

# Beyond Restoration

## 14th IUCN UK Peatland Programme Conference

3 – 5 October 2023

The Maltings, Ely

Day 1, Tuesday 3 October



Peatland Programme

Gordon's Mere, Woodwalton Fen © Guy Pilkington

# UK Strategy summary of progress

Session chair: **Stuart Brooks**

National Trust for Scotland and IUCN UK Peatland Programme Chair

11:00 – 13:00



Peatland Programme

Gordon's Mere, Woodwalton Fen © Guy Pilkington

Peatland Programme conference  
3<sup>rd</sup> October 2023

# UK land use emissions and the importance of peatlands

Indra Thillainathan  
Climate Change Committee

## Contents

- UK land use and peat emissions
- The role of peat re-wetting & sustainable management in delivering the Net Zero target
- The benefits for climate adaptation and resilience.
- Work programme for the CCC

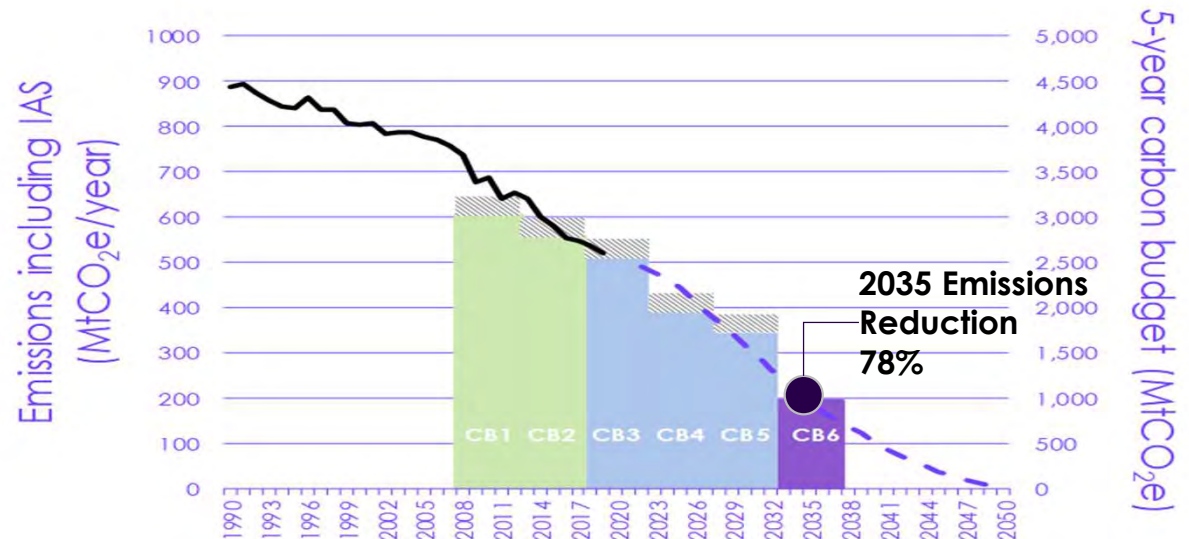


## The role of the Climate Change Committee

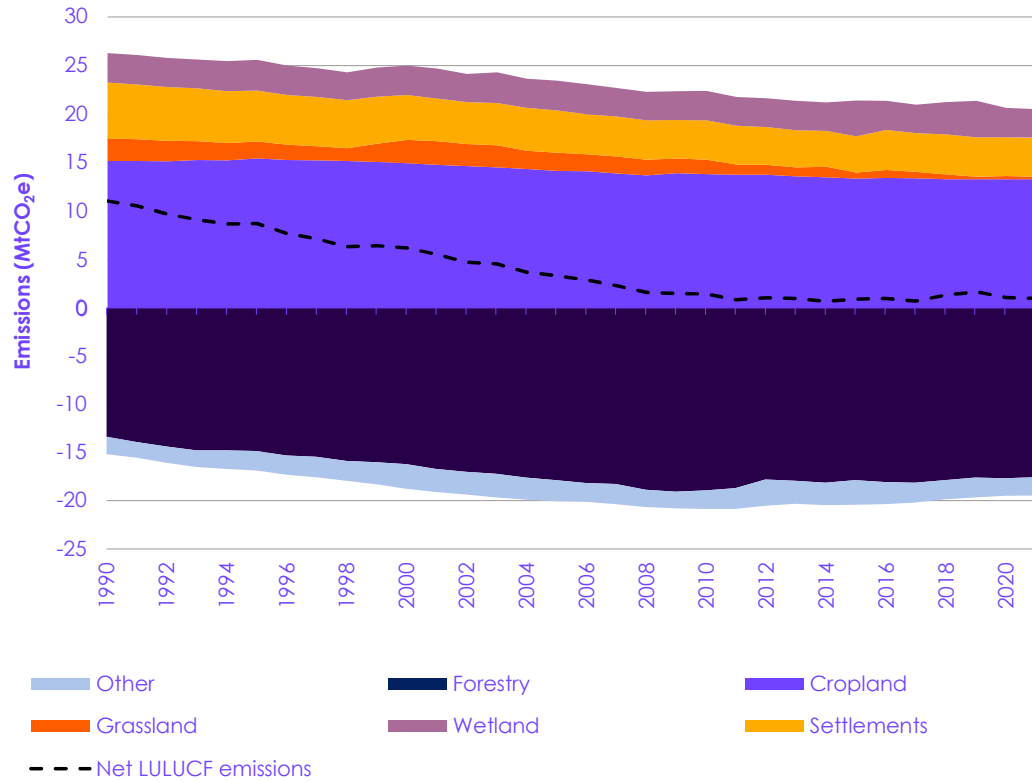
- The UK's independent adviser on tackling climate change.
- Independent, statutory body established under the Climate Change Act 2008.
- UK legislated target to reduce GHG emissions to Net Zero by 2050.
- Our statutory duties require us to:
  - Advise the UK and devolved governments on emissions targets.
  - Report to Parliament on progress made in reducing GHG emissions & preparing for and adapting to the impacts of climate change

## The Sixth Carbon Budget (6CB)

- One key role is providing advice on setting and meeting carbon budgets.
- In 2020, advice provided on the volume of emissions the UK can emit during the period 2033-2037 (Sixth Carbon Budget).
- **Now working on our advice for the Seventh CB.**



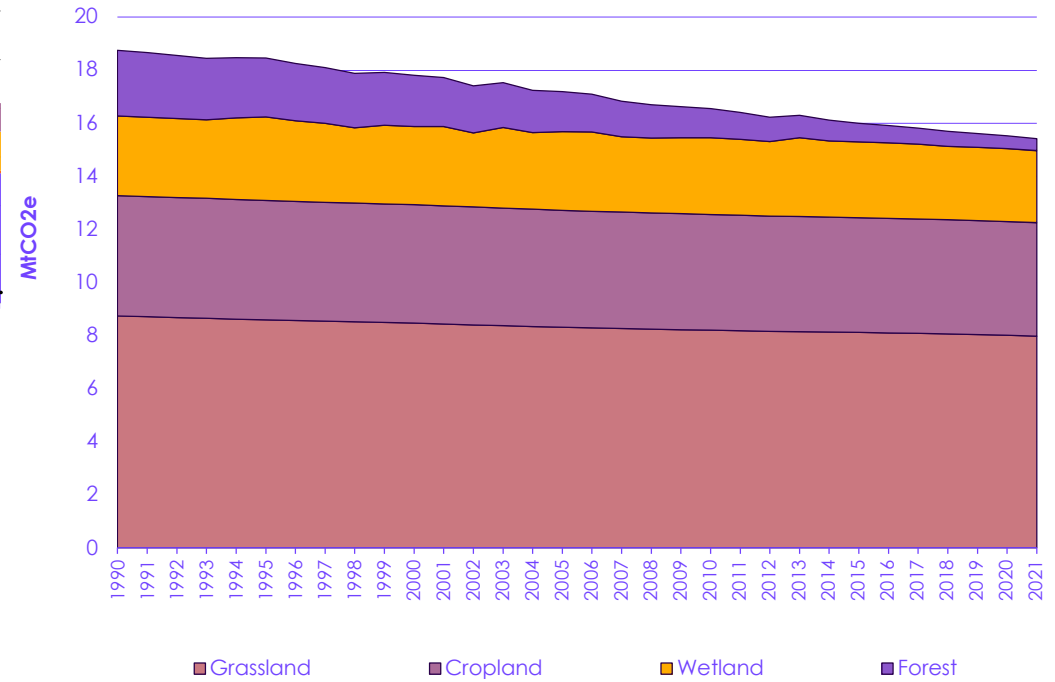
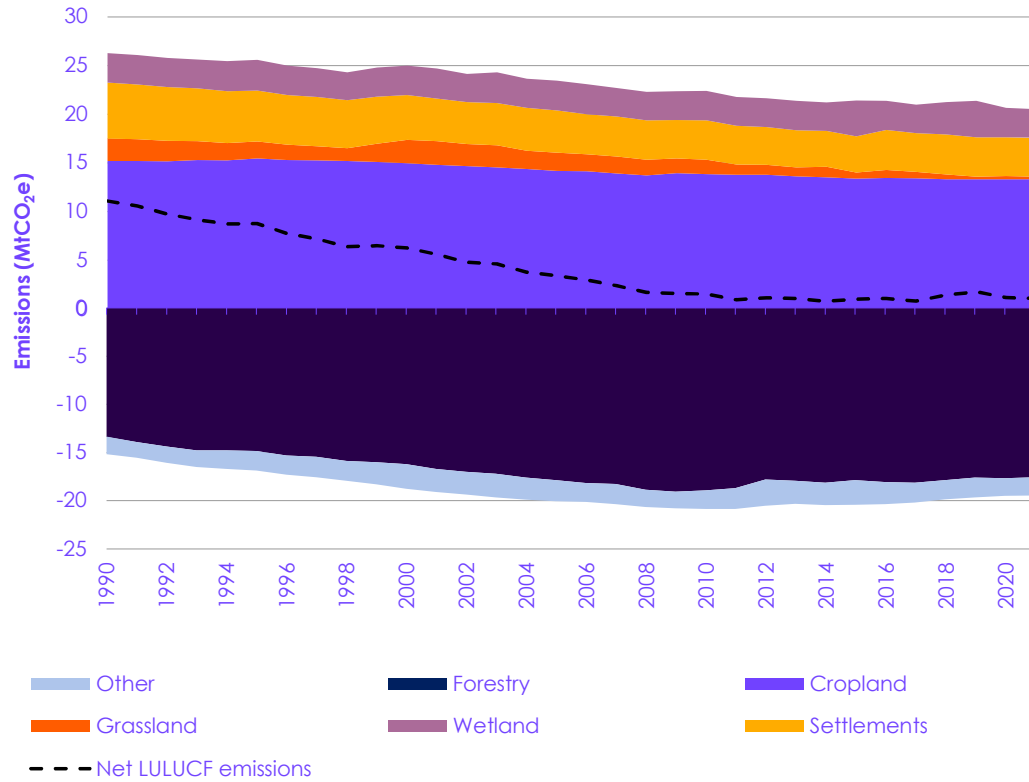
GHG emissions in the land use, land use change and forestry sector  
 Have fallen by 90% since 1990, but are flat since 2010 due a weakening forestry sink



