

An Introduction to Applied Biogeography

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[Aller au sommaire du numéro](#)

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An Introduction to Applied Biogeography

By Ian F. Spellerberg and John W.D. Sawyer
Cambridge University Press
Cambridge, United Kingdom
 1999, 243 p.
 US\$24.95, paperback
 US\$64.95, hardback

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Biogeography is a field that has lately regained prominence after decline from its heyday in the 18th and 19th centuries when the faunas and floras of new worlds were being documented by such greats as von Humboldt, Darwin, and Wallace. Wallace alone collected 125,660 species from the Malay Archipelago. The early workers reveled in the rich diversity of life, and their discoveries led to an overthrow of ancient ideas on how life was created and organized on earth. Today, biogeography has a new, almost opposite perspective, in assessing the loss of species diversity and the threat to natural ecology posed by the pressures of human population growth, resource exploitation, pollution, and climate change.

Spellerberg and Sawyer's goal is to introduce the science of applied biogeography focussing on environmental protection and resource management, but much of their book is devoted to introductory biogeography with emphasis on historical highlights, biogeographic classifications, island biogeography, geology, ecology, and data collection. Most chapters begin with a fanciful introduction to the topic, and then discussion proceeds to more technical aspects, but all material is handled fairly briefly, in a simple manner true to the introductory nature of the book. Focal points of the book include island populations, wildlife corridors, and fragmented habitats. The authors have extensive experience in both hemispheres and bring a fairly balanced perspective to the topics, although the bias in examples and illustrations favours the United Kingdom, Australia, and New Zealand. Throughout, the writing is clear and very readable. Key information is summarized

conveniently in 22 tables scattered through the book. The graphics are in black and white, most are clear, but a few illustrations are not. The graphics pale in comparison to Bailey's (1998) *Ecoregions* that I reviewed last year (*Geoscience Canada*, v. 25, p. 193).

Spellerberg and Sawyer raise a number of key problems in biogeography. There are, for example, approximately 1.7 million described species from a potential world total of 11-30 million species. Species may be going extinct faster than they are being described! Taxonomy is generally in decline and the geographic areas of highest species diversity ("Vavilov centres") of Africa, Asia and South America have the fewest taxonomists. Another bugaboo in biogeography is the lack of a uniform scheme for classifying the biological diversity of the world's plant and animal communities and ecosystems. Unfortunately, no ready solutions appear to be at hand. A bright spot for the future may be the development of computer data bases, the use of GIS in storing and modelling data, the exchange of data bases on the World Wide Web, and the increased awareness of the importance of maintaining species diversity. The authors wishfully predict the future creation of a "World Biogeography Agency." Spellerberg and Sawyer conclude with a useful list of conventional organizations and web sites devoted to ecology and environmental management, for example, the World Conservation Monitoring Centre, in Cambridge, England.

This book fulfills its goal as an introduction to applied biogeography, but it probably is not the definitive work on the topic. Given the huge potential scope of biogeography, it is probable, however, that the definitive work on the subject may never be written.

Introduction to Energy Resources, Technology and Society

By Edward S. Cassedy and Peter Z. Grossman
Cambridge University Press
 1998 (second edition), 427 p.
 US\$80.00, hardcover
 US\$34.95, paper

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The text of this book is divided into three parts. I: Energy Resources and Technology; II: Power Generation: the technology and its effects; III: Energy technology in the Future.

The purpose of Part I is to acquaint the reader with the kinds of energy sources in the world, and the methodology of converting these sources to energy. The methods of making resource estimates of oil and gas and reserves of them are addressed. In addition, the conflicting views regarding estimates are aired. References to oil and natural gas dominate Part I but renewable sources are treated also: water power, nuclear, wind, solar, geothermal, wood, and biomass energy.

Part II deals mainly with the way fossil fuels (oil, gas, coal) are converted to energy and the resulting impact the process has on the environment. This entails a discussion on the carbon cycle and acid rain. These undesirable features engender high costs now and in the future.

Nuclear fission occupies 60 pages in Part II. The authors review the physics of how the nuclear reaction is initiated and how the heat is captured and converted to energy. They discuss the incidents at Three Mile Island and Chernobyl. Just as there is an acid rain consequence when using oil for the source of energy there is a similar problem after uranium is used to create energy. The authors give a discussion on the disposal (or storage) of radioactive waste. The last chapter of Part II contains the authors views on the real cost of electricity.

Part III contains a classification of technologies which are too costly today