


# Rhaglen Weithredu Genedlaethol ar Fawndiroedd: Adroddiad Blwyddyn 2

## National Peatland Action Programme: Year 2 Report

2021-2022

**#AdferMawndirCymru**  
**#NaturUwchCarbonIs**



**Cefnogi  
NATUR  
Supporting  
NATURE**

**Lleihau  
allyriant  
CARBON  
Reducing  
CARBON  
emissions**

**#HighNatureLowCarbon**  
**#WalesPeatlandAction**

# Contents / Cynnwys

Uchafbwyntiau'r Ail Flwyddyn.....	4
Second Year Highlights.....	5
Crynodeb Gweithredol.....	6
Executive Summary.....	8
1. Introduction.....	10
2. Programme Resourcing.....	16
2.1 Staffing.....	16
2.2 Programme governance.....	17
3. Funding mechanisms used to deliver the 2021/22 programme .....	18
3.1 Grant aid.....	18
3.2 Direct procurement.....	19
3.3 Section 16 Land Management Agreements.....	20
3.4 Use of an existing Memorandum of Agreement (MoA) .....	21
3.5 Preparation for future years.....	22
4. Overview of work delivered during the Year 1 programme.....	23
4.1 Peatland restoration through capital delivery.....	23
4.2 Coordinating and supporting delivery.....	31
4.2.1 Place-based working & engagement with Area Statement Partnerships	31
4.2.2 National Delivery Partners Group.....	33
4.2.3 UK level national programmes group.....	34

4.2.4 Engagement.....	35
4.2.5 Evidence programme.....	49
4.2.6 Monitoring and activity recording and the SMNR data portal.....	53

# Uchafbwyntiau'r Ail Flwyddyn 2021/22



## Rhaglen Weithredu Genedlaethol ar Fawndiroedd – Uchafbwyntiau 2021 / 2022

# >1000 ha

o waith adfer\*

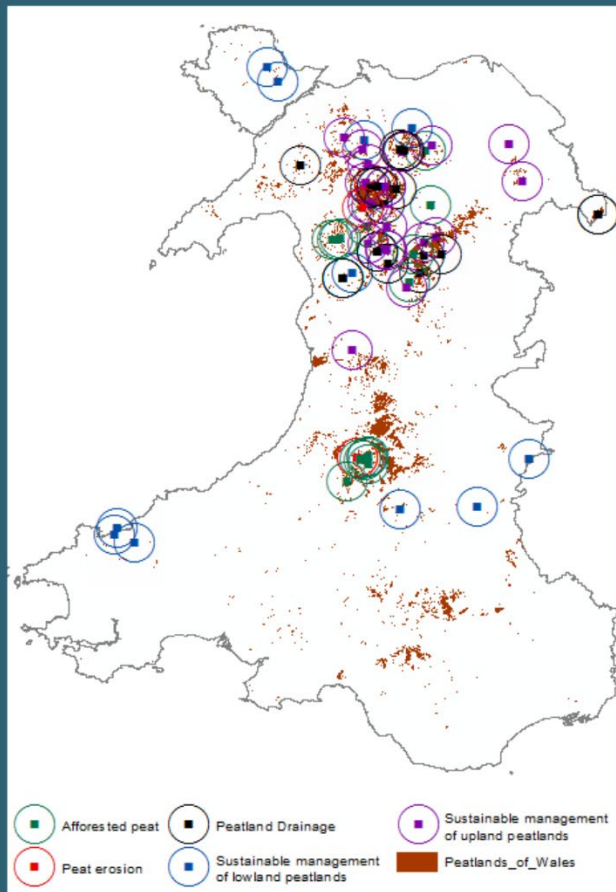
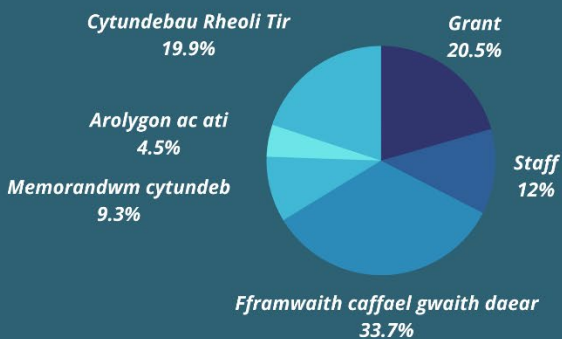
Cyflawnwyd 50% o'r gwariant ar weithgareddau adfer mewn cydweithrediad â phartneriaid ledled Cymru