Source: BEIS (2023) Final UK greenhouse gas emissions national statistics: 1990 to 2021

# UK peatland emissions 1990-2021

Emissions have fallen by 18% since 1990, and now account for 4% of total UK emissions



Source: BEIS (2023) Final UK greenhouse gas emissions national statistics: 1990 to 2021

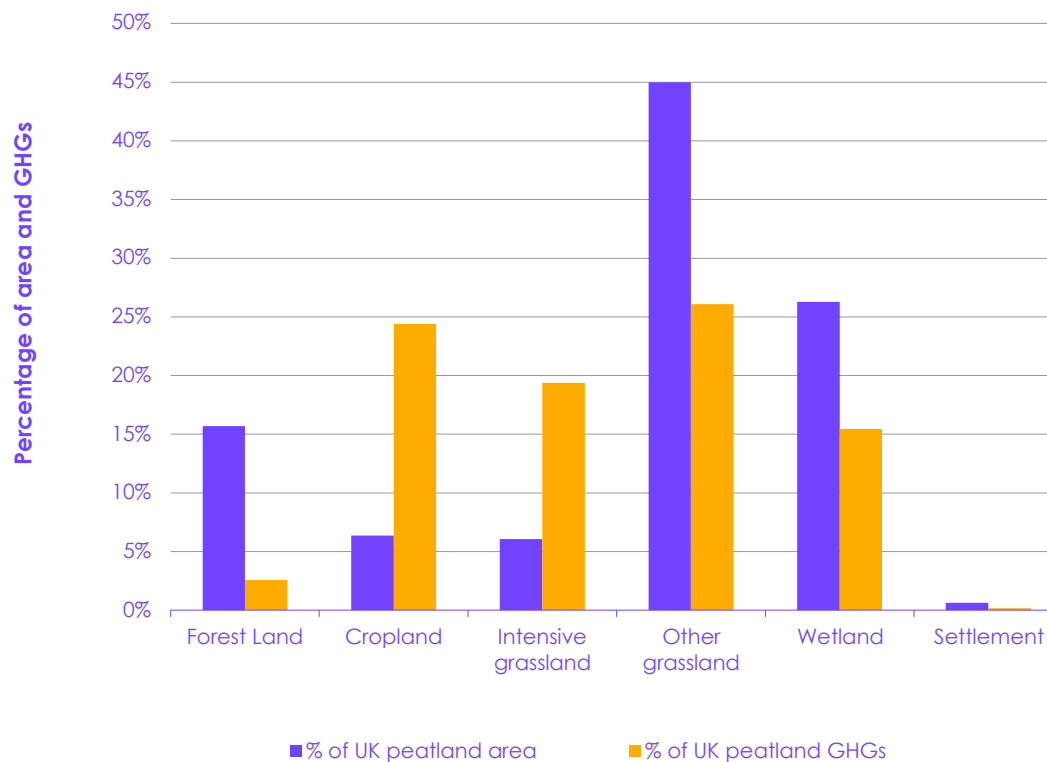
## Share of peat GHG emissions & land area by land use type

Per hectare emissions highest for cropland

### Hectare emissions per year

- Forestry 0.98 - 5.7 tCO<sub>2</sub>e
- Cropland 26-37 tCO<sub>2</sub>e
- Intensive grassland 22 tCO<sub>2</sub>e
- Extracted domestic 15 tCO<sub>2</sub>e
- Near natural fen -0.4 tCO<sub>2</sub>e

Source: UK NIR (2023)



Source: Data provided by UKCEH; CCC analysis.



Role of peat restoration & sustainable management in delivering the Net Zero target  
Increasing the area of peat to a re-wetted state to almost 80% and sustainably managing 35% of lowland crop area could reduce emissions by 40% by 2050

- **Lowland**
  - Re-wetting to near-natural condition
  - Re-wetting with paludiculture
  - Dynamic water-table management
  - Seasonal water-table management
- **Upland** restoration
- **Removing low-productive trees off peat**
- **Rewetting of extraction sites**

We will be reviewing the abatement potential and feasibility of abatement measures for our advice on the Seventh Carbon Budget



## Peatland restoration also delivers significant co-benefits for climate adaptation/resilience

In addition to climate change mitigation, peat restoration is also important for delivering key services, and essential for building resilience:

- Productive capacity of lowland soils
- Regulating water run-off (flood alleviation)
- Fresh water quality (filtration)
- Biodiversity (sphagnum mosses, rare invertebrates)

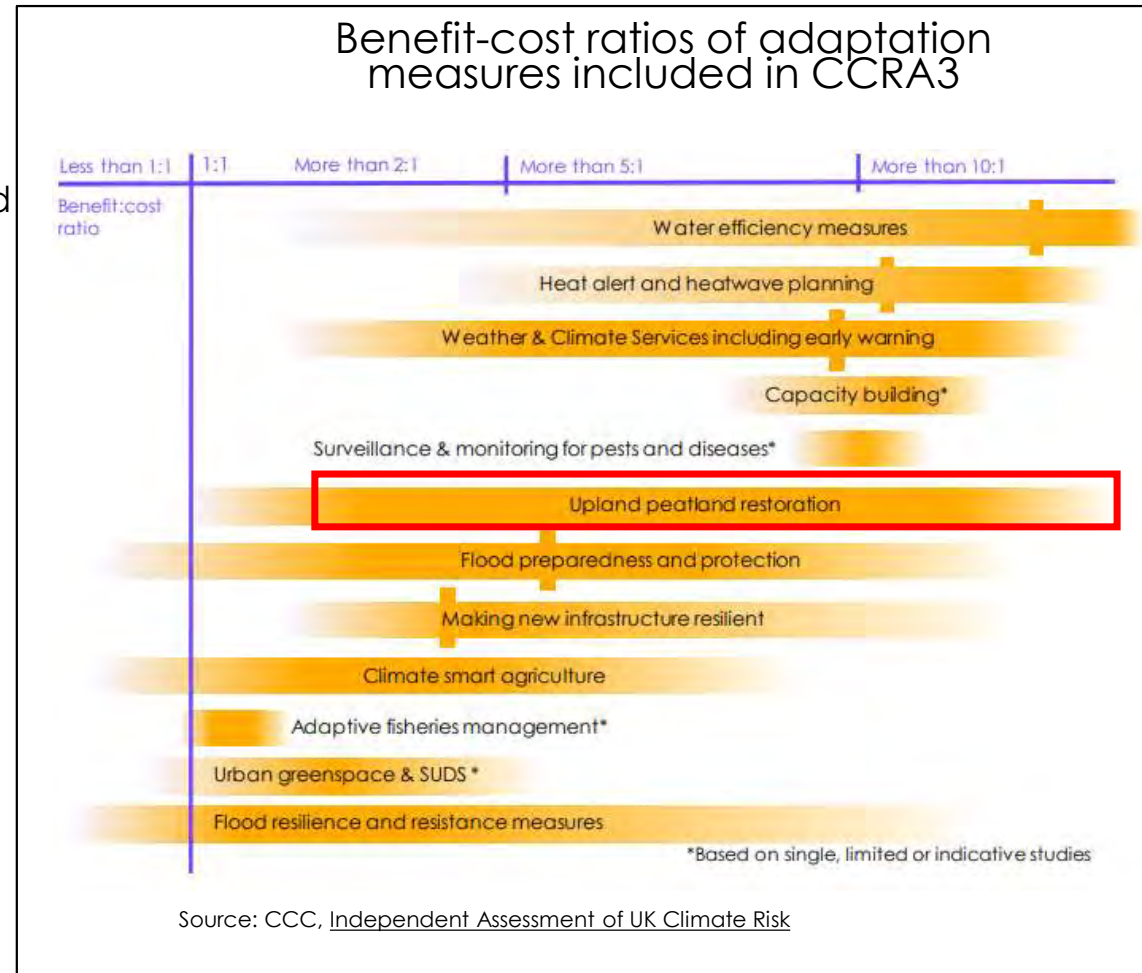
But peatland habitats are vulnerable to changing climatic conditions. Warmer and drier conditions likely to:

