

How Many People can the Earth Support?

Joel E Cohen, 1995

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A MUCH-HEATED debate has evolved over the past few decades regarding the future of human population growth and the number of humans that the planet Earth is able to sustain. Some claim that Earth has already reached its human carrying capacity, where others argue that the carrying capacity of the planet is limitless given modern technology. What is clear is that the carrying capacity of the Earth and the future of human population growth is a subject of much uncertainty.

Joel E. Cohen is head of Laboratory of Populations at Rockefeller University, New York. His goal in writing this book is to "give a view of the Earth's Human carrying capacity that recognizes the interactions among populations, economies, environments and cultures" (p. 12). Cohen examines the scientific basis for concerns that the world has, or soon will have, more people than the world's economies, environments and societies can accommodate in acceptable ways. Cohen addresses these issues in a review that discusses, synthesizes and evaluates models and theories pertaining to the human population in the past, the present and the future. He discovers that he is not alone in not knowing how many people the world can support and that it is a question as many answers as protagonists. Although the opinions of the author, in addition to those of others, are expressed throughout the book, the reader is left on their own in regards to where the Earth is headed in terms of human population growth and human carrying capacity.

The book is divided into five main parts. Part one, the introductory chapter, includes an outline of how the book is organized and the major themes of the book, in addition to a summary of the information contained within each Part. Cohen dedicates the next five chapters, Part two, to the history of human population growth since the last ice age. He covers four evolutions in past growth, discussing theories for changes in human populations, and quantitative estimates of population size and growth rates. Part three is dedicated to a discussion of future human population growth. This includes a critical review and analyses of population projection methods, scenarios of future populations, and what we know about the future of the global population. Part four covers issues pertaining to human carrying capacity. Cohen looks critically at eight past estimates of carrying capacity, followed by a survey of all past estimates. These chapters include a discussion of

factors that can influence carrying capacity and present an example of conditional estimates to determine carrying capacity. Part five divulges Cohen's conclusions on human carrying capacity. Here he reviews suggestions for the future, including some of his own, and summarizes issues currently under debate.

What is known, amid all this debate, is that never before, in absolute numbers, have so many people been added to the Earth's population each year as now. In addition, it is known that as the population grows so does the impact upon the environment. Given a growing population, new problems arise before old problems are fixed. Daily and Ehrlich (1996) argue that a doubling of human population size portends a more than doubling of human impacts because humanity has sequentially exploited the most accessible of its essential resources. They argue that even with drastic changes in technology and consumption it may be difficult to offset the increase in environmental deterioration associated with population growth.

This book should be compulsory reading for politicians as well as environmental managers, as the slowing of population growth will take time, and larger populations will be at a cost to the environment. Although Cohen makes it clear that the carrying capacity of the Earth cannot be predicted with any degree of certainty, what is certain is that there are limits, but that there is still time to "end population growth voluntarily and gradually" (p. 11) in a manner that is acceptable to the majority of the human race.

The intended audience is those "who seek factual information about where the human species and its companion species of the Earth are headed" (p. 12). Cohen has "in mind a bright, curious reader who takes an interest in important human issues, rejects oversimplification and understands that numbers can be helpful and illuminating" (p. 12). Cohen hopes that "scientists, scholars and students from other fields will turn to this book for a reliable account of what is known and for a frank confession about theories that are controversial" (p. 12). Admittedly it is not a simple introduction to the population problem and readers wanting such a book should look elsewhere. Speaking from the viewpoint of a student, the "illuminating and helpful" numbers make for laborious reading in parts. This book appears most suited to scientists and scholars who have interests that lie in the finer details of the human population dilemma.

REFERENCES

- Daily, G. C. and Ehrlich, P. R., 1996. Socioeconomic equity sustainability, and Earth's carrying capacity. *Ecological Applications* 6: 991-1001.

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