Plant Health Modelling workshop run by FOREMOD

Date: Friday 20th May 2016

Venue: Board Room, Sainsbury Laboratory, Cambridge (http://www.slcu.cam.ac.uk/)

Aim: The aim of meeting is threefold.

- To provide the audience with an update of the progress made by the FOREMOD project team, and obtain feedback.
- To invite some of the workshop participants to present their work relevant to the workshop theme.
- To discuss some key modelling components of plant health.

Agenda

09.30-10.00 Coffee and registration

10.00-11.00 Welcome and update from FOREMOD project (Ciara, Morag and Oleg)

11.00-11.30 Guest speaker 1 (Stephen Parnell)

11.30-12.00 Guest speaker 2 (Rob Fraser, Glyn Jones, Nikki Parker)

12.00-12.30 Guest speaker 3 (Willem Roelofs)

12.30-13.00 Lunch

13.00-14.00 Group discussion

14.00-15.00 Feedback and closing remarks

Titles and Abstracts

Some current challenges in modelling tree diseases

Stephen Parnell, Nik Cunniffe, Frank van den Bosch, Chris Gilligan

Epidemiological modelling has played an increased role in risk assessment and management of tree pests and diseases. Models allow us to address what-if scenarios and incorporate epidemiological as well economic and social factors into the same framework. In this talk we highlight a series of current challenges faced by epidemiological modelling. We place particular focus on a small number of these challenges, including that of surveillance and early detection of epidemics. Early detection of diseases spreading through vast and complex landscapes is challenging but is crucial if a pathogen is to be eradicated or cost-effective control measures introduced. Models offer the opportunity to quantify the probability to detect an invading epidemic, at low prevalence, with current survey resources and optimise the allocation of survey effort.   We discuss some recent applications as well directions for future work.

The story (so far) of the Total Value of UK Trees.

Rob Fraser, Glyn Jones, Nikki Parker

This title relates both to "total value" as meaning economic + environmental + social values, and to "total value" as meaning the value of UK trees compared to UK crops and UK animals. Our presentation will outline the significance of understanding these values for animal and plant/tree health spending decisions and then lead into a set of three government initiatives since 2012 relating to the value of UK trees and government spending on animal and/or plant/tree health: a) the Tree Health and Plant Biosecurity Expert Taskforce; b) the Prioritised Plant Health Risk Register; and c) the Animal and Plant Health Capability Assessment.

Modelling & Policy: A Plant Health Perspective

Willem Roelofs

Modelling forms a key part of the evidence base that informs Government policy with examples ranging from (simple) qualitative risk models to advanced stochastic models predicting the impacts of climate change. In the Plant Health policy areas, modelling has come to the forefront in the aftermath of the Phytophthora ramorum outbreak with applications ranging from the Plant Health risk register to epidemiological models that support policy and operations in outbreak situations. However, the competition for the West Coast rail franchise indicates that modelling can also pose a risk for Government operations. In this talk, I will provide an overview of how modelling can help the development of Plant Health policy, what the challenges are and how they can be overcome

<u>Participants</u>

Name	Organisation	Email
Andrew Bate	University of York	andrew.bate@york.ac.uk
Matt Castle	University of Cambridge	mdc31@cam.ac.uk
Stephen Cavers	Centre for Ecology & Hydrology	scav@ceh.ac.uk
Andrew Crowe	Food & Environment Research Agency	Andrew.Crowe@fera.co.uk
Nik Cunniffe	University of Cambridge	njc1001@cam.ac.uk
Ciara Dangerfield*	University of Cambridge	ced57@cam.ac.uk
Rob Fraser	University of Kent	R.W.Fraser@kent.ac.uk
Chris Gilligan*	University of Cambridge	cag1@cam.ac.uk
Nick Hanley*	University of St. Andrews	ndh3@st-andrews.ac.uk
Richard Haw	Forestry Commission	richard.haw@forestry.gsi.gov.uk
John Healey*	Bangor University	j.healey@bangor.ac.uk
Debbie Hemming	Met Office	debbie.hemming@metoffice.gov.uk
Glyn Jones	Food & Environment Research Agency	Glyn.d.Jones@fera.co.uk
Adam Kleczkowski*	University of Stirling	ak@cs.stir.ac.uk
Morag Macpherson*	University of Stirling	mfm@cs.stir.ac.uk
Nikki Parker	Defra	Nikki.Parker@defra.gsi.gov.uk
Stephen Parnell	University of Salford	s.r.parnell@salford.ac.uk
Willem Roelofs	Defra	Willem.Roelofs@defra.gsi.gov.uk
Oleg Sheremet*	University of St Andrews	ois2@st-andrews.ac.uk
Julia Touza	University of York	julia.touza@york.ac.uk
Gregory Valatin	Forest Research	Gregory.Valatin@forestry.gsi.gov.uk
Elizabeth Whalley*	Warwick Business School	Elizabeth.Whalley@wbs.ac.uk

* Member of FOREMOD team.