



Speaker Biographies and Overview of Presentations

Martin Harper, Director of Conservation, RSPB

Martin Harper has been the RSPB Conservation Director since May 2011 and oversees the Society's work on conservation policy and advocacy, research and acquisition of nature reserves. Prior to joining the RSPB in 2004 as Head of Government Affairs, Martin spent five years as Conservation Director at Plantlife International, having previously run Wildlife & Countryside Link. Educated at Oxford and University College London, Martin undertook fieldwork in the Comores and Mongolia before embarking on a career in policy and advocacy.

Lord Taylor of Holbeach, Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs

Lord Taylor entered the House of Lords in 2006, having been made a life peer as Baron Taylor of Holbeach, of South Holland in the County of Lincolnshire. Between 2006 and 2010, he held several Opposition spokesperson positions. Between the 2010 election and his appointment to Defra, he was Government spokesperson for the Cabinet Office, Energy and Climate Change, and Work and Pensions. He was created a Commander of the Order of the British Empire in 1992 for political service and served as Chairman of the National Conservative Convention from 2000 to 2003.

Dr Jason Lowe, Met Office Hadley Centre

Dr Jason Lowe is Head of Climate Knowledge Integration at the Met Office Hadley Centre and lead scientist on the AVOID programme, which aims to provide stakeholders with climate information to better understand and plan for potentially dangerous future climate changes. After obtaining a degree in pure and applied Physics, he focused on climate science and was awarded a PhD in 1997. His research interests include changes in sea level, reversibility of climate change, and climate model experimental design.

Our Earth's changing climate: observations and projections

Dr. Lowe will discuss observations of how the climate has changed during the instrument record period, and the evidence for a human contribution to the causes of climate change. The focus will then move to projections of the future from climate models, with an emphasis on the 21st century. Increasingly there is a need for more regional and local scale projections and, while the precise state of the future climate remains uncertain, there is a great deal of useful information that can be provided.

Dr Mike Morecroft, Natural England

Dr. Mike Morecroft leads Natural England's work on climate change – both in terms of developing the evidence base and embedding adaptation and mitigation in our work programme. Prior to joining Natural England in 2009 he worked at the Centre for Ecology and Hydrology at Wallingford and has carried out research on the ecological impacts of climate change since the late 1980s. He is a Senior Visiting Research Associate at Oxford University's Environmental Change Institute.

Changing ecosystems: from the globe to our doorstep

Evidence that the world's ecosystems are changing in ways that are consistent with the impacts of climate change has become increasingly clear in recent years. The timing of seasonal events has shifted towards earlier timing of spring events such as the emergence of leaves from buds and the hatching of eggs. There is compelling evidence that species distributions are shifting to higher altitudes and latitudes and indications are emerging that the composition of ecological communities is changing. This biological evidence of increasing temperatures corroborates physical measurements of historical climate change and is a common signal across many areas of the world. These changes are also an early warning of more significant changes that may come, especially when considered alongside the effects of changing weather patterns and extreme climatic events. The UK has been one of the most intensively monitored and studied countries in the world and there are clear examples of the emerging risk to our own ecosystems.

Professor John Grace, University of Edinburgh

John Grace is Emeritus Professor at Edinburgh university, with a long career there in environmental biology and ecological research. This included pioneering work on the carbon balance of rainforests, and the ability of climax vegetation to sequester carbon and respond to drought. He has published more than 200 scientific papers and also written two textbooks. He co-founded Functional Ecology and was editor from its inception in 1987 until 1999. A former President of the British Ecological Society, he received the BES Medal in 2007 and is also a Fellow of both the Royal Society of Edinburgh and the Institute of Biology

Dr Matt Frost, Marine Biological Association

Dr Matthew Frost is Deputy Director, Policy and Knowledge Exchange at the Marine Biological Association and coordinator of the Marine Environmental Change Network (MECN). His main focus is the provision and translation of marine scientific research to inform policy and to that end he is chair of the Marine Climate Change Impacts Partnership (MCCIP) work group and vice-chair of the Healthy and Biologically Diverse Seas Evidence Group. With a scientific background in marine benthic ecology Dr Frost has published numerous scientific papers and reports.