- Increase the rate of carbon losses from degraded peatlands
- Reduce the water-holding and filtering capacity of degraded peat.

The longer the delay in reversing degradation, the more expensive it will become to deliver

Evidence shows that for many interventions the benefits substantially outweigh the costs of restoration

- More evidence is becoming available on the net benefits to adaptation from actions to restore peatland habitats.
- Reported cost-benefit ratios for different upland peat restoration sites can range as high as '12 to 1'.
- Net benefits of restoration found to increase by:
  - the more ecosystem services are included;
  - the longer the time-period considered; and
  - the greater the assumed pace and extent of climate change.



## Upcoming work programme for the CCC

- Our advice for the setting of the **Seventh Carbon Budget** will be published in early 2025
- We want to update our abatement potential to reflect, amongst other things:
  - Updated estimates of peatland emissions – we now have better knowledge on the condition, location and extent of peatland under different land use types.
  - Updated evidence from Defra's sustainable lowland peat project
  - The impact of climate change
- Our advice for the **CCRA4** will be published in 2026:
  - Stakeholder groups on risks to soils
- We are keen to engage with stakeholders as we develop our thinking on both

Contact me [Indra.Thillainathan@theccc.org.uk](mailto:Indra.Thillainathan@theccc.org.uk)





# IUCN Peatland Conference Country Update: Northern Ireland

**Dave Foster**

**Director, Natural Environment Policy Division  
Environment, Marine & Fisheries Group  
DAERA**

3 October 2023

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# Policy Landscape

## Relevant DAERA policies and strategies

**Climate Action Plan/LULUCF**

**Green Growth Strategy**

**Environment Strategy/EIP**

**Farming with Nature**

**Ammonia Strategy**

**NRS/30x30**

**Horticultural Peat**

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# NI Peatland Strategy Update



- Public consultation on Equality Impact Assessment completed and Strategy finalised.
- Need Ministerial & Executive approval to publish.
- Intend to take forward a selection of actions including restoration activities, policy initiatives and knowledge transfer.

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# Peatland Restoration & Associated Initiatives



- Environment Fund Projects
- EFS Group Projects
- Flux Towers

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# Environment Fund 2023- 2028

- Environment Fund supports projects which delivers key environmental outcomes across Northern Ireland.
- Fund valued at total of £100 million.
- Will contribute to Nature and Climate Recovery, Building Ecological and Climate Resilience, Connecting People with the Environment.
- 37 projects, including peatland projects, will be funded through the EF Strategic Strand ~£50m over 5 years.

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# Environment Fund - RSPB Peatland Code Projects



- First Peatland Code projects in NI
- Funded in partnership by the DAERA Environmental Challenge Competition and Northern Ireland Water
- Registration of 2 Peatland code sites in NI
- Development of RSPB NI Peatland Programme

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## Environment Fund Strategic Strand 2023-28



- Peatland restoration on approx. 400ha.
- Delivery of pipeline projects for approx. 5000ha.
- Establishment of a Collaborative and Technical Network.
- Results-based pilot scheme on peatland restoration.
- Exploration of novel approaches to peatland restoration.

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# EFS Group Projects

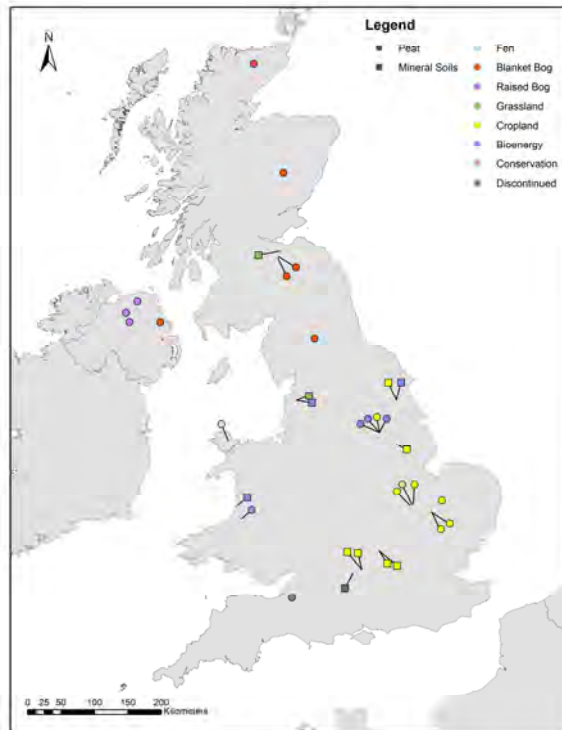


- 10 EFS Group projects with independent facilitators
- Ulster Wildlife Group Project covers Counties Fermanagh, Tyrone and Derry/Londonderry and includes significant areas of Priority Peatland habitat.
- RSPB are delivering Group Projects in Glenwherry, Causeway Coast and Rathlin, Garron, Lough Beg and County Down.
- Lough Neagh Partnership have two group projects around the shores of the Lough, providing valuable advice and support to landowners in managing the priority habitat.

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# PeatFlux: a national carbon flux network for peatlands in Northern Ireland

Figure 1- UKCEH Flux tower network



- CEH DAERA Environment Fund Challenge fund project ,
- Glenullin, Ulster Wildlife site– Raised bog
  - Ballynahone SAC – Raised Bog
  - Garry Bog SAC– Raised Bog
  - Glenwherry Hill Farm – Blanket bog

The PeatFlux network is integrated with the UKCEH Land Flux Network, contributing to assessments of the status of the carbon, water and GHG balance of UK peatlands.

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# Policy Initiatives & Knowledge Transfer



- Climate Action Plan
- Farming with Nature
- Ammonia
- Horticultural Peat

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# Climate Action Plan - LULUCF

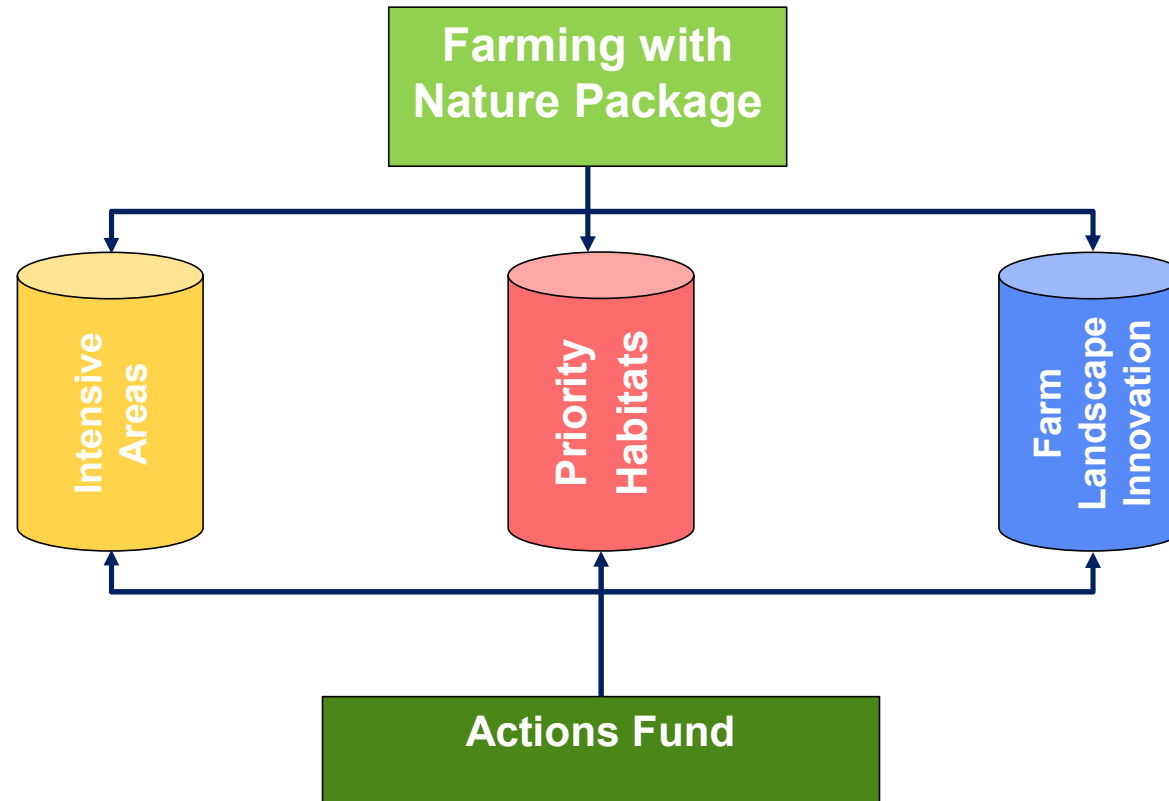
- Climate Change Act (NI) 2022
- Climate Action Plans must set out policies and programmes to put Northern Ireland on course to reach net zero by 2050.
- LULUCF Chapter of CAP
  - ❖ Increase forest cover
  - ❖ Restore Peatlands. Put 23,175 hectares of Peatland Habitat on the road to recovery by 2027
  - ❖ Deliver carbon sequestration through agri-environment schemes