Rhaglen arloesol ymgysylltu â chontractwyr

Cynigwyd grant i 11 partner

Datblygu a lansio Porth Data Mawn a grant cystadleuol

### Crynodeb Gwariant



\*Darperir 11gwr ha ceidwadol. Adroddir 11gwr o 2698.5 ha, ond mae'r adroddiadau'n destun adolygiad er mwyn sicrhau eu bod yn unol â methodoleg recordio safonol RHWGF.

# Second Year Highlights, 2021/22



## National Peatland Action Programme – 2021 / 2022 Highlights

**>1000 ha**  
of restoration activity\*

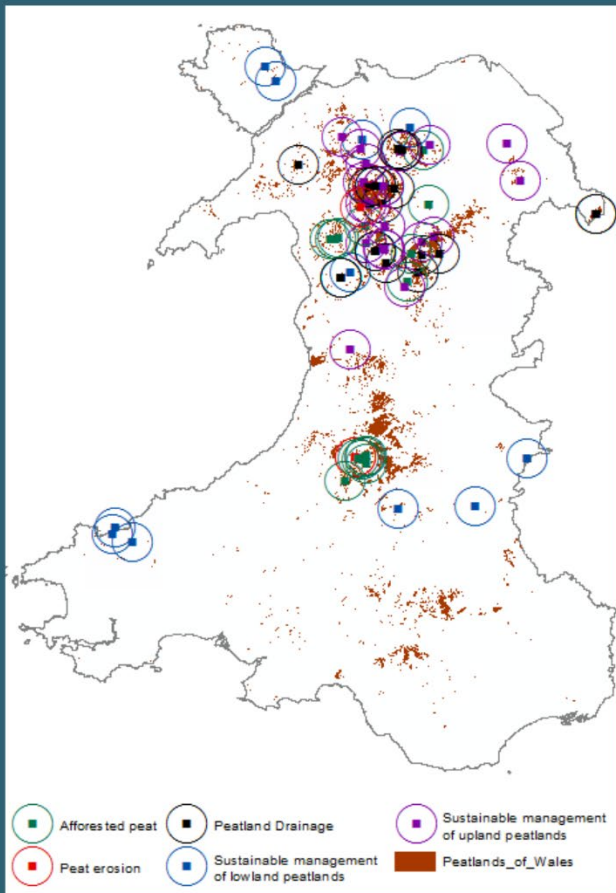
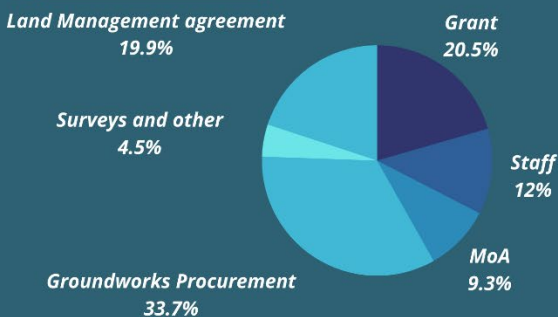
50% of restoration activity spend delivered in collaboration with partners across Wales

Pioneer contractor engagement programme

11 partners offered grants

Developed and launched the Peat Data Portal and competitive grant

### Spend summary



\*Conservative hectareage figure provided. Reported figures are 2698.5ha, but reporting is subject to review to bring it in-line with a standard NPAP recording methodology.



