

generally interested in the topics of animal rights and the ethics of conducting science on animals should certainly read this book because many of the author's ideas are both provocative and highly relevant. For example, one of Bekoff's most interesting points is that, in some cases, the cost of studying a particular animal may not be worth the benefit, something that many research scientists would consider unacceptable.

There are, however, several aspects of this compilation that were unsatisfying. First and foremost, there is relatively little that is new in this book. Many of the chapters are themselves chapters from prior compilations. The introductory chapters for each section are new, and are the most provocative, but they generally lack the background research that is needed to make a convincing argument. Indeed, readers can easily access these same ideas in his previously published papers and book chapters. Second, Bekoff seems to contradict himself by first criticizing individuals who argue that animals are only valuable if they measure up to human standards of intelligence, but then proceeding to spend much of the book arguing that animals do exhibit "human-like" behaviors (morality, fair play). On the first point, I suspect that many researchers would agree. Biological organisms are notable for their amazing diversity of behavior, and one should not judge the value of an organism based solely on how similar they are to humans. However, this first critique is undermined by the author's argument that animals have "ethics" and "morals" much like humans, and therefore deserve the same kinds of "rights" afforded humans. This argument seems to work fairly well for some of the large, intelligent carnivores that Bekoff works on (e.g., coyotes), but falls flat for the vast majority of remaining biological diversity (e.g., plants, reptiles, birds, and microorganisms, among others). Indeed, I found his arguments about animal "morality" and "fair play" to be hardly representative of the vast majority of animal behavior. For example, I would not call the behavior of male lizards toward one another during the peak of the breeding season to be "moral" in any sense of the word. Similarly, his ideas of "play" seem hardly relevant beyond mammals, and it was disappointing that he did not attempt to address the issue of play in a broader comparative context. In his effort to promote the view that animals have a sense of "fair play" and morality, he generally ignores the vast body of published literature that shows animals often engage in highly competitive, seemingly nasty, and sometimes downright destructive behavior toward one another. This is not to argue that animal behavior is more competitive or aggressive than human behavior; a simple review of our own bloody history will disabuse anyone of that notion.

Indeed, Bekoff missed an important opportunity to justify animal rights based not on anthropomorphism, but on the inherent beauty of biological diversity, particularly in regard to behavior. This is a point that could have been well-received; animals are not always "moral" like humans (sometimes) are. However, just because sharks bite one another, and male lions sometimes kill other male offspring does not make them any less worthy of conservation than a coyote that seems to play fair. In fact, the author's view implies that we should only conserve animals that meet the human standard of morality, which is, ironically, how conservation efforts are largely proceeding today, with much of the emphasis being placed on large mammals and birds, and only an afterthought being given to other equally important groups. Obviously, Bekoff does not promote this latter view, but one could argue that it follows logically from his argument that animals are more complex, intelligent, and moral (and implicitly more valuable) than we give them credit for.

Bekoff has highlighted the concept that researchers should be kind to animals, both in the field and in the laboratory, and I agree with this point. I imagine that the vast majority of biologists who study animals for nonapplied reasons got into the field because they loved animals, and hence this concept will likely resonate with many researchers. The author correctly notes that in the rush to be as impartial as possible, we often lose sight of the fact that we are working with living, breathing organisms that deserve our love and respect. However, he fails to make a convincing argument for animal rights based on concepts of "fair play" and "morality." Animals deserve our love and respect for many reasons, but not primarily because they are nice to one another.

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ANTIPREDATOR DEFENSES IN BIRDS AND MAMMALS.
Interspecific Interactions.

By Tim Caro, drawings by Sheila Girling. Chicago (Illinois): University of Chicago Press. \$95.00 (hardcover); \$38.00 (paper). xvi + 591 p; ill.; prey species index and subject index. ISBN: 0-226-09435-9 (hc); 0-226-09436-7 (pb). 2005.

