... a node in the CoMSES Network

CoMSES Digest: Spring 2014

Volume 2, No.1 December 16, 2013 – March 15, 2014

Welcome to a new year, and a new issue (and volume) of the CoMSES Digest. With 2014 we begin Volume 2, and the Digest begins its second calendar year of reporting the transactions of the CoMSES network.

The new models contributed to the model library at OpenABM.org continue to span an array of socio-ecological subjects, including agriculture, forestry, and hunter-gatherer subsistence. More general topics are represented by an intriguing model on innovation networks, coalitions, and power; see below for the list of most recent uploads. By continuing to grow the model repository, both OpenABM and CoMSES push forward transparency and collaboration in modeling. CoMSES members and affiliates are invited to review these and the other models in the OpenABM library, and to discuss them on the OpenABM forums (http://www.openabm.org/forum).

CoMSES continues to promote clear documentation and good modeling practice by offering certification that a model in the OpenABM repository meets standards of transparency and consistency. The model of ungulate population dynamics by Nika Galic (see below) is the most recent example. Looking forward in 2014, as spring semesters end and projects for the academic year are wrapped we encourage our affiliated members to submit their models to the library and to make them even more widely accessible by making them meet the standards for CoMSES certification. Meeting the requirements for certification could also be an excellent exercise for students building modeling projects; asking them to do this would help train the next generation of modelers in practices of good modeling and in participating in a wider community of scientists and researchers.

Many members may be especially interested at this time of year in the Job Postings and Appointments section of OpenABM.org (http://www.openabm.org/forum/jobs-and-appointments). If you are looking for a job, this is a ready resource; if you are posting a job, please post to the job forum. This is an easy way to transmit your message to the targeted community of SES modelers.

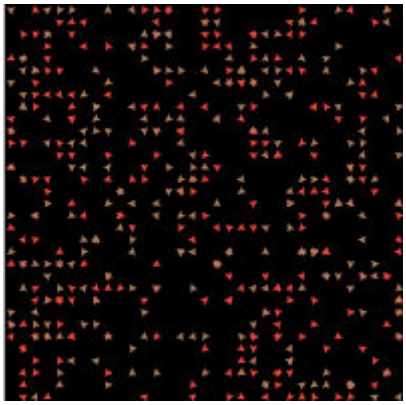
As mentioned in the last digest, the CoMSES Interim Executive Board continues to craft the Strategic Planning Document that CoMSES will use to promote its goals over the next five years. The IEB will be meeting in the next week to move this work forward; results should be available and distributed to the CoMSES community soon, with feedback and suggestions always appreciated.

Sincerely,
John T. Murphy
CoMSES Digest Editor
Member, CoMSES Interim Executive Board

Newly Certified Models in the Model Library

Horse Population Dynamics

Nika Galic



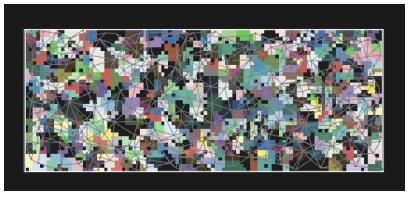
Dynamics of ungulate populations are shaped by the climatic conditions and/or density-dependent causes, due to e.g. resource overexploitation. With this model we explore the life history of individual horses, exploitation of a seasonal resource and dynamics of the whole population. We explicitly model energy acquisition through resource grazing and milk intake (for foals), and energetic costs of metabolism, growth, gestation and lactation. In addition, a certain probability and duration of snow cover can be tested with the model. Under snow conditions, both resource intake by individual horses and resource growth are stopped.

More Information About Model Certification

Newly Published Models in the Model Library

ManPest

François Rebaudo

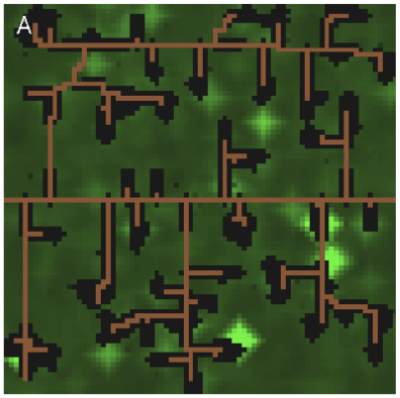


We assessed the impacts of climatic and economic variability on farmers' adaptive management of agricultural pests in the Ecuadorian Andes. We developed an agent-based model simulating an artificial society of farmers, relying on field data and validated models. Farmers were represented as heterogeneous autonomous agents interacting and influencing each other, and capable of learning and adapting to circumstances.

Coalitions in Networked Innovation

Rory Sie, Peter Sloep, Marlies Bitter-Rijpkema
A first version of a model that describes how coalitions are formed during open, networked innovation

Concession Forestry Modeling



Andrew R Bell, Rick L Riolo, Jacqueline M Doremus, Daniel G Brown, Thomas P Lyon, John Vandermeer, Arun Agrawal

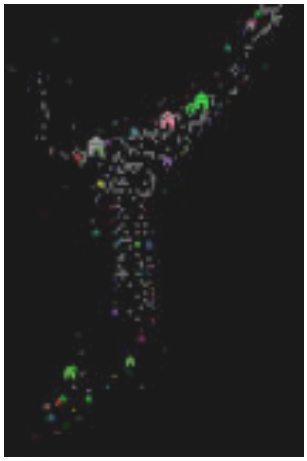
A logging agent builds roads based on the location of high-value hotspots, and cuts trees based on road access. A forest monitor sanctions the logger on observed infractions, reshaping the pattern of road development.

ForagerNet3_Demography_V2

Andrew A. White

ForagerNet3_Demography_V2 is a non-spatial ABM for exploring hunter-gatherer demography. This version (developed from FN3D_V1) contains code for calculating the ratio of old to young adults (the “OY ratio”) in the living and dead populations.

Most Downloaded Models in the Model Library



(December 16, 2013 – March 15, 2013)

1. (58 Downloads) Artificial Anasazi ***by Marco A. Janssen***

2. (50 downloads) A simple Multi-Agent System of the Tragedy Of the Commons (MASTOC-s) ***by Julia Schindler***

3. (49 Downloads) MayaSim: An agent-based model of the ancient Maya social-ecological system ***by Scott Heckbert***

4. (45 downloads) A Computational Model of Workers Protest ***by*** **Jae-Woo Kim**

5. (43 Downloads) (Policy induced) Diffusion of Innovations - An integrated demand-supply Model based on Cournot Competition ***by Martin Rixin***