# Crynodeb Gweithredol

Mae'r Rhaglen Weithredu Genedlaethol ar Fawndiroedd yn cydnabod y cysylltiad cynhenid rhwng y buddion carbon a bioamrywiaeth a ddarperir gan fawndiroedd, a'i nod yw cynyddu eu gwytnwch fel ecosystem trwy raglen uchelgeisiol o adfer a rheoli cynaliadwy. Wrth wneud hynny, bydd y Rhaglen yn cyfrannu canlyniadau diriaethol i helpu i fynd i'r afael â'r Argyfwng Newid Hinsawdd a'r Argyfwng Natur. Cewch fanylion llawn yn y ddogfen [Rhaglen Weithredu Genedlaethol ar Fawndiroedd](#) am sut mae'r Rhaglen yn cyfrannu at fframweithiau polisi blaenoriaeth Llywodraeth Cymru, megis cynlluniau addasu hinsawdd yn unol â deddfwriaeth allweddol fel Deddf Amgylchedd Cymru.

Yn 2021/22 adeiladodd y Rhaglen ar sylfeini'r flwyddyn gyntaf lwyddiannus i gyflawni amcangyfrif o 1000ha o leiaf o waith adfer ar draws pump o'r chwe thema ar gyfer blaenoriaethu gweithredu.

Cyflawnwyd tua 50% o'r cyfanswm a wariwyd ar waith adfer mewn cydweithrediad â phartneriaid ar draws Cymru, gwaith a gyllidwyd drwy gyfrwng mecanweithiau yn cynnwys: Caffael, Grantiau, Cytundebau Rheoli Tir a Memorandwm Cytundeb.

Mae'r Rhaglen wedi parhau i feithrin a chynnal perthnasoedd sy'n arwain yn uniongyrchol at gyflawni gyda phartneriaid allanol. Fe greodd tîm y Rhaglen hefyd berthnasoedd newydd o fewn Cyfoeth Naturiol Cymru (CNC) a arweiniodd at waith adfer ar Ystad Goetir Llywodraeth Cymru yn 2020/21 a 2021/22 a chynllun am fwy o waith yn y blynyddoedd i ddod. Mae meithrin perthnasoedd yn fewnol wedi arwain at ddatblygu cyd-ddealltwriaeth allweddol o wahanol nodau busnes ac wedi amlygu tir cyffredin a arweiniodd at ganlyniadau uniongyrchol ar rai o'r mathau o fawndir sydd wedi'u haddasu fwyaf yng Nghymru. Mae'r Rhaglen, ar y cyd â thimau polisi coedwigoedd, yn parhau i asesu potensial adfer mawndiroedd ar yr Ystad Goedwig. Bydd hyn yn cael ei ddefnyddio i lywio Cynlluniau Adnoddau Coedwig newydd sy'n nodi cyfleoedd i adfer mawndiroedd.

Cynhaliwyd rhaglen ymgysylltu sylweddol hefyd, wedi'i galluogi yn sgil penodi swyddog Cyfathrebu a Phartneriaethau i'r Rhaglen, yn cynnwys digwyddiadau, cynnwys gwe, fideos gwybodaeth, ac ymgysylltu drwy'r cyfryngau.

Mae'r Rhaglen wedi parhau i ddatblygu'r gwaith o gydlynu adferiad mawndiroedd yn genedlaethol. Mae tîm y Rhaglen wedi datblygu llinellau cyfathrebu â phob un o'r chwe arweinydd Datganiad Ardal i nodi opsiynau ar gyfer integreiddio'r Rhaglen â phob un o'r Datganiadau Ardal. Cynhaliodd y Rhaglen weithdy ar y cyd â thîm Datganiad Ardal y Gogledd-orllewin ym mis Mehefin a Gorffennaf 2021, a chafwyd adborth cadarnhaol iawn gan gyfranogwyr allanol a mewnol. Mae'r Rhaglen hefyd wedi cynnal gweithdy mewnol Datganiad Ardal ar gyfer y Canolbarth, a chafwyd adborth cadarnhaol unwaith yn rhagor, a byddwn yn parhau i ymdrechu i gydweithio â thimau Datganiadau Ardal i strwythuro ymgysylltiad mewn ffordd gydweithredol sy'n canolbwyntio ar le.

