Birkbeck UNIVERSITY OF LONDON

Institute of Environment

The LINNEAN SOCIETY of London

Free Public Lecture Series, Spring 2011

'World Biodiversity in Crisis?'

Birkbeck Institute of Environment, University of London

in conjunction with the

Linnean Society of London, and Ecology and Conservation Studies Society

At the Nagoya Conference in November 2010, governments agreed challenging targets: to halve, at least, the loss of natural habitats, increase both land and sea areas designated as nature reserves, and increase aid budgets for these targets. But the 2002 Rio target to slow biodiversity loss by 2010 was not met and the present rate of extinction is as great as that in the five periods of mass extinction in the geological record. What must we do to halt the loss? In this series we ask what causes species loss and what actions are needed to meet international targets?

Join the debate. All welcome. Free admission. Booking is not necessary.

The lectures will be held in Lecture Theatre B34, Birkbeck College, University of London, Torrington Square, London, WC1E 7HX

All lectures are from 6.30pm to 8.30 pm on the following Fridays. Doors open at 6.00pm.

For enquiries, e-mail: Jeremy.Wright@walkern.org.uk. (tel: 020 7485 7903)

11 February	**'The Evil Quartet – what do we know of the causes of biodiversity loss?'** **Dr Dave Dawson, Chairman Ecology and Conservation Studies Society**
18 February	**'Protecting the best areas'** **Charles Besançon, Head of Protected Areas Programme, World Conservation Monitoring Centre of the United Nations Environment Programme**
25 February	**'Making Space for Nature – a review of England's protected area network'** **Prof. Sir John Lawton CBE FRS, Chairman of the Review Group**
4 March	**'Agri-environment schemes – can they help to reverse biodiversity declines?'** **Dr Nigel Boatman, Land Use and Sustainability Team, The Food and Environment Research Agency**
11 March	**'Towards fair and sustainable fisheries'** **Aniol Esteban, Head of Environmental Economics, The New Economics Foundation** **Rupert Crilly, Researcher, The New Economics Foundation**
18 March	**'Island Invaders: what are the biodiversity impacts of invasive species and what are the conservation solutions?'** **Dr Richard Cuthbert of the RSPB**

The Linnean Society of London and the Ecology and Conservation Studies Society welcome new members. Society details and application forms will be available at the door, and are on websites at:

http://www.linnean.org/ **http://www.bbk.ac.uk/environment/prospective/ecss**

‘World Biodiversity in Crisis?’

Notes on the Contributors and their Lectures

11 February ‘The Evil Quartet – what do we know of the causes of biodiversity loss?’

Dave Dawson is the Chairman of the Ecology and Conservation Studies Society. He trained as a vertebrate population ecologist at the University of Canterbury, New Zealand and the Edward Grey Institute, Oxford. He researched bird populations in New Zealand temperate rainforests, where he developed a framework for the protection of threatened lowland forests. Then he came to London to work on applied urban ecology, working in turn for the Greater London Council, London Ecology Unit and Greater London Authority. There he helped to develop the London Habitat Survey, the hierarchy of Sites of Importance for nature conservation and the handbook series describing them.

His lecture will cover the following themes:
To be able to halt the decline of biodiversity, we need to know what causes the losses. Clearly, the causes will point to the remedies, but there is much debate over which are the most significant. Many consider that the prime cause has been man’s destruction and degradation of wildlife habitat, leading to concerns over the small size and isolation of the remaining fragments of good habitat, and fears that this has resulted in an “extinction debt”. Other causes are found in: pollution and the intensive management of productive agriculture and forestry; over-exploitation of wild animals and plants; and difficulties with invasive aliens - diseases, predators and competitors - giving rise to “biotic homogenisation”. Whilst these four causes appear to account for the historical losses, we now need to consider how climate change might affect all of these.

18 February ‘Protecting the Best Areas’

Charles Besançon is the Head of the Protected Areas Programme at the United Nations Environment Programme, World Conservation Monitoring Centre in Cambridge. His team of researchers works to measure how well we are doing at protecting important areas of land and sea where endangered species and other biodiversity live, as well as important ecosystems like coral reefs and mangroves. His background includes working as a park ranger, environmental advocate, developing conflict-sensitive approaches to conservation in Rwanda, Uganda and the Democratic Republic of Congo and developing information management systems for protected areas.