Oceans – a world of Change

The oceans cover 71% of the planet by area and contain an enormous diversity of habitats and species. There is more phyletic diversity and unique phyla in the ocean than in the terrestrial or freshwater environment. The impacts of climate change on marine biodiversity are becoming better understood although it is still challenging to identify drivers of change in an environment subject to multiple pressures. Climate change affects marine biodiversity via a number of physical processes including increased seawater temperatures, sea level rise and changes to ocean circulation. Increased carbon uptake is also leading to acidification of the worlds seas. Examples of impacts on marine biodiversity include changing species distributions and alterations in marine communities (leading to effects at the ecosystem level) and loss of habitats through sea level rise. Many components of marine biodiversity such as coral reefs and fish have high cultural and economic value and it is imperative that the appropriate adaptation measures are put in place.

Dr Colin Summerhayes, Scott Polar Research Institute

Colin Summerhayes is an Emeritus Associate at the Scott Polar Research Institute (SPRI) of Cambridge University. Until April 2010 he was the Executive Director of the Scientific Committee on Antarctic Research (SCAR), based at the SPRI. He was also a member of the Steering Committee for the International Polar Year 2007-2008, and co-edited the major report

Antarctic Climate Change and the Environment. Colin joined SCAR from UNESCO, where he directed the Global Ocean Observing System Project Office within the Intergovernmental Oceanographic Commission. He is a past Director of the UK's Institute of Oceanographic Sciences Deacon Laboratory, now merged into the National Oceanography Centre, of which he is a former Deputy Director. His career includes spells in academia, government and industry in several countries. He holds a PhD in Geochemistry from Imperial College, London, and MSc and DSc degrees in Geology from Victoria University, Wellington, New Zealand, and has also carried out research at Oxford, University College London, the University of Cape Town and the Woods Hole Oceanographic Institution in Massachusetts. He has published 7 books and 230 research papers and other articles. He is President of the Society for Underwater Technology, a Vice President of the Geological Society of London, and Chairman of the International Advisory Board for the Korea Polar Research Institute.

Poles Apart – Wildlife at Hotspots for Warming

Global warming is amplified at the poles as sea ice melts. The Arctic is warming faster than the Antarctic, because the ozone hole keeps Antarctica cold. While Arctic sea ice is decreasing, Antarctic sea ice is not. In the Arctic, wild reindeer and caribou are declining, as are 8 out of 12 polar bear populations. Warming and loss of sea ice west of the Antarctic Peninsula has led to declines in Adelie penguins and krill, and an invasion of spider crabs. With continued warming, benthic invertebrates are likely to decline, but grasses and mosses will expand. Slow acidification of the surface ocean will affect the Southern Ocean most, likely leading to a decline of pteropods near the base of the food chain. Comprehensive observing systems are required to monitor and detect changing biodiversity as the basis for projecting further change and to underpin conservation planning.

Professor David Hill, Deputy Chair, Natural England

David was appointed Deputy Chair in February 2011, his responsibilities include: Land Use, Local Authorities and developers, Northumberland and Yorkshire Dales National Park, Natural England's Science Advisory Committee, Audit and Risk Committee, and Non-executive Arms Length Body sub-group.

David has experience in consultancy, nature conservation and company business strategy. He runs an ecological consultancy company, is Chairman of The Environment Bank Ltd and was previously Chief Scientific Adviser to RPS Group plc. Over the past three years he has been actively involved in promoting environmental markets to provide new and innovative ways of mitigating impacts on ecosystem services from development, industry and corporate business. David is a Fellow and past President of the Institute of Ecology and Environmental Management. He has published extensively on ecological issues over the past 25 years. He is a member of the RSPB, BTO, Norfolk Wildlife Trust and a life member of the National Trust.

Professor Bill Sutherland, Cambridge University

William Sutherland holds the Miriam Rothschild Chair in Conservation Biology, University of Cambridge. He has written three books and edited five others. He established and is series editor for the Techniques in Ecology and Conservation series with Oxford University Press and is an Editor in Chief for Conservation Letters and for Conservation Evidence. He set up the Gratis book scheme to give conservation books to developing countries, which donated over five thousand new books to 132 countries. He has been awarded the Marsh Award for Ecology, the Scientific Medal of the Zoological Society of London and the Marsh Award for Conservation Biology. He is particularly interested in developing new links between science and practice and in expanding the use of evidence-based conservation including through website www.ConservationEvidence.com.

