

TUESDAY 10 JULY 2018

ZSL SCIENCE AND CONSERVATION EVENT

The Meeting Rooms, Zoological Society of London,
Regent's Park, London NW1 4RY

AGENDA

Wildlife and well-being in urban landscapes

Chaired by **Professor Kate Jones**, *Centre for Biodiversity and Environment Research, UCL*

Receive the following communications:

Professor Zoe Davies, **Durrell Institute of Conservation and Ecology (DICE), University of Kent**
Human health and wellbeing in urban green spaces

Dr Katherine Baldock, **University of Bristol**
Conservation opportunities for pollinators in urban areas

Dr Chris Carbone, **Institute of Zoology, ZSL**
London hedgehog watch: the preliminary findings from surveys on an elusive urban mammal

ABSTRACTS

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Human health and wellbeing in urban green spaces

Professor Zoe Davies, Durrell Institute of Conservation and Ecology (DICE), University of Kent

Urban areas are expanding faster than any other land-use type and represent ~3% of landcover. Over half of the global human population live in towns/cities and, by 2050, over 80% of people in Europe and the Americas will be residing in an urban area. In such highly urbanised societies, the human-nature interactions that occur are often restricted to green/blue environmental spaces (e.g. public parks, woodlands, private gardens) within towns and cities. Consequently, the argument has been made by many authors that people are becoming progressively 'disconnected' from the natural world. Nonetheless, the reported personal/societal benefits gained from human-nature interactions are diverse (e.g. added health benefits when exercise is carried out in environmental spaces, improvements in self-reported general health, stress-relief, reduced mental fatigue cognitive development in childhood and degree of social interaction). These beneficial outcomes derived from nature are of interest to the health sector as the prevalence and costs associated with treating poor mental health and non-communicable diseases (e.g. diabetes, cardiovascular disease, depression) are expanding worldwide, particularly in developed nations. For example, mental ill health is one of the greatest challenges facing healthcare in Europe, accounting for almost 20% of the disease burden, and affecting one in four people at some point in their life. In the UK, the government Department of Health cites 'use of nature' as a determinant of public health and estimates that this could save the National Health Service ~£2 billion per year. In this presentation, we will consider people's responses to urban biodiversity, and how such interactions can influence their wellbeing.

Zoe Davies is Professor of Biodiversity Conservation at the Durrell Institute of Conservation and Ecology (DICE), University of Kent. She is a landscape ecologist by training, but has become increasingly interested in using interdisciplinary approaches to answer research questions pertinent to supporting conservation policy and management. Zoe now works regularly with psychologists, economists, human geographers, engineers and landscape architects. She is currently leading a large European Research Council grant entitled 'Environmental Spaces and the Feel-Good Factor: Relating Subjective Wellbeing to Biodiversity'. As well as her work in the UK, she has a number of projects ongoing in Malaysian Borneo, Guyana and Kenya.

Conservation opportunities for pollinators in urban areas

Dr Katherine Baldock, University of Bristol

Pollinators are currently the focus of international concern as numerous studies document their declines and the multiple threats they are facing. Land use change is one of the main drivers of pollinator declines, with urbanisation regarded as a major threat to biodiversity. I will discuss the findings from the Urban Pollinators Project, a national scale study of insect pollinators in UK towns and cities, involving the Universities of Bristol, Reading, Leeds and Edinburgh and practitioner partners from local councils and Wildlife Trusts. The research addressed three questions: 1. Where is the UK's pollinator biodiversity? 2. Where are the hotspots of pollinator biodiversity in urban areas? 3. How can we help conserve pollinators in urban areas? To answer the first question we compared pollinators in urban areas, farmland and nature reserves in and around 12 UK towns and cities, using a plant-pollinator network approach. To answer the second and third questions we sampled more than 350 sites encompassing all different types of urban land uses across four cities, including parks, residential gardens, allotments and road verges. I will discuss the findings of this research, highlighting opportunities for improving urban land management to aid urban pollinator conservation. I will also outline the resulting impact activities I have been carrying out during my NERC Knowledge Exchange Fellowship.

Katherine Baldock is a NERC Knowledge Exchange Fellow at the University of Bristol working on a range of projects looking at how urban habitat management can be improved to benefit pollinators. She works with a range of organisations including local councils, wildlife trusts and Defra. Prior to her fellowship Katherine's postdoc, also at the University of Bristol, involved managing the Urban Pollinators Project, a UK wide project assessing pollinators in urban environments. She has also researched pollinators in more tropical environments, including the African savannah during her PhD based at the University of Edinburgh and the Costa Rican dry forest.

London hedgehog watch: the preliminary findings from surveys on an elusive urban mammal

Dr Chris Carbone, Institute of Zoology, ZSL

Preliminary results from our hedgehog camera-trap surveys of London parks, green spaces and private gardens will be presented. We will explore differences in hedgehog and fox ecology in order to gain greater insights into the differences in distribution and status of these two important urban mammals. One of the key challenges is develop a survey method that is effective and provides an accurate estimate of abundance in an elusive nocturnal animal located in public spaces intensively used by people. The citizen science elements of the project include, the use of volunteer networks from local conservation groups, the use of citizen science data bases (e.g. the National Biodiversity Network) to develop a London-wide distribution maps and target new camera trap survey sites; and surveys of private gardens to gain an understanding of the species' mobility and access to foraging sites. While still relatively small in scale, it is hoped that the London hedgehog watch might expand to cover major hedgehog strongholds across greater London.

Chris Carbone is a senior research fellow at the Institute of Zoology, Zoological Society of London. The main developments in his research come from the field of macroecology, focusing on understanding ecological characteristics of animals using data (such as population density and diet types) from a wide range of species. His research asks questions, such as, how do terrestrial and marine predators differ in predator-prey relationships and how do herbivores and predators differ in activity levels and use of their environments. His work also incorporates survey methods such as camera-traps, which can be used to greatly improve our understanding of the abundance and distribution of animals in

remote areas (tropical forests mammals) or species which are secretive or nocturnal in our local neighbourhoods (urban hedgehogs). This work helps us address critical questions such as, how are animals coping under increasing human pressure on their environments.

Chair: Professor Kate Jones, Centre for Biodiversity and Environment Research, UCL

Kate Jones is Professor of Ecology and Biodiversity at University College London and Zoological Society of London and has held appointments at University of Cambridge, Columbia University and Imperial College London. Her research investigates the interface of ecological and human health, using statistical and mathematical modelling to understand the impact of global land use and climate change on ecological and human systems. Kate's research has also developed tools for monitoring ecological health, particularly for monitoring ecosystems acoustically and runs a number of citizen science global programmes for monitoring biodiversity. Kate has written over 100 articles and book chapters in prestigious journals such as Nature and Science and is a scientific advisor for a number of international biodiversity charities and chaired The Bat Conservation Trust for 9 years. In 2008, Kate won the Leverhulme Prize for outstanding contributions to Zoology.