Issue No. 12 | Summer 2005

NEWS IN BRIEF

A little grazing is better than none

REDUCING grazing pressure on upland pastures has been found to improve biodiversity, more so than complete removal of livestock. These are the findings of a study led by the Macaulay Institute at Glen Finglas, in the Loch Lomond and The Trossachs National Park.

The study set out to determine the relationships between grazing levels and breeding success of upland birds by looking at food abundance and diet of the birds. The grazing experiments ranged from standard commercial stocking densities to no grazing. The initial results, after 18 months, show that low levels of grazing, at one third of standard stocking rates, are most beneficial to the diversity and numbers of invertebrates.

Meadow pipits, like this one, benefited from the reduced grazing regime

Dr Peter Dennis of the Macaulay Institute said "We found that in both the reduced grazing and grazing-free conditions there was a doubling of the invertebrate biomass, meaning there is more food available for the upland birds to find. However, meadow pipits nesting in the reduced grazing areas actually produced larger eggs, and we are seeing the first signs of improved breeding success in this species.

"Wildlife responses to changes in grazing in the hills can be slow and we are hoping to continue the trials to investigate the long term benefits of this type of grazing. The continuation of the experiment at Glen Finglas should also allow us to find out what else influences the numbers of birds that can successfully breed in an area. We are encouraged by these results, and we are confident that they can be applied to many other areas where conservation objectives are a priority.

"This research also gives us important clues about the consequences of potential changes in grazing brought about by reforms to the Common Agricultural Policy. Farmers are increasingly being asked to contribute to environmental improvements and enhance biodiversity in return for subsidy payments. We have demonstrated the positive side of reducing grazing pressure rather than completely removing livestock."

The first phase of this collaborative research was completed in December 2004 and was supported by a competitive funding initiative from SEERAD. Funding has recently been confirmed by SEERAD for the continuation of the project in 2005. The other partners were the Centre for Ecology and Hydrology (CEH) at Banchory, the Royal Society for the Protection for Birds (RSPB), the Scottish Agricultural College (SAC), Biomathematics and Statistics Scotland (BioSS) and the University of Aberdeen.

The research was conducted at the Woodland Trust's Glen Finglas reserve with comparative surveys at 12 RSPB study sites in the Scottish Borders.

For more information about this work please contact Peter Dennis: p.dennis@macaulay.ac.uk

Quality Counts

IN October 2004, The Macaulay Institute was accredited to the Quality Management Standard BS EN ISO 9001 (2000). The laboratories of our analytical services were already accredited to UKAS 17025 and this was reconfirmed in November 2004 by the UKAS Surveillance Team. The ISO 9001 (2000) standard applies to the whole institute, including our commercial companies.

Macaulay Unveils Virtual Landscape Theatre

Chief Executive Maggie Gill with MSP Lewis Macdonald at the launch of the Virtual Landscape Theatre

Photo: David Riley

MACAULAY'S new virtual reality facility which allows users to visualise changes to local landscapes, was hailed as "exciting" and "innovative" when it was officially opened by MSP Lewis Macdonald in May.

Dr Macdonald, then the Deputy Minister for Environment and Rural Development, said the mobile theatre – the first of its kind in the UK - was vital if Macaulay was to continue to improve the understanding of the complex issues surrounding land use and rural societies.

"The Institute has gathered an impressive spectrum of expertise under one roof," he said. "I have no doubt that you will make very good use of this facility to expand your important research work."

A key aspect of the Scottish Executive funded facility is that it can be taken out to local audiences across the country.

Dr Macdonald said: "I'm sure this will help more remote and far flung communities have a say in planning future changes for the environment.

"Allowing those in such communities to feel included in the research and decision making process is also an important part of our wider aspirations for both rural and urban Scotland."

Introducing the Macaulay Virtual Landscape Theatre P3

Chief Executive's Introduction

MACAULAY staff members are interacting with a growing range of people over land management issues in the UK and internationally. This Newsletter gives some recent examples across a spectrum from pasture management for horse owners in NE Scotland to natural resource management for villagers in Tibet.

These stories reflect both our enthusiasm for communication, and our willingness to use these interactions as an opportunity to learn. For example, we have learned from the other side of the world about the usefulness of participatory videos as tools for facilitating communication between farmers and their policy makers.

And we are bringing these ideas back to Scotland. We see our new Virtual Landscape Theatre as an equivalent tool, specifically to facilitate communication between stakeholders with an interest in the future of Scottish landscapes, and the relevant policymakers.

Landscapes are shaped by many factors and features, which range from the underlying rock formations, through water and vegetation (both natural and cultivated) to buildings and fences as further evidence of human activity. Some of these features have been there for centuries, even millennia, while others are more recent.

Within living memory, rapid changes in landscapes have generally been the results of the activities of man, but we are becoming increasingly aware of the rapidity with which climate change can impact on our landscapes. We have seen extreme weather events causing landslips and we read predictions of the potential impact on our coastlines.

