

# New LIFE for Welsh Raised Bogs Project

**Project Data**  
Reference: LIFE16 NAT/UK/000646  
Acronym: LIFE Welsh Raised Bogs  
Start Date: 01/09/2017  
End Date: 30/06/2024  
Total Eligible Budget: 5,484,422 €  
EU Contribution: 4,106,623 €  
Coordinator: Natural Resources Wales (NRW)  
Associated Beneficiary: Snowdonia National Park Authority (SNPA)

## Restore

All 7 raised bog SAC sites in Wales have suffered due to historic drainage and peat extraction, alongside poor wetland management. This has caused lowering of the water table and colonisation of invasive scrub, and *Molinia* grass, to dominate, and crowd out important plants like *sphagnum* mosses.

The project aims to restore these sites towards a healthier condition through implementation of innovative restoration techniques to raise water levels, reduce carbon emissions and improve resilience to climate change.



125,000m of peat bunds.



Scan this QR code to see bunding being installed by a specialist contractor at Cors Fochno SAC

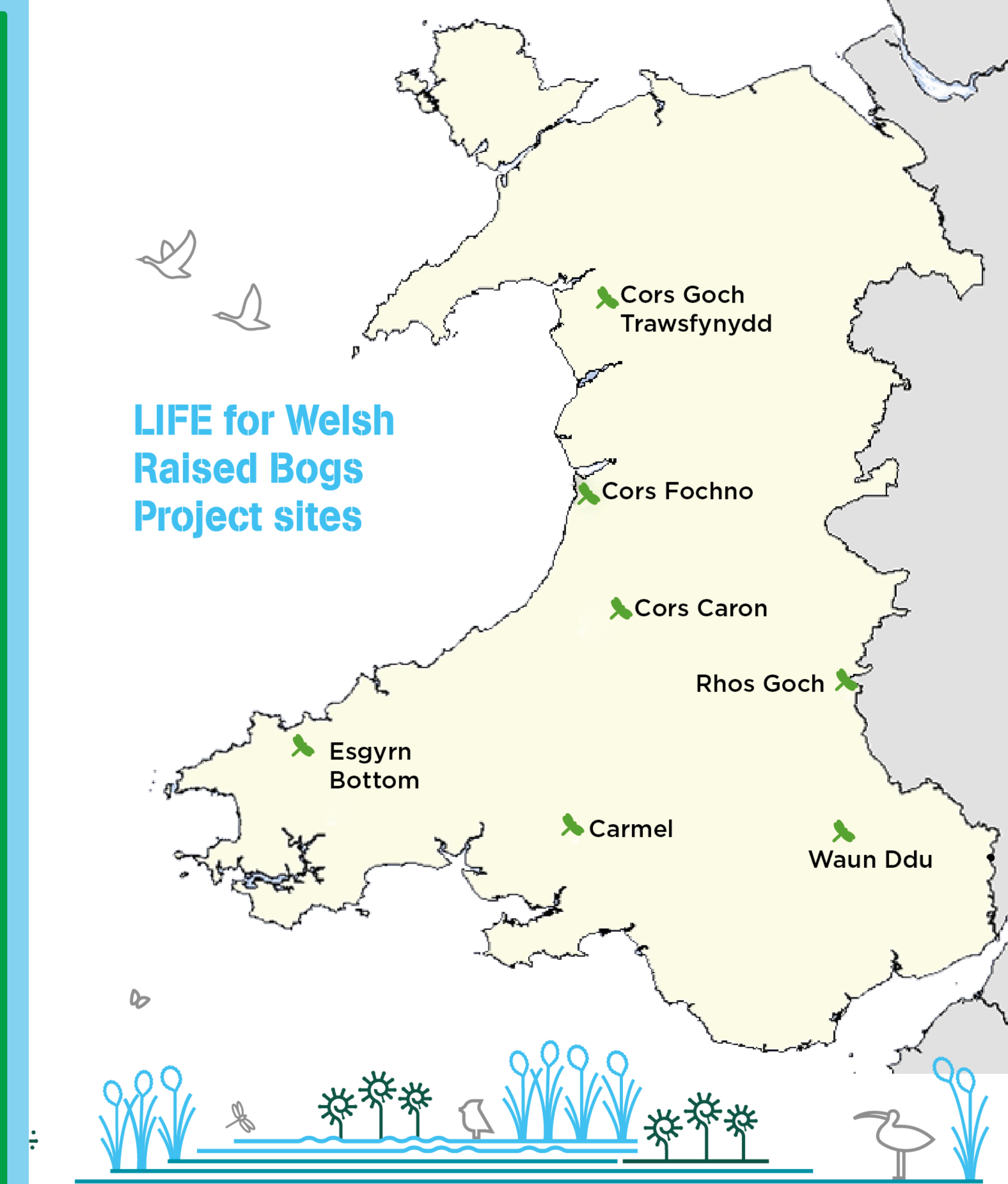


500ha of invasive scrub removed.



100ha of Molinia cutting.

Pisten Bully, Wetland Harvester

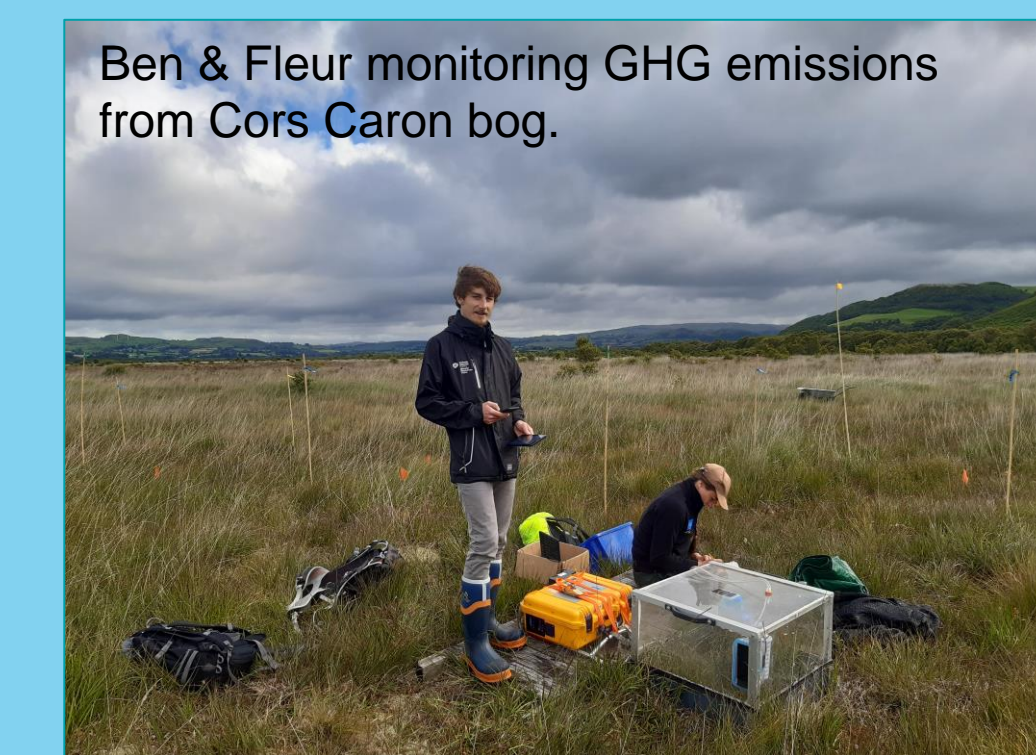


LIFE for Welsh Raised Bogs Project sites

## Green House Gas

This monitoring work was done in collaboration with the UK Centre for Ecology & Hydrology (UKCEH). Greenhouse gas monitoring enabled the project to measure how much carbon dioxide (CO2) and methane (CH4) is being stored or released in the raised bogs before and after our restoration works.

