

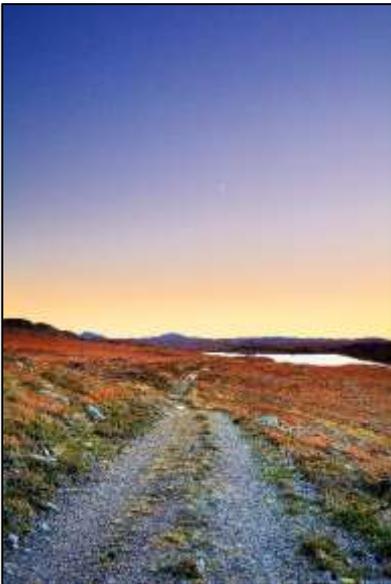
A BIG Thank you!

Between January and March, the team up here was quite busy preparing for the 4th Flow Country Research Conference, which was held in Thurso in the third week of March. At the same time, some of the new projects were taking shape, and we welcomed the announcement of further Peatland Action funding to support peatland restoration across Scotland. This edition of the newsletter provides a quick update on all these activities and more!

Thanks to all who provided short articles and pictures!

Updates from the Flow Country Research Conference IV: Thinking Big!

Results from the photography competition



The top three images: Left: first place, 'Dusk at Loch Meadie' from Donald Sandison, middle: second place, 'Bogbean' from Jean Mackay and right: third place 'The Old Heilan Hoosie' from Audrey Gunn.

As part of the "Poster & Taster" session, the Thurso Camera Club produced an exhibition of images inspired by the Flow Country. Conference delegates and members of the public attending the session were able to vote for their favourite image. The winning image will then be included on a Flow Country calendar, to be produced as part of the Flows to the Future project. The exhibition clearly showed the many different facets of the Flows and all the images were stunning. *Roxane Andersen, ERI-UHI*



Student prizes

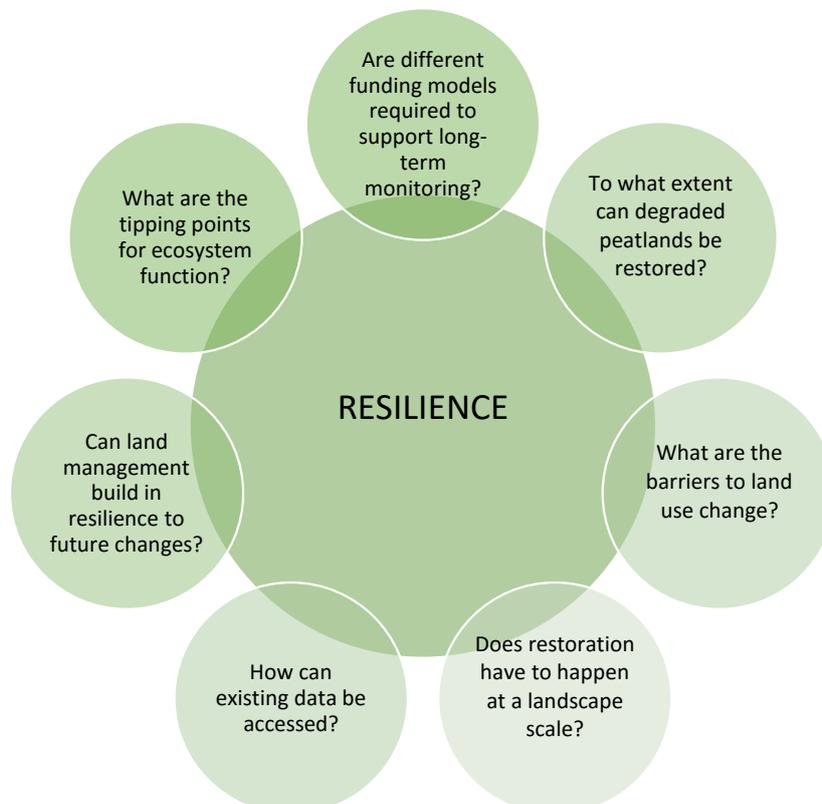
Congratulations to our winners Kirsten J. Lees (best oral presentation) and Jasmijn Sybenga (best poster) who won the student competition at the Flow Country Research conference. Both Kirsten and Jasmijn have just completed their first year so we look forward to following up their progress over the coming years. The prizes were sponsored by SNH, who recognizes the importance of student's research and input towards building the evidence necessary to support the Flow Country's candidature as a World Heritage Sites. *Roxane Andersen, ERI-UHI*