Climate change has become a big issue on the political agenda, and research can make a major contribution to the rational setting of priorities. The Macaulay is well positioned to contribute to the debate, particularly in terms of the potential of Scottish soils to act as sources or sinks for carbon. The submission of our research proposals to SEERAD, in line with their new strategy, highlights areas where research on land management can influence both the factors contributing to climate change and how we respond to it and this is an area in which we anticipate investing more resources over the coming years.

We are therefore delighted that Professor John Schellnhuber has agreed to give the 29th Macaulay Lecture on Monday, 14 November 2005. Prof Schellnhuber is currently Director of both the Tyndall Centre, UK and the Potsdam Institute for Climate Impact Research in Germany. He has recently been awarded an honorary CBE in recognition of his major contribution to climate change research.

I hope you enjoy reading this issue of our Newsletter. As always we welcome feedback, both on its contents and the contents of our revised website.

Professor Maggie Gill

News in Brief

Explore "The Machair" – a new classroom teaching resource

THE Macaulay Institute has teamed up with Learning and Teaching Scotland to produce a new digital teaching resource for The Rural Land Resources section of Higher Geography. It is about machair (areas of coastal grassland formed on calcareous sands and almost unique to Scotland) and links aspects of our research with the needs of the school curriculum.

The Machair is an innovative resource, giving teachers access to detailed information in a format similar to a PowerPoint presentation. It is designed for use in the classroom, but can also be used by pupils for self-directed study. The Machair covers the Resources (physical and human landscape) of the Western Isles machair, describes the Land Use systems as well as highlighting some of the Conflicts and Solutions in these coastal landscapes. Topics include the geomorphology, crofting system, land use and ownership, renewable energy and conservation.

A live version of the resource can be found at http://www.macaulay.ac.uk/machair/. It has recently been distributed to all Scottish secondary schools on CD-ROM by Learning and Teaching Scotland. The whole package can also be down-loaded as a compressed file (1.5Mb) from the Learning and Teaching Scotland website: *http://www.ltscotland.org.uk*

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News in Brief

Introducing the Macaulay Virtual Landscape Theatre

THE Macaulay Institute has purchased a new research tool to aid public engagement over changes in the landscape.

The Virtual Landscape Theatre allows Macaulay scientists to create and demonstrate different future scenarios for land use.

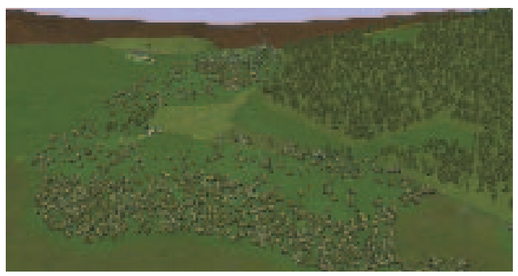
"Ask the audience" – getting feedback on the virtual landscape

These scenarios can be linked to policies or plans to examine potential conflicts and facilitate resolutions. The theatre can be used with, for example, landscape professionals, land managers, policy makers or the general public

The state-of-the-art facility, which uses computer generated landscapes to help people visualise planned landscape changes, was described by MSP Lewis Macdonald as a "real asset" in achieving the objectives laid out in the Scottish Executive's research strategy, which was announced in January.

The large curved projection system allows small groups of people to be visually 'immersed' in a computer generated landscape. This system gives people the opportunity to experience landscapes by moving around the virtual world and providing feedback on what they see.

If you would like to find out more about the Virtual Landscape Theatre, please contact Professor David Miller (d.miller@macaulay.ac.uk)



An example of a virtual landscape

Teamwork helps conservation of willows

A THREE year study of montane willow scrub by a group of scientists from Scottish research institutions has revealed important insights into species diversity and how sub-arctic willow communities function.

The team has been able to advise on guidelines for restoration of this endangered habitat with the knowledge gained delivered directly to the people involved in the conservation effort.

"This has been a great project to work on, as it illustrates how a combination of genetic and ecological approaches can successfully address the practical problem of conserving our Scottish willows," says Glenn Iason of the Macaulay Institute, who is joint coordinator of the project.

"For example, the genetic work suggests that some willow species reproduce sexually more than others. But our observations show that successful pollination, seed dispersal and establishment all require very specific sets of conditions, so successful sexual reproduction is therefore achieved only sporadically."

Montane willow scrub is one of the UK's most endangered habitats; apart from a few fragments in the Southern Uplands and the Cumbrian Lake District, it is found only in the Scottish Highlands. These few remaining patches hang on in often precarious locations such as inaccessible ledges and crags. This keeps them out of the reach of grazing sheep and deer but vulnerable to erosion and rock fall as well as genetic isolation.

Pete Hollingsworth, project coordinator at the Royal Botanic Garden Edinburgh explains: "The fragmented willow populations presented a real problem; conservation work urgently needed to be done but there was a fear of doing it in a knowledge vacuum.

