Spring 1999

Review of *Evaluating Natural Resource Use in Agriculture* Edited by Thyrele Robertson, Burton C. English, and Robert R. Alexander

Glenn Helmers
*University of Nebraska - Lincoln*, ghelmers1@unl.edu

Follow this and additional works at: [http://digitalcommons.unl.edu/greatplainsresearch](http://digitalcommons.unl.edu/greatplainsresearch)

Part of the [Other International and Area Studies Commons](http://digitalcommons.unl.edu/greatplainsresearch)


[http://digitalcommons.unl.edu/greatplainsresearch/439](http://digitalcommons.unl.edu/greatplainsresearch/439)

This Article is brought to you for free and open access by the Great Plains Studies, Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Research: A Journal of Natural and Social Sciences by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

This gathering of updated papers first presented during the special sessions on natural resource modeling at the 1990 conference of the Atlantic
Economic Society, with a recent paper added, is oriented to both policy and process models and their efficacy in examining economic, environmental, and social impacts. The authors were encouraged to address resource models’ strengths and weaknesses, as well as their data requirements, theoretical bases, and forward and backward linkages.

Section 1, “Evaluating Our Nation’s Natural Resources,” includes chapters dealing with models used in the 1985 RCA (Resources Conservation Act of 1977) appraisal, particularly the Agricultural Resource Interregional Modelling System (ARIMS), multiple goal programming, sustainable agriculture, sustainable agriculture policy, pesticide risk, and the use of the Policy Analysis System (POLYSIS) to model environmental impacts in agriculture. Section 2 describes process models, including the Erosion Productivity Impact Calculator (EPIC) and the Simulation of Production and Utilization of Rangelands model (SPUR). The three chapters of Section 3 relate to impacts of alternative environmental policies, focusing on the Micro-Oriented Sediment Simulator (MOSS) and the reduction of sediment damage, farm production and conservation impact models (including a review of several policy, process, and resource models), and off-site costs of soil erosion. Section 4 examines economic impacts outside agriculture, including a description of IMPLAN (Impact Analysis for Planning), the application of Input-Output to the Conservation Reserve Program, and linkages of sector and resource allocation models. The final section, oriented to modelling toward the year 2000, includes a chapter on data needs and two chapters on natural resource accounting.

A major strength of the book is the assembly and description of current and former models commonly used in natural resource research. Since models typically undergo frequent revision, some described in these pages have likely already been modified. Offering the perspectives of many major researchers involved with natural resource modeling, the book also provides a summary of numerous government program provisions dealing with resource use. The reader will gain an appreciation for the importance of modeling in addressing significant resource issues. Those attempting to model resource use will certainly want to examine the approaches described here.

As is often the case with books developed from conferences, chapters do not always flow together well. Some include responses by a discussant, a useful feature. By design there is more attention to model description than to model results.

The volume’s weaknesses include relatively little attention to model validation; alternative firm and aggregate models; allowance in models for
resource substitution, technical change, and equilibria; and theory. The description of agricultural change related to specialization and its relation to sustainable agriculture can be debated (implied is a decline in real returns per acre). Also, commodity program provisions and their relation to sustainable agriculture (and natural resource use) could have received more emphasis, especially since resource issues have gained increased attention in farm bill debates. And the book is unindexed. **Glenn Helmers**, *Department of Agricultural Economics, University of Nebraska-Lincoln.*