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Climate Change, Biodiversity and Sustainability in the Americas: Impacts and Adaptations

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CHICAGO JOURNALS

Climate Change, Biodiversity and Sustainability in the Americas: Impacts and Adaptations.
Climate Change, Biodiversity and Sustainability in the Americas: Impacts and Adaptations by Francisco Dallmeier; Adam Fenech; Don MacIver; Robert Szaro
Review by: Shaily Menon
The Quarterly Review of Biology, Vol. 86, No. 3 (September 2011), p. 220
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space is presented, and distance and envelope methods are also reviewed.

Finally, Part IV is dedicated to model evaluation and implementation, reviewing common statistics derived from specificity and sensitivity measures. This chapter ends with a discussion of the need to report the spatial structure of uncertainty and errors in the predictions.

This volume is well written, comprehensive, and provides excellent summaries at the end of every chapter. The literature review, without being exhaustive (an impossibility in this rapidly developing field), provides a very good entry to most of the key papers and applications. The book will be useful to novice readers as well as to more experienced ones who need to have a good summary of the field of species distribution modeling (sensu lato).

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CONSERVATION BIOLOGY

CLIMATE CHANGE, BIODIVERSITY AND SUSTAINABILITY IN THE AMERICAS: IMPACTS AND ADAPTATIONS. *Based on a symposium held in Panama City, Panama, 25-29 February 2008.*

Edited by Francisco Dallmeier, Adam Fenech, Don MacIver, and Robert Szaro. Published by Smithsonian Institution Scholarly Press, Washington (D.C.), in cooperation with Rowman & Littlefield Publishers, Lanham (Maryland). $59.95. xii + 183 p. + 16 pl.; ill.; index. ISBN: 978-0-9788460-7-7. 2010.

This slender book is part of a two-volume collection of papers emerging from an international symposium in 2008 on Climate Change and Biodiversity in the Americas cohosted by Environment Canada and the Smithsonian Institution's Center for Conservation Education and Sustainability. This volume comprises eight papers on the science; a companion book contains the policy papers. Together with the Panama statement, the two volumes are intended to represent a continuation of collective attempts to build our adaptive capacity to climate change.

An introductory chapter provides the context and goals of the symposium and a review of species and ecosystem responses to climate change along with proposed adaptation and mitigation strategies. Most of the papers address responses of bird species or vegetation to altered climate conditions such as changing temperature and seasonality, stronger hurricanes, or increased snow melt. Two papers address the potential for linking carbon storage with biodiversity conservation and the role of secondary forests and forest plantations as restoration tools.

The questions elucidated by papers include the following: How useful is bird species richness as an indicator of climate change? How effectively can we predict responses based on species' natural history traits? How valuable is long-term baseline monitoring for assessing climate change impacts and future risks? What is the effectiveness of reforestation for biodiversity conservation and carbon cycling? What is the role of secondary forests and forest plantations as restoration tools? What is the response of desert vegetation to declining snow depth?

The papers underscore the importance of long-term monitoring to understand climate change response signals; predictive modeling for risk assessment; synergy at the local, national, and international levels; reforestation with native tree species; and ongoing research to understand climate change forcings and their impacts.

The Panama statement in the Appendix offers general recommendations and suggested adaptation solutions. The goal to reduce the rate of biodiversity loss by 2010 seems both vague and optimistic given the challenges that confront us and the uncertainties in our knowledge. The volume would have benefited from a synthesis of the information presented at the symposium to illuminate the state of our current knowledge and progress in each of the four symposium goals: review of baseline data and systematic observation networks; integrating knowledge about future changes; evaluating effectiveness of predictive modeling and decision support tools for developing of adaptation strategies; and establishing a framework for future collaboration.

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NATURE'S MATRIX: LINKING AGRICULTURE, CONSERVATION AND FOOD SOVEREIGNTY.

By Ivette Perfecto, John Vandermeer, and Angus Wright. London (United Kingdom) and Washington (D.C.): Earthscan. $136.00 (hardcover); $34.95 (paper). xiii + 242 p.; ill.; index. ISBN: 978-1-84407-781-6 (hc); 978-1-84407-782-3 (pb). [First published in 2009.] 2010.

This volume attempts to influence the debate in the biodiversity conservation community against agricultural intensification using "land sparing" and toward "wildlife-friendly" farming that relies on traditional agroecological methods. The authors' central argument is that biodiversity conservation and small-scale traditional agriculture complement one another, and that "fortress conservation" (protected area) strategies are largely misguided. They argue that the quality of the "matrix" that surrounds fragments of natural habitat is critical for biodiversity conservation at the landscape scale and that traditional small-scale agriculture provides a high quality matrix that supports biodiver-