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# Farming with Nature Package Framework



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# Ammonia

## Draft Ammonia Strategy

- Consultation Exercise complete.
- An ambitious and verifiable ammonia reduction programme:
  - ❖ Implemented on a Northern Ireland-wide basis;
  - ❖ Spatially targeted around designated sites.
- A strategic programme of conservation, restoration, and management of our most valuable habitats.

## Future Operational Protocol to Assess the Impacts of Air Pollution on the Natural Environment.

- DAERA duty as statutory nature conservation body to advise regarding the impact plans and projects on designated sites.
- Advice is being revised.
- Call for evidence is complete and responses being considered.



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# Knowledge Transfer - Horticultural Peat



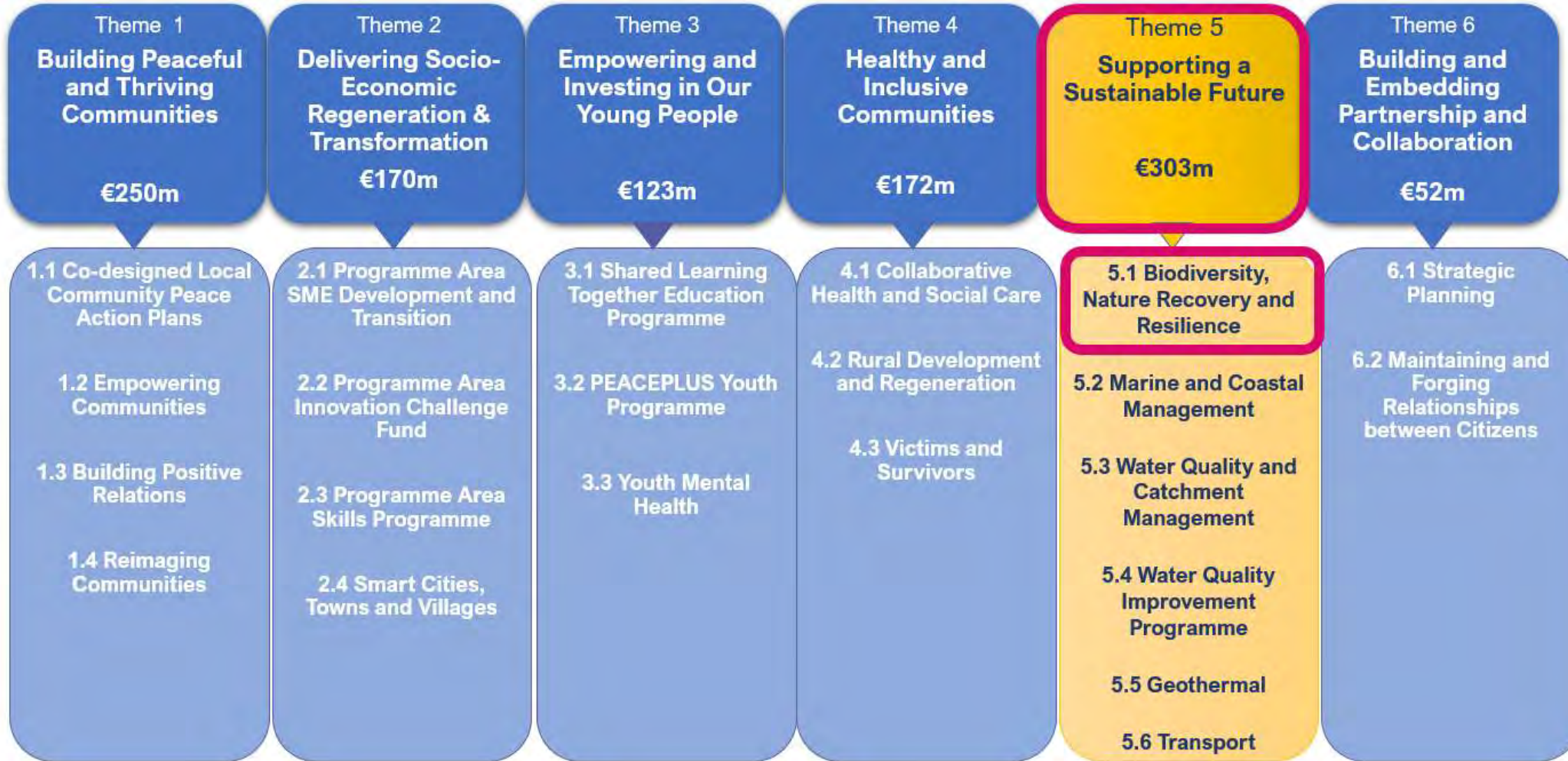
- Continue facilitating the transition towards peat-free production of horticultural plants and trees.
- CAFRE Horticulture staff host technical workshops for growers based in NI
- Assessment of peat-free plant growing media by means of plant performance
- Production of both ornamental and edible plants and trees in nearly exclusively peat-free plant growing media

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# Peace Plus

**Thematic Areas**

**Investment Areas**



# Shared Island Fund

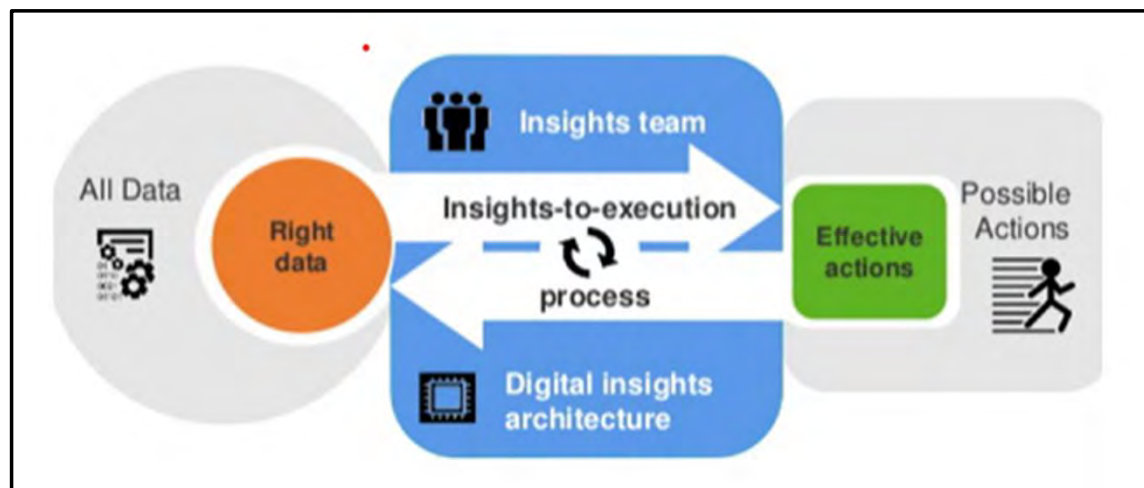
- **€20 million over 6 Year programme (2023-28)** - €15 million from Irish Government with additional contributions from NIEA & Nature Scot.
- **Led by partnership** of National Parks and Wildlife Service (NPWS), LIFE IP Wild Atlantic Nature, NIEA and NatureScot.
- **Cross-border collaboration** on peatland restoration and capacity-building in Ireland, Northern Ireland and Scotland.

- **Identification and prioritisation of target sites**
- **Site Selection**
- **Capacity building**
- **Knowledge exchange between coordinating partners**
- **Monitoring and evaluation programme**

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## Private Finance

- Survey examining stakeholder attitudes to opportunities & obstacles into potential use of private finance to co-fund peatland restoration.
- Survey results currently being analysed.
- Strategic Insight Lab to be held to further examine the suitability of private finance in the Northern Ireland context and provide future direction.



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## Way forward.....

