

A Primer of Conservation Genetics by Richard Frankham, Jonathan D. Ballou & David A. Briscoe (2004), xiii + 220 pp., Cambridge University Press, Cambridge, UK. ISBN 0 521 53827 0 (pbk), £19.99/\$30.00, ISBN 0 521 83110 5 (hbk), £55.00/\$85.00.

This book is an abridged version of the authors' *Introduction to Conservation Genetics* (F. Frankham, J.D. Ballou, & D.A. Briscoe, 2002, Cambridge University Press, Cambridge, UK). The more comprehensive text is directed at upper level undergraduates, graduate students, and scientists and conservation practitioners requiring a detailed, fully referenced resource. This short book covers essentially the same ground but in a simpler way and without references. The *Primer* is directed at undergraduates, or perhaps at graduate students who are taking a more general conservation biology class within which conservation genetics is a part. Conservation practitioners lacking background in the genetic aspects of conservation management would also find the book useful. As the cover states, only minimal knowledge of genetics and statistics is required for the text to be accessible; most of the equations and inferences are drawn from straightforwardly expressed first principles. In fact, some of the basic population genetics – the Hardy-Weinberg equilibrium, for example – is explained (or even derived) more clearly than in many other textbooks.

The first half of the book (chapters 1–4) introduces the reader to basic population genetics in the context of small population size; conservation of course being in its essence an effort to ameliorate the effects of small population size. Much of this is basic and could be gleaned from any population genetics text book. The second half (chapters 5–9) is where the book addresses conservation more explicitly. Here is where we read about extinction (chapter 5), the need for accurate species identification and delimitation, which is only possible within a genetic context (chapter 6), management of genetic variation in wild populations (chapter 7), captive breeding and its ultimate purpose, reintroduction (chapter 8, which is excellent and perhaps the highlight of the book). Chapter 9, the final chapter, covers the practical application of genetic analysis in detecting illegal hunting, as well as a number of disparate but important issues of basic biology that are relevant to conservation and that can be addressed using gene

trees and coalescence theory and molecular genetics in general, including demographics, gene flow and population structure, breeding systems, and the importance of disease in population decline. The book's organization leads to some repetition, inasmuch as the theoretical background is introduced in chapters 1–4 and is then put to use in chapter 5–9, but this helps to reinforce the main concepts.

Each chapter has a list of further reading, which partly addresses the problem of lack of references, although anyone wanting to delve deeper should probably just get a copy of the more comprehensive text. At least there is a list of sources for the figures and tables that will allow readers to access specific examples. There is also a good glossary, which will help the novice.

While explanations are generally very clear, there are instances when more detail might have been warranted: the explanation of additive, dominance and interaction genetic variances in chapter 3, and the calculation of mean kinship for the golden lion tamarin (example 8.1), are just two instances picked at random. Some equations are presented with no explanation or derivation, e.g. equation 4.1, the proportion of initial heterozygosity retained after a single generation bottleneck. There are also a few minor errors; equation 4.6, for example, is incorrect. Occasionally I felt the organization within chapters was a little disjointed (notably chapter 9), and there is some imbalance in treatment of topics, some being treated in depth, others superficially; for instance the section on constructing phylogenetic trees in chapter 6 could have been expanded, and that on coalescence in chapter 9 shortened. Many of these minor issues probably arise out of the attempt to abridge the longer text whilst still cover everything.

Despite these minor flaws, as an introduction to conservation genetics for the undergraduate or novice practitioner, this book is excellent, and there is presently no other resource that covers the subject at this level. I strongly recommend it to anyone who is involved in conservation, in any context and at any level, but who lacks a basic understanding of the genetic issues that are increasingly being recognized as of great importance in conservation biology.

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Rights, Resources, Culture, and Conservation in the Land of the Maya edited by Betty B. Faust, E.N. Anderson and John G. Frazier (2004), xxi + 296 pp., Praeger Publishers, Westport, USA. ISBN 0 89789 731 5 (hbk), £46.99/\$82.00.

Rights, Resources, Culture, and Conservation in the Land of the Maya is an edited volume that seeks to examine a broad range of issues in the extremely complex cultural-geographic region of the Yucatan Peninsula, Mexico. Based largely on papers presented in a session at the American Anthropological Association meeting in 1998, it also was compiled to honour Mary Lindsay Elmendorf, an anthropologist by training best known for emphasizing participatory research with a focus on women, but whose breadth of interests and research experience in many ways defies categorization. In contrast to many volumes published in honour of notable researchers, Elmendorf herself contributed two of the 13 chapters in this book.