This is being undertaken through use of closed 60cmx60cm chamber measurements using Los Gatos GHG analyser across 30 plots at Cors Caron SAC, plus through an eddy covariance (EC) flux tower also at Cors Caron.



Ben & Fleur monitoring GHG emissions from Cors Caron bog.



Ben cleaning flux tower instruments

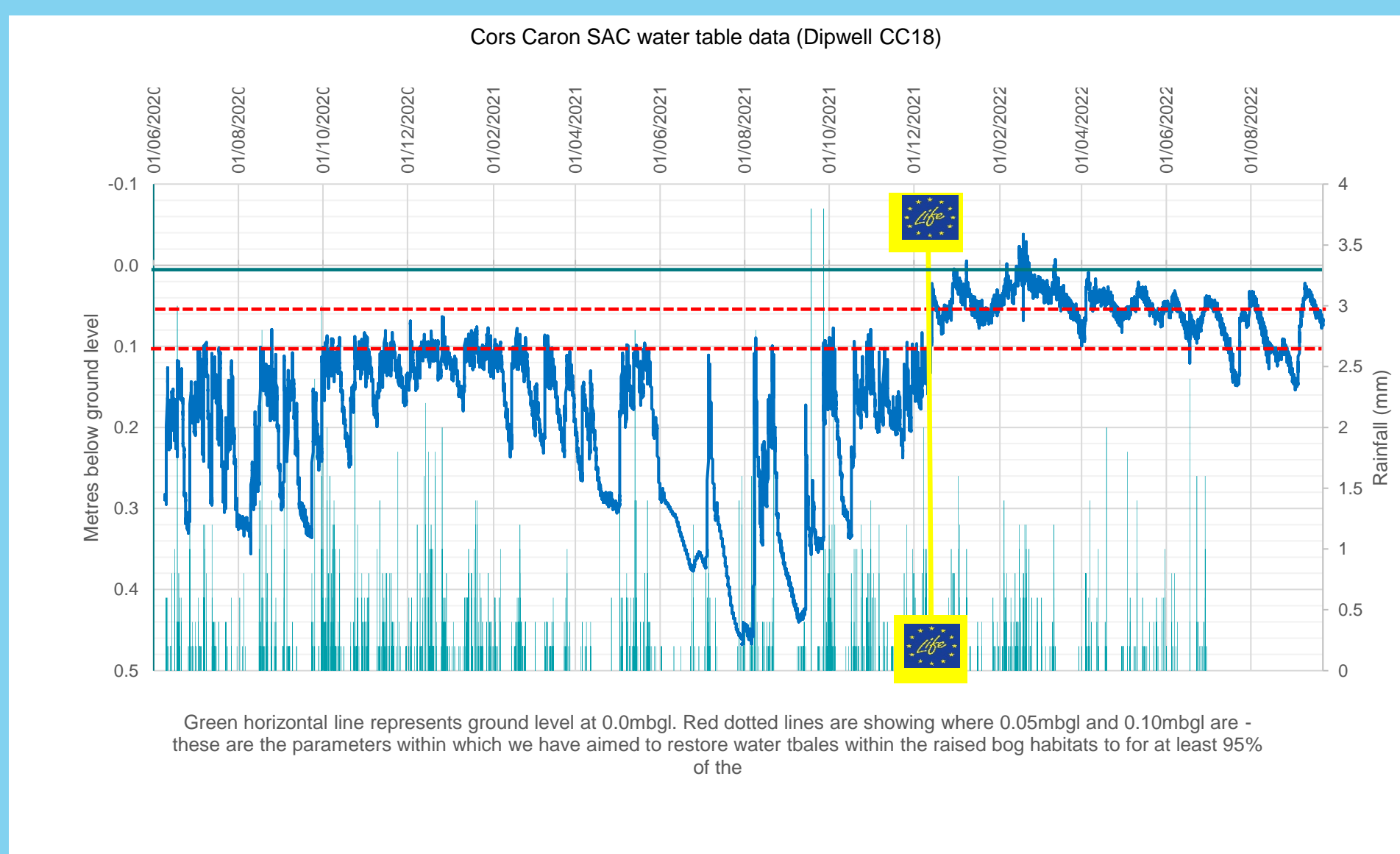
## Evidence & Learning

### Hydrology

The water table is a key indicator of health within a peatland – a healthy peatland should have a water table with 5-10cm of the surface for most of the year. This provides the perfect conditions for bog plant species to thrive and for the continued waterlogged conditions to support carbon sequestration.