"With the financial support from SEERAD, we were able to assemble a diverse team with the conservation interest at Edinburgh and Aberdeen Universities, ecological research experience at the Macaulay Institute, numerical skills from experts at Biomathematics and Statistics Scotland (BioSS), state-of-the-art molecular genetics from the Scottish Crop Research Institute (SCRI) and land management expertise from the Scottish Agricultural College."

More information about the project and its results can be found at:
http://rbg-web2.rbge.org.uk/willow/

News in Brief

Himalayan villagers' visit to Aviemore

A RECENT workshop hosted by The Macaulay Institute brought an international group of researchers and policy makers face to face with villagers from Himalayan communities, in the Highland resort of Aviemore.

The aim was to discuss ways of tackling issues surrounding the management of natural resources and the villagers brought "participatory videos" to help them put across their side of the story.

These videos are made in rural communities by local people, with professional assistance, and give an added voice to locals when faced with the sometimes intimidating prospect of dealing with government officials or researchers.

Grant Davidson, who coordinated the workshop, spoke of the challenges faced in making this event happen: "The workshop was originally due to take place in Nepal, but with the recent political instability there we made the last minute decision to bring it to Aviemore instead.

"On top of the usual headaches of organising a workshop with international delegates, we had the added complication of getting local villagers to the UK, most of whom didn't even have passports six weeks before the start of the workshop.

"High profile media concerns about migration and asylum seekers have meant that the rules for getting people into the UK are incredibly strict – it was only when we were faced with the prospect of getting visas for 'ordinary people' that we realised how hard they are to obtain quickly, even with the help of embassy staff and local agents.

"In the end we were unable to get all of the invited villagers to Aviemore, despite one group driving across China from Tibet to Beijing to apply for their visas. It was frustrating for us, but devastating for those who had made the videos and were then unable to make the trip of a lifetime to the UK to present their work in Aviemore."

Despite the problems, a few of the invited villagers were able to make it, and the project team were happy with the outcomes of the workshop. The workshop is part of an EU funded project called NORMA (Natural Resource Management in the Mountain Regions of Asia). This one year project aims to identify key research requirements for natural resource management, to support existing policies for sustainable mountain development, in the semi-arid

areas of the Karakoram Hindu-Kush Himalayan region.

Chris Lunch of Insight, one of the partners in the NORMA project, commented, "We are pleased with how effective the participatory videos have been in helping rural communities find their voice, and we are looking forward to using these techniques throughout the project."

The Macaulay Website – more than just a new look

OVER the last few months we have taken apart our website and reconstructed it in an attempt to make it more user-friendly and relevant to you.

We have selected six issues that we think are important to rural Scotland and based our website around these. We hope that this makes it easier for you to find what you are looking for. These issues also overlap with SEERAD's new Science Strategy, so we hope that this puts us in a good position to look ahead to communicating the outcomes of future research programmes.

Please visit our new website at http://www.macaulay.ac.uk and let us know what you think.

The Macaulay Institute Newsletter Summer 2005

News in Brief

Rewarding long service

EARLIER this year we recognised the loyalty of 33 long-serving staff members, who collectively have given 894 years of service to the Institute. The employees, who range from administration and support staff to senior scientists, have each spent between 20 and 40 years of their working lives at the Institute.

"Many visitors comment on the friendly atmosphere and the fact that colleagues have a genuine interest in the well-being of their workmates," said Chief Executive, Professor Maggie Gill.

"In addition, the nature of our work means that we can often see positive benefits resulting from the research we carry out, which results in people being happy in their work. The Macaulay Institute is very fortunate in having so many loyal staff, many of whom have spent their whole career working for the Institute."

James Anderson, Fleet Manager, who has spent 40 years at The Macaulay Institute, said: "I have been employed in a number of roles in my time with The Macaulay and get a lot of satisfaction working here."

On the cutting edge of pasture management

AT the end of April, we hosted a seminar and discussion evening on "Pasture Management for Horse Owners". Many people in Scotland, and especially in Aberdeenshire, keep horses at home and are managing their own pasture land.

Often, in equestrian books and magazine articles, information on pasture management has insufficient detail or lacks practical or local advice.This gap was identified during discussions with some of the Riding Clubs in the north-east of Scotland and so the Macaulay Institute decided to develop and run a seminar on the topic of Pasture Management, aimed at the horse-loving population.

Our seminar was divided into 4 topic areas - Grazing Conditions, Practical Land Maintenance, Weed and Animal Health and Making Hay. Around 50 people enjoyed an evening with us - listening to short talks and then joining in with the discussion after each talk with great enthusiasm. Afterwards, the Macaulay team of Andrew Nolan, Ann Malcolm, Angela Sibbald and Andy Dalziel answered guests' questions on a one-to-one basis.

One unexpected benefit was that, unknown to us, a member of the audience was a journalist representing two local newspapers. Later that week, a half page article appeared in both newspapers.

For those who could not attend the April seminar, we will be running another one at the end of 2005. Special thanks for making this seminar enjoyable and successful must go to our Events Manager, Jane Lund.

Ann Malcolm