Workshop outputs

On Thursday the 23rd of March, the participants of the Flow Country conference took part in a workshop, where they were asked to give their views on the two key scientific questions put out by NERC for the development of a potential strategic research programme on enhancing resilience of UK peatlands.

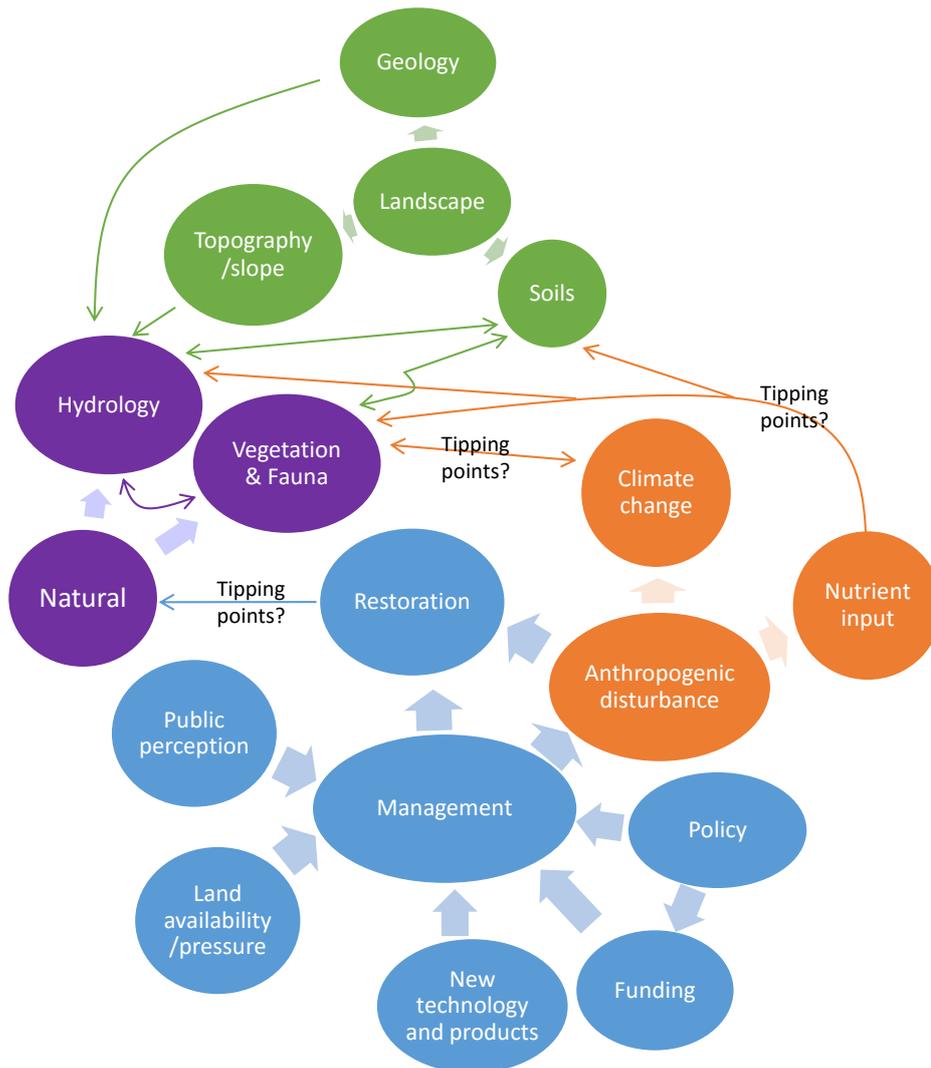
- 1) How can we establish peatland resilience during land use to secure the provision of GHG mitigation processes and wider ecosystem services?