In this book, the author undertakes the immense task of summarizing and synthesizing all of the information related to antipredator behavior in birds and mammals. Caro's agenda is to provide a complete and easy-to-use reference on all aspects of predator avoidance. A quick look indicates the extent of this literature review: accompanying a text of less than 500 pages is a bibliography of nearly

100 pages! Throughout the volume, the author provides unbiased treatments of different hypotheses (sometimes even criticizing his own). Where conflicting theories exist in the field, each is given equal weight and criticism, resulting in a nicely balanced presentation.

The book is organized in a similar way to which animals might deal with predators: it begins with mechanisms to recognize and detect predators and ends with methods used to escape attacking predators. Each section is accompanied by summary tables that list all of the species that lend support for a particular idea and the key details of the original study, as well as provide quick access to the original references. In addition to these summary tables, key graphs from the original journal articles are reproduced throughout the text.

Of course, antipredator behavior is found in animals other than birds and mammals, and perhaps the greatest potential shortcoming of this volume is that it is limited in scope to these two taxonomic groups. Although it would be a lifetime's work to include all taxonomic groups in a book such as this, Caro avoids this potential problem perfectly by focusing the scope of his comprehensive review to birds and mammals, but also frequently incorporating examples and important concepts from other groups ranging from insects to reptiles.

The text is primarily intended for scientists, yet it is written in such an engaging fashion that it should also appeal to nonspecialists. Although there is considerable jargon associated with the field, it is carefully explained well enough to bring an amateur up to speed. Yet even those scientists specializing in antipredator behavior will learn many new and amazing stories from this book.

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HANDBOOK OF CAPTURE-RECAPTURE ANALYSIS.

Edited by Steven C Amstrup, Trent L McDonald, and Bryan F J Manly. Princeton (New Jersey): Princeton University Press. \$99.50 (hardcover); \$49.50 (paper). xix + 313 p; ill.; index. ISBN: 0-691-08967-1 (hc); 0-691-08968-X (pb). 2005.

Mark-recapture literature has been mired by complicated nonstandardized notation developed by various camps of open and closed population modelers, biologists, and statisticians, making the subject difficult if not inaccessible to novices. This handbook attempts to standardize the notation and distill the literature into eight chapters each written by established mark-recapturists. It provides a comprehensive summary of mark-recapture techniques that will be accessible to both field biologists and statisticians.

The first chapter is an overview of the subsequent chapters as well as parameter estimation methods and model selection techniques. Assumptions are made that readers will be familiar with these methods (Newton-Raphson, Expectation-Maximization, and Bootstrap), so novice readers may have some difficulty. An algorithm or example for the numerical techniques used throughout the text would be a good addition to this excellent handbook.

Chapters Two through Eight cover classical and modern closed population, open population, tag-recovery, joint tag-recovery and live-resighting, and multistate models. The chapters flow together seamlessly considering the differing authorship.

Although the chapters increase in complexity, they all discuss likelihood development, goodness of fit, model selection, and software implementation. Some details are glossed over such as implementation of goodness-of-fit tests and nonidentifiability of parameters, but presumably, users will look toward current software to implement these techniques rather than code software themselves. Each chapter works through a practical example (if not several) using a real dataset. Further, Chapter Nine is dedicated to working through several examples of the techniques discussed in previous chapters. These examples will allow readers to follow along the course of the text by doing their own analyses. This feature makes this an enticing volume to use as a graduate-level textbook if supplemented by original articles, for either statisticians or quantitative biologists. Finally, Chapter Ten provides practical advice from the editors about the subtleties of mark-recapture experiments and data analysis.

Not for beginners, this is a good book for anyone with a basic understanding of capture-recapture models who wants to develop their knowledge and apply these techniques to their own data. Exactly what a handbook should be!

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HUMAN BIOLOGY & HEALTH

THE STRONGEST BOY IN THE WORLD: HOW GENETIC INFORMATION IS RESHAPING OUR LIVES.

By Philip R Reilly. Cold Spring Harbor (New York): Cold Spring Harbor Laboratory Press. \$29.00. xvi + 278 p; ill.; index. ISBN: 0-87969-801-2. 2006.

This is a collection of essays on the theme of genetics in our lives. Philip Reilly, a physician, historian, ethicist, and now a CEO of a medical genetics