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TROPICAL CONSERVATION: PERSPECTIVES ON LOCAL AND GLOBAL PRIORITIES

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Source: Journal of Wildlife Diseases, 54(1) : 203-205

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-54.1.002

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Journal of Wildlife Diseases, 54(1), 2018, pp. 203–205
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Book Review

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Tropical Conservation: Perspectives on Local and Global Priorities. By A. Alonso Aguirre and R. Sukumar (editors). Oxford University Press, New York City, New York, USA. 2016. 491 pp. ISBN: 978-0-19-976698-7. US $99 hardback.

Review by Are Berentsen

The tropics and subtropics are found between the Tropics of Cancer and Capricorn and are home to approximately 75% of the world's human population. The region boasts an impressive biodiversity but also contains some of the world's poorest communities, which in some regions are growing at a faster rate than in other areas of the world. As regional and global human populations continue to grow, so do the impacts on natural resources and biodiversity. These impacts can be felt on both global and local levels. *Tropical Conservation: Perspectives on Local and Global Priorities* provides well-referenced information on a variety of ecologic issues along with case studies describing global and local efforts to mitigate environmental impacts. The book is composed of 29 chapters, divided into five parts. Each part discusses an overarching theme that gets narrower in scope as the reader progresses through the book. The initial focus on landscape-level conservation gives way to human-wildlife conflicts and specific analytical techniques (including ecologic modeling and genetic techniques), followed by challenges of illegal wildlife trade and the exploration of commercial production as a strategy to combat such trade, and concludes with practical examples of community involvement in conservation. The book focuses primarily on terrestrial mammals with a few chapters dedicated to marine mammals, reptiles, insects, and plants as well as an emphasis on community involvement in conservation issues.

Part One, "Conserving Biodiversity and Ecological Functionality in Human-Dominated Landscapes," consists of seven chapters and three case studies discussing biodiversity at a landscape scale. The first two chapters largely describe in general terms the issues facing conservation in tropical and subtropical ecosystems. Chapter 3 discusses landscapes and corridors in conservation efforts of Asian elephants. Chapter 4 continues the landscape-level approach with respect to restoration of the Atlantic forest in Brazil followed by two case studies on howler monkeys (*Alouatta pigra*) in human-impacted landscapes and on conserving biodiversity in urban environments. Chapter 5 evaluates anti-deforestation policies and their impacts on hydropower supplies and economic impacts in Brazil. Chapter 6 examines the links between land-use change and infectious diseases in fragmented landscapes. The final chapter in Part One describes the impacts of climate change on biodiversity in India and concludes with a case study on a strategic plan for biodiversity with specific target goals.

Part Two, "Resolving Conflicts Between Wildlife and Humans in the Tropics and Subtropics," narrows the scope relative to landscape-scale considerations and focuses on specific human-wildlife conflict issues in five chapters with seven case studies. Chapter 8 provides a general overview of human-wildlife conflicts in the Andean region followed by

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three case studies. The first case study describes many contributing factors that increase human-wildlife conflict including habitat loss, fragmentation, changes in land use, and climatic considerations, among others. The two case studies that follow describe conflicts with carnivores in India and the impacts of tourism on mountain gorillas (*Gorilla beringei beringei*) in central Africa. Chapters 9 and 10 discuss bat conservation in the neotropics and the impacts of invasive plants with particular attention to *Lantana camara*. Chapter 11 focuses on conservation of dolphins and the impacts of fisheries bycatch, intentional capture for cultural uses (i.e., food, medicinal use or bait), public display, and habitat destruction. The case study which follows provides an enlightening account of the African manatee (*Trichechus senegalensis*). Part Two ends with a chapter on the conservation of loggerhead turtles (*Caretta caretta*).

Part Three, "Approaches to Conserving Species: Emerging Lessons and New Science," becomes slightly more technical and provides information on current techniques (modeling, genetics, etc.) in conservation in six chapters with three case studies. Chapter 13 describes modeling techniques used to manage and conserve endangered wildlife in Ethiopia. Chapters 14 and 15 describe the use of integrated and conservation genetic techniques in the conservation of a variety of endangered species followed by a case study on Neotropical forest ungulates. Chapter 16 discusses effects of habitat fragmentation on black lion tamarins (*Leontopithecus chrysopygus*) in Brazil and Chapter 17 reviews ecology and conservation efforts of jaguars in Mexico. The final chapter in Part Three discusses the decline of insects as pollinators and two case studies describing insect conservation and practical use of beekeeping as a conservation tool.

