Animal Nation: The True Story of Animals and Australia.

This volume is very comprehensive and provides an excellent resource for scientists interested in the effect of early differential rearing on behavioral and physiological development. For anyone who is more interested in the practical side of nursery rearing and how best to meet the needs of the developing infant, the book also offers several insightful and informative chapters. Field biologists, who are usually concerned with behavior as it unfolds in natural circumstances, may be less inclined to purchase this volume because it focuses on infant development in a relatively atypical circumstance. In summary, this book is well organized, well written, and informative. It is an excellent contribution to the practical and research findings on primate infant development.

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The goal of this book is to develop a predictive theory of animal home range patterns. The authors use correlated random walks (approximated by advection-diffusion equations) to predict patterns of space use in foxes, coyotes, and wolves. They contrast their approach to the prevailing descriptive, statistical, and resource-selection approaches, which they argue lack predictive capability. Starting with a simple model to predict space
use in relation to distance from the den, they add scent marking and responses to scent marks to improve the realism of space use near the edges of adjacent territories. By adding and adjusting parameters, they account for environmental heterogeneity and prey availability, as well as examine the effects of various approaches to the analysis of empirical data. Finally, they explore the relationship between space use and predator-prey population dynamics using a game theoretical analysis. Although many ecologists lack the mathematical skills to follow all the derivations, the authors effectively summarize their main findings.

Theoreticians will find this approach to territorial behavior a stimulating starting point for new work. Field biologists may be less impressed because the advection-diffusion models seem so unrealistic, because the models initially appear rather specific to canids, and because the models are seen as successful when they predict well-recognized patterns rather than novel relationships. On the basis of our experience with territory use in non-canid carnivores, rodents, and fishes, we feel that this theory provides great opportunities for close collaboration between theoreticians and field biologists working on a variety of systems. Extension and testing of these models is both feasible and crucial. A more rigorous approach to testing, such as that developed for the parallel literature on self-organization—e.g., Camazine et al.’s Self-Organization in Biological Systems. (2001. Princeton (NJ): Princeton University Press)—would have been a useful addition. Larger plates and figures would have made it easier to follow the arguments as would another round of proofreading. This book provides an original starting point for new directions in the analysis of territorial behavior.

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AQUATIC SCIENCES

Salmon 2100: The Future of Wild Pacific Salmon.


This volume contains 28 articles that present the views and opinions of the contributors on the policies, practices, and philosophies needed to sustain populations of wild Pacific salmon (Oncorhynchus spp.) in California and the U.S. Pacific Northwest (Washington, Oregon, and Idaho) through the year 2100. According to Lackey et al., the intended audience is the general public who need to be better informed and more involved in this debate.

The chapters are grouped into the following sections: Scientific and Policy Context (three papers by the editors), Policy Prescriptions (23 papers by contributing authors), and Concluding Remarks (two papers by the editors). The 33 contributing authors are salmon scientists, policy analysts, and advocates who were asked to provide their policy prescriptions for restoring and sustaining wild salmon. Lackey et al. set the context for this volume by identifying four core drivers of policy, including human rules of commerce, human demands for water, human population growth, and society’s collective behavior. Most of the contributing authors accepted this context, and advocated solutions that were later grouped by the editors into four general categories: protect salmon habitats; reform institutional structures; increase the role of science and technology; or change human lifestyles and ethics. The editors conclude that while billions of dollars are being spent to restore runs of wild salmon, the problem might never be solved because of human population growth and development. A concise article that summarized the editors’ views might have been a better vehicle than this lengthy volume (629 pages) for informing and involving the general public in this debate.

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Top Predators in Marine Ecosystems: Their Role in Monitoring and Management. Based on a symposium held in London, April 2004.

Edited by I L Boyd, S Wanless, and C J Camphuysen. Cambridge and New York: Cambridge University Press. $130.00 (hardcover); $70.00 (paper). xiv + 378 p; ill.; index. ISBN: 0-521-84773-7 (hc); 0-521-61256-X (pb). 2006.

This is an important book. With a total of 36 contributors and 24 chapters, it explores the role that upper trophic level consumers (“top predators”) can play in assessing aspects of habitat change, especially due to degradation by overexploitation (and the need to define “over”) of fisheries resources. Top predators use major parts of their ecosystems, and may provide clear direction to management of what we humans are doing wrong.

The volume concentrates on the excellent ecological information provided for sea birds and pinnipeds. These upper-level consumers range widely, but need to come to land or ice to breed.