- **Development of a Draft NI Peatland Strategy Implementation Plan**
- **Business case development for CAP peatland restoration target**
- **Capacity Building**
- **Continue to build evidence base**

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A photograph of mangrove plants growing in shallow water, with the text "Introduction and Context" overlaid in the center. The plants are silhouetted against the water, and the foreground shows some grasses and other vegetation.

# Introduction and Context





# Peatland Restoration

A landscape photograph of a moorland. The foreground is dominated by a dense carpet of low-lying vegetation, showing a mix of vibrant green and dark brown/maroon hues, suggesting a wet or boggy area. The middle ground features rolling hills covered in taller, more sparse vegetation, primarily in shades of brown and tan. In the background, more distant hills are visible under a sky filled with large, dramatic, grey and white clouds, with some blue patches showing through. The overall scene is a natural, uncultivated landscape.

# Conservation and Management



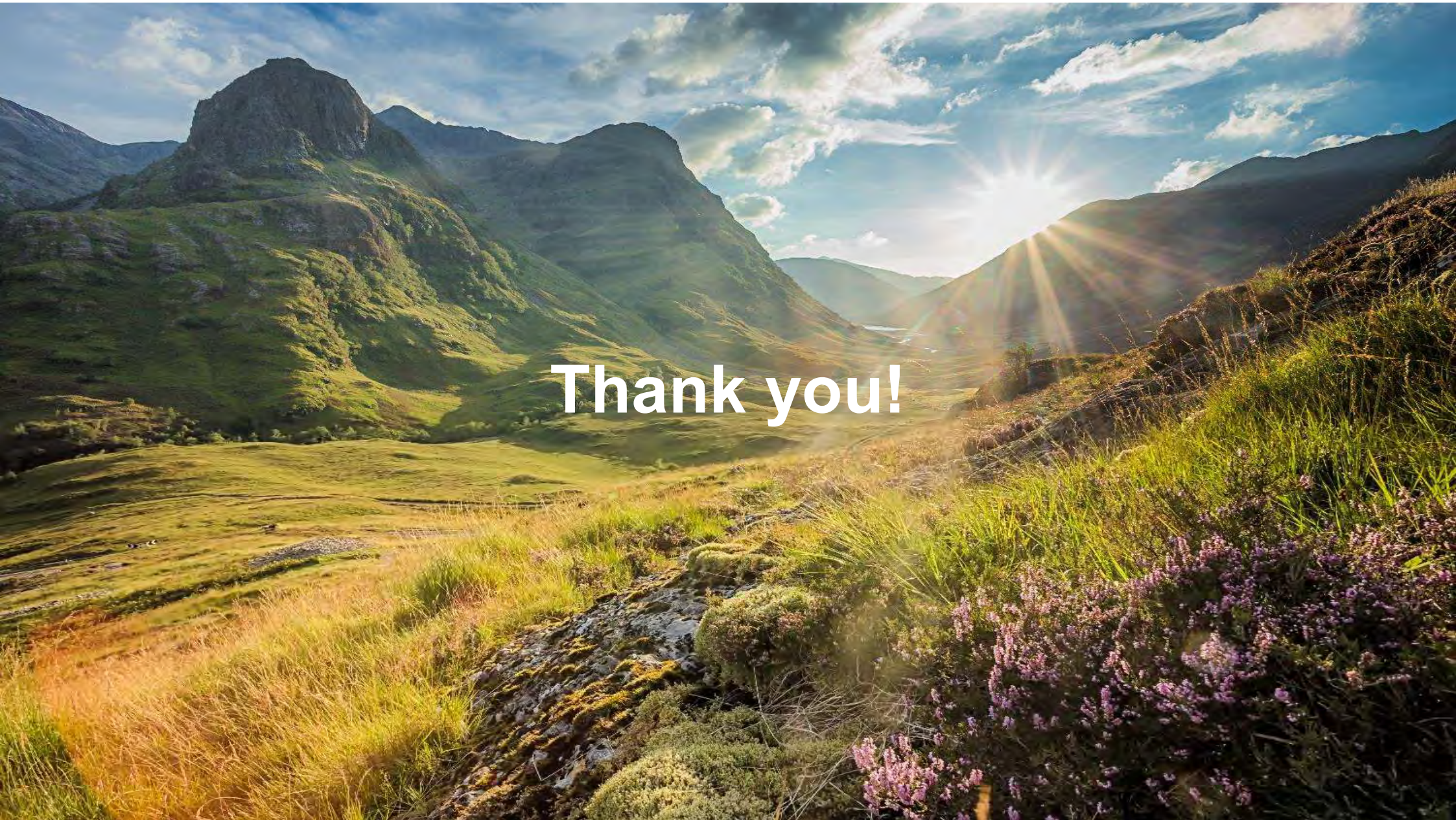
# Land Use



Forestry

A wide-angle photograph of a wooden boardwalk path stretching from the foreground into the distance. The path is made of dark brown wooden planks and leads through a vast, open landscape of dry, golden-brown grass. In the background, there are rolling hills and a cloudy sky. The text "Onshore Electricity Generation" is overlaid in white, bold font across the middle of the image.

# Onshore Electricity Generation



**Thank you!**

# Annual update: England

IUCN Peatland conference 2023



Department  
for Environment  
Food & Rural Affairs



**Dr Christopher Moses**  
Policy Lead,  
Lowland Agricultural Peat  
**Defra**



**Dr Megan Ellershaw**  
Nature for Climate  
Peatland Grant Scheme  
**Natural England**



**Dr Emma Taylor**  
Peatland Advisor,  
National Peatland  
Programme  
**Environment Agency**







Department  
for Environment  
Food & Rural Affairs

# Defra Policy Update

Focus on Lowland Agricultural Peat





Department  
for Environment  
Food & Rural Affairs

# Lowland Agricultural Peat: Task Force Chair's Report



Water for peat and  
more water level  
management control

Enabling more  
sustainable ways of  
farming on peat soils

Supporting people,  
partnerships and  
economies

Driving forward  
science and  
innovation



# Developing Defra's Lowland Agricultural Peat Programme

## Pilot Projects:

Water Discovery Pilot  
Small Infrastructure Pilot  
Paludiculture Exploration Fund

## Research & Evidence:

England Peat Map  
Lowland Peat R&D Project 3  
Lowland Water Research R&D

Early steps towards a larger-scale programme based around water storage and water management

## Supporting Sustainable Farming:

Environmental Land Management schemes

## Supporting Private Finance:

Peatland Code Version 2.0



# Collaborating with local delivery partners on pilot projects

Paludiculture Exploration Fund



Water Discovery Pilot



Small Infrastructure Pilot



What will these projects tell us?

Appetite for Change

Potential for Collaboration

Technical Feasibility

Market Opportunities

Future Costs

Challenges

# Restoration delivery updates

Natural England

## Restoration ambition - work to support

- England Peatland Action Plan outlines the ambition
- **Peatland Restoration Roadmap** will provide the delivery pipeline, response trajectories & narrative
- **England Peat Map** – extent, depth and condition models
- Restoration register
- **Nature for Climate Fund**
  - Nature for Climate Peat Grant Scheme (NCPGS)
  - Paludiculture Exploration Fund (PEF)
- Monitoring and evaluation framework

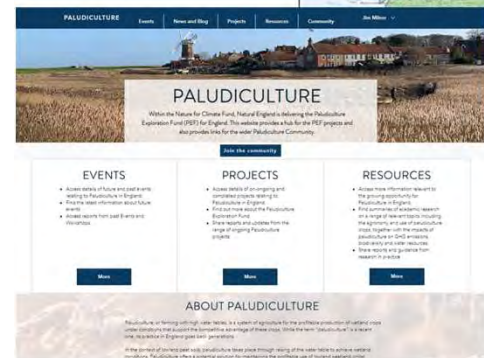
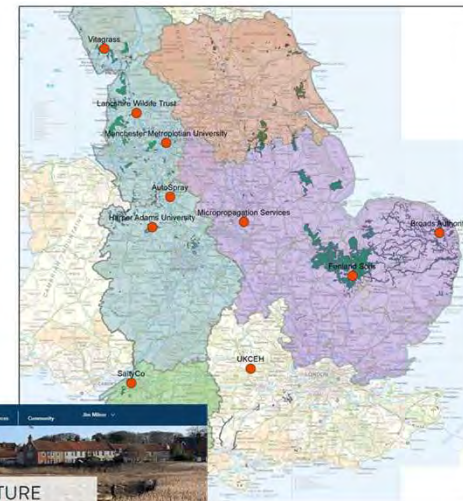
# Restoration ambition - advice

- Heather and grass management
- Trees and peat – revised July 23
- Waders – revised July 23
- Restoration guidance - NCPGS
- Historic environment – toolkit for contractors



# Restoration delivery

- **Nature for Climate Peat Grant Scheme (NCPGS)**
  - 2.78 Mtons of C secured,
  - 22 000ha on path to restoration
  - Total of 23 restoration projects - £53 M awarded
  - 2023 round saw 12 new projects – awarding £16M
- **Paludiculture Exploration Fund (PEF)**
  - 12 Projects
  - Community of interest
- **Other restoration**
  - NNR Estate
  - Waterlands





# Restoration and beyond – what next?

- Transition from NCPGS
- ELM – the peat offer
- Growing private investment & longer-term security
  - Peatland code
- Increasing sector capacity
  - working group
  - 18 month research project
- Paludiculture – an expanded offer.