Issues on the horizon – beyond our current knowledge

We have missed some issues that in retrospect should have been foreseeable. For example, as a community we did not seem sufficiently prepared for the shift to biofuels initiated by President Bush's State of the Union address and so did not contribute sufficiently to the debate about the potential consequences. Partly as a result of this we have initiated regular horizon scanning of conservation issues to identify issues that could be important, but which have received too little attention. I will describe why such a process is useful and how it can be applied to climate change. I will consider three main issues: feedback processes that may influence the magnitude of climate change, unexpected consequences of climate change and the possible consequences of suggested responses to climate change.

Professor Chris Thomas, York University

Chris Thomas is Professor of Conservation Biology at the University of York, having previously having been a Research Fellow and then Professor at the University of Leeds. During the 1990s, Chris's research concentrated on understanding and predicting how species have responded to habitat loss and fragmentation at a landscape scale. More recently, he has worked on how animal populations are responding to climate change, again emphasising the importance of large scale patterns and processes to the survival of species. He is also interested in developing rational conservation strategies to minimise the extinction risks from climate change. Chris has published over 225 scientific articles and he has been a co-editor of nine scientific journals. His work is widely quoted in the scientific literature and media, and was influential in the 2007 Intergovernmental Panel on Climate Change reports. Chris has received the Scientific Medal of the Zoological Society of London (1998), the President's Medal of the British Ecological Society (2001), the Marsh Award for Conservation Biology (2004) and the Marsh Award for Climate Change Research (2011).

Nature conservation for different world scenarios

Species have been shifting towards the poles at an average rate of around 17 kilometres per decade in recent years; and these changes are now unequivocally linked to climate change. However, a great deal of variation around this average makes it very hard to draw up firm plans to alleviate the potential problems that will arise. If we project into the future, two degrees warming is already expected to be fatal for many species and ecosystems, four degrees disastrous and six unimaginable. The status quo of ecosystem management and conservation will no longer operate. Keeping things as they are becomes impossible and invasive species will be as widespread as the former natives. We are left managing ecosystems that no longer resemble what used to exist, and saving species wherever we can, including releasing them into areas far outside their historical ranges. What will conservation look like in this Anthropocene Park?

Joanna Phillips, Head of Climate Change Adaptation, WWF-UK

Joanna Phillips has been Head of Climate Change Adaptation at WWF-UK since September 2010. Before this she was Head of International Development Policy at the Royal Society for the Protection of Birds (RSPB), the UK Partner of BirdLife International. She works at the interface of environment and international development, drawing on over 10 years experience in policy, advocacy and stakeholder engagement at international, national and local levels. She chaired the Development and Environment Group (DEG) of BOND from 2005 - 2010, and currently co-chairs the DEG Adaptation Group.

Joanna was born in Kenya and raised and educated in the UK. She graduated with first class honours in Environmental Science from Plymouth University and went on to research indoor air quality at Imperial College (MPhil, 1993).

Climate change and the interdependence of people and nature

This presentation will hear how local people in Honduras are trying to deal with increasing climatic uncertainty and weather related threats which are complicating and compounding other environmental and development challenges, and affecting livelihoods and wellbeing now.

We will discuss the links between natural systems and people through the concept of ecosystem services, and what climate change means in both developing and developed countries. We will address the interconnectedness of our world and look at the regional implications of a '4 degree future'. Both mitigation and adaptation are urgent and crucial, and can deliver multiple benefits for people and nature. We need to recognise and better understand the significant and multi-faceted value of biodiversity and the vital role of ecosystems in this, and how it is crucial for making informed decisions and for evaluating and managing trade offs as we tackle climate change and other interconnected global challenges.

With thanks to Osvaldo Munguia, native indigenous person from La Mosquitia, Honduras and National Director and co-founder of Mopawi and to Mike Wiggins from Tearfund for recording a personal perspective of climate and environmental change in La Mosquita for this conference.

