



# Biodiversity Technologies

Biodiversity Institute Symposium

September 27<sup>th</sup> & 28<sup>th</sup> 2012

Department of Zoology, University of Oxford

## Conference Overview

**08:30** Day 1 Registration opens

**09:15 – 09:30** Welcome address

**09:30 – 11:10** [Session 1] Novel technologies for collecting field data

11:10 – 11:40 Coffee and Discussions

**11:40 – 13:00** [Session 2] Genomic Observatories: Biodiversity genomic observing systems

13:00 – 14:00 Lunch and Discussions

**14:00 – 15:40** [Session 3] Virtual information technologies for research and conservation

15:40 – 16:10 Coffee and Discussions

**16:10 – 17:50** [Session 4] Citizen science: Recording and monitoring the natural environment

17:50 – 19:00 Posters and Drinks reception

**08:30** Day 2 Registration opens

**09:00 – 10:40** [Session 5] Tools as change agents: Technology-inspired future visions

10:40 – 11:10 Coffee & Discussions

**11:10 – 12:30** [Session 6] Genetic technologies to unravel species diversity

12:30 – 13:40 Lunch & Discussions


**13:40 – 15:00** [Session 7] Bioacoustic technologies

15:00 – 15:30 Coffee & Discussions

**15:30 – 16:50** [Session 8] Moving forward: Realising the potential of biodiversity technology tools

**16:50** Symposium Ends



We'll be live-tweeting throughout the symposium – *please join in.* 

@bioinstituteox | #biosymox

<http://bit.ly/BioSymOx>

08:30 Registration opens

09:15 Welcome address: **Kathy Willis**  
Director of the Biodiversity Institute, Oxford

### Novel technologies for collecting field data

Chairs: Tim Guilford & Jake L Snaddon

[Session 1]

- 09:30 - 09:50 **Daniel Kissling**  
Aarhus University, Denmark  
Challenges and prospects in the telemetry of insects
- 09:50 - 10:10 **Stephen Ellwood**  
WildCRU, University of Oxford, UK  
The Wildsensing Project: discovering badger social networks
- 10:10 - 10:30 **Tim Coulson**  
Imperial College London, UK  
Wireless mice: tracking small rodents in real time in the field
- 10:30 - 10:50 **Michelle Taylor**  
University of Oxford, UK  
Mapping the Deep: ecosystems of Southwest Indian Ocean seamounts
- 10:50 - 11:10 **Tim Guilford**  
University of Oxford, UK  
Tracking the behaviour of the ocean's wanderers

11:10 - 11:40 **Coffee & Discussions**

### Genomic Observatories: Biodiversity genomic observing systems

Chairs: Neil Davies and Dawn Field

[Session 2]

- 11:40 - 12:00 **Neil Davies & Dawn Field**  
UC Berkeley, USA & CEH, UK  
The Genomic Observatories Network: from Moorea Biocode to Ocean Sampling Day
- 12:00 - 12:20 **David Schindel**  
Smithsonian Institute, USA  
The Consortium for the Barcode of Life
- 12:20 - 12:40 **Guy Cochrane**  
European Bioinformatics Institute, UK  
Merging sequence (genomic) and biodiversity data in the INSDC
- 12:40 - 13:00 **Éamonn Ó Tuama**  
Global Biodiversity Information Facility, Denmark  
Accommodating genomic biodiversity data in the GBIF network

13:00 - 14:00 **Lunch & Discussions**



### Virtual information technologies for research and conservation

Chair: David Boshier

[Session 3]

- 14:00 - 14:20 **Stephen Harris**  
University of Oxford, UK  
The challenge of more and better botanical data from the field and herbaria
- 14:20 - 14:40 **Hannes Gaisberger**  
Biodiversity International, Rome  
Conservation priorities for *Prunus africana* defined with the aid of spatial analysis of genetic data and climatic variables
- 14:40 - 15:00 **Ben Clark**  
University of Oxford, UK  
EMonocot: a global online resource for monocot plants
- 15:00 - 15:20 **Vincent Smith & Dave Roberts**  
Natural History Museum, UK  
Scratchpad virtual research environments: sharing, linking and publishing biodiversity data the ViBRANT way
- 15:20 - 15:40 **Iead Rezek**  
University of Oxford, UK  
Inferring social network structure in ecological systems from spatio-temporal data streams

15:40 - 16:10 **Coffee & Discussions**

### Citizen science: Recording and monitoring the natural environment

Chairs: Shonil Bhagwat & Tom Hart

[Session 4]

- 16:10 - 16:30 **Jon Parson**  
Global Canopy Programme, UK  
Technology to enable non-technical people to record the natural environment
- 16:30 - 16:50 **Alistair Yeomans**  
Sylva Foundation, UK  
"myForest" - a working woodlands network
- 16:50 - 17:10 **Jonathan Silvertown**  
Open University, UK  
iSpot - the challenge of making a British success global
- 17:10 - 17:30 **Tom Hart**  
University of Oxford, UK  
Creating a monitoring network for Antarctica
- 17:30 - 17:50 **Chris Sandbrook**  
University of Cambridge, UK  
Can digital games and virtual worlds help us save nature?

