Advanced species occurrence modelling course

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This course is aimed at participants that have completed the introductory-level course, or have suitable practical experience implementing species occurrence models that account for imperfect detection. Topics to be covered include:

- review of basic static occupancy model.

- multi-scale occupancy model.

- correlated detections.

- including spatial correlation in occupancy.

- review of dynamic occupancy model.

- multi-state occupancy model (static and dynamics).

- species co-occurrence model.

- community-level models.

For each topic, the underlying theory of the models will be presented and hands-on exercises for participants to put the theory into practice. All exercises will be conducted in R, covering data analysis and presentation of results (plotting results, creating maps, etc.). Course participants are expected to be able to perform basic data manipulation tasks in R (input data from file, understand different types of R objects, extract information from objects) and be familiar with the R formula-based notation for defining models. Some exercises will require the use of JAGS for fitting models using a Bayesian methods, implemented via R.