**Research studies**

**Dr. Sarah Davies, Dr. Patrick Robson and colleagues at Aberystwyth University**, Institute of Geography and Earth Science are commencing (2018) a new research project investigating past storm periods evidenced in the peat record at Cors Fochno,and building on previous doctorate work undertaken by Lisa Orme. The project is being sponsored by the EU funded Ireland-Wales CHERISH (climate change and coastal heritage) project.

**Luke Andrews, Ph.D. student and Maria Gerril, post-doctoral researcher of York University** commenced work in 2017 on a Leverhulme Trust funded study led by Dr. Richard Payne which is using a multi-proxy approach to describe changes in the last two millennia of the peat archive in relation to prevailing climate and environmental variables.

**Professor Paul Hughes, Southampton University** is currently submitting a Leverhulme grant proposal and will follow this with a NERC one in July with the aim of assembling evidence for the likely impact of current and near-future climate change on UK raised bogs using ancient DNA and plant macrofossils to track changes in plant biodiversity and develop a biomarker for water stress in Sphagnum that could be tracked back through the peat record, and to record past water-table change, nutrient cycling and carbon accumulation.

**Martin Kay, Manchester Metropolitan University**, will complete a Ph.D. thesis on Saltwater Influence on Coastal Peat Bog in 2019. The study looks at impacts of saline waters on peat properties, atmospheric gas exchange as well as on bog species ecology.

**Emma Brown, Bangor University**, will complete her Ph.D. titled ‘Carbon balance in grass dominated peatlands, comparing grazed and drained with near-natural and restored bog areas’, in early 2018. She plans to publish her findings in the science literature.

**Professor Chris Evans, CEH Bangor**, completed three years 2014-2017 of data measurement of fluxes and controls on the carbon and greenhouse gas (GHG) balance on a drained/ not yet restored area at Cors Fochno as part of a WG funded project. Report awaited.

**Dr. Rob Low (Consultant Hydrologist**) has carried out downloading and analysis of on-going hydrological data collection from the Cors Fochno SAC dipwell array and updated previous evaluation reports:

**Professor Nancy Dice (CEH Edinburgh), Professor Simon Caporn (Manchester Metropolitan University) Dr. James Rowson (Liverpool University), Dr.Richard Payne and Luke Andrews (York University**), carried out vegetation analysis and additional factor change in the Cors Fochno experimental climate change plots (set up as part of EU PEATBOG study in 2008) in august 2017.

**Professor Andrew Baird Leeds University** and **Dr. Alice Milner QM London University**, carried out peat sampling Cors Fochno in 2016 to study specific yield /drainable porocity of the peat and determine how water is stored in and released from the peat in relation to rainfall events and post-rainfall drainage. This work is on-going.

**Dr. Tim Mighall, Aberdeen University**, examined a 7m peat core from Cors Fochno extracting 5 radio-carbon dates and a detailed pollen and peat chemistry record to assess the vegetational impact of pre-historic mining in the area. The findings were published in 2017.

**Beau Garry, Leeds University**, completed a B.Sc.thesis in 2016 on ‘The effects of peat temperature and rainfall chemistry on the decomposition of peat and the production of DOC (dissolved organic carbon)’.

**Alf Tolley & Toby Davies, Southampton University. B.Sc.Theses. 2018.** Peat core palaeoenvironmental studies of a) bog maritime interface b) peat pollen record.

**Mike Bailey, NRW** Senior Reserve Manager, produced a report (2017) ‘Changes in the cursorial spider population at Cors Fochno 1987-2015.

**Mike Bailey NRW, and Anna Kightley Manchester Metropolitan University** (2017) produced a report on a *Sphagnum* bog-moss growing trial at Cors Fochno (part of NRW’s Carbon Positive Programme).

Research publications based on field-work at (or partially at) Cors Fochno SAC, 2009-18

**BAIRD, A.J., MILNER, A.M., BLUNDELL, A., SWINDLES, G.T., & MORRIS, P.J. 2015**. Microform-scale variations in peatland permeability and their ecohydrological implications. *J. of Ecology*. Doi: 10.1111/1365-2745.12530

**CHARNOCK, R. 2016.** Assessment of Remote Sensing Attributes as Biodiversity Indicators on a European Protected Raised Bog. Ph.D. Thesis. University of Wales, Aberystwyth.

**EADES, P.A. 2013.** Cors Fochno: A study of peat hydraulic conductivity, bulk density and humification adjacent to the Pwll Du and river Leri. Contract report to Natural Resources Wales, Aberystwyth.

**HARRIS, A., CHARNOCK, R. & LUCAS, R.M. 2015.** Hyperspectral remote sensing of peatland floristic gradients. *Remote Sensing of Environment*. **162**. 99-111.

**LOW, R. 2017.** Review of hydrological data from Cors Fochno, Borth. Report 1407 to NRW, Dyfi NNR. Rigare Ltd. Abergavenny.

**McGEE, K. 2010.** Entomological survey and recording at Cors Fochno and Ynyslas dunes, Dyfi National Nature Reserve, 2009-10. Aberystwyth University IBERS Countryside Management, Industrial work experience project report, RS24710.

**MIGHALL, T., TIMBERLAKE, S., MARTINEZ-CORTIZAS, A., SILVA-SANCHEZ, N. FOSTER, I.D.L. 2017.** Did Prehistoric and Roman mining and metallurgy have a significant impact on vegetation*? Journal of Archaeological Science*: Reports. 11. 613-625.

**ORME, L.C., DAVIES, S.J. & DULLER, G.A.T. 2015.** Reconstructed centennial variability of Late Holocene storminess from Cors Fochno, Wales, UK*. J. of Quaternary Science*. **30**(5) 478-488

**ROBROEK B.J.M. et.al. 2017**. Taxonomic and functional turnover are decoupled in European peat bogs. *Nature Communications* **8**: 1161. Doi: 10.1038/s41467-017-01350-5.

**WATSON, E.J., SWINDLES, G.T., LAWSON, I.T., SAVOV, I.P. & WASTEGARD, S. 2017.** The presence of Holocene cryptotephra in Wales and southern England. *J. Quaternary Sci*., Vol.**32**(4) 493-500. DOI: 10.1002/jqs.2942