

Managing Natural Resources in a Warmer Climate—Pathways for Adaptation

Climate Savvy—Adapting Conservation and Resource Management to a Changing World, Lara J. Hansen and Jennifer R. Hoffman. Island Press, Washington, DC (2011). 245 pages, \$40.00 (US) paperback.

The field of climate change adaptation is rapidly evolving, and non-governmental and governmental agencies of all levels from city to national are developing adaptation plans. Many ideas about how to adapt resource management to climate change are emerging from these simultaneous efforts thus creating the expectation among experts that the field will continue to be “messy” as new processes and frameworks are developed. In any rapidly evolving field it is important to step back and describe the current state of the knowledge so that common themes can be discovered and progress can be made. *Climate Savvy—Adapting Conservation and Resource Management to Changing World* takes on this challenge at a time when a critical level of need and interest exists among conservation biologists and resource managers.

Climate Savvy is an ambitious and comprehensive book on climate change adaptation written for the practitioner or policy maker. It is geared toward the management of flora and fauna, although not to any particular resource sector, geographic region, agency type, or level of authority. Although at times unnecessarily philosophical, *Climate Savvy* makes a compelling argument for the need to incorporate adaptation planning into conservation biology and resource management. It follows up by demystifying the concepts of “vulnerability assessment” and “adaptation planning” and moving the reader through key concepts necessary to take on adaptation planning. *Climate Savvy* stops short of outlining a step-by-step guide to adaptation planning and implementation.

The book includes an introduction and three parts: (1) Building the Plan, (2) Taking Action, and (3) Rethinking Governance, Policy, and Regulation. The introductory section includes three chapters. Chapter 1 describes the history of adaptation in climate change policy. Chapter 2 provides a cursory overview of projected climate change effects on

natural resources that is almost too simplistic to be useful. This scientific chapter contains only sparse and sporadic citations and might leave the reader looking elsewhere for information on climate change effects. Chapter 3 argues for a new paradigm in conservation and resource management. One that moves away from “protect in place” and “restore to the way it was” towards a “temporal, kinetic, and forward thinking” model for managing natural resources for climate change.

Part 1, *Building the Plan*, includes four chapters intended to help the reader proceed with adaptation planning by incorporating climate change thinking into conservation and resource management. Chapter 4 describes a philosophy for bringing climate change into all activities and decisions, although the authors emphasize that adaptation planning is not a wholesale change in how business is done but is more about “maximizing the likelihood of continued efficacy of your work in the face of climate change” and “increasing the return on your investment” in resource management. Chapter 5 describes the elements of a vulnerability assessment and differences in the scope and level of detail that these assessments can include. Chapter 6 outlines general principles for adaptation planning, common obstacles to taking action, and options for incorporating climate change into the planning process. Chapter 7 gives a brief overview of models that appear frequently in the climate change literature. This chapter accomplishes its stated goals of conveying the value and limitations of models and helping the reader understand appropriate use of models, but it seems tangential with the overarching objectives of the book.

Part 2, *Taking Action*, covers five common tools used in conservation biology: protected areas (Chapter 8) individual species management (Chapter 9), ecological connectivity (Chapter 10), restoration (Chapter 11), and control of invasive species (Chapter 12). Each chapter evaluates the utility of the management strategies in the context of a changing climate and suggests ways that the strategies could be modified to increase their effectiveness in a warmer climate.

The tone of the book changes in Part 3, *Rethinking Governance, Policy, and Regulation*, which takes a broader perspective on how policies and regulations that govern resource management may need to be modified so that they continue to

be relevant in a changing climate. Policy makers will likely find this chapter to be more relevant than will conservationists or resource managers. Three chapters review classic environmental issues and how climate change may affect the terms of the debate: natural resource harvests (Chapter 13), regulation of pollutants (Chapter 14), and conflicts between conservation and human development (Chapter 15). Chapter 16 explores the idea of adaptive governance, “governance systems that balance flexibility with oversight, discretion with accountability, and science with politics”. The authors make the case that such changes in governance are important for dealing with uncertainty and rapidly changing information that are inherent in climate change science.

The final chapter takes a fun look at the use of creative thinking in conservation and resource management, interspersed with entertaining quotes from baseball legend Yogi Berra.

Climate Savvy provides helpful definitions of key concepts and useful guidance on adaptation planning for a wide audience. Resource managers, conservationists, policy makers, and environmentalists will all likely find something of interest in this book.

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