

## New Species Distribution Modelling methods and making them relevant to users.

G J , McInerny <sup>a, b</sup>

<sup>a</sup> Department of Computer Science,  
University of Oxford,  
Wolfson Building,  
Parks Road,  
OX1 3QD, UK.

<sup>b</sup> Computational Science Laboratory,  
Microsoft Research Ltd,  
21 Station Road,  
Cambridge  
CB1 2FB, UK.

*gregory.mcinerny@cs.ox.ac.uk*

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**Abstract:** Species Distribution Modelling (SDM) is fascinating. It is a prolific, multi-faceted and often controversial research domain. Controversy arises from a range of sources, including the difficulty of matching the ‘hard’ topics such as statistics, computation & data, and the challenges in matching that with ‘soft’ topics such as philosophy, software design practices & SDM culture. In this talk I will talk about published and unpublished work in both areas, based on a variety of multidisciplinary collaborations. Firstly, work we have done in ‘hard’ topics and describe two methods we developed to address observation and process errors in SDM (Fine-Scale Environmental Variation & Biotic Interactions, two key sources of uncertainty) using MCMC to parameterise the models. And secondly research we carried out in the ‘soft’ topic of software use and how that contributed development of a new software. I will discuss why these research areas are intimately linked and suggest that adopting a more joined-up approach to these diverse challenges can aid progress in SDM.

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