Two Research Fellows in Computational Ecology

<u>36 and 46 months</u> duration; University of Leeds Job Reference Number FBSBY0000

We are looking to recruit two dynamic early career researchers with proven track records in ecological theory, analytical or simulation, spatial analyses, and/or software development. Between them, they will address a number of exciting projects as part of three concurrent EU projects:

- **Modelling spatial conservation strategies for multiple goals**. Genetic diversity, population viability, species richness and ecosystem service provision respond differently to reserve configuration, leading to trade-offs in conservation strategy. We will model them on a common set of spatial scenarios and current reserve networks, and look for configurations and design principles that work well for all.
- **Relating ecosystem function to biodiversity across scales**. Biodiversity and ecosystem function scale differently, which suggests that any relationship between them should be scale-dependent. In parallel with a field research campaign, we will develop mechanistic models of species richness and various ecosystem functions across heterogeneous landscapes at multiple scales.
- **Developing up-scaling and down-scaling analytical tools**. Novel methods are being developed to "up-scale" regional biodiversity from sets of local samples, and to "down-scale" species' occupancy from coarser scale distributional data. We will improve these techniques and develop software tools or analytic libraries to help make them more widely available to non-specialist users.
- **Developing spatial niche models**. Niche models and spatial downscaling methods both make predictions about species' distributions, but have complementary strengths and weaknesses. The goal here is to develop a hybrid approach, one that takes advantage of both spatial and environmental pattern information to predict where species should be found.
- **Implementing improved remote sensing vegetation models**. New machine-learning methods can greatly improve the interpretation of remotely sensed images by incorporating information from spatial environmental datasets. We will further develop these methods to incorporate temporal variation in reflectance, and develop application software to make them more widely available.

The two Research Fellows will join a large and varied team of academics, postdoctoral researchers and postgraduate students from both the Kunin and Benton labs, and the wider Leeds Ecology and Evolution research group. They will also have the opportunity to form collaborations with a wide circle of researchers across Europe and beyond through the three associated EU project teams (EU-BON, SCALES and ExpeER). Leeds is a vibrant university city with cultural attractions, affordable housing and easy access to beautiful countryside.

University Grade 7 (£30,122-35,938 per annum)   **Closing date: 17 December 2012**

Informal enquiries to <u>Prof. William Kunin</u>, tel +44 (0)113 343 2857, email <u>w.e.kunin@leeds.ac.uk</u>

For further details and online application links, go to the University of Leeds jobs website: <u>http://jobs.leeds.ac.uk/fe/tpl_universityofleeds01.asp</u> **and search on Job Reference** FBSBY0000.