

Models as Languages: How Can Scientific Modeling Improve Environmental Policy Process?

Abstract of presentation

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Abstract: While scientific models are often thought of as "descriptive" and as mainly designed to generate predictions, in fact scientific models can be constructed for many and varied purposes. Like formal languages, scientific models are conventional representations designed for better understanding and communication. Just as languages have many uses, only some of them to describe and predict the world, models can be constructed to fulfill many purposes. One key--and growing--use of models is to improve communication among stakeholders in contentious and public environmental management processes.

Jan Rotmans, Director of the International Center for Integrative Studies, Maastricht, Netherlands, has proposed that we distinguish between "supply" and "demand" modeling. The former involves cutting-edge use of disciplinary or multi-disciplinary tools to develop state-of-the-art models, while the latter models are developed specifically to respond to particular, real-world problems in environmental management. It will be argued that the development of useful "demand" models will require a significant re-thinking of the criteria by which we form and judge scientific models. Especially, it will require that we reconsider important aspects of the way scientists participate in public processes to manage the environment. These ideas will be illustrated by reference to research on modeling and management of Lake Lanier (a large, multipurpose impoundment of the Chattahoochee River North of Atlanta), undertaken by the presenter and colleagues from Georgia Tech and the University of Georgia.

Suggested References:

Funtowicz, S.O. and J.R. Ravetz, 1990. Managing Uncertainty in Policy-Related Research, Kluwer Academics, Dordrecht, The Netherlands.

Gunderson, L.,C.S. Holling, and S.S. Light, Eds., Barriers and Bridges to the Renewal of Ecosystems and Institutions Columbia University Press, New York, 1995.

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