His lecture will cover the following themes:

National parks and protected areas are well recognised for their central role in conservation and development. They protect 1/3 of critically endangered species, 1/3 of the world’s largest cities depend on protected areas for fresh water, and millions of the world’s poorest people depend upon them for their livelihoods. The World Database on Protected Areas has identified over 150,000 protected areas in every country and in the High Seas beyond national jurisdiction. The UN Convention on Biological Diversity has recently passed a new strategic plan where 193 countries have agreed that at least 17% of terrestrial and 10% of marine areas, especially areas of particular importance for biodiversity and ecosystem services, will be protected by 2020. This talk will discuss 1) where in the world biodiversity and ecosystem services are found and concentrated; 2) whether the percentages agreed by the 193 countries will be sufficient to protect biodiversity and ecosystem services and how will this be measured; 3) why traditional monitoring approaches have failed and why we need to embrace citizen science, the wiki approach and social networking applications like Facebook, blogging and Twitter.

25 February ‘Making Space for Nature – a review of England’s protected area network’

Sir John Lawton is Chairman of the Royal Commission on Environmental Pollution, and formerly Chief Executive of the Natural Environment Research Council (1999-2005), and Director of the Centre for Population Biology at Imperial College (1989-1999). He trained as a zoologist at the University of Durham, and subsequently held posts at Oxford and York Universities. His scientific interests have focussed on the population dynamics and biodiversity of birds and insects, with emphasis over the last decade on the impacts of global environmental change. He was elected FRS in 1989, awarded a CBE in 1997 and knighted in 2005 for his contributions to ecological science. He has been awarded numerous other national and international

prizes, including the Japan Prize 2004, and was elected as a Foreign Member of both the US National Academy of Sciences and the American Academy of Arts and Sciences in 2008. He is married to Dot, with two grown up children and five grandchildren.

His lecture will cover the following themes:

The lecture will summarise a review of England's protected area network, commissioned by the outgoing Labour government, and accepted by the new coalition. The review concludes that whilst the network of protected sites largely established since the end of the second world war has been valuable in slowing down the loss of species and habitats, it has failed to halt the loss of England's biodiversity, and looks increasingly inadequate in the face of climate change. The report argues for a step-change in the way that species and habitat conservation are delivered in England. Its recommendations can be summarised in four words: 'more, bigger, better and joined'. The scientific evidence points overwhelmingly to the need for more sites, bigger (landscape-scale) sites, better managed sites and better connections between sites in the form of 'stepping stone' reserves and corridors. The means to delivering these ends will be discussed, particularly the need to establish Ecological Restoration Zones in England. The report sets out a long-term vision – a desired direction of travel – and recognises the critical importance of collaboration between statutory agencies, local authorities, the voluntary sector, private land-owners and managers to deliver that vision.

4 March 'Agri-environment schemes – can they help to reverse biodiversity declines?'

Nigel Boatman is Head of Agri-Environment and Science Leader in the Land Use and Sustainability team at the Food and Environment Research Agency, where he has worked for ten years. He is an agro-ecologist with 25 years experience in agri-environmental research and policy. He has led several evaluations of agri-environment schemes, advised government departments on their design, and recently co-ordinated a review of their environmental benefits. In April 2010 he organised a conference entitled: "Agri-environment schemes, what have they achieved and where do we go from here?" He was formerly Director of a research and demonstration farm incorporating environmental management into a commercial farming operation.

His lecture will cover the following themes:

Agriculture is the major land use in Europe and it is now well established that major losses of biodiversity have occurred on agricultural land over the past 50 years or so. These declines have been linked to the agricultural intensification, which has greatly increased food production but has had negative environmental impacts. Agri-environment schemes help farmers to enhance environmental sustainability whilst maintaining agricultural production, and help to combat the observed losses in biodiversity. The first scheme began in the 1980s, and they are now in place across Europe. However, scheme design varies widely between countries and in many cases there is a paucity of information on which to gauge effectiveness. Some of the best data derives from the UK, and the talk will draw particularly on this. The lecture will consider the track record of agri-environment schemes so far, with examples of where they have worked well, where they have been less successful and how measures are being implemented to improve their performance.