Our project team used level logger pressure transducers sunk into 150 dipwells across all 7 project sites to accurately measure the annual changes in the water table, measured once an hour. They have provided us with a clearer picture of the health of our peatlands and the impact of our restorative actions, such as peat bunds.

The graph below shows water table data from a dipwell upslope of a peat bund on Cors Caron SAC. It shows that the bunding (yellow line) has immediately increased the water table to within 10cm of the surface, and stabilised the water table throughout summer droughts, shown by rainfall throughout July and August.



Contour bunding installed at Cors Goch Trawsfynydd SAC winter 2022/23 – taken from a drone.



### Vegetation

175 vegetation plots have been surveyed for their plant life assemblage and micro-topographic structure. Alongside this, the peat depth was measured and photos were taken of the bog surface. Repeat surveys will be conducted five years after restoration actions to assess their impact on surface vegetation.



Ben & Jo surveying a 2mx2m veg plot



Scan this QR code to see some of the 360 photos taken by the team.

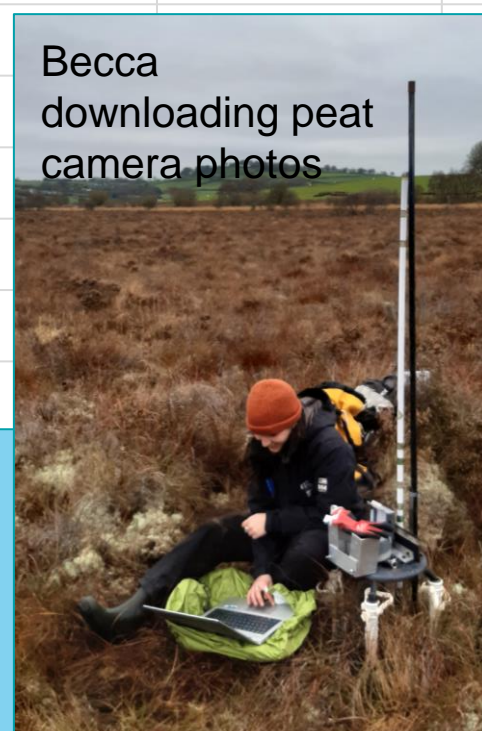
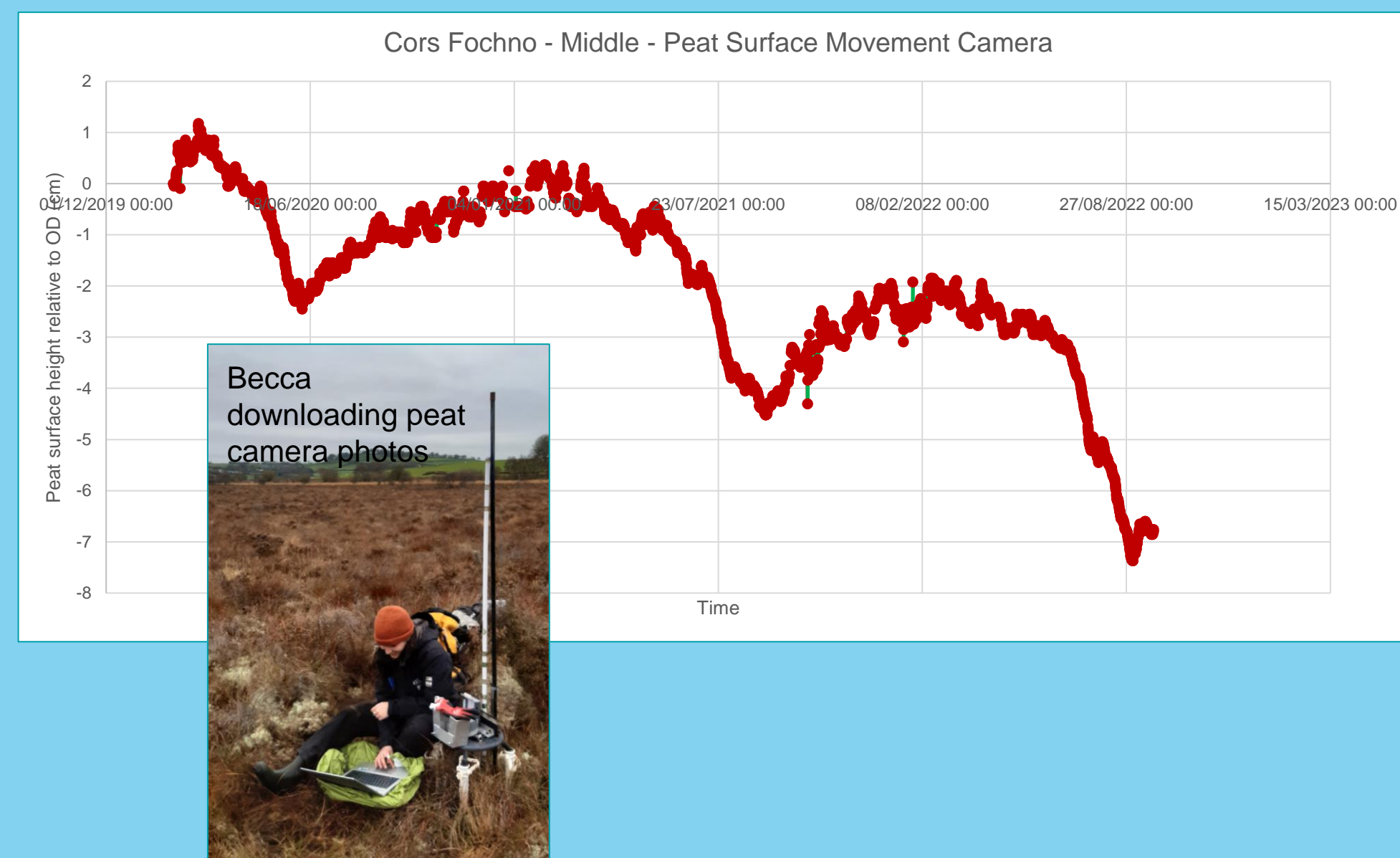
### Bog Breathing

We have been monitoring the peat surface expansion and contraction in response to seasonal rainfall and drought - much like breathing!

We monitored this "breathing" by using a timelapse camera to take photos of a ruler anchored into the underlying mineral substrate. As the camera moved up and down we were able to monitor this movement by how much the camera moved relative to the fixed ruler.

Our work will help contribute towards an innovative project to understand whether peatland condition can be linked to surface movement, and whether this movement can be accurately measured using sentinel 1 satellites. The data we collected can help ground-truth this satellite data and contribute towards a method of monitoring global peatland condition.

The graph below shows the annual bog 'breathing' in response to rainfall, but also a steady fall in peat surface over time.



Becca downloading peat camera photos

## Spotlight on Bogs!

Degraded peatlands are contributing to many of Wales', and the Earth's, environmental problems, such as climate change, flooding and bio-diversity loss. So, it's vital we raise awareness of the importance of peatland restoration within all levels of society.

The project aims to not only teach the communities living locally to the project sites about the benefits of peatland restoration, but also to raise awareness throughout Wales through attendance at national Welsh events, such as the National Eisteddfod, Royal Welsh Agricultural Show and Greenman Festival.

The WRB LIFE project also hosted the IUCN Peatland Conference 2022 at Aberystwyth Arts Centre.

