teague (1979:59) noted that "Most wildlife management problems start out as biological

problems but eventually become people problems. . . . Because we are dealing with a social science problem, we should use concepts and procedures that have been developed in the social sciences." Managers and researchers should be encouraged with the progress made toward that end, but should recognize that we are short of what we might aspire to achieve. Consider the following questions for the future: (1) To what extent is HDW research a regular part of wildlife management activities? (2) How many wildlife agencies have social scientists on their staff to assist with HDW problems? (3) How much HDW training is received by wildlife biologists? (4) How many academic wildlife programs have a solid HDW component which is required? (5) How often is HDW research used in development and evaluation of management programs? (6) How many wildlife managers honestly know how HDW research can assist them in their management activities and what to do with HDW results of research when they get it? (7) Are people with a specialization in HDW considered "wildlife professionals"?

The human dimensions component of wildlife management is still evolving. With growing public interest and involvement in wildlife issues, it seems likely that HDW will become more important in the future. We should be encouraged that our "research program on man" is reaching fruition.

Acknowledgments.—Impetus for this special Human Dimensions portion of *Wildlife Society Bulletin* grew from the Second Social Science and Natural Resources conference held at University of Illinois in May 1988. At that conference there were 6 HDW (including fisheries) sessions and 44 papers or posters dealing with this topic. Several papers presented at that conference appear in this issue. I thank conference coordinators R. Burdge and J. Vining for their cooperation in developing this issue and to D. J. Witter and the Human Dimensions in Wildlife Study Group for their support in organizing this effort.

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