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Key Differences in Thought in Science and Values Regarding National Park Service Wildlife Management Policies

In his opening remarks, Michael Soukup described the current conditions on park lands and the challenges to managing wildlife conservatively under visitor and budget pressures. He acknowledged that changes in policy are made by the National Park Service (NPS) as the bureau's understanding of ecology progresses. He expressed an openness to modifying park policies objectively and professionally, based on increased understanding of natural systems. And Soukup expressed an awareness of the criticism of NPS management and the agency's use of science in decision-making. He acknowledged the legitimacy of concerns in the scientific community and expressed a willingness to re-examine current policies in light of ecosystem-level needs, diverse public values, and contemporary scientific theory and practice. He explained that the budget for natural resources and science is very limited in relation to the needs of a huge visitorship. Therefore, policies are very cautious to assure that if errors are made, the bureau will err on the side of conservatism.

In response to a question from the audience, he said NPS needs to find innovative ways to supplement technical expertise available to them; perhaps by recruiting assistance from retired experts.

John Dennis described the history of federal legislation that created and guides NPS as it strives to conserve wildlife for the enjoyment of future generations. Dennis remarked that national parks are solely the expression of human values. Policies have evolved from the early days to the present based on available knowledge. Congressional direction also has changed over time as has administrative policy that implements it.

Dennis described the flexibility of NPS management policies to achieve species conservation needs. He described park resource management plans and challenged scientists to provide technical input for the plans. He urged the scientific community to help the agency by focusing on how to identify and develop standards for evaluating whether or not natural conditions, unimpaired states, and non-derogation of values and purposes are being advanced for any given change in policy. He challenged wildlife scientists to study how ecosystems work, how animal population dynamics are influenced by intrinsic and extrinsic factors, and

what and how human actions are or are not changing the baseline environments within which park animal populations have evolved.

He further challenged the scientific community to take a long-term view of both human enjoyment of parks and the population dynamics of the animals. However, he cautioned that scientists should avoid advocacy of their personal values. He suggested that wildlife professionals develop jointly with the parks a comprehensive and coordinated program of long-term ecological monitoring in the parks.

William Supernauth discussed individual park management needs from a biologist's perspective. He emphasized how unique conditions in each park may require flexibility in policies to address social and biological concerns. NPS policy accommodates needed management actions in parks within fragmented ecosystems that contain only a portion of the original faunal component after a definable threshold of tolerance is reached.

Michael Ruggiero emphasized that NPS policy has focused on a few charismatic species to the neglect of invertebrates which make up three-quarters of all described species—the so-called spineless majority. Invertebrate species have significant economic value. They provide trillions of dollars in services. NPS policy has recognized the value of conserving invertebrates, but invertebrate re-

search has received relatively little funding. NPS needs to: (1) inventory invertebrates and establish collections, (2) develop reference materials and collections, (3) do research on inventory and monitoring methods, (4) hire entomologists to collect data, and (5) aggregate data.

Linda Wallace expressed concern that NPS policies focus on vegetation management as it relates to the level of ungulate grazing, that is, whether or not vegetation is overgrazed. Vegetation responses to herbivory should be viewed more broadly to include how communities might be grazed and look after considering the evolutionary history of different grazing regimes. Scientists can then better understand how ecosystems may have functioned in an evolutionary context. She suggested that policy-makers should recognize that plant behavior does not necessarily respond to policy-based timetables, but integrates across a range of conditions over evolutionary time.

Ruthann Knudson believes NPS wildlife policy needs to take into account cultural history as well as biological factors. Native Americans may have affected wildlife and habitat conditions many thousands of years ago. Understanding long-term past relationships, including the bilateral impacts of natural and cultural events and activities, can help the NPS make more scientifically based and publicly acceptable wildlife management decisions.

Frederic Wagner believes that the NPS needs to identify clearer goals for the National Park System and individual parks. The public needs to be involved actively to identify social and biological goals. Science should neither prescribe goals nor set policies. It should be a non-advocating service to the goal-setting and policy development processes, pointing out the consequences of alternative goal options, assisting in the design of management programs, and evaluating their effectiveness. In the process it should clarify, and in some cases dispel, ecological theory and practice. The entire ecological community should be involved in this process.

John Freemuth told us that NPS wildlife policies should be critiqued with particular attention to assumptions, constraints, and opportunities that are rooted in the political system and in NPS organizational culture. He raises some important questions about how to resolve policy conflict—through a collaborative approach or through the quantitative approach established by the Government Performance and Results Act.

William Halvorson and Chris Eastin suggested that national parks policy must be considered in the context of ecologically sensitive management of the surrounding landscape. They believe it is no longer feasible to manage NPS units as if they were islands in the age of com-

puters and information proliferation. NPS wildlife management policies must take into consideration the management practices of agencies surrounding them.

NPS needs to move from management by belief-based directives of the few to management by scientific understanding and broad consensus. But they acknowledge that this change will create a new set of sociological problems. They believe NPS must now work toward managing resources more effectively through educating, cooperating, and involving its neighbors in wildlife management decisions.

Discussion

A stimulating open discussion occurred following the presentations. Key points made by the audience included:

1. Judicial influences have led NPS to initiate more collaborative processes.
2. NPS needs to engage the public more effectively by presenting them with management dilemmas from which to choose.
3. Parks are a long-term public good that need to take into account how to meet the needs of future generations.
4. Scientists should communicate directly to a larger public rather than filtering their science through agencies.

Addressing Differences in Thought in Science and Values

Existing wildlife policies of NPS are an artifact of past politics, biological theories, public values, and perceptions of agency administrators and scientists. Advances in science and ecological theory, constantly changing public values, and stakeholder interests suggest an innovative approach to establishing goals and objectives for wildlife management in national parks.

The answer to existing policy conflicts should be addressed through informed and careful public scrutiny of NPS practices at both the national and individual park levels. All Americans, wherever they reside, should have the opportunity to express their opinions about park issues in a formal public process in which their wishes are carefully considered by NPS. Scientists both inside and outside of the agency should have reasonable access to the parks and the entire body of scientific literature to test theories empirically. The diversity of viewpoints about park wildlife issues should be discussed openly in forums such as we are enjoying here in Snowmass.

NPS should consider adopting a formal planning process for public input into decisions affecting the Na-

tional Park System and individual parks. There may be an opportunity to better use existing resource management planning processes. The Government Performance and Results Act may be a useful tool. A modified land planning model, such as exists in the Resource Planning Act and the National Forest Management Act for the U.S. Forest Service and perhaps in the new National Wildlife Refuge legislation before Congress, is worthy of consideration—especially if it includes an effective adaptive management requirement. Although not perfect, such a process could encourage thoughtful consideration of all aspects of resource management for the National Park System as well as at the landscape level for each park. Such a process could lead to better public acceptance of NPS actions. Certainly such a process does not eliminate conflicts, but it would help illuminate conservation options, ensure that the concerned public has an opportunity to affect the natural resources conditions in the parks, and set the stage for implementing state-of-the art wildlife management practices that will benefit the resource as well as present and future generations of American citizens.

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