

Of Grouse and Golden Eggs: Can Ecosystems Be Managed Within a Species-Based Regulatory Framework?

Author(s): Chad S. Boyd, Dustin D. Johnson, Jay D. Kerby, Tony J. Svejcar, and Kirk W. Davies

Source: Rangeland Ecology & Management, 67(4):358-368. 2014.

Published By: Society for Range Management

DOI: <http://dx.doi.org/10.2111/REM-D-13-00096.1>

URL: <http://www.bioone.org/doi/full/10.2111/REM-D-13-00096.1>

BioOne (www.bioone.org) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/page/terms_of_use.

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

Forum

Of Grouse and Golden Eggs: Can Ecosystems Be Managed Within a Species-Based Regulatory Framework?

Chad S. Boyd,¹ Dustin D. Johnson,² Jay D. Kerby,³ Tony J. Svejcar,⁴ and Kirk W. Davies¹

Authors are ¹Rangeland Scientists, US Department of Agriculture, Agricultural Research Service, Burns, OR 97720, USA; ²Associate Professor, Oregon State University, Department of Animal and Rangeland Sciences, Burns, OR 97720, USA; ³Southeast Oregon Project Manager, The Nature Conservancy, Burns, OR 97720, USA; and ⁴Research Leader, US Department of Agriculture, Agricultural Research Service, Burns, OR 97720, USA.

Abstract

Declining greater sage-grouse populations are causing concern for the future of this species across the western United States. Major ecosystem issues, including exotic annual grass invasion and conifer encroachment, threaten vast acreages of sagebrush rangeland and are primary threats to sage-grouse. We discuss types of problems facing sage-grouse habitat and argue that complex ecosystem problems may be difficult to address under the Endangered Species Act as currently applied. Some problems, such as anthropogenic development, can be effectively regulated to produce a desired outcome. Other problems that are complex and involve disruption of ecosystem processes cannot be effectively regulated and require ongoing commitment to adaptive management. We believe that historical inertia of the regulatory paradigm is sufficient to skew management toward regulatory mechanisms, even though complex ecosystem problems impact large portions of the sage-grouse range. To overcome this situation, we suggest that the regulatory approach embodied in the Endangered Species Act be expanded to include promoting management trajectories needed to address complex ecosystem problems. This process should begin with state-and-transition models as the basis for a conceptual framework that outlines potential plant communities, their value as sage-grouse habitat, and their ecological status. Desired management trajectories are defined by maintenance of an ecologically resilient state that is of value as sage-grouse habitat, or movement from a less desired to a more desired state. Addressing complex ecosystem problems will involve shifting conservation roles. Under the regulatory approach, programmatic scales define regulatory policies, and local scales focus on implementing those policies. With complex ecosystem problems, programmatic scales empower local conservationists to make decisions necessary to adaptively manage problems. Putting ecosystem management on par with traditional regulatory actions honors obligations to provide regulatory protections while maintaining the capacity of the ecosystem to produce habitat and greatly expands the diversity of stakeholders willing to participate in sage-grouse conservation.

Key Words: Endangered Species Act, sagebrush, sage-grouse, state-and-transition

INTRODUCTION

In the tale of the goose that laid the golden egg, a farmer and his wife who are in possession of said goose, kill the goose based on their hypothesis that inside the goose would be found a great quantity of gold. Initial enthusiasm turned quickly to postmortem despair on finding the goose to be barren of internal wealth. The situation then went from hapless to hopeless with the dawning realization that, absent the goose, there would be no more golden eggs.

This fable may be an apt metaphor for some of the difficult conservation challenges facing today's society and natural resources professionals. Consider, for example, the issue of species-centric vs. ecosystem management. When populations of sensitive species decline, concern over their numbers often

prompts species-centric actions on a variety of fronts, including policy, regulatory, and judicial actions (Mann and Plummer 1996). Meanwhile, public and private land managers struggle to maintain ecosystem processes and functions against a seemingly unending tide of destabilizing influences (Davies et al. 2011). This dichotomy between species-centric and ecosystem management is not academic but is instead consistent with contemporary challenges relating to the needs of a burgeoning list of sensitive species (i.e., golden eggs) vs. those of the larger ecosystem that produced these species (i.e., the goose). Unlike the farmer of the original story, most of the participants in this debate are ultimately driven by concern over the well-being of sensitive species and natural environments. Nevertheless, decisions have consequences, and the decisions regarding how we approach both species and ecosystem management have had and will continue to have significant bearing on conservation of our vast wealth of natural resources.

Those consequences are becoming increasingly evident as we approach a court-ordered 2015 deadline for a decision by the US Fish and Wildlife Service on whether to afford Endangered Species Act (ESA) protections to the greater sage-grouse (*Centrocercus urophasianus*). In the run-up to 2015, we have seen a wide diversity of management and policy initiatives unfolding across the western United States promoting sage-

Mention of a proprietary product does not constitute a guarantee or warranty of the product by the USDA or the authors and does not imply its approval to the exclusion of other products that may also be suitable.

USDA is an equal opportunity provider and employer.

Correspondence: Chad Boyd, 67826-A Hwy 205, Burns, OR 97720, USA. E-mail: chad.boyd@oregonstate.edu

Manuscript received 21 June 2013; manuscript accepted 21 April 2014.

© 2014 The Society for Range Management

Download English Version:

<https://daneshyari.com/en/article/4404248>

Download Persian Version:

<https://daneshyari.com/article/4404248>

[Daneshyari.com](https://daneshyari.com)