

ECOLOGY

Cat Wars: The Devastating Consequences of a Cuddly Killer. By Peter P. Marra and Chris Santella. 2016. Princeton University Press. (ISBN 978-0-691-16741-1). 212 pp. Hardcover. \$24.95.

A book all about cats? Whether you love them or not, this book will enlighten you about the complex issues surrounding these “cuddly killers.”

Cat Wars provides a case study on the impact of an invasive species on biodiversity, infectious diseases, and the ethical issues involved in sacrificing the well-being of one species for another. In so doing, this book could appeal to educators from a variety of backgrounds.

The authors begin with a history of the impact of pet-loving humans on the rise in the global free-ranging cat population. Domestic cats (*Felis catus*) are nonnative to many of the areas they inhabit. In fact, as the authors point out, domestic cats are

on the “list of the world’s 100 worst invasive alien species” (p. 21), as it is estimated that they have “contributed to or caused thirty-three (14 percent) of the 238 global reptile, bird, and mammal extinctions” (p. 20). The authors cite historical accounts and scientific studies regarding the impacts of cats on biodiversity. The exact number of animals killed by cats each year is difficult to estimate, as the number of free-ranging cats is unknown. The authors provide excellent examples of population modeling as they seek to quantify the impact. Educators will find that *Cat Wars* provides them with concrete and current examples of biodiversity, extinction, and population modeling to which students can easily relate.

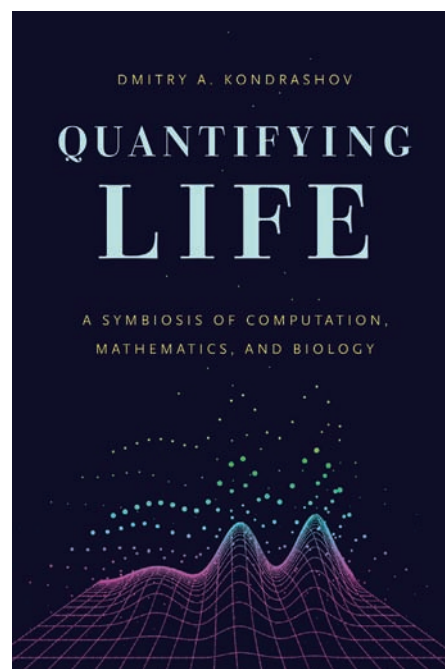
In addition, the authors explore the domestic cat as “agents of disease” (p. 75). From the plague (*Yersina pestis*) to possible contributions to some cases of schizophrenia (*Toxoplasma gondii*), cats have been implicated in transmission of disease. While the authors provide a summary of the roles of cats in the transmission of the plague and rabies, they focus heavily on cats as the primary host of the protozoan *Toxoplasma gondii*. They discuss parasite-host interactions, parasite life cycles, predator-prey interactions, and public health. They investigate the possibility that *T. gondii* may manipulate the behavior of infected rats and mice, thereby overriding their innate aversion for the predator cat and increasing the likelihood of cat infection and, therefore, parasite survival. The book, and the studies cited within it, provide opportunities for educators to discuss infectious diseases and public health in the context of a subject with which students will already have some familiarity.

Finally, the authors explore the controversy surrounding different strategies for controlling the exploding cat population worldwide and the devastating effects they are having on biodiversity, especially with regard to bird populations. The ethical dilemma of euthanasia as an option, as well as the less effective trap-neuter-return

strategy, is discussed. In *Cat Wars*, the authors bring to life the real issues facing scientists and society when it comes to bioethics, preservation of species, and public health.



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MATHEMATICS AND BIOLOGY

Quantifying Life: A Symbiosis of Computation, Mathematics, and Biology. By Dmitry A. Kondrashov. 2016. University of Chicago Press. (ISBN 978-0-226-37176-4). 417 pp. Softcover. \$35.00.

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