Department  
for Environment  
Food & Rural Affairs

# Delivery updates

Environment Agency



# EA Peatland Restoration

## EA funded restoration in last 10 years

- 12,700 ha of blanket bog
- 21 ha lowland raised bog
- 79 ha of fen

## Supporting future restoration & management

- ELM Landscape Recovery Round 1
- EA leading on 11 projects, 5 include peatland restoration
- Multi-landowner, catchment scale, upland & lowland

## Filling evidence gaps around restoration & water environment



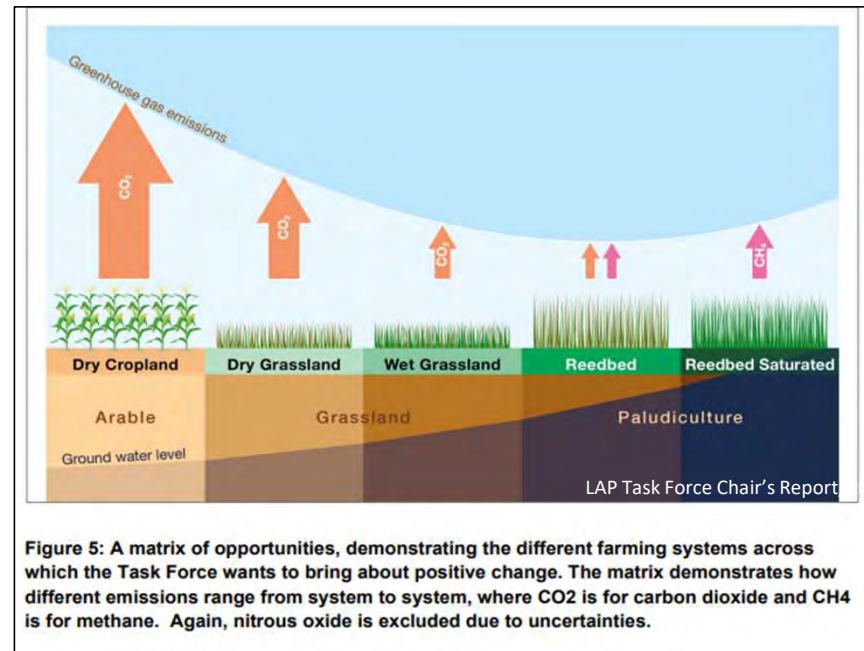
# Restoration vs Wetter Farming

EPAP introduced ambition for raising the water table on Lowland Agricultural Peat

What does this look like on the ground?

Mosaic Approach

- Focus on reducing carbon emissions
- Mix of approaches
- Field by field
- Still producing food



# Environment Agency - LAP Water Discovery

- **LAP Water Discovery Pilot**
  - £2.2 million grant fund
  - Application deadline 27<sup>th</sup> October
  - Information event on 26<sup>th</sup> September – recording available  
[LAPWDP@environment-agency.gov.uk](mailto:LAPWDP@environment-agency.gov.uk)
- **LAP Water R&D**
  - designed to develop the water-environment evidence base,
  - to inform the transition to wetter farming at a catchment to landscape scale,
  - complementing forthcoming and existing research commissions





Department  
for Environment  
Food & Rural Affairs

Thank you!



# Diweddariad Cymru Wales Country Update



Llywodraeth Cymru  
Welsh Government

James Cooke



Pete Jones  
Hanna Huws



Cynhadledd / Conference  
IUCN Ely 03 October 2023

# Ymrwymiad Bioamrywiaeth 30 x 30 30 x 30 Biodiversity Commitment

**“Today’s Biodiversity Deep Dive helps us urgently rethink our relationship with the natural world and how to make the next best choices which benefits us and the future generations of Wales.**

**“We need a Team Wales effort to drive a decade of decisive action so we can put the brakes on the biodiversity decline and jump-start the restoration of our ecosystems to their former glory. Our health, happiness and future depend on it”.**

**Julie James MS, Minister for Climate Change**



## National Peatland Action Programme 2022/23 Highlights

**~630 ha** of restoration activity\*

>50% of restoration activity spend delivered in collaboration with partners across Wales

12 partners funded via 2 different grant mechanisms

Launched...

- Peat Data Portal
- Competitive Development Grant

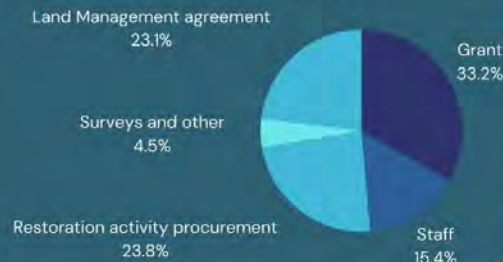
Awarded 3 grant rounds to deliver up to March 2025



Restoration at Figyn Blaen Brefi, SSSI, WGWE

NPAP peatland content gained 250,000 impressions and 20,000 engagements on social media

### Spend summary



NPAP won the #TimCyfoeth Carbon Footprint Award 2022

\* Conservative hectareage figure provided. Reported figures are over 3,000ha, but reporting is subject to review to bring it in-line with a standard NPAP recording methodology. The reported figure of 3,000ha includes substantial hectarages where the main activity has been sitka seed-in removal.



# Ymrwymiad Bioamrywiaeth 30 x 30

## 30 x 30 Biodiversity Commitment

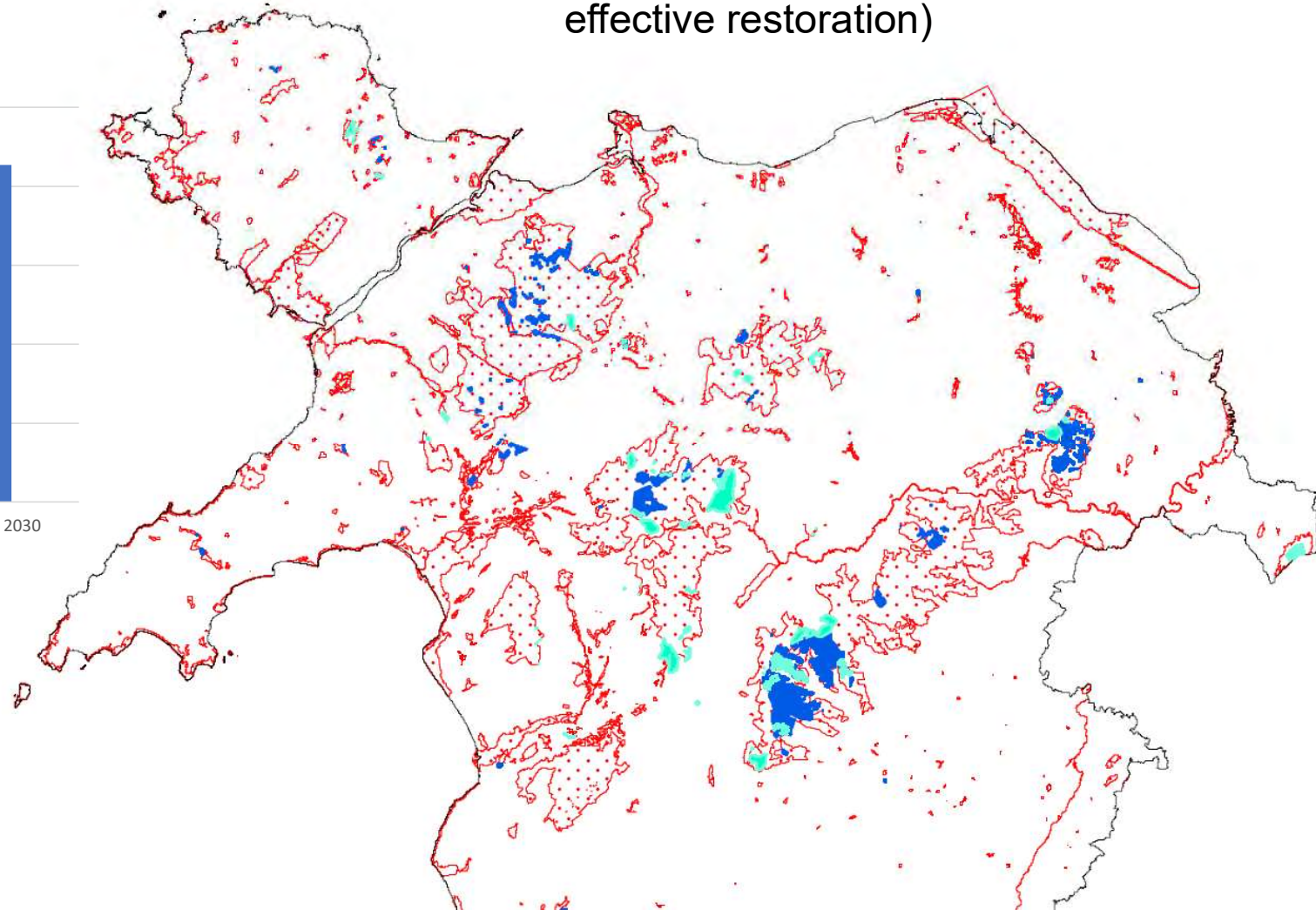
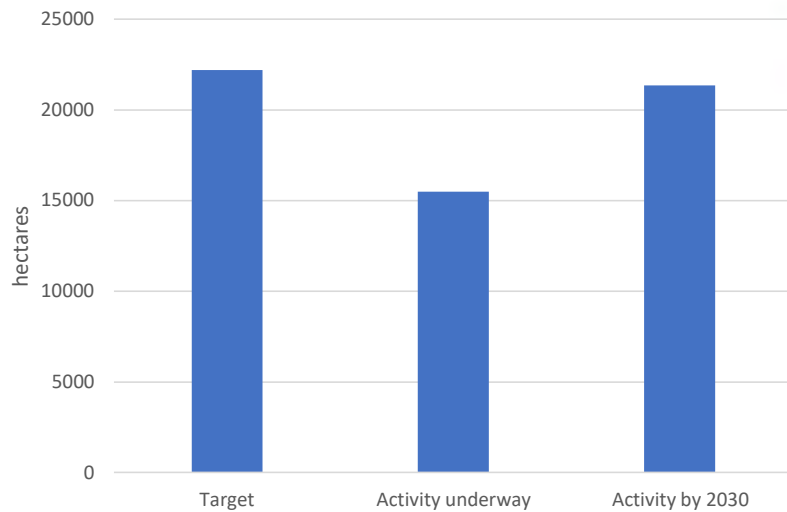


