

Global Land Project symposium on agent-based modelling of land use effects on ecosystem processes and services

Hosted at the 2009 US-IALE Conference 12-16 April, Snowbird, Utah

One of the main themes of the Global Land Project concerns the understanding of the effects of human land use activities in altering the structure and functioning of terrestrial landscapes and ecosystems. Improved understanding of the decision making processes related to land use management provides the foundation for evaluating the interactions between factors influencing human activities and feedbacks within the coupled human-environment system. Modelling can contribute to better understanding of these systems. It is now generally accepted that to adequately understand the complex dynamics of landscapes, it is often necessary for models thereof to integrate the human social processes embedded within them. In so doing, a spectrum of approaches can be applied, from analytical through to narrative; quantitative to qualitative. In the social sciences, agent-based (akin to individual-based) modelling has been proposed as a 'third way': formal and yet descriptive in its representations. Agent-based modelling has been applied for some time now to the study of land use and cover change by various researchers.

This symposium will consider developments in coupled human-natural system modelling using agent-based simulation, from the perspective of land use effects on population dynamics and ecosystems processes and/or services at the landscape scale. It is directly relevant to the broader US-IALE conference theme of Coupling Humans and Complex Ecological Landscapes, so participants should find plenty of other interesting talks to attend. Papers at this symposium cover the following topics, with a view to showcasing the various ways in which agent-based modelling can contribute to the an integrated understanding of the social and the ecological:

- Case studies of agent-based modelling in natural resource management and policy;
- Calibrating and validating coupled agent-based/ecosystem models;
- Developing coupled social-ecological theory using reduced form/conceptual agent-based models;
- Disseminating ecologically-embedded agent-based models to the scientific community and beyond;
- Lessons for and critiques of ABM from other efforts in coupled SES modelling.

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