



## Relu Newsletter

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#### **1 Managed honeybees linked to new diseases in wild bees**

Diseases that are common in managed honeybee colonies are now widespread in the UK's wild bumblebees, according to research published in *Nature*. The study suggests that some diseases are being driven into wild bumblebee populations directly from managed honeybees. It showed that deformed wing virus (DWV) and the fungal parasite *Nosema ceranae* can infect worker bumblebees and, in the case of DWV, reduce their lifespan. The study is part of the [Insect Pollinators Initiative](#) and is a joint project between Royal Holloway, Queen's University Belfast and Exeter University.

## **2 Better planning for our river catchments**

The management of our river catchments and the ecosystems services that they provide is an increasingly complex task. Historically single sectors have been prioritised in a given location - for example farming, biodiversity or recreation - but this has failed to address the ways in which such different services are interlinked. Catchment partnerships are playing an important role in changing the way we undertake this task and rivers trusts are key to the new approach. The latest policy and practice note in the Living With Environmental Change series aims to guide catchment partnerships as they plan for this important function. "[Catchment partnerships – better planning for our rivers and landscapes](#)" may be downloaded from the [LWEC website](#) or hard copies may be obtained from [anne.liddon@ncl.ac.uk](mailto:anne.liddon@ncl.ac.uk).

## **3 New research projects will support UK tree and plant health**

The societal benefits of the UK's trees are estimated at around £1.8 billion per year but in the last few years several new pests and diseases have emerged as significant risks to tree health and plant biosecurity. Seven new research projects have received a share of £7 million to help address threats to UK forests, woods and trees. The multi-disciplinary [Tree Health and Plant Biosecurity Initiative](#) will generate knowledge to tackle pests and diseases and to support the future health of the UK's woodlands, commercial forests and urban trees.

## **4 Health and social services will need to adapt to climate change**

Maintaining essential services in the face of climate change is a growing challenge across the public sector. The NHS needs to ensure that its estate meets sustainability requirements and community teams are already having to adapt to extreme weather events. At the launch of the new [NHS Sustainable Development Strategy](#) two new notes in the Living With Environmental Change policy and practice note series were unveiled: "[Ensuring resilience in care for older people](#)" guides community teams who are planning for a changing climate, pointing them to the new [Built Infrastructure for Older People's Care in Conditions of Climate Change toolkit](#), while "[Avoiding summer heating while saving energy in hospitals](#)" outlines best practice for NHS estate managers in planning new buildings and refurbishing the old. Both may be downloaded from the [LWEC website](#) or hard copies are available from [anne.liddon@ncl.ac.uk](mailto:anne.liddon@ncl.ac.uk).

## **5 Exploring solutions for water and land management**

Water is very much in the news at the moment, not for the best of reasons. How can professional advisers help farmers and land managers make the most efficient use of this important resource - and the range of ecosystem services that are affected by it - while avoiding the obvious problems? In response to these dilemmas The [Environmental Sustainability Knowledge Transfer Network](#) held an event in conjunction with the [University of the West of England](#), the [Royal Agricultural University](#), and [Landbridge](#). In the [Landbridge blog](#) Kate Russell of the [Central Association of Agricultural Valuers](#) explains how "Systemic Solutions at the landscape-water interface" brought together advisers, academics, policy makers and water companies to explore some of the opportunities and barriers to the use of farmland to develop wetland-based solutions in the delivery of ecosystem services.

## **6 Improving knowledge exchange on water management**

A new research project is being funded by Defra, the Environment Agency, NERC and the Scottish Government on [Developing More Effective Models for Managing Water from the Local to the National Scale from a Risk and Pollution Perspective](#). The three year programme aims to promote knowledge exchange and collaboration between researchers, developers and users of environmental models, evaluate the performance of a selection of existing models, and develop approaches to integrate them into an enhanced UK environmental modelling framework.

## **7 Relu Director receives royal award for Newcastle's rural research**

Duke of Northumberland Professor of Rural Economy Philip Lowe and colleagues from Newcastle University received the Queen's Anniversary Prize at Buckingham Palace in February. Philip, who directed the [Rural Economy and Land Use programme](#), was responsible for establishing the [Centre for Rural Economy](#) at Newcastle in 1992 and the Prize, presented by Her Majesty the Queen and the Duke of Edinburgh, was awarded in recognition of Newcastle's internationally-renowned research into sustainable rural economies and societies, led by the Centre for Rural Economy, which has influenced policy and practice around the world.

## **8 Teaching resource gives pupils insight into value of peatlands**

[A new schools resource](#) for A and AS Level Geography and Higher Geography and Biology pupils has been launched, drawing on the research carried out by Relu's [Sustainable Uplands: Learning to Manage Future Change project](#). Hosted by UK National Parks, it has been developed in collaboration with learning and teaching consultant Jenny Townsend, Cairngorms and Peak District National Parks, the International Union for the Conservation of Nature and RSPB. The resource is based on the latest research on peatlands, giving pupils a unique insight into the hidden beauty and value of these environments to UK society, how they have been damaged, and what we can do to restore and protect them.