There was a consensus that in order to establish peatland resilience as part of land-use strategy to secure provision of a range of ecosystem services, there was a strong need for long-term planning and research, as well as policy continuity and associated funding. In particular, long-term monitoring studies at a range of scale (local, regional, national) are integral to understand how peatlands are responding to land-use and climate change. However, there is also a need for public support, and therefore an integration of socio-economics, and a clear articulation of benefits (in particular from restoration activities) is required to enable a shift from "top down" to "bottom up" in management. The participants also highlighted a number of key questions relating to resilience in peatlands.



2) What are the main influences on peatland formation and degradation processes?

The work of the four teams is summarised below with a diagramme showing key influences on peatland formation and degradations processes, and highlighting some of the interactions between the processes. Although not comprehensive, it clearly highlights that more research is needed to identify tipping points beyond which peatlands can no longer function, or tipping points that need to be crossed for restoration to allow the recovery of key functions.



More detailed results from the workshop will be presented at the NERC Scoping workshop in London in May, on behalf of all the participants, as a collective view from the Flow Country Research Hub. *Roxane Andersen, ERI-UHI*

Project updates & New faces in the Flows

New Forest-to-bog project



Tim Howson will be starting a new PhD with the University of Leeds and Forest Research and will be studying the hydrology, hydrochemistry and aquatic carbon fluxes associated with forest-to-bog restoration. This hopes to build on Paul Gaffney's work and other work in similar areas, to provide more evidence needed to influence future land use/restoration policies for peatlands. Professors Pippa Chapman and Joseph Holden will be supervising the project, in collaboration with Russell Anderson and Nadeem Shah from Forest Research. The project is still in the early stages but research gaps are in the process of being identified, from relevant literature, including a recent PhD study from the Forsinard reserve. Gaps identified include 'how do the physical properties of peat, and hence water table fluctuations, vary between pristine, afforested and restored sites?'

News from InSAR TOPS project

I am Chris Marshall, a postdoc at the University of Nottingham (UoN) has started work on the InSAR ToPS project, a collaboration between UoN, ERI and University of Glasgow with support from the RSPB and Plantlife. The project aims to validate peat surface motion data from Sentinel 1 satellite radar data against precise levelling measurements from 1km sites at Knockfin Heights and Munsary peatlands, sites which satellite data indicates are subsiding and are stable respectively. This will be achieved by creating a network of floating and fixed ground anchors in clusters incorporating the varying peat environments within the study area and is designed to maximise comparability with the area measurements provided by satellite data. Surveys will be taken every 36 days to correspond with six passes by the Sentinel 1 satellites aiding comparability. Accompanying ground motion monitoring, vegetation, gas flux, ground water and peat moisture measurements will be taken to give context to the ground motion and will provide information on the relationship between subsidence and peat health, testing assumptions for example that subsidence is negative. Together this will help define the current applications and limits of the technology and help inform future algorithm development and application over larger areas such as a Flow Country or national basis facilitating large-scale monitoring of peat health, land management and restoration strategies.



In previous projects I have examined historic Ba contamination in Swaledale (N.Yorkshire), ultra high pressure metamorphism in Bulgaria and the oil potential of coals from Svalbard. Whilst conducting fieldwork and lab work on the Svalbard coals I found the palaeoclimatic and landscape data contained within coals interesting. This introduced me to the study of ancient peatlands and resulted in publications on time in coal which led to a publication using coal as a dust deposition indicator in the Permian. I realised that to understand how ancient peats responded required a knowledge of modern peatland processes which led me to apply for a short postdoc examining peatland subsidence monitoring by satellite radar. The absence of ground data and my time in the field in Malaysia made me want to help test the InSAR technique further and the InSAR ToPS project gave me an opportunity to do this. *Chris Marshall, U. Nottingham*

NERC VPN project update

The Peatland Tipping Points project website has now been launched: <https://www.peatlandtippingpoints.com>. As part of the project, stakeholder meetings are planned in North Pennines and Flow Country in May and June.