An introductory chapter by the editors is intended to set the scene for the book, discussing the prehistory and history of people in the Yucatan Peninsula. Next is a chapter by Alicia Re Cruz describing the background, education and research of Mary Elmendorf, followed by the first of two chapters by Elmendorf, synthesizing her work with Maya women. The ensuing seven chapters address several issues associated with human-environment relations, including conservation: a history of the conservation organization Pronatura Península de Yucatán by its founder Joann Andrews; a study of population and land use in the context of biodiversity conservation in the Calakmul area (Jenny Ericson); an examination of traditional uses of forests versus development through local perceptions in Chununhuhub, a small village in interior northwestern Quintana Roo (E.N. Anderson); an evaluation of agribusiness development decisions made by the community of Pich in central Campeche (Betty Faust); a study of increasing rates of social and environmental problems in Yaxunáh, in central Yucatan state (Grace Bascopé); an analysis of metaphors in defining land tenure, access, land ownership, and water management on Santa Rita Komchen hacienda, central Yucatan state (David Forrest); and a study of how the Maya valuation of nature has persisted from prehistoric times to the present in Cobá, a community in northeastern Quintana Roo (Ellen Kintz and Amanda Ritchie). Suzannah Glusker's chapter summarizes human rights in the context of Maya women, particularly in the context of land tenure and resource control. John Frazier (a biologist) discusses the need to integrate social science research within conservation efforts in a chapter exploring the economic and political influences on decisions to develop or conserve. Finally,

Mary Elmendorf presents a brief reflection on the preceding chapters with respect to her own experience working among the Maya.

This book represents a useful reference for the changing relationship between people and the environment, and women's studies, among the Yucatec Maya. It is not without certain shortcomings. Its greatest weakness may be its considerable breadth, presenting the challenge to develop a cohesive volume with a common theme. According to the preface, this theme is the conservation of biodiversity and ecosystem services through maintaining local resources, but divergences into women's studies and the history of Elmendorf's research make this central focus difficult to maintain. In addition, with a couple of minor exceptions (e.g. in the chapters by Andrews and Ericson) the volume lacks anything resembling quantified data presentation and analysis. Such approaches are obviously not appropriate everywhere, but in my experience studies of changing resource use over time or space are often greatly enhanced by examining the data in such a manner. However, these shortcomings are compensated for by the volume's strengths. One is in providing a repository of several studies that explore the difficult decision faced by certain Mayan communities to conserve or develop, and the reasoning that led communities to choose one over the other. Another strength is in presenting ethnographic studies that consider change over time, a characteristic not all that common in cultural anthropology. Several chapters employ this sort of dynamic component, reminiscent of Redfield's classic work during the 1930s and 1940s at the village of Chan Kom, Yucatan, and it plays a central role in presenting the evolving pressure from development. This dynamic component reflects a research interest of Mary Elmendorf, who also studied Chan Kom (in the early 1970s), as does the breadth of topics that makes the volume somewhat challenging to control – the latter, I suppose, a price that must be paid in compiling papers to honour someone with such a remarkable and diverse record of research.

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The Biology and Conservation of Wild Canids edited by David W. Macdonald and Claudio Sillero-Zubiri (2004), xiv + 450 pp., Oxford University Press, Oxford, UK. ISBN 0 19 851556 1 (pbk), £39.95, ISBN 0 19 51555 3 (hbk), £80.00.

David Macdonald's name has been synonymous with the conservation of wild canids since he began his fieldwork

on foxes in 1972. He has chaired the IUCN Canid Specialist Group since 1981. Any scientist who works on wild canids knows his name and has probably met him somewhere. In the mid 1970s he founded an informal group known as the Oxford Foxlot and this changed into the Wildlife Conservation Research Unit (WildCRU), which was officially founded in 1986 at Oxford. I first learned of Claudio from his work on the conservation of Ethiopian wolves in the mid 1980s. Since then his passion for the Ethiopian wolves and his association with WildCRU have set his priorities.

The result of their collaboration was surely worth waiting for and does not disappoint. *Biology and Conservation of Wild Canids* is 450 pages packed with everything you wanted to know about wild canids and everything you need to know but did not know enough to ask. Only these authors could have pulled together the heavyweight list of scientists and conservationists capable of explaining clearly some of the thorniest issues in canid evolution, biology, ecology and conservation.

