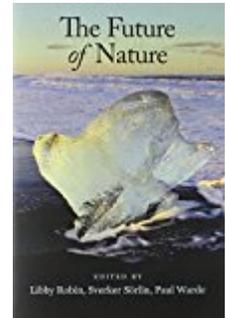


**Libby Robin, Sverker Sörlin, Paul Warde, eds..** *The Future of Nature: Documents of Global Change*. New Haven: Yale University Press, 2013. 584 pp. \$30.00, paper, ISBN 978-0-300-18461-7.



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*The Future of Nature* blazes a new trail for the history of environmental science and environmentalist ideology from the Enlightenment to the Anthropocene. Rather than a conventional textbook or survey, the book consists of thirty-nine primary sources framed and interpreted by critical commentaries. These excerpts are organized into ten different thematic groupings, from “Population” and “Sustainability,” to “Diversity,” “Measuring,” and “The Anthropocene.” The primary sources are for the most part texts drawn from the natural sciences.

This sourcebook is the first publication to emerge from the four-year initiative Expertise for the Future: Histories of Environmental Prediction and Policy sponsored by the University of East Anglia, Harvard University, Australian National University, and the Stockholm Resilience Center. *The Future of Nature* will be followed by a companion monograph entitled *The Environment: A History* in 2015. The three editors Libby Robin (Australian National University), Sverker Sörlin (Kungliga Tekniska Högskolan, Stockholm), and Paul Warde

(University of East Anglia/Cambridge) bring to the task an impressive range of scholarship from environmental history, history of science, environmental humanities, and economic history. They have been assisted in writing the critical commentaries by twenty-two other scholars from a variety of fields, including, among others, Jean-Baptiste Fressoz, Christoph Mauch, Will Steffen, and Alison Bashford.

How did the environment become an object of predictive expertise? This neglected historical question gives *The Future of Nature* much of its coherence and strength. An excerpt from T. R. Malthus opens the book. The Anglican parson’s thought experiment about runaway population growth in *The Essay on the Principle of Population* (1798) suggested that the finite supply of land set physical limits to economic and demographic growth. Crucially, this simple model scaled upward from the island nation of Great Britain to include the entire planet. Indeed, Malthus compared the collective force of human numbers to the relentless multiplication of plants in a world

without rival species. *The Future of Nature* tracks the permutations of this powerful idea from the prediction of British coal exhaustion in William Stanley Jevons's *The Coal Question* of 1865 to the computer simulations in Donella Meadows's 1972 *Limits to Growth* report. The book concludes with three documents on the dawn of the Anthropocene.

Clearly, the editors are not suggesting any sort of simple equivalence between Malthus's prediction and the forecasts of the present. Indeed, much of the anthology is occupied with exploring the massive changes in science, society, and environment over the last two hundred years. In particular, the editors stress the far-reaching impact of quantification and data collection in shaping our view of the natural order: "the Age of Environment has been nurtured by the Era of Prediction" (p. xi). Yet "trust in numbers" has of course done little to quell political and environmental controversies about long-term trends. Metrics like GDP and CO2 PPM are frequently deployed to generate quite different visions of the future.

Another crucial thread in the argument concerns the emergence of the concept of the "environment" in the modern sense of a global system vulnerable to anthropogenic force. Warde, Sörlin, and Robin rightly stress how "surprisingly little" we know about the "origins, usage, [and] functions" of this idea (p. 157). They suggest a relatively long history of conceptual formation that included competing notions, such as Vladimir Vernadsky's "biosphere." Only in the aftermath of World War Two were the disparate elements of the concept combined into a "meaningful whole" in the works of American writers William Vogt and Fairfield Osborn (p. 159).

This hypothesis about the origins of environmentalism is framed by selections from the history of geographic determinism, ecology, and climate science, which show how Malthusian anxieties about natural limits of stock and population have been overlaid by concerns about ecological

fragility, resilience, and planetary boundaries. Paul Crutzen's and Eugene Stoermer's 2000 article "The 'Anthropocene'" announces the beginning of a new geological era of pervasive human influence throughout the Earth System.[1]

*The Future of Nature* owes a great deal to the social and cultural history of science. The aim of the editors is to illuminate the social dimension of technical expertise and metrics, and "to ask questions about the human condition—the ethics, justice, and effects of change" (p. 5). What political priorities and social values are implicated in different scientific forecasts about "natural limits" to economic development? How can we integrate the findings of the environmental sciences into politics and culture without falling prey to a certain kind of reductionism and determinism? For this reason, the editors shy away from the term "climate change" in favor of the more capacious concept of "global change" (pp. 1, 13).

Inevitably with a sourcebook of this scope and ambition, there will be legitimate questions about the criteria of selection. One fundamental issue that does not receive full attention here is the relation between predictive analysis in the natural sciences and other disciplines. The excerpts from Malthus and Jevons hint at a neglected nexus between classical political economy and environmental thought. In the twentieth century, discourses of the "economy" and the "environment" emerged within decades of each other. Arguably, modern anxieties about limits have developed in a dialectical relation with cornucopian forecasts from the Enlightenment onward. Long before Julian Simon's bet with Paul Erlich, there was the quarrel between William Godwin and Malthus. The use of "scenario building" in climate change policy offers another striking case of such entanglements; this strategic approach to risk management was first developed in the oil industry. A second fundamental question here concerns the relation between prediction and prescription. Many arguments about environmental futures

have been fueled by social visions of benign contraction and stagnation. Here too there is a great deal of scholarly work to be done. What were the historical roots of concepts like degrowth, plenitude, and sufficiency?

*The Future of Nature* provides an important and useful model for historians who wish to engage with the problem of anthropogenic climate change and the closely related issue of scale in a serious yet critical manner. Too often, a historical perspective is missing in contemporary debates about the economics, ethics, and politics of climate change. There has been an odd reluctance on the part of many scholars in environmental history (especially in the United States) to admit the severity of the crisis of climate change, perhaps out of a misplaced sense that the basic science is still uncertain or that the social and economic risks are exaggerated. The ecological orientation guiding much of environmental history may have contributed to the problem, in as much as it often fails to recognize the fundamental difference between environmental change at the level of specific ecosystems and at the level of the Earth System as a whole.

The rich source materials and commentaries in *The Future of Nature* will make it a comprehensive sourcebook in courses on historical geography, the history of climate science, and environmental thought. For those of us who believe that history of science forms an indispensable component of environmental history, this is a particularly welcome addition.

#### Note

[1]. Paul Crutzen and Eugene Stoermer, "The 'Anthropocene,'" *Global Change Newsletter* 41 (2000): 17–18.

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