For US Wildlife Management, Social Science Needed Now More Than Ever

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In January 2019, a bill was introduced to the Montana House of Representatives (HB 161) stating that "the director, department, and commission may only use facts and science when making decisions" but "may not use social science, human dimensions, or people's attitudes, opinions, or preferences in decision-making processes related to fish and wildlife." The bill, which was ultimately tabled, highlights a resounding philosophy in wildlife management that embraces "science" while simultaneously invalidating social science as a legitimate form thereof. Stemming back to the days of Woodrow Wilson, this false duality is glaring today amid diversifying public values and increased demand for transparency and accountability in natural resource management. For the sake of America's biodiversity and the continued success of wildlife agencies, there is a need to embrace a broader view of science and to recognize the limitations of biology in answering socially rooted questions.

The preeminent position of biology in wildlife decision-making has deep roots in the foundations of wildlife conservation in the United States (Organ et al., 2012). At their inception, state agencies were tasked with maximizing game species and, given the widely accepted utilitarian purpose of wildlife, managers deployed biology in achieving this objective. Biology-trained scientists took on an elite role in the decision-making process, and biological sciences served as the core of university wildlife-training programs and professional societies. Meanwhile, utilitarian values were imbedded in wildlife management institutions through laws linking agency funding to the sale of hunting and fishing licenses and creating an iron triangle in which the legislature, agencies, and hunter–angler clientele drove policy to the exclusion of all other interests. This regime—underlaid by a single set of values—reaffirmed the need for technical biological science, which transformed the natural environment as predators were culled, ungulate populations boomed, and high herbivore abundance degraded ecological systems.

So long as there was consensus in values and agreement on the overall goals of wildlife stewardship, this management strategy was tenable. However, following World War II, society underwent a widespread value shift, resulting in a diversification of social values. This shift had direct implications for wildlife managers, who now had to contend with competing public conceptualizations of the role of wildlife, with some viewing wildlife as resources for human use, whereas others regarded animals as sentient and humanlike (Manfredo et al. 2018). Amid this value shift, hunting participation in the United States declined from approximately 10% in 1975 to 4% in 2015, and traditional wildlife management techniques like lethal predator control began to face legal and political challenges.

Agencies, however, appear not to have been swept along in these societal changes, resulting in a growing chasm between public sentiment and policy around wildlife. In turn, biological science that once served to solve technical challenges now appeared as a veil behind which agencies avoided "uncomfortable and difficult debates over underlying values" (Doremus 2005, p. 255). This is indeed where the social sciences can offer their utility to public managers, but despite calls for such inclusion dating back nearly half a century, there remains a deficit of social science in wildlife policy and practice. Moreover, social science findings are too often judged by their acceptability to traditional stakeholders in order to avoid difficult value conflicts at the heart of contemporary wildlife management (Wagner 1995).

Wildlife conservation will not be advanced, nor will the changing values of the public be effectively addressed, by eliminating social science. The conflict between societal transition and traditional wildlife ideology looms as the most transformative issue challenging wildlife conservation today. At issue is not whether consumptive users are important or whether biological science is critical to effective wildlife conservation, because both are undoubtedly true. Rather, the challenge is how to build on past successes while embracing a broader constituency so as to maintain funding, social influence, and the rich heritage of US wildlife conservation in a changing social context.

Social science is needed now, even more than in the past, to address this challenge. Although it is not uncommon for agencies to use surveys to identify stakeholder preferences, modern conservation challenges will require a broader conceptualization that recognizes the utility of social science for communication, organizational development, conflict resolution, governance reform, and careful planning to anticipate uncertain social–ecological futures. This is the science that will help wildlife managers reconcile diverse values, guide sustainable policy, and enhance the democratic nature of wildlife governance. Moreover, it can guide agencies in asking and answering the following questions.

First, what vision of the future do agencies wish to purse, and what challenges need to be confronted in pursuit of that vision? Current trends in wildlife recreation, funding, and social value shifts indicate that historic paths of wildlife management are likely unsustainable. Avoiding discussions about these changes illustrates a tacit decision to embrace the past as the desired future, which could leave agencies vulnerable to concerns of relevancy. Social science can be used to outline the likelihood of success and costs and benefits associated with potential future trajectories.

Second, how should agencies adapt to the changing social environment, and how can change realistically be achieved? Research shows that agency employees' values are currently a strong reflection of their traditional clientele (Manfredo et al. 2018). However, as values change in society, agencies look increasingly different from the broad public they wish to engage, which acts as a barrier to connecting with and understanding public interests. Social science will offer utility in addressing possible strategies for fostering a culture that is more reflective of these publics and their interests, both within agencies and wildlife management institutions more broadly.

Finally, what styles of governance are most appropriate for addressing contemporary conservation challenges? Current institutions for governance foster only shallow opportunities for public participation—and often only with certain sets of stakeholders. This undermines attempts to embrace new stakeholders and encourages divisiveness in decision-making. Advancing the sorts of inclusive and participatory decision-making opportunities that create space for the plurality of wildlife values and address associated conflicts head on will pose significant challenges to wildlife managers trying to rely on biology alone.

This is a call to wildlife management institutions, including the programs of higher education that train future professionals, to embrace a broader view of social science than they have in the past. This will likely be a difficult path, fraught with resistance. When faced with new social pressures, organizations often become entrenched and resistant to change. However, rather than suppressing uncomfortable discussions, we believe they must be embraced. Given the growing complexity of the social and ecological context of wildlife management, there will be persistent need for being more inclusive and engaging thoughtfully with innovative ideas about how to merge the social and natural sciences in the pursuit of impactful wildlife conservation.

References cited

Doremus H. 2005. Science plays defense: natural resource management in the bush administration. Ecology Law Quarterly 32: 249.

Manfredo MJ, Sullivan L, Don Carlos AW, Dietsch AM, Teel TL, Bright AD, Bruskotter J. 2018. America's Wildlife Values: The Social Context of Wildlife Management in the U.S. Western Association of Fish and Wildlife Agencies, Colorado State University, Ohio State University.

Organ JF, et al. 2012. The North American Model of Wildlife Conservation. Wildlife Society, technical review no. 12-04.

Wagner WE 1995. The science charade in toxic risk regulation. Columbia Law Review 95: 1613–1723.

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