Steve Railsback

ABSTRACT

Life with an agent-based simulation model can be challenging. At the beginning, you may think you understand it completely, but as the years go by its complex and unpredictable behaviors continually surprise, please, and annoy you; and before long you find yourself with a whole family of models. My colleagues and I started working with an individual-based stream trout conservation model in 1998 and have been developing and using the "inSTREAM" family of models ever since. The models have proven useful far beyond the initially envisioned range of sites and management questions, and have produced not just management recommendations but also basic theoretical insights. We encountered a number of challenges that anyone attempting this kind of research is likely to also face. But, largely thanks to many collaborators, we have also developed strategies and techniques for overcoming these challenges. These keys to success are general and should be of benefit to computational social scientists.

Steve Railsback is an environmental research consultant and adjunct professor with the Environmental Modeling Graduate Program at Humboldt State University, Arcata, California. He has degrees in civil and environmental engineering from University of Illinois and a PhD in biology from University of Bergen, Norway; and spent five years on the research staff at Oak Ridge National Laboratory. Steve's work on river management led to an interest in individual-based modeling as a technology for predicting and understanding how management actions affect fish populations. With Volker Grimm, he authored *Individual-based Modeling and Ecology* (Princeton University Press; 2005) and *Agent-based and Individual-based Modeling: A Practical Introduction* (Princeton University Press; 2012).