Ar ddechrau 2022, cynullodd y Rhaglen gyfarfod cyntaf y Grŵp Strategol newydd Partneriaid Cyflawni ar Fawndiroedd. Mae'r grŵp newydd yn disodli'r Grŵp Gweithredu ar Fawndiroedd Cymru, gan fod yn fforwm sy'n fwy priodol i gefnogi rhaglen sydd â chyllid craidd sy'n canolbwyntio'n bennaf ar adfer mawndiroedd, ac mae'n adlewyrchu'r angen

dybryd i ymateb yn effeithiol i'r Argyfwng Newid Hinsawdd a'r Argyfwng Natur. Yn 2022, sefydlodd y tîm hefyd Fforwm Cenedlaethol ar gyfer Monitro ac Ymchwil Mawndiroedd mewn cydweithrediad â Phrifysgol Abertawe.

Mae'r Rhaglen wedi arwain ar ddull arloesol yn CNC o feithrin perthnasoedd gwaith cadarnhaol â chontractwyr. Mae'r Rhaglen a'r adran Gaffael wedi bod yn gwneud ymweliadau safle gweithrediadol er mwyn cyfarfod a dod i adnabod y cyflenwyr ar y fframweithiau a sefydlwyd ym Mlwyddyn 1. Croesawyd hyn yn frwd ac mae wedi arwain at ddatrys problemau contractiol yn gyflymach a chontractwyr yn hysbysu am broblemau yn gynharach. Mae argaeledd contractwyr yn un o'r prif risgiau i'r rhaglen mawndiroedd ac mae'r ffordd hon o ymgysylltu yn profi i fod yn un gadarnhaol iawn.

Mae tîm y Rhaglen wedi gwneud cysylltiadau â phrosiectau tebyg yn y DU, sef Peatland Action yn yr Alban, cynllun grant Peatlands for Climate gan Natural England, a'r rhaglen sy'n cael ei datblygu yng Ngogledd Iwerddon, Peatland Strategy. Mae'r cysylltiadau hyn yn amlygu heriau cyffredin y gellid eu datrys yn fwy effeithiol drwy gydweithio, a bydd y canolbwyntio i gychwyn ar safonau adrodd a methodolegau.

Yn sgil penodi arbenigwr GIS a data mawndiroedd mae cynnydd sylweddol ar waith rheoli data y Rhaglen wedi gwella'r tryloywder. Ar 4 Ebrill 2022, lanswyd y porth newydd ar gyfer data mawndir ar wefan CNC. Mae'r Porth Data Mawndiroedd yn cynnig yr holl ddata sydd ar gael yn agored am fawn mewn fformat sy'n hygyrch i'r cyhoedd am y tro cyntaf. Mae'r porth yn cynnwys gwahanol haenau o ddata gofodol cysylltiedig â mawndiroedd, gan gynnwys y mapiau priodoleddau carbon a dosbarthiad mawn a gwblhawyd yn ddiweddar ac a gyllidwyd gan Lywodraeth Cymru. Bu gwaith yn mynd rhagddo hefyd i ddatblygu fformatau wedi'u safoni ar gyfer adrodd ar waith adfer mawndiroedd, ar draws y Rhaglen a'i phartneriaid, er mwyn cysoni gwaith adrodd.