11 March 'Towards fair and sustainable fisheries'

Aniol Esteban is head of environmental economics at the New Economics Foundation (2012) and UK coordinator for OCEAN2012, a coalition of more than 100 organisations working to transform EU fisheries. He holds an MSc in environmental economics from UCL, London, and a degree in Biology from the Universitat de Barcelona. He works to drive change towards enhancing the natural system that underpins our society by revealing how nature and the environment benefit our society and by making the environment central to economic and policy practice. Key working areas include: economics for fair and sustainable fisheries in the EU; alternative Carbon markets; critical natural capital; and nature, well-being and sustainable lifestyles. Previously he worked with the RSPB, and for WWF's Mediterranean Programme.

Rupert Crilly has previously worked in scientific research. In Brunei he worked on Orang-Utan conservation, assessing the rainforest for their potential rehabilitation. In Canada he has researched bone metabolism, moving to France to study the evolution of bone mineralization. He has published in the peer-reviewed journal PLoS on Natural Killer cells, focussing on the immune cell synapse. This work aimed to show how signals from cells such as cancers and virus-infected cells can elicit an immune response.

Rupert holds a first degree in biology at Imperial College London, from which he has moved into economics, studying courses at LSE and an MSc at UCL, London. His main research areas are the impact of growth on the environment, valuing the environment and how policy can be made to increase sustainability.

Their lectures will cover the following themes:

Fish stocks are valuable renewable resources that deliver huge benefits to society. Optimally managed, they provide a long-term and stable source of food, income and employment, contributing to the well-being of many people around the world. There is a very strong case to manage our fish resources within environmental limits and in a socially just way. But unfortunately we are failing on both fronts. This talk will analyse the causes that lead to overexploitation of fish stocks and the opportunities ahead to build fairer and more sustainable fisheries models, with a particular focus on the EU.

18 March 'Island Invaders: what are the biodiversity impacts of invasive species and what are the conservation solutions?'

Richard Cuthbert is a senior conservation scientist within the International Research Section of the Royal Society for the Protection of Birds. He has been involved in a programme of conservation work on islands in the UK Overseas Territories for over ten years, as well as in the conservation of vultures in South Asia. His research on the impact of invasive mammals has involved working at some of the world's remotest islands groups, including Tristan da Cunha and the Pitcairn Island group. As well as researching the impact of invasive species, he is actively involved in working towards the conservation solutions, in particular planning for the eradication of invasive rats and mice from these two island groups.

His lecture will cover the following themes:
Islands harbour some of the world's most spectacularly diverse biodiversity, often holding unique species and vast populations that have evolved in isolation and prospered in the absence of mammalian predators. However, islands are also especially vulnerable to the negative impact of invasive species, no more so than in the case of introduced mammalian predators. These introductions have caused severe losses of biodiversity in the past, as well as ongoing losses in to the future, and are one of the major causes of the world's ongoing extinction crisis. As well as outlining the problems and impacts of introduced species, the talk will also focus on the solutions: most notably the control and eradication of invasive species. He illustrates the problems of invasive species and solutions with examples from two major RSPB projects which are planning to eradicate invasive rats and mice from Henderson Island in the Pacific and from Gough Island in the South Atlantic.

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The Linnean Society of London is the world's oldest active biological society. Founded in 1788, the Society takes its name from the Swedish naturalist Carl Linnaeus (1707–1778), whose collections have been in its keeping since 1829. The Society promotes the study of all aspects of the biological sciences, with particular emphasis on evolution, taxonomy, biodiversity and sustainability. It encourages and communicates scientific advances through its three world-class journals, special publications, meetings and website. The Society also reaches out to future biologists through schools and educational programmes.

Web site : http://www.linnean.org

The Ecology and Conservation Studies Society aims to foster interest in conservation based on sound ecological principles by arranging lecture courses, field visits and meetings, and by keeping its members up to date on literature, new concepts, research and practical field studies techniques. Membership is open to all who have relevant experience or interests. Non-members are most welcome at these lectures series.

Web site : http://www.bbk.ac.uk/environment/prospective/ecss

The ECSS Autumn 2011 Free Public Lecture Series will be run in collaboration with **Birkbeck Institute of Environment**. It will be held on six consecutive Friday evenings from mid October to mid November 2011. This series will examine, in depth: - **Woodlands and Forests and their relationship with us**.

Watch our website; - details will be posted by summer 2011.

http://www.bbk.ac.uk/environment/prospective/ecss