### **The Biodiversity Deep Dive sets the following recommendations:**

1. Transform Wales' protected sites portfolio so that it is better, bigger, and more effectively connected so that plants and wildlife are able to travel and adapt to climate change
  - Increase the delivery capacity of the National Peatland Action Programme
  - Ensure protected sites (management, monitoring, designation) are a priority for NRW
  - Review the SSSI series to inform an accelerated notification programme aligning it with Nature Network Programme.
  - Improve the effectiveness of protection from the damaging impacts of development and other threats / pressures.
  - Embark on an ambitious programme of protected site designations with an accelerated notification process.
4. Ensure land and marine planning decisions consider biodiversity and that good decisions are incentivised
  - Develop strengthened guidance for Policy 9 of Future Wales via the Gwent Levels pilot project for mainstreaming biodiversity, ecosystem resilience and green infrastructure into planning policies.
  - Strengthen the policy protection afforded to SSSIs as outlined in Planning Policy Wales 11.
  - Design the Sustainable Farming Scheme.
6. Unlock public and private finance to deliver for nature at far greater scale and pace
8. Embed Nature Recovery in policy and strategy in public bodies in Wales
  - Develop primary legislation to set overarching nature recovery targets and establish an environmental governance body, and a suite of more detailed statutory nature recovery targets focussed on achieving environmental outcomes and delivering Wales's contribution to the post 2020 global biodiversity framework.

# Fframwaith Bioamrywiaeth Byd-eang Global Biodiversity Framework

- GBF 2 (by 2030, 30% of degraded ecosystems under effective restoration)



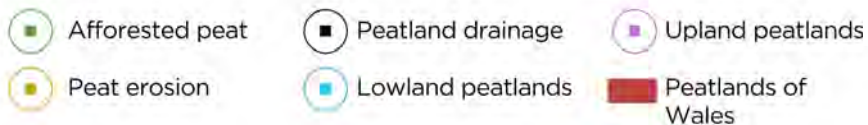
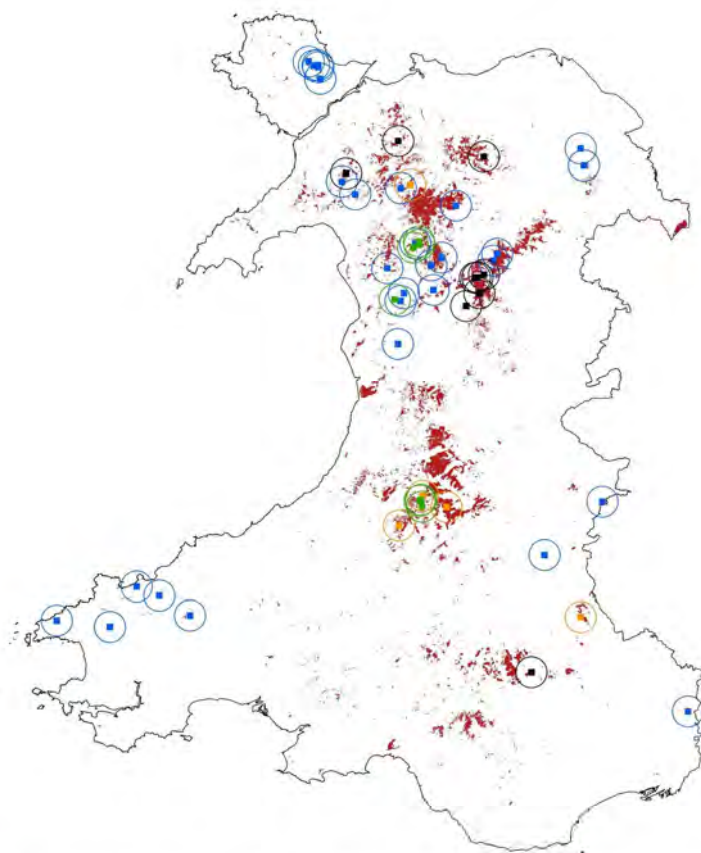
## Legend

- NPAP Activity
- Wales
- NRW Land Management Agreements
- SSSI Sites of Special Scientific Interest

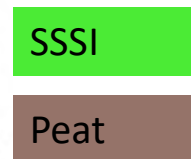
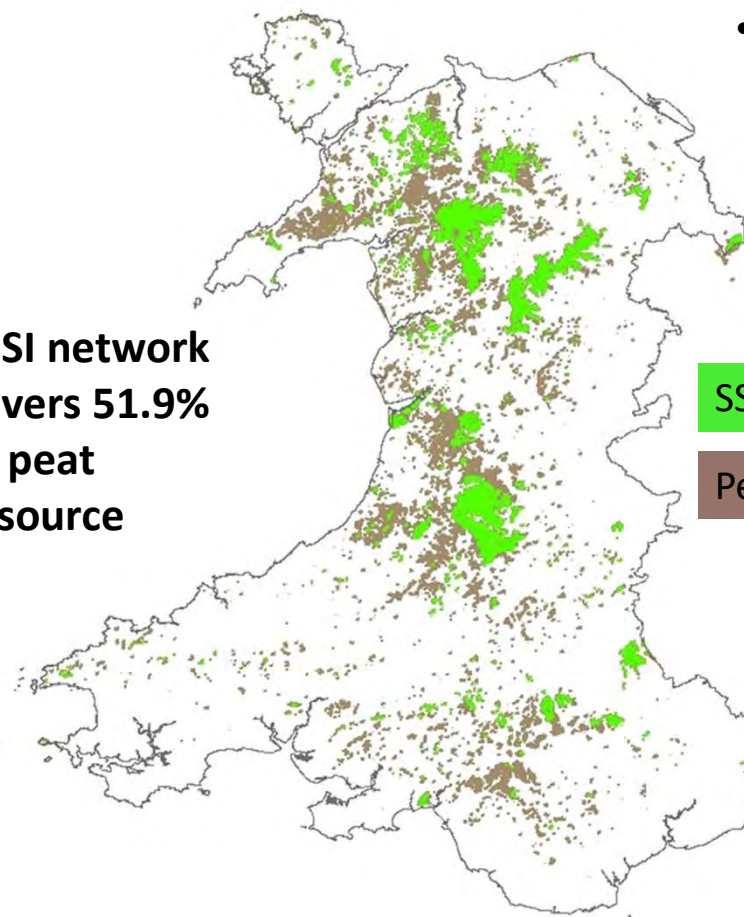
# Graddfa Rhwydwaith SSSI – Cyd-destun Cyffredinol

## SSSI Network Scale – General Context

- GBF 3 (by 2030, 30% in protected areas)



SSSI network covers 51.9% of peat resource



# Bwrw mlaen gyda'r targedau – sut bydd monitro ag adrodd arnynt?

## Progress towards targets – how will these be monitored and reported?



### Outcomes we must evidence

### Outline methodology

### Current state of play

**Ecosystem change (habitat recovery), area & quality**



Use of EO for large-scale condition mapping\*

Habitat condition mapping\*

Fixed point vegetation sampling\*

Hydrological response\*



Future project

Draft methodology currently being trialled (Bowland Ecology). Compatible with Peatland Action methodology.