The book's first of three parts provides a general overview of the canids, their ancestry and origin, population genetics, social structures, and includes a chapter on diseases affecting wild canids. The first chapter presents a brief general description and distribution map for each species and is therefore essential reading. I found *Chapter 2 Ancestry: Evolutionary History, Molecular Systematics, and Evolutionary Ecology of Canidae* especially interesting because it contains the latest phylogenetic relationships based upon DNA sequencing. Does it make sense that bush dogs and maned wolves should be closely related although they look so very different? The answer is in the DNA.

Part II contains 15 chapters, each devoted to a single species (and in two cases two species) and covers 16 species in all – the grey wolf has two chapters devoted to it. The remaining 20 species apparently require more work before similar chapters can be written.

Part III A Conservation Perspective contains a single chapter dealing with the global canid conservation situation. As one might expect some species' populations are declining and in need of serious help, some have stable populations, and some such as the coyote are increasing their range. Having covered many conservation issues related to the species so thoroughly in Part II, this section of the book is necessarily general. An action plan summary might have been provided in this section to tell us where canid research and conservation are heading. The list of references used in each chapter has been collected, synthesized, and is given in the References section. The Index is substantial and complete, making the book all the more useful.

David Macdonald once joked to me that God put cats on Earth so dogs would have something to chase. Since

then I have given much thought to the similarities and differences between the two carnivore families: Canidae, honoured in this book, and Felidae, the family of cats. Having diverged more than 30 million years ago from a common ancestor, I was fascinated to learn that there are now 36 extant species of each family. Moreover, there are many other notable similarities and differences between the two families.

Cats show a much greater variation in body size, and some species are far more arboreal than any members of the Canidae. Thus, more members of Felidae are found to be sympatric (8 in one case) than Canidae (5 in one case). However, members of Canidae have spread over the Earth to occupy far more terra firma than Felidae. There is no Arctic cat for instance. Some members of Canidae seem to have thrived as a result of the spread of *Homo sapiens*, whereas only domestic cats have prospered in the presence of man. In New Mexico I frequently observed coyotes raid trash bins more than once, and in Chile I recall a Culpeo fox routinely being hand fed tuna sandwiches by mine workers. Few cats would show such trust and none would eat a tuna sandwich, at least not the bread anyway. Among the felids only lions are social, whereas many species of canids are highly social and their greetings never fail to delight those of us privileged to observe them.

Readers of this book will learn far more about wild canids than they need to know simply because each chapter makes fascinating reading. No nature library, amateur or professional, is complete without this volume, the most thorough treatment of the canids ever produced.

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Curassows and Related Birds by Jean Delacour & Dean Amadon (2004), 476 pp., Lynx Edicions, Barcelona, Spain. ISBN 84 87334 64 4 (hbk), \$75.00.

Approximately 30 years ago Jean Delacour and Dean Amadon published an elegant book about a cryptic group of tropical gamebirds of which relatively little was known at the time. They published that book with every bit of information they were able to come across, from notes scribbled by zoo curators, to scrawled records of habitat, voice, and other important aspects of natural history during brief research trips to the birds' native haunts. Most likely Delacour and Amadon had no idea at the time of writing that the foundations they were inadvertently planting 30 years ago would later expand into a passionate fervor for one of the groups of birds that

Neotropical ornithologists would become most involved in from an autecological standpoint. Today the IUCN/Birdlife Cracid Specialist Group (CSG) boasts a list of some 500 correspondents, many of whom are actively working in the field. To this band of dedicated scientists, the original book by Delacour and Amadon served as a bible of sorts. Over the past decade the CSG has published a plethora of books (over 100 chapters spanning approximately 1000 pages in 4 separate trilingual books) as well as a trilingual biannual bulletin (20 volumes containing approximately 50 articles to date). The final, updated chapter in this revised *Curassows and Related Birds* by del Hoyo and Motis is primarily an exhaustive compilation of those works already published by the CSG.

This book is divided into three major parts. The first (pages 18–206) comprises the original book with the black-and-white figures that appeared therein. The second (pages 207–320) are colour plates from the cracid section in Handbook of the Birds of the World, Volume 2, plates from the original book, and some updates (including 15 plates of downy young at the end). The final part (pages 321–476) is the updated chapter by del Hoyo and Motis mentioned above.

One of the biggest fears for this book was that it would not include individually itemized references but that they would be summarized at the end of each species account, similar to the problem with Handbook of the Birds of the World (also produced by del Hoyo and his company, Lynx Edicions). The problem with summarizing references at the end of each species account is that individual references cannot be traced, thereby forcing anyone using a Lynx Edicions publication as a source to cite del Hoyo *et al.* rather than the rightful author. During several conversations with Amadon about this before his unfortunate passing in January 2003, he was also concerned about this. Thankfully del Hoyo was careful to cite individual references in this book.