PhD success

Our most heartfelt congratulations to Paul Gaffney for successfully defending his PhD "The effects of bog restoration in formerly afforested peatlands on water quality and aquatic carbon fluxes". The project was one of three projects partly funded by the RSPB, and was based at the ERI in Thurso. Paul had his viva on the 21st of March 2017 and will now be working on publishing his data chapters over the next few months. We wish him the best of luck! *Roxane Andersen ERI-UHI.*

Other news and announcements

IPS Convention and Symposium: Aberdeen, May 28-31

The 2017 [International Peatland Society Convention](#) will be held in Aberdeen, Scotland, UK during the last week in May. The Theme of the Convention is 'Responsible Management of Peatlands' and will offer an excellent opportunity for scientists, policy makers, regulators and industry managers to meet, share and discuss current and emerging knowledge and experience on all aspects of peat and peatlands. The keynote speakers for the event are Prof Chris Evans (UK) Prof Line Rochefort (Canada), Prof Carl Trettin (USA), Mike Quinn (Ireland), Nazir Foad (Indonesia).

The IPS Allan Robertson Grant

The International Peat Society has extended its annual call for applications for the [Allan Robertson Grant](#). Applicants will normally be younger than 30 on application deadline (30th of April 2017) and the grants amount a number of €500 bursaries.

IPCC

Nominations for lead and contributing authors for the [IPCC Special Report on Climate Change and Land](#) opens 10th April.

IUCN updates: Creating A Legacy for Peatlands: 2016 Conference & Bogfest

The IUCN UK Peatland Programme would like to thank everyone who took part and contributed to the 2016 conference held in Shrewsbury, titled 'Creating A Legacy for Peatlands'. Presentations from the three days and summaries of the workshops and seminars can now be downloaded from their website here: www.iucn-uk-peatlandprogramme.org/conf16-summary. This year, the IUCN UK Peatland Programme will be trialling a different approach, teaming up with Moors for the Future Partnership to deliver a slightly more informal format.

Moors for the Future Partnership and IUCN UK Peatland Programme are joining forces to host an all new 'BogFest' in Edale, Derbyshire from 21st-23rd September. BogFest will be a joint celebration of our iconic uplands and brilliant blanket bogs, whilst providing an opportunity for people working on both upland and lowland peatland restoration to connect. The location, in the heart of the Peak District National Park and South Pennines Special Area of Conservation, will also afford a unique opportunity to discuss the future of these protected landscapes in a post-Brexit world. Please save the date for BogFest 2017. More information soon! *Joanna Richard, IUCN*

PhD opportunities in York & Thurso

The University of York is recruiting for a new [PhD project](#) linking palaeoecological records to experiments to assess peatland resilience to climate change. Student with either a palaeoecology or a biogeochemistry background and/or with previous experience working on peatlands would be ideally suited. The studentship is fully funded at standard rates for 3.5 years. As this is a Leverhulme-funded studentship, it is open to EU candidates and European applicants are very welcome. *Richard Payne (U. York)*

A further two ERI-led peatland-related fully funded PhD studentships will be advertised on the 10th of April on www.findaphd.com. One PhD will be working in collaboration with a range of partners in the Flow Country, using ERI's Unmanned Aerial Vehicle to develop remote sensed methods and metrics for evaluating peatland conditions. The second PhD will be largely based in Shetland, assessing the viability of a long-term peat store for future restoration of blanket bog, and will involve a close collaboration with Total E&P UK. For both projects, we will seek to recruit highly motivated students to join our team! Please get in touch for further details. *Roxane Andersen (ERI)*

The next edition of the newsletter will come out in June, please email your contributions to Roxane Andersen (roxane.andersen@uhi.ac.uk) before the Friday 16th of June 2017.