## **9 Radical action required if UK rivers are to meet European targets**

The Thames is just one of our waterways that is not on course to meet European Water Framework Directive targets on nitrate and phosphate pollution. In a [podcast for NERC's Planet Earth online](#) Paul Whitehead, who leads LWEC's Macronutrient Cycles Programme and Mark Barnett from the Environment Agency explain the problems and what measures are being taken to address them.

## **10 Natural Capital report urges better understanding of natural assets**

The "[State of Natural Capital](#)" report published by the [Natural Capital Committee](#) urges the Government, as a matter of priority, to take steps to improve our understanding of natural assets, focussing on those that are not being used sustainably and are important for our wellbeing. The report also recommends that the value of natural capital be integrated into decision making to enhance the value for money for taxpayers and generate net benefits for society.

## **11 Latest food security research on line**

The Global Food Security programme has launched its latest issue of [Insight](#) about severe weather and UK food resilience. Severe weather events such as unusual or unseasonal changes in weather patterns including droughts, heat-waves, floods and storms are likely to become more severe in the future. This will impact on our agriculture and environment and has serious implications for food security.

### **12 Rufopoly plays out well for government staff**

The highly successful planning game [Rufopoly](#), developed by Alister Scott and team as part of their Relu project [Managing Environmental Change at the Rural Urban Fringe](#) is being used in more and more different contexts. It was recently played by staff at the Department for Communities and Local Government at a staff development day and has been adapted for use in the consultation phase for Greater Birmingham and Solihull's Local Enterprise Spatial Plan – which was commended in the Placemaking Awards 2014.

### **13 Smart app supports smart agriculture**

Global agri-food businesses and NERC-funded scientists have collaborated to create a free new web app aimed at helping farmers reduce their carbon footprints. Known as the [Cool Farm Tool](#), it is the creation of NERC Knowledge Exchange Fellow Dr Jonathan Hillier of the University of Aberdeen, working alongside companies including PepsiCo, Unilever, Heineken, Marks & Spencer, Tesco, Yara and Fertilizers Europe. The tool gives farmers a simple way to access the latest science so they can understand the greenhouse gases their farms release, and how to reduce them most effectively.

### **14 Not enough bees to pollinate crops, say scientists**

Researchers, led by Professor Simon Potts at the University of Reading, say that [Europe only has two thirds of the honeybee colonies it needs to pollinate crops](#), with a deficit of more than 13.4 million colonies. They compared the numbers of honeybee colonies with the demand for pollination services across 41 European countries, and mapped the changes between 2005 and 2010. They found that in more than half of European countries - including the UK, France, Germany and Italy, there were not enough honeybees to properly pollinate the crops grown. The problem was particularly acute in Britain, which has only a quarter of the honeybees it needs to pollinate crops. The findings suggest that agriculture in many countries is increasingly reliant upon wild pollinators, such as bumblebees, solitary bees and hoverflies.

### **15 Cost-effective flood protection for Pickering**

Following on from Relu's [Understanding Environmental Knowledge Controversies](#) project undertaken with local residents, construction has begun on a flood storage bund for Pickering in North Yorkshire. The bund will provide around 90% of the required flood water storage for 1:25 year protection for the town. The other 10% of storage is already in place through woody debris dams, riparian tree planting, moorland drain blocking and peat restoration higher in the catchment. At a time when money is in short supply and highly engineered schemes become unaffordable, this method of cost effective flood protection becomes all the more important.

### **16 University research helps walkers and cyclists learn about nature – and invest in it**

[Researchers from Birmingham City University](#) have been examining Visitor Giving schemes, which take donations from people visiting the countryside to fund environmental and community projects that give something back to the local area. The research team has been exploring whether such schemes might be able to quantify specific environmental benefits that visitors can sponsor, boosting visitor donations and creating better environmental outcomes. Funded by Defra, the research is [one of ten pilot studies](#) exploring how to apply the concept of payments for ecosystem services.

A key outcome of the research is the development of a set of smart phone apps for walkers and cyclists, which provide them with location-based information about the benefits provided to society from the landscapes they're travelling through.

### **17 Involving local communities in recognising what nature does for people**

Valuing nature's services and involving local communities are two important components of an ecosystems approach. The challenge of putting these two components together is only just beginning to be recognised. The Ecosystems Knowledge Network, in partnership with the Lewes and Ouse Valley eco-nomics project (L&OVe), is organising a field trip to East Sussex on 5<sup>th</sup> June 2014. This will allow participants to find out more about the work that L&OVe has been doing to engage local people in recognition of the value of nature, to improve their wellbeing and the resilience of the local economy. More information is available on the [Ecosystems Knowledge Network website](#). The free event is for all organisations that work with communities, including local authorities, Wildlife Trusts and Local Nature Partnerships.

### **18 Fera Chief Scientist moves to Newcastle**

Professor Rob Edwards who was Chief Scientist at Fera, based in York, has moved to Newcastle University to take up the post of Head of the [School of Agriculture, Food and Rural Development](#).

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