One problem with this book is that some of the information already published by the CSG that del Hoyo and Motis attempted to summarize was done so incorrectly. Without going into too many details, I will provide only a single example to state my case. In the second paragraph on page 339, they state in relation to the Chaco Chachalaca *Ortalis canicollis* "... only one sighting involved a group of nine birds (Brooks 1997b)." When one checks the cited reference however, flocks of nine were actually observed more than once. While seemingly trivial, attention to detail is of the utmost importance when doing a master compilation of already published works. Other more extreme errors include misspelled species names.

Another criticism of this book is that it is not trilingual. Only one species of Cracid (the Plain Chachalaca *Ortalis*

vetula) occurs in the United States (the southernmost three counties of Texas), with the other 49 species occurring entirely in Latin America. As such, the primary audience of this book is workers whose primary language may not be English. The hefty price of \$75.00 will also make this book prohibitive in the libraries where it is needed most. However, many of the Cracidologists using this book will already have web access to the trilingual publications of the CSG, which the updated chapter by del Hoyo and Motis serves as a good summary of.

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The Precautionary Principle in Biodiversity Conservation and Natural Resource Management. An Issues Paper for Policy-makers, Researchers and Practitioners by Rosie Cooney (2004), xi + 51 pp., IUCN, Gland, Switzerland and Cambridge, UK. ISBN 2 8317 0810 9, £7.50.

This is a new output from the Precautionary Principle Project – a joint initiative of FFI, ResourceAfrica, IUCN and TRAFFIC, published in the IUCN Policy and Global Change series. The precautionary principle, or precautionary approach, is now widely accepted in environmental law and policy at international and, increasingly, national level. However, the principle remains highly controversial, its meaning contested, its acceptance and implementation inconsistent across sectors and contexts, and its impacts unclear. This paper aims to inform and assist IUCN and its members in developing greater shared understanding of the meaning and implementation of the principle in the context of biodiversity conservation and natural resource management, respecting priorities of both conservation and sustainable development. It examines the meaning of the precautionary principle and its incorporation into biodiversity and resource management law and policy, and discusses a series of issues raised by its implementation in this sector for biodiversity conservation and for livelihoods and poverty alleviation.

2004 IUCN Red List of Threatened Species: A Global Species Assessment edited by Jonathan E.M. Baillie, Craig Hilton-Taylor & Simon N. Stuart (2004), xxiii + 191 pp., IUCN, Gland, Switzerland and Cambridge, UK. ISBN 2 8317 0826 5 (pbk), £18.50.

This is the first global species assessment to be conducted by the Red List Consortium (IUCN Species Survival Commission, BirdLife International, the Center for

Applied Biodiversity Science at Conservation International, and NatureServe). The document provides a comprehensive assessment of the conservation status of the world's species, and is based on the latest, 2004, IUCN Red List of Threatened Species (available at <http://www.redlist.org>). The 2004 assessment includes, for the first time, complete assessments of amphibians, cycads and conifers.

The following publications have been received at the Editorial Office and may be of interest to readers:

Agroforestry and Biodiversity Conservation in Tropical Landscapes edited by Götz Schroth, Gustavo A.B. da Fonseca, Celia A. Harvey, Claude Gascon, Heraldo L. Vasconcelos and Anne-Marie N. Izac (2004), xii + 523 pp.,

Island Press, Washington, DC, USA. ISBN 1 55963 356 5 (hbk), \$90.00, ISBN 1 55963 357 3 (pbk), \$45.00.

Assembly Rules and Restoration Ecology: Bridging the Gap Between Theory and Practice edited by Vicky M. Temperton, Richard J. Hobbs, Tim Nuttle and Stefan Halle (2004), xv + 439 pp., Island Press, Washington, DC, USA. ISBN 1 55963 375 1 (pbk), \$45.00, ISBN 1 55963 374 3 (hbk), \$90.00.

Tropical Forest Diversity and Dynamism: Findings from a Large-Scale Plot Network edited by Elizabeth C. Losos and Egbert G. Leigh Jr (2004), xiii + 645 pp., The University of Chicago Press, Chicago, USA. ISBN 0 226 49346 6 (pbk), \$38.00, ISBN 0 226 49345 8 (hbk), \$95.00.

The Ecology of Seeds by Michael Fenner & Ken Thompson (2005), x + 250 pp., Cambridge University Press, Cambridge, UK. ISBN 0 521 65311 8 (hbk), £55.00/\$90.00, ISBN 0 521 65368 1 (pbk), £26.00/\$45.00.