17:50 - 18:10 **Quickfire poster session**  
Chair: Gill Petrokofsky

18:10 - 19:00 **Posters and Drinks reception**



08:30 Registration opens

### Tools as change agents: Technology-inspired future visions

Chair: Paul Jepson

[Session 5]

- 09:00 - 09:20 **Muki Haklay**  
University College London, UK  
The role of technology in extending Citizen Science to new groups and places
- 09:20 - 09:40 **Johannes Vogel**  
Museum für Naturkunde, Berlin, Germany  
NHM 3.0: Nature-Humans-Machines
- 09:40 - 10:00 **Lian Pin Koh**  
ETH, Switzerland  
Conservation drones': real-time remote sensing
- 10:00 - 10:20 **Andy Clements**  
British Trust for Ornithology, UK  
Big data, big volunteering, smart technology - BTO biodiversity monitoring 2025
- 10:20 - 10:40 **Paul Jepson**  
University of Oxford, UK  
Opti-hunting: a technology inspired vision for resolving migratory bird hunting

10:40 - 11:10 Coffee & Discussions

### Genetic technologies to unravel species diversity

Chairs: Jeyaraney Kathirithamby & Jordi Paps

[Session 6]

- 11:10 - 11:30 **Marta Riutort**  
Universitat de Barcelona, Spain  
How can a "morphology-less" organism benefit from new high-throughput molecular methodologies: the case of planarians diversity
- 11:30 - 11:50 **Ludovic Orlando**  
University of Copenhagen, Denmark  
From the wild to domestication: comparative genomics of ancient and modern horses reveals specific demographic, admixture and selective signatures
- 11:50 - 12:10 **Bastien Boussau**  
University of California, USA  
Phylogenetic inference from genomic data sets
- 12:10 - 12:30 **Yuri Roskov**  
University of Reading, UK  
Catalogue of Life: data assembly and public services

12:30 - 13:40 Lunch & Discussions



### Bioacoustic technologies

Chairs: Steve Roberts and Kathy Willis

[Session 7]

- 13:40 – 14:00 **David Chesmore**  
University of York, UK  
Automated Identification of Species: current techniques and future directions
- 14:00 – 14:20 **Karl-Heinz Frommolt**  
Museum für Naturkunde, Berlin  
Bioacoustic monitoring of nocturnal wetland bird
- 14:20 – 14:40 **Gianni Pavan**  
University of Pavia, Italy  
Soundscape libraries as a tool for conservation and education
- 14:40 – 15:00 **Alex Rogers**  
University of Southampton  
Smartphone-based Biodiversity Monitoring: Mobilising the crowd in the hunt for the New Forest Cicada

15:00 – 15:30 **Coffee & Discussions**

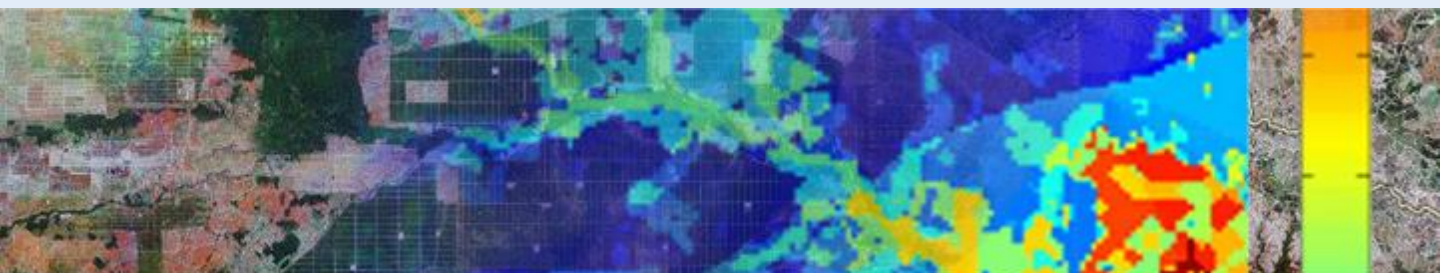
### Moving forward: Realising the potential of biodiversity technology tools

Chairs: Owen Lewis

[Session 8]

- 15:30 – 15:50 **Atte Moilanen**  
University of Helsinki, Finland  
Zonation (Biodiversity Conservation Informatics)
- 15:50 – 16:10 **Mark Mulligan**  
Kings College London  
Web-tools for mapping ecosystem services and our impacts upon them
- 16:10 – 16:30 **Neil Boucher**  
SoundID, Australia  
A high precision sound recognition system suitable for complex studies, including the dawn chorus and mixed species surveys, with demonstrated 95%+ accuracy
- 16:30 – 16:50 **Kathy Willis & Peter Long**  
University of Oxford, UK  
Remote assessment of ecologically sensitive landscapes anywhere in the world: development of a Local Ecological Footprint Tool (LEFT)