Mae'r Rhaglen wedi parhau i wneud gwaith paratoi i ddatblygu rhaglen genedlaethol ar gyfer monitro canlyniadau er mwyn helpu i gasglu tystiolaeth o ganlyniadau'r Rhaglen mewn perthynas ag ecoleg (bioamrywiaeth) a lliniaru newid hinsawdd, drwy dreialu dulliau a datblygu perthnasoedd cydweithio allweddol.

Wedi derbyn y gorchwyl gan Lywodraeth Cymru, datblygodd y Rhaglen gynigion ar gyfer uwchraddio gwaith adfer mawndiroedd er mwyn cyrraedd targedau sero net. Byddwn yn adrodd ar ddatblygiadau pellach mewn perthynas â'r gwaith hwn yn 2022/23.

# Executive Summary

The National Peatland Action Programme (NPAP) recognises the intrinsic link between the carbon and biodiversity benefits provided by peatlands and aims to increase their ecosystem resilience through an ambitious programme of restoration and sustainable management. In doing so, NPAP will contribute tangible outcomes to help address both the Climate Change Emergency and Nature Emergency. Full details of how NPAP contributes to priority Welsh Government (WG) policy frameworks, such as climate adaptation plans in line with key legislation such as Environment Wales Act, are described in detail within the published [National Peatland Action Programme](#) document.

In 2021/22 NPAP built on the foundations of the first successful year to deliver an estimated minimum of 1000ha of restoration activity across five of the six priority action theme areas.

Around 50% of the spend on restoration activity was delivered in collaboration with partners across Wales, funded by mechanisms including: Procurement, Grants, Land Management Agreements and a Memorandum of Agreement.

NPAP has continued to build and maintain relationships that lead to direct delivery with external partners. The NPAP team also built new relationships within Natural Resources Wales (NRW) which led to restoration activity on the Welsh Government Woodland Estate (WGWE) in 2020/21 and 2021/22 and a plan for more in future years. This internal relationship building has developed key mutual understanding of different business aims and found common ground that led to direct results on some of Wales' most modified peatland types. NPAP, in conjunction with forest policy teams, is continuing to undertake peatland restoration potential assessment on the WGWE. This will be used to inform new Forest Resource Plans that identify peatland restoration opportunities.

A significant engagement programme was also undertaken, enabled by the appointment of an NPAP Communications and Partnerships officer, including events, web content, informative videos, and media engagement.

NPAP has further developed the national co-ordination of peatland restoration. The project team has developed lines of communication with each of the six Area Statement (AS) leads to identify options for integrating NPAP with each of the Area Statements. NPAP held a joint workshop with the North West AS team in June and July 2021 and had very positive feedback from external and internal participants. NPAP has also held an internal AS workshop for the Mid region, again with positive feedback, and will endeavour to work collaboratively with AS teams to structure engagement in a collaborative and place-focused way.

During early 2022, NPAP convened the first meeting of the new Strategic Peatland Delivery Partners Group. The new group replaces the original Welsh Peatland Action Group with a forum more appropriate to the support of a core-funded programme with a primary focus on peatland restoration and reflects the very immediate need to respond effectively to the Climate Change and Nature Emergencies. In 2022, the team also established a National Peatland Monitoring and Research Forum in collaboration with Swansea University.



NPAP has led on a pioneering approach in NRW to build positive working relationships with contractors. NPAP and Procurement have been undertaking operational site visits to meet and get to know the suppliers on the frameworks that were established in Year 1. This has been positively welcomed and has resulted in quicker resolution to contractual issues and earlier alerts of issues from contractors. Contractor availability is a key risk for the peatland programme and this engagement approach is proving very positive.

The programme team have made connections with other similar UK projects, namely Peatland Action in Scotland, Natural England's Peatlands for Climate Grant Scheme, and the emerging Peatland Strategy programme in Northern Ireland. These contacts are revealing common challenges which could be resolved more effectively through collaboration, with an initial focus required on reporting standards and methodologies.

