

[Serengeti: People as Part of Ecology \[book review\]](#)

[Sinclair, A. R. E., Craig Packer, Simon A. R. Mduma, and John M. Fryxell, editors. 2008. Serengeti III: human impacts on ecosystem dynamics. The University of Chicago Press, Chicago, Illinois. x + 522 p. \\$125.00 \(cloth\), ISBN: 978-0-226-76033-9 \(alk. paper\); \\$45.00 \(paper\), ISBN: 978-0-226-76034-6 \(alk. paper\).](#)

By: [Sally E. Koerner](#)

**This is the peer reviewed version of the following article:**

Koerner, S.E. (2009). Serengeti: People as Part of Ecology [Review of the book *Serengeti III: human impacts on ecosystem dynamics*, edited by A.R.E. Sinclair, Craig Packer, Simon A.R. Mduma and John M. Fryxell]. *Ecology*, 90(8), 2334-2335.

**which has been published in final form at**

**<https://doi-org.libproxy.uncg.edu/10.1890/BR09-36.1>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions. This article may not be enhanced, enriched or otherwise transformed into a derivative work, without express permission from Wiley or by statutory rights under applicable legislation. Copyright notices must not be removed, obscured or modified. The article must be linked to Wiley's version of record on Wiley Online Library and any embedding, framing or otherwise making available the article or pages thereof by third parties from platforms, services and websites other than Wiley Online Library must be prohibited.**

**Abstract:**

The thought of the Serengeti calls forth images of endless plains, broken only by the occasional Acacia or the large migratory herd of wildebeest. This land captures the imagination, and those who have seen the vast expanse and the unending abundance can never forget it. Perhaps this is why few ecosystems have been studied as comprehensively as the Serengeti–Mara System. However, as much as our imagination might desire it to be, we are beginning to realize that the land does not go on forever and that even this vast ecosystem is limited. Conservation, especially in developing countries, must enhance human welfare and reduce poverty. Conservation and ecological integrity are no longer enough; protected areas must provide economic and social benefits.

**Keywords:** community-based conservation | human–wildlife conflict | Serengeti | wildebeest migration

## Article:

The thought of the Serengeti calls forth images of endless plains, broken only by the occasional Acacia or the large migratory herd of wildebeest. This land captures the imagination, and those who have seen the vast expanse and the unending abundance can never forget it. Perhaps this is why few ecosystems have been studied as comprehensively as the Serengeti–Mara System. However, as much as our imagination might desire it to be, we are beginning to realize that the land does not go on forever and that even this vast ecosystem is limited. Conservation, especially in developing countries, must enhance human welfare and reduce poverty. Conservation and ecological integrity are no longer enough; protected areas must provide economic and social benefits.

This book is not the standard compilation of research on a given ecosystem. General knowledge of the ecosystem was covered in *Serengeti* and *Serengeti II*. Nor is this book merely an update on the research being done. Instead, this book takes on a whole new direction, focusing on human impacts. If you want to know how grazing affects plant community composition or how fire affects herbivore distributions, read books one and two of the series. Book three will challenge the way you think of ecology and change the context in which you place natural ecosystems. This book is about humans. The fate of the Serengeti rests largely in the hands of humankind. The authors recognize this fact and develop a fully integrated research program that links socioeconomic research on human activities and human decision making with ecological research.

The early chapters serve as an introduction to the system by summarizing the climatic and ecological factors that dominate the area and by providing an ecological history. The book details the major phases of human activity in the Serengeti system, tracing the development of early humans as foragers when humans were still subordinate carnivores, through the development of pastoralism and agriculture, to commercialization and urbanization where humans are more decoupled from ecological events than ever before. The authors note that trends in rainfall and soil fertility not only affect wildlife distributions but affect the distribution of people and their land use choices.

The middle chapters focus on key ecological research topics of the last decade. Chapter 5 explores the patterns of heterogeneity in the Serengeti system and identifies processes that maintain this heterogeneity. Chapter 6 deals with climate change and how elevated CO<sub>2</sub>, changes in rainfall and temperature, and increased nitrogen deposition will affect plant communities and food web structure as well as human welfare. Chapters 7, 8, and 9 touch on infectious disease, how food webs vary in structure through space and time, and why the grazer community is so exceptionally species rich. Although these chapters focus on changes to the natural system, every chapter considers human impacts, human responses, or effects of ecosystem changes on human welfare. Rarely a section goes by that we are not reminded of the sea of humanity in which this ecological island resides.

Chapter 10 introduces a model that integrates the consequences of human decision making on ecosystem processes. This model is then used throughout the next three chapters to predict possible futures for the Serengeti system under different climatic and socioeconomic scenarios. Chapter 11 looks in detail at human welfare and how it will change under two scenarios: increased climatic variability or altered market conditions in terms of prices of bush meat and crops. Chapter 12 examines how national and international policy and economics affect the Serengeti, while Chapter 13 looks at land use economics. The final chapters seem a hodgepodge of topics, discussing the usefulness of current ecological theories for predicting complex ecosystem dynamics (14), the financing of the Serengeti system (15), and community-based conservation (16).

Overall, the chapters relate well to each other and the book flows easily. The authors integrate the chapters well and yet the information is not repetitive. The chapters dealing with the models are laden with equations, making the read a bit more difficult, but the authors do an excellent job of walking the reader through the model-building process and making it clear what parameters are being used. The model introduced in Chapter 10, which integrates human decision-making and ecosystem processes, is an interesting exercise; however, I wonder at its applicability. The authors themselves admit that they lack the socioeconomic data needed to parameterize the model. Therefore, the conclusions drawn from the model simulations must not be taken too seriously.

Ecologists interested in conservation will find this book to be a good addition to their library, useful primarily for its focus on the integration of humans into ecosystem dynamics. The authors rightfully point out that human history has shaped and has been shaped by the natural system. We are not separate from the system but instead play an integral role. Humans, all of us—scientists, tourists, poachers, and farmers—control the fate of the Serengeti system, and it's time we integrate humans into ecological thought, development, and theory. Conservation areas do not exist in a vacuum, but are set within a social, economic, environmental, and political framework. Yet for most of the 20th century, conserved areas were managed as distinct units, completely separate from the surrounding landscapes. This book challenges the paradigm of fortress conservation, and uses the Serengeti system as an experiment in community-based conservation. The conservation of biological diversity depends not on keeping people out, but on getting people involved. The Serengeti system and the authors of this book serve as models for protected areas and scientists world wide, for we all must integrate human welfare into our work if we desire to make a positive sustainable impact.