Hydrology Monitoring Strategy under development - to be trialled in 24/25 field season

**Predicted changes in GHG emissions, tCO<sub>2</sub>eq/ha/yr**  
(\* denotes relevant Ecosystem change elements)



UK Peatland GHG Inventory Methodology for predicted changes (Activity x condition)

Measured changes in emissions

GIS based activity recording platform. Updated condition evidence improves GHG emissions reporting

Academic networks, membership of GGAP and other projects, commissioned evidence

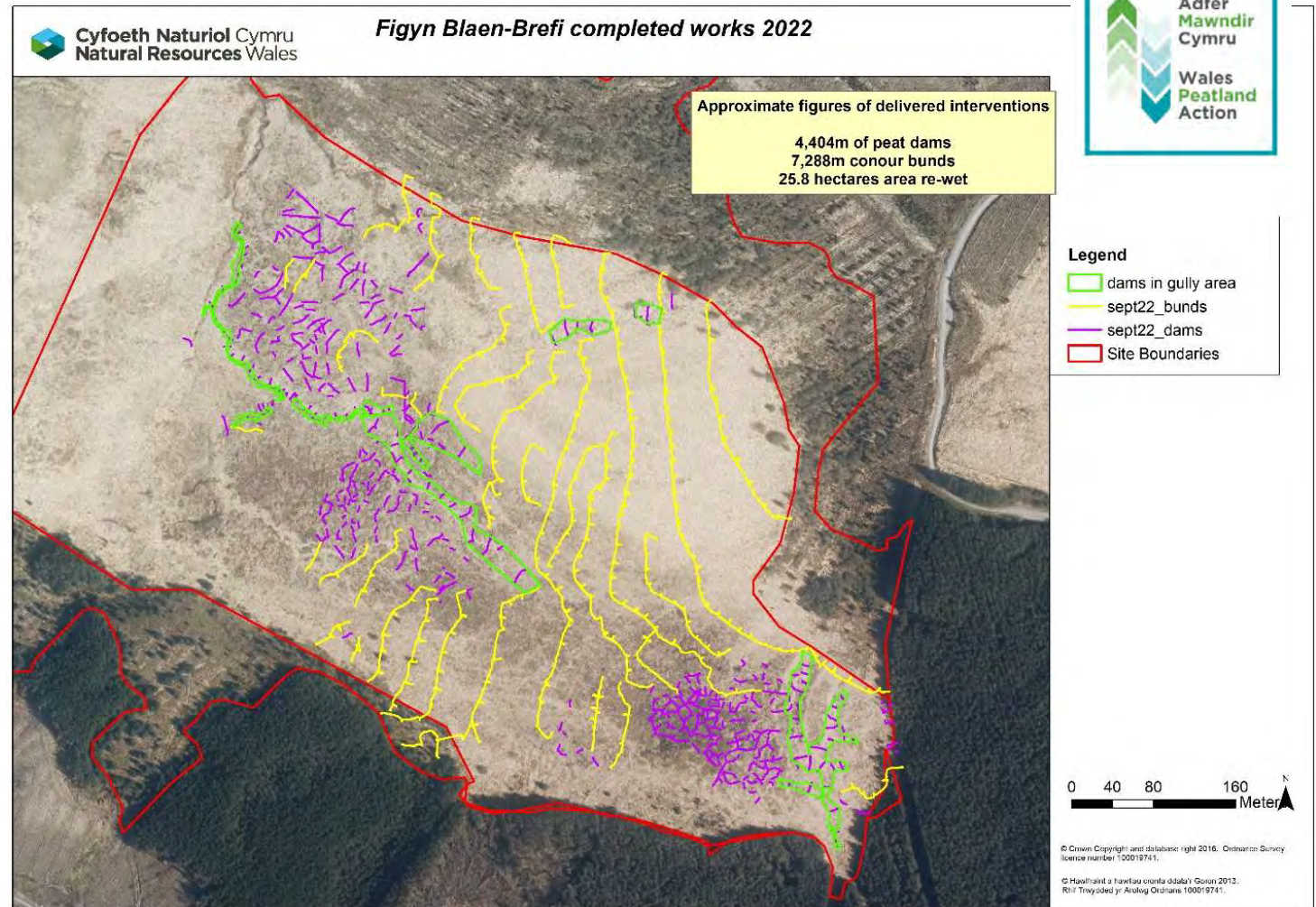
# Astudiaeth Achos Case Study

## Figyn Blaen-Brefi SSSI

**Activity:** Hydrological Restoration

**Site type:** WGWE / SSSI

**Duration:** September – October 2022



# Astudiaeth Achos Case Study

## Figyn Blaen-Brefi SSSI

**Activity:** Hydrological Restoration

**Site type:** WGWE / SSSI

**Duration:** September – October 2022

2021



2022





**Photo Credit, Sorcha Lewis (Elen Valley)**

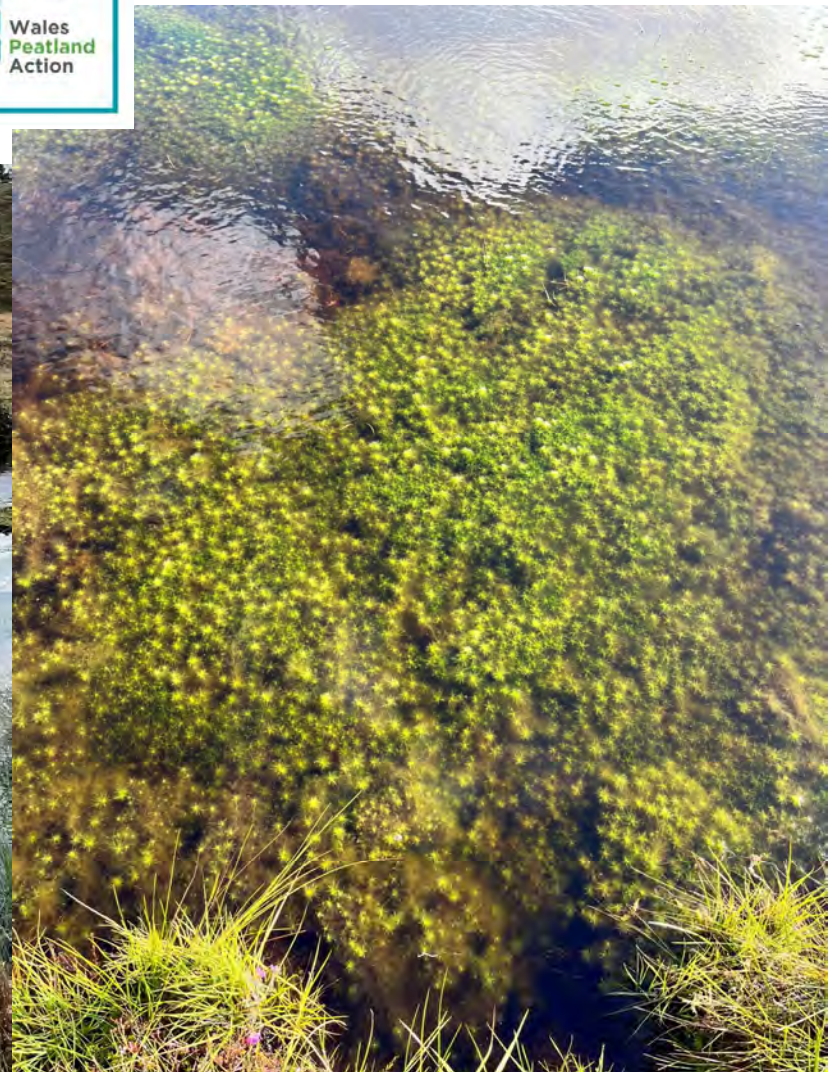
# Astudiaeth Achos Case Study

## Carn Fflur

**Activity:** Hydrological Restoration (Oct 2021)

**Site type:** WGWE

**Photos:** October 2022

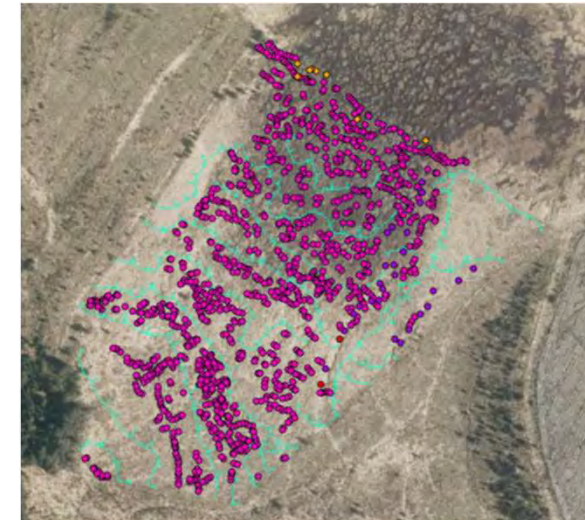




# Astudiaeth Achos Case Study

## Llyn Gorast central

**Activity:** Hydrological restoration  
**Site type:** Eroded Bog on WGWE  
**Duration:** October – November 2022  
**Site area:** 9.35ha



# Thank you & contact details

Working in partnership...



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