The appointment of a peatland GIS and data specialist has meant that significant progress on NPAP data management has increased transparency. On the 4<sup>th</sup> of April 2022, the new peat data portal was launched on NRW's website. The peat portal hosts all of the openly available peat data in a publicly accessible format for the first time. The portal includes various peatland related spatial data layers, including, the recently completed new peat distribution and carbon attribute maps funded by Welsh Government. Work has also been underway to develop standardised peatland restoration activity reporting formats, across NPAP and partners, to streamline reporting.

NPAP has continued with preparatory work to develop a national outcomes monitoring programme to help evidence the ecological (biodiversity) and climate change mitigation outcomes of the programme, by trialling approaches and developing key collaborations.

Tasked by Welsh Government, NPAP developed upscaling proposals for peatland restoration to meet net zero targets. Further development of this work will be reported on in 2022/23.

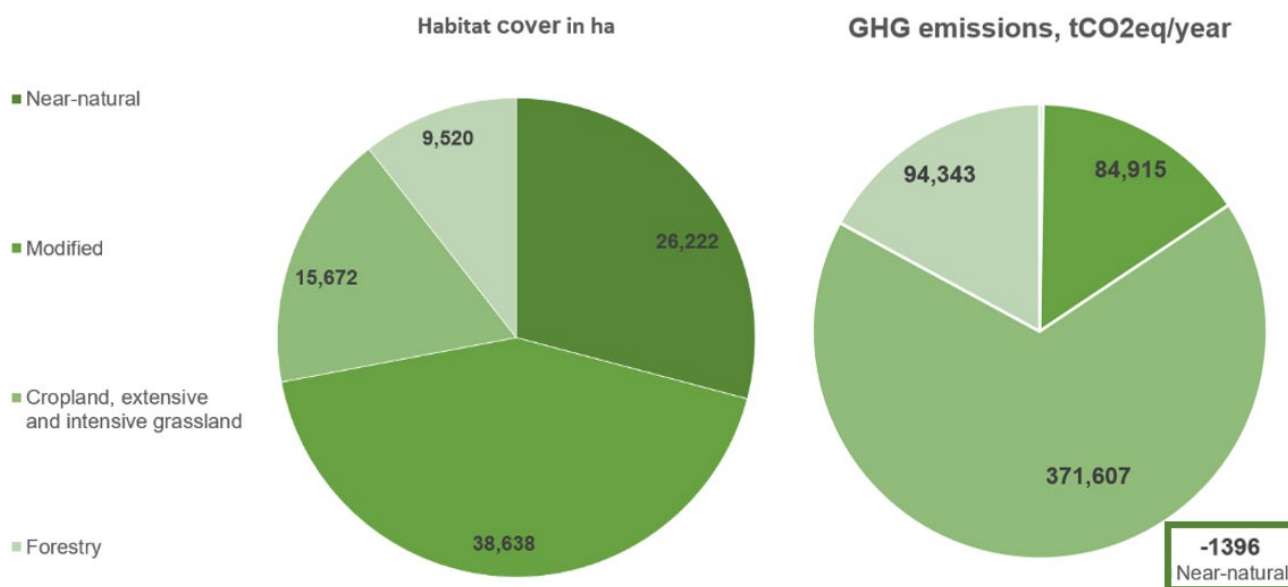
# 1. Introduction

This report describes work undertaken during the second year (2021/22) of the National Peatland Action Programme.

This is a five-year programme led by NRW with additional funding from Welsh Government. The programme can be viewed on a dedicated section of NRW's website (Natural Resources Wales / National Peatland Action Programme).

The programme recognises the intrinsic link between the carbon and biodiversity benefits provided by peatlands (see Figure 1) and aims to increase the ecosystem resilience of Welsh peatlands through an ambitious programme of restoration and sustainable management. In doing so NPAP will contribute tangible outcomes to help address both the Climate Change Emergency and Nature Emergency.

