Another Milestone in Conservation Literature

Connectivity and Conservation. Crooks, K. R., and M. Sanjayan, editors. 2006. Conservation Biology Series No. 14, Cambridge University Press, New York. 728 (xvi + 712) pp. $160.00 (hardcover). ISBN 0-521-85706-6. $80.00 (paperback). ISBN 0-521-67381-X.

Enhancing ecological connectivity in the context of protected-area networks and land- and waterscapes may be the greatest challenge and possibly the most important task facing conservationists today. This book is a milestone in conservation biology not only because of the importance of the subject matter but also because of the numerous excellent and authoritative summaries.

Connectivity refers to the movement of organisms or processes. Ecologists recognize 2 broad forms of connectivity: structural, which refers to the spatial arrangement of habitats, and functional, which defines the behavioral response of an organism to physical structure. In fragmented landscapes connectivity is essential for the maintenance of many ecological and evolutionary processes and the population viability of many species—thus the centrality of connectivity to conservation.

The book is divided into 3 major sections: part 1 examines the importance of ecological connectivity in the context of terrestrial, freshwater, and marine systems; part 2 reviews approaches for assessing connectivity; and part 3 discusses challenges and approaches for implementing connectivity. Of the 26 chapters contained within this volume, I found 5 chapters particularly important because of their subject matter: chapter 1 by Crooks and Sanjayan, which reviews the importance, historical development, and interest in ecological connectivity particularly in relation to wildlife corridors; chapter 3 by Moilanen and Hanski, which discusses measurements of connectivity in the context of metapopulation biology; chapter 12 by Fagan and Calabrese, which provides a comprehensive overview and discussion of approaches for quantifying connectivity; chapter 16 by Haddad and Tewksbury, which examines wildlife corridors in the context of enhancing population viability; and chapter 22 by Beier and colleagues, which describes the experience and process of implementing a connectivity plan for southern California.

Several important concepts are emphasized in various chapters throughout the book that proponents and critics of connectivity often ignore. First, connectivity is scale- and species-specific. Thus, strategies to enhance connectivity for species A may not be effective at alternative temporal or spatial scales or for species B and C. Second, if a primary objective is to enhance species viability, questions about population persistence can only be addressed through studies that examine population dynamics and more than movement or connectivity studies are required. Third, the implementation of broad-scale connectivity plans on the ground is and will almost certainly remain the primary obstacle to enhancing connectivity in fragmented landscapes in most regions of the world. If there is any weakness in the book, it is the absence of any rigorous evaluation of the implementation of broad-scale connectivity plans particularly in the poorer but more biologically rich nations so that conditions, approaches, and policies essential for the successful implementation of such plans can be identified.

This book provides, as described on its cover, a summary of the current status and literature on connectivity and will certainly become one of the classic texts in conservation biology. As with other books in this series, it should be required reading in all advanced courses in conservation biology.

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98% Human: 91% Extinct

World Atlas of Great Apes and Their Conservation. Caldecott, J., and L. Miles, editors. 2005. University of California Press, Berkeley, California. 456 pp. $45 (hardcover). ISBN 0-520-24633-0.

Apes have been fighting a losing battle with extinction for the past 5 million years. Of the 35 ape genera that radiated in the Miocene, only 3, *Pan*, *Pongo*, and *Gorilla*, remain. Apes are now declining at an accelerated rate due to habitat loss, driven largely by corporate enterprise and human population growth. This situation is exacerbated in central Africa by the bushmeat trade (Wilkie et al. 2005; Bennett et al. 2007) and recent epidemics of infectious disease (Leroy et al. 2004; Leendertz et al. 2006).

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Systematic study of the apes began just 50 years ago, yet we now know an extraordinary amount about them. National Geographic exposés of "Leakey's Angels" (Goodall, Fossey, and Galdikas) popularized the apes as anthropological and psychological studies improved our understanding of human behavior and evolution through study of our closest relatives. The past decade has yielded integrative studies of ape ecology, behavior, and evolution, highlighting the importance of scale and interpopulation variation and offering concrete data for assessments of population risk.

The *World Atlas of Great Apes and Their Conservation* provides a comprehensive review of current knowledge of these species and threats to their survival. The initial section of the book provides an overview of the evolutionary and historical context of the apes. This introduction is followed by detailed descriptions of the behavior, ecology, and conservation status of each of the six extant species of great apes: chimpanzees, bonobos, eastern and western gorillas, and Sumatran and Bornean orangutans. The third section of the book examines challenges to ape survival and lessons learned from ape conservation strategies past and present. The final section provides range- and country-specific details on the conservation status, strategies, and priorities for great apes.

One of the major challenges of conservation-related volumes is to provide realistic assessments of species status and anticipated threats to species survival. To do this well, large amounts of up-to-date data on a multitude of factors that relate to species survival (i.e., species abundance and distribution, forest cover, distribution and size of protected areas, and proximity of roads and human settlement) must be evaluated, consolidated, and presented in an easily interpretable fashion. This volume succeeds in this regard where many in the past have failed. On the whole, the atlas succeeds in balancing general information with specific case studies focused on individual countries and their apes. Two unfortunate omissions limit the volume from its full potential. First, the thorough literature review of the text is not accompanied by a listing of cited references. Although this deficiency has been remedied through online access to the references, this limits the usefulness of the text for those at remote field sites without reliable access to the Internet. Second, considering the dependence of integrated ape research and conservation projects on recent technological advances, overviews of the technologies being used for noninvasive assessment of stress, genetics, and health and of remote-sensing and GIS applications and data-collection and management systems would have been useful additions. These detractions aside, The *World Atlas of Great Apes and Their Conservation* is a unique and comprehensive resource that will be of great value for conservation biologists, primatologists, and others keen to keep the apes alive and well.

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Playing to a Tough Crowd

Introduction to Population Ecology. Rockwood, L. L. 2006. Blackwell Publishing, Malden, Massachusetts. 350 (xi + 339) pp. $44.95 (paperback). ISBN 1-4051-3263-9.

Population ecology is critical to conservation biology—as well as many other areas—yet teaching it presents some special difficulties. First, the topic necessarily involves a fair amount of mathematics, but students attracted to ecology and conservation are often poorly trained in, and sometimes rather frightened by, math. Second, the students we teach are a mixed bunch—some are interested in population ecology, some are interested if they can be shown immediate application of an idea, and there are always some who are interested only if the professor juggles while lecturing.

Given these problems, writing a textbook on population ecology presents a set of formidable challenges. One must choose which of these fractions of students to address. Related to this are hard choices about the level of intellectual rigor to demand. An overlapping set of issues has to do with how much mathematics to include and how to explain the math.

Rockwood aims his book at a particularly tough crowd to please. His students, he explains in the preface, typically work for government or private wildlife or conservation agencies or zoos, and are taking courses to move ahead in their careers. They have, he says, little sympathy for "theory for the sake of theory" and want quickly to see application. The book is written so that the only real mathematical background required is some algebra; although Rockwood uses calculus and matrix algebra, students do not actually need to be