

FEARLUS: An Agent-Based Model of Land Use Change

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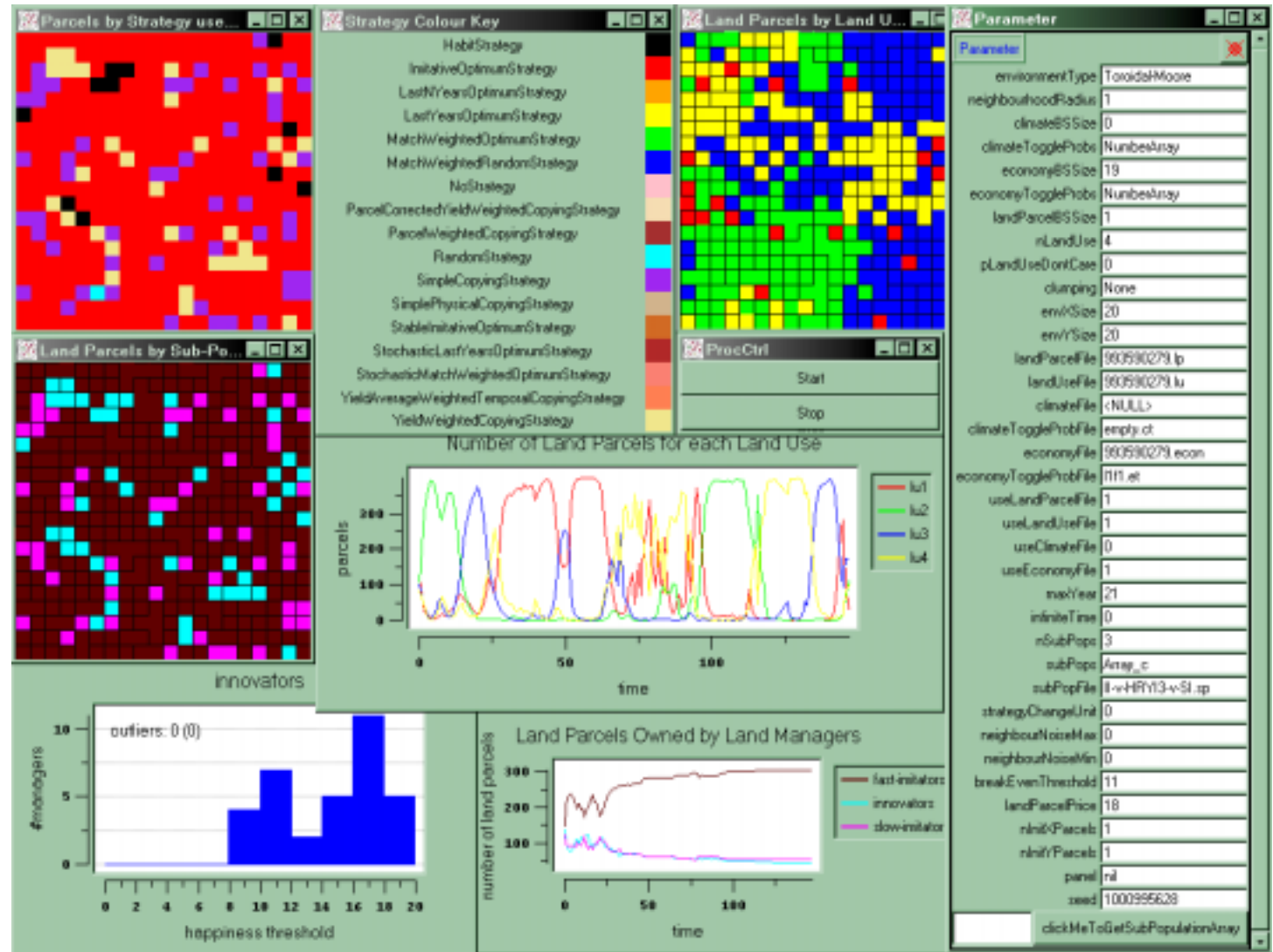
The FEARLUS modelling approach

- **Current model is very abstract**
 - No real land uses (e.g. wheat), physical properties of land parcels (e.g. soil type) climate (e.g. rain) or economy -- bitstrings
 - Grid-based representation of space
 - Agents have simple land use decision algorithms
- **Forthcoming model more complex**
 - Framework rather than single model



Screenshot of current model

- Swarm
- Obj-C
- >20K lines of code
- Perl scripts for expts involving many runs



Long term goals

- **A tool for exploring possible future (and historical) land use scenarios**
- **Assist policy-makers and advisers**
 - Possibilities, not prediction
- **Education and participation**
- **Development of Land Use Theory**



Short term goals

- **Evaluating the use of agent-based modelling techniques in land use**
- **Development of a methodology**
 - **What to include in the model?**
 - **How to conduct experiments and interpret the results?**



Research directions in FEARLUS

- **Imitation and innovation**
- **Review of agent-based modelling of common-pool resource dilemmas**
- **Multi-dimensional utility functions**
- **Representation of space**
- **Scale**

