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TROPICAL ECOLOGY | 2018

ANNUAL MEETING OF THE SOCIETY FOR TROPICAL ECOLOGY (GTÖ)



**CHALLENGES IN
TROPICAL ECOLOGY AND CONSERVATION -
GLOBAL PERSPECTIVES**





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WHAT WILL HAPPEN TO THE FORESTS OF THE CONGO BASIN, HOW AND WHY

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Statements about the future do not fall under the constraints of classical logic. They are not true or false. They are undetermined, so-called future contingents. This unescapable uncertainty is a source of stress and discomfort for all, political leaders included. The use of scenario planning for decision-making is a way to reduce this discomfort, and to develop strategies that are better able to cope with surprise. However, the development of scenarios requires underlying mental models, however loose.

All models are wrong, with one exception. All others degrade the information to make it manageable with our cognitive limitations. This degrading is done across several dimensions. A useful framework proposes a trade-off between precision, realism and generality. Another major limitation is the representation of human agency in these models, a critical determinant of the dynamics of social and ecological systems. The manner in which agency is represented is often unsatisfactory. We present here how we overcame these trade-offs and obstacles, clarifying here the contribution of different forms of models to the development of narratives of possible futures.

To explore the futures of the forests of the Congo Basin, we developed theoretical, empirical and process-based models that merge expert, local and scientific knowledge, integrating social, economic, governance, ecological and geophysical processes. These models represent, predict and explain regional trajectories of landscape change at the time scale of 50 to 100 years. The scenarios explicitly address different management and policy options.

Taken together, these three types of models explain what will happen to the forests of the Congo Basin in the coming decades, how and why. As in any good crime story, this leaves only two questions unanswered: who? and when? But these are no longer questions scientists can explore. These belong to the realm of strategy and decision making. They belong to the realm political will, corporate commitments, and stakeholder livelihood strategies.