David Norman, Director of Campaigns, WWF-UK

David Norman has been WWF-UK's Director of Campaigns since April 2008. Before that he was WWF's Head of Communications and Head of Public Affairs. He is also on the board of Saferworld, which works with local people and through governments and international bodies to prevent violent conflict and encourage cooperative approaches to security. Before WWF, David worked in senior campaigning, communication and policy roles in Westminster, at Amnesty International and in international development charities such as Oxfam and Save the Children.

Professor Robert Watson, Chief Scientific Advisor, Defra

Professor Watson's career has evolved from research scientist at the Jet Propulsion Laboratory: California Institute of Technology, to a US Federal Government programs manager/director at the National Aeronautics and Space Administration (NASA), to a scientific/policy advisor in the US Office of Science and Technology Policy (OSTP), White House, to a scientific advisor, manager and chief scientist at the World Bank, to a Chair of Environmental Sciences at the University of East Anglia, the Director for Strategic Direction for the Tyndall Centre, and Chief Scientific Advisor to the UK Department for Environment, Food and Rural Affairs. In parallel to his formal positions he has chaired, co-chaired or directed international scientific, technical and economic assessments of stratospheric ozone depletion, biodiversity/ecosystems (the GBA and MA), climate change (IPCC) and agricultural S&T (IAASTD). Professor Watson's areas of expertise include managing and coordinating national and international environmental programmes, research programmes and assessments; establishing science and environmental policies - specifically advising governments and civil society on the policy implications of scientific information and policy options for action; and communicating scientific, technical and economic information to policymakers. During the last twenty years he has received numerous national and international awards recognising his contributions to science and the science-policy interface, including in 2003 Honorary Companion of the Order of Saint Michael and Saint George from the United Kingdom; 2010 the Blue Planet Prize and 2011 being elected as a Fellow of the Royal Society.

Moussa Na Abou Mamouda, AfricaAdapt / ENDA Senegal

I defended my Masters of Sciences in Environmental Sciences in 2004 at Cheikh Anta Diop University of Dakar. A key area of this included carbon sequestration as a means of adaptation and mitigation in farming systems. I am currently involved in a PhD program at Cheikh Anta Diop University investigating food security and climate change adaptation in the Sahel, with a

case study on Maradi district, southern Niger. This focuses on understanding local community coping mechanisms, for the design of better policy frameworks against food insecurity and for adaptation to climate.

I work for ENDA since 2001, actively involved in all ENDA climate change-related projects including the Climate Change Capacity Development (C3D) support programme to country National Adaptation Programs of Action, the programme on Advancing Capacity to support Climate Change Adaptation, and Climate Change Adaptation in Africa. I coordinated several climate NGO networks including Capacity Strengthening for Least Developed Country Civil Society Organisations on Climate Change Adaptation; the Climate and Development network and the knowledge-sharing AfricaAdapt Management Group since August 2010.

Development, environment and climate change: an African perspective

Africa is extremely vulnerable to climate change: agricultural yields could fall by up to 50 per cent by 2050 in some countries and, by 2020, up to 250 million people are projected to face increased water stress due to climate change. Poverty increases vulnerability. Adaptation is an urgent priority for Africa, including to build resilience and adaptive capacity of local people and the climate sensitive nature resource base that they depend upon.

Nigeria's damming of the Maradi River illustrates a typical interaction between climate, environment, ecosystem services and governance. It has provided benefits for some, but has changed ecosystems and undermined ecosystem services, and led to conflicts between farmers and herders. High-level consultations have been required between Niger and Nigeria on the sharing of water for irrigation, including to address a food deficit. The interplay of climate change, ecosystem services and governance issues are becoming national security issues.

Africa's efforts to address climate change and achieve climate compatible development goals need solidarity with developed countries. Africa has an opportunity to pursue climate compatible, sustainable development paths that help Africa develop and protect its natural environment. We need to agree on a second Kyoto commitment period and a legally binding treaty that will result in the action required to avoid dangerous climate change, in Africa and elsewhere.