16:50 **Symposium Ends**





# Conference Programme

## Posters

**Christopher Gwilliams**  
Cardiff University, UK

Local and Global Knowledge to Improve the Value of Information in Sensor Networks

**Davide Zilli**  
University of Southampton, UK

Smartphone-powered Citizen Science for Biodiversity Monitoring

**Karin Ulbrich, Elisabeth Kühn & Josef Settele**  
Helmholtz Centre for Environmental Research, Germany

Citizen Science in Germany

**David Kilbey**  
University of Bristol, UK

Nature Locator: Geospatial Smartphone Apps and the use of Crowd Sourcing for the Recording of Invasive Species

**Kirsty Monk *et al.***  
University of Oxford, UK

FungiWatch: using citizen science to provide reliable distribution data for UK fungi

**Emma Sheppard-Walwyn**  
University of Oxford, UK

Mapping Sacred Forests: A GIS approach to ecological Analysis

**Peter van Tienderen**  
University of Amsterdam, Netherlands

LifeWatch: a European Research Infrastructure for Biodiversity and Ecosystem Research

**David Jarrett**  
Econometrica, Edinburgh, UK

*Our Ecosystem*: A web-based mapping platform for analyzing, sharing and communicating ecosystems data

**Arnald Marcer, Carlos Alonso-Blanco, & F. Xavier Picó**  
Universitat Autònoma Barcelona, Spain

An Information System on Natural Variation of the Annual Plant *Arabidopsis thaliana* in the Iberian Peninsula

**Charlotte Walters, Kate Jones & Stuart Parsons**  
UCL, London, UK

A continental-scale tool for acoustic identification of European bats

**Dan Stowell & Mark Plumbley**  
Queen Mary, University of London

An efficient chirplet representation of birdsong for improved recognition

**Nadia Pieretti & Almo Farina**  
The University of Urbino, Italy

The Acoustic Complexity Index and the soundscape approach



# Conference Programme

## Posters

**David Martí Pino Xavier Font & Rafael Quadrada**

University of Barcelona, Spain

Zamiadroid: field registration of biological data using mobile devices

**William Wint**

Department of Zoology, University of Oxford, UK

A Spatial Decision Support System for Targeted Vector Surveillance and Control

**Ashley Massey, Shonil Bhagwat & Kathy Willis**

Biodiversity Institute & School of Geography and the Environment, University of Oxford, UK

Mapping the Sacred: Global analysis of sacred and religious sites

**Jorgelina Marino, Fekadu Lemma, Gebeyehu Rskay & Claudio Sillero**

Wildlife Conservation Unit (WildCru), Department of Zoology, University of Oxford, UK

Citizen Science: Ethiopian wolf ambassadors monitor threatened carnivore populations

**Kate Ashbrook, Robert Burnside, David Waters, Ian Carter, Leigh Lock & Tamás Székely**

Department of Biology & Biochemistry, University of Bath, UK

Sex-specific habitat use by Great bustards in the UK

**Oliver Wearn, Robert Ewers, Chris Carbone & Marcus Rowcliffe**

Imperial College London & Institute of Zoology, Zoological Society of London

Tracking mammalian communities in time and space in Borneo

**Neil Bailey**

Oxford Brookes, UK

WildKnowledge

**Thomas von Rintelen, Christoph Häuser, Johannes Vogel, Ristiyanti Marwoto & Rosichon Ubaidillah**

Museum für Naturkunde Berlin, Germany

The biodiversity discovery factory – describing mega(bio)diversity with new partnerships and new technologies

**Martin Svátek**

Mendel University, Czech Republic

Field-Mapping forest structure and fine-scale spatial distribution in Sabah, Malaysia;





**Biodiversity  
Institute  
Oxford**



Ecological and Evolutionary Processes  
Biodiversity Beyond Protected Areas  
Biodiversity Technologies

The Biodiversity Institute's research theme on Biodiversity Technologies aims to engage in agenda-setting research from which it develops web-based tools that enable an easy identification of species and the assessment of important regions for biodiversity conservation. This year's Biodiversity Institute Symposium highlights the use of emerging technologies in biodiversity science and conservation.

The symposium brings together 36 speakers presenting the latest research and developments in biodiversity technologies that are used in a wide variety of settings and applications. Materials from the symposium will be made available in various formats online.

To keep in touch with the research and activities of the Biodiversity Institute, Oxford, visit the website.

**[www.biodiversity.ox.ac.uk](http://www.biodiversity.ox.ac.uk)**

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