An effort to improve nonlinear modeling practice

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Funded by the National Center for Ecological Analysis and Synthesis, the Nonlinear Modeling Working Group is an assembly of approximately 20 researchers from a number of countries who are meeting for two 1-week working seminars, one in January 2011 and the other scheduled for late July 2011. At the first meeting, we chose a suite of test problems of an ecological nature requiring nonlinear models to be estimated. Each problem was then approached using open source modeling tools, in particular, *R*, *AD Model Builder,* and an open version of BUGS (either *OpenBUGS* or *JAGS*). This work will be continued at the second meeting and individually outside the formal events.

The goal of the Working Group (http://www.nceas.ucsb.edu/projects/12602) is to document the effort to build solutions in each package, to provide a set of ecological nonlinear modelling problems that are well-described, to provide advice on how to carry out the process, and to assess where each package has advantages or disadvantages with a view to improving the tools.

This paper will aim to share our preliminary findings and look to enlarge the activity and understanding of benchmarking not only software but the human process of problem-solving.