Part Four, "Integrating Conservation and Sustainable Use: The Management of Wild Living Resources," consists of five chapters with six case studies. Chapter 19 discusses illegal trade in wildlife from northern Africa into Europe. The two case studies within this chapter describe trade of Barbary macaques (*Maccaca sylvanis*) from Morocco into Europe followed by a description of the use of modern genetic techniques to identify species and regions of origin for poached wildlife. Chapter 20 brings to light the issues surrounding harvesting of bush meat in food-insecure regions of central African rainforests and, in particular, the ecologic impacts of over-harvesting. Chapter 21 reviews the successes and failures of crocodile farming to protect wild crocodilians throughout the Asia Pacific region followed by a case study on similar efforts to commercialize production of edible nests produced by swiftlets (*Aerodramus fuciphagus*) in Indonesia. The next case study provides a unique account of the effects of deforestation on *Llaveia axin axin* (a wax-producing insect in Mexico and Central America), and the potential cultural and economic impacts of its decline. Chapter 22 reviews the growing need for sustainable agricultural production to reduce habitat loss in Mexico. The two case studies that follow describe a pilot study in Mexico to analyze the relationships between cattle production strategies and various ecosystem services and the relationship between agroforestry and biodiversity in Indonesia. Part Four concludes with a discussion of how conservation can be integrated into a new paradigm of economic development.

Part Five, "Building Capacity to Sustain Conservation: People, Institutions, and Networks," is the final section of *Tropical Conservation: Perspectives on Local and Global Priorities* and consists of six chapters and three case studies. This section widens the scope to provide information on current needs with respect to collaboration across various communities as well as strategies to improve conservation efforts on local and community levels. Chapters 24 and 25 discuss the need for improved education on conservation issues, the roles nongovernmental organizations (NGOs), business, and citizen-science groups can play in increasing awareness and establishing partnerships between conservation professionals and educators. Chapter 26 provides a summary of the challenges integrating ecotourism, local communities, and conservation in Kenya and is followed by a case study describing similar challenges in Brazil. Chapter 27 is the only piece dedicated to a discussion of zoonotic diseases. This chapter summarizes the capac-

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ity (i.e., surveillance, laboratory infrastructure, etc.) of Columbia to study and monitor diseases in captive and free-ranging wildlife. While numerous zoonoses with wildlife reservoirs are of national interest, surveillance in wildlife is limited to West Nile virus and avian influenza in birds and yellow fever in nonhuman primates. Control of rabies is restricted to culling vampire bats (*Desmodus rotundus*) in rural endemic areas. Chapter 28 provides guidance on establishing an NGO to support and promote conservation including outlining objectives, staffing, and fundraising. The final two case studies provide first-hand accounts of the challenges associated with developing and maintaining conservation-based NGOs in India. The final chapter is the Afterword provided by the book's editors, which provides a vision of hope for the future.

Tropical Conservation: Perspectives on Local and Global Priorities provides a unique snapshot into a wide variety of conservation issues ranging in scope from deforestation and climate change, human-wildlife conflicts, and illegal wildlife trade to various species-specific accounts and community involvement. The book is well organized and the chapters do not bog the reader down with extensive scientific jargon or complicated analyses. Rather, it provides a practical discussion of the growing concerns of ecologic conservation in tropical and subtropical ecosystems. Various case studies and break-out boxes within chapters provide real-world examples of successes and challenges associated with a broad spectrum of conservation efforts. The emphasis on the need for capacity building and shared knowledge among wildlife professionals, educators, local communities, and conservation organizations is an excellent example of what can be done at local levels to enhance conservation efforts. Readers with an interest in wildlife and zoonotic diseases will find the topic somewhat lacking but perhaps such an important topic will receive more attention in a subsequent edition. Overall, *Tropical Conservation: Perspectives on Local and Global Priorities* is a valuable reference for students, professionals, and anyone with an interest in conservation issues facing tropical and subtropical ecosystems.

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