Historical Perspectives on Science and Management in Yellowstone National Park

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Introduction

The essays appearing in this issue were originally presented at "People and Place: The Human Experience in Greater Yellowstone," the Fourth Biennial Scientific Conference on the Greater Yellowstone Ecosystem, October 12-15, 1997, at Mammoth Hot Springs, Yellowstone National Park.

Today, science is championed as a critical tool in managing the remarkable and all-too-often threatened resources of the American National Park System. Friends and critics alike continue to bombard the federal government with more and better science. Large segments of the public, politicians, and special-interest groups of all stripes persist in believing that science can sort out complex resource management problems. Yet, almost invariably, introducing science into a management controversy merely transforms it into a scientific controversy—scientists disagree, choose sides, and sometimes add their own rhetorical excesses to ongoing policy debates. Scientists (and the science they produce) are not immune from the ideological assumptions, social biases, and political vagaries of the surrounding culture. Historians of science have long been interested in exploring this interplay of science and society and a growing number of scholars have begun to examine the particular world of science and natural resource management. The essays in this special section of THE GEORGE WRIGHT FORUM present historical perspectives on the conduct of science in Yellowstone National Park—a place noted for a long tradition of innovative and often contentious resource management.

The philosopher of science David Hull recently wrote that "when scientists first opt one way or the other on important issues, the causal circumstances that are relevant to these decisions are extremely particularized. Only an intensive and extensive investigation of these circumstances can explain why science took the course it did.... If one wants to understand the course of science, it must be studied just as minutely as evolutionary biologists study changes in gene frequencies in local populations" (Hull 1988, 21). The following essays shine just such an intensive light on four episodes in Yellowstone's history, from the dawn

of serious interest in science as a management tool in the early twentieth century to the dawn of the modern environmental era in the 1960s. Each essay focuses on a different time period and on disparate subjects, ranging from Theodore Roosevelt's planned (but never realized) cougar hunt in Yellowstone to the earnest (but futile) effort of post-World War II managers to obliterate blister rust in a shower of Agent Orange. Yet all these studies share a common purpose—to demonstrate how integral science and scientists have been to the way in which Americans have imagined, valued, and cared for Yellowstone over its 125-year history.

Jeremy Johnston's reconsideration of Theodore Roosevelt's thinking about predators is an appropriate opener for this series, because Roosevelt (product of a truly particularized experience) provides us with such a vivid example of the state of resource-management science in his day. Make no mistake about Roosevelt's stature as a scholar. Described by the prominent professional biologist Edmund Heller as "the foremost field naturalist of our time," Roosevelt also served a term as president of the American Historical Association (Roosevelt once publicly debated taxonomy with no less a scientific and wildlife authority than C. Hart Merriam, and though Merriam was judged the winner by the observers, Roosevelt's positions were the ones that endured into later generations). The scientific disciplines that would later be so central in national park dialogues were still loosely defined enough to accommodate the occasional citizen-scholar like Roosevelt, and the national parks were still administratively adrift enough to experience the remarkable episodes of presidential micromanagement described by Johnston.

James Pritchard calls our attention to Charles C. Adams, an extraordinarily influential early ecologist who emerged on the scientific scene late in Roosevelt's life, and who was one of the most important voices in park natural-area policy in the first years of the National Park Service. While park defenders of Roosevelt's generation were generally content with simple admonitions to "leave it as it is," Adams and his colleagues began to address the still-problematic question of just what "it" was, and how we were to leave it as it was when it kept changing, and when it kept demanding our attention. The confidence of a Rooseveltian naturalist gave way to the somewhat more puzzled inquiries of an Adamsian ecologist.

The essay by Katherine Kendall and Jennifer Asebrook, on the history of blister rust control attempts in Yellowstone, illuminates a host of "particularized" elements of national park resource management that, though not focused on an individual scientist or manager, nonetheless are essential to appreciating the complex interplay of science and management in a park. Simply the image of park workers hiking along with open, sloshing containers of Agent Orange strapped to their backs gives us pause to consider where Charles Adams' quest for natural conditions

could lead the unwary optimist. More complex images, of various parks going their own ways for their own reasons, of the sometimes long lag between scientific breakthrough and management application, and of the society of BRC staff as part of Yellowstone's human subculture, suggest the convoluted course of the national parks as they sought to honor their mandates in the face of an irrepressible wild invader.

All these deliberations, struggles, and ambitions lead inevitably to a single, pivotal figure in national park science and management (and still perhaps the central figure in the intellectual history of the national parks): A. Starker Leopold. A respected, productive scientist and writer, Leopold and a few colleagues straddled the fence between the insufficiencies of science as a mentor and the perhaps even greater perils of philosophy as a resource-management tool. In the 1960s, as an advisor of the secretary of the interior, Leopold championed science and left a legacy of foresight and eloquence not since matched in management documents or advocacy tracts. Kiki Rydell traces not only the roots of his science but also his metamorphosis from scientist to policy advocate, and, like the three previous authors, sheds further light on how science has sought to come to terms with a modified version of the original Rooseveltian command: leave it as it is, once you figure out what it is.

In less than two generations, Starker's milestone 1963 report to the secretary of the interior has become historic. In the accelerating pace of resource-management evolution, the Leopold Report seems like something that happened long ago, and the pronouncements of earlier thinkers, including Roosevelt and Adams, are too easily discarded as quaint, almost ancient. Conservation biology, landscape ecology, environmental history, and other disciplines that were not even active in the 1960s now expose levels of philosophical, ethical, and scientific complexity that were scarcely imagined when the subjects of these four case studies were at work. But these earlier generations of park thinkers were grappling with issues and problems identical to those we face today. If their technology was feeble by comparison with ours, their intellects were in no way inferior, and their devotion to the parks still inspires us today. We neglect their thoughts, and the lessons of their triumphs and failures, at our peril. And now that Congress has provided the National Park Service with a firm mandate to conduct research (Title II of the National Parks Omnibus Management Act of 1998), the lessons of these historic figures become even more important to modern managers.

References

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