**Figure 1.** Pie charts and linked **Table 1** show **a).** Habitat cover of Welsh peatlands based on broad land cover types, with areas of each category shown in ha. **b).** Greenhouse gas emissions from Welsh peatland soils within each of the broad land cover types based on tier 2 emissions factors data. Totals shown in Table 1 below.



Land cover type of Welsh peatland	Habitat cover in ha	GHG emissions, tCO2eq/year
Near-natural	26,222	-1396
Modified	38,638	84,915
Cropland, extensive and intensive grassland	15,672	371,607
Forestry	9,520	94,343
<b>Total</b>	<b>90,052</b>	<b>549,469</b>

In short, the national programme (Table 2 following) identifies a focus for restoration activity across six priority action themes which represent the primary areas of peatland degradation in Wales.

- Peat erosion
- Peat drainage
- Sustainable management of degraded upland peatlands
- Sustainable management of degraded lowland peatlands
- Afforested peatland
- Hyper-modified peatlands

An additional three cross-cutting themes provide national coordination across critical areas relating to our collective capacity and capability in Wales to deliver peatland restoration where it is needed most urgently.

- National Coordination
- National monitoring and activity capture
- Increasing stakeholder and wider engagement in peatland restoration and its value to society

**Table 2.** Summary of NPAP priority action themes and cross cutting themes.

## NPAP Priority Action Themes



### Peat erosion

- Peatland erosion results in the loss of peatland vegetation and part or all of the essential supporting peat deposit.
- Erosion results in significant emissions of greenhouse gasses (GHG) and particulate and dissolved carbon.
- Peat erosion also causes significant drainage impacts which extend well beyond the immediate footprint of erosion features.
- Erosion will be exacerbated by climate change and whilst a relatively local and primarily upland issue, urgent action is required to prevent further peat loss and encourage its redevelopment through a range of techniques.

### Peat drainage

- Active drainage remains widespread and is associated with increased GHG emissions as well as causing unfavourable hydrological regimes for active (peat forming) mire habitats.
- Drainage also introduces positive feedback mechanisms through changes in surface topography which result in enhanced water loss.



### Sustainable management of degraded upland peatlands



- Blanket bog is our most extensive peatland habitat, and its landscape scale gives it particular significance in terms of ecosystem resilience, GHG mitigation, carbon storage and natural flood-risk management.
- Peat erosion and drainage are key themes in their own right, but further widespread measures are needed to tackle issues of graminoid or ericoid dominance and the restoration of blanket bog from heavily modified precursors.
- The aim of this action theme is to restore blanket peatlands to a condition where low-cost sustainable management is effective in retaining ecosystem service provision and biodiversity interest, and reducing fire risk.

### Sustainable management of degraded lowland peatlands

- Lowland peatlands are a critical resource for peatland biodiversity but are fragmented, with low current resilience.
- Modified lowland peatlands release significant GHG emissions and may store large amounts of carbon per hectare due to the depth of peat deposits.
- This theme will focus on restoring sites to a point where ongoing sustainable management (including seasonal grazing where appropriate) can sustain ecosystem service provision and biodiversity interest.



### Afforested peatland



- Afforestation results in increased emissions of greenhouse gases from the peat surface and causes peatland habitat degradation.
- Afforested peatlands form an important component of the 5,000 ha Welsh Government target for our most modified peatlands.
- The current focus of the programme will be on restoring areas of peatland with low yield class plantations, and also open ground within the Welsh Government Woodland Estate.

### Hyper-modified peatlands

- This component of the resource includes our most heavily modified peatlands under improved grassland and arable land use: the most intensive GHG emissions arising from peatlands in Wales are from these categories.
- The Low Carbon Wales assessment anticipates that “Towards 2050, we need to continually look at what new opportunities can be brought into play, to further enable all Welsh peatlands being brought into sustainable management”.
- This priority action will seek to begin through a process of consultation and the use of demonstration sites.



## Cross-cutting Themes

### **National Coordination**

- National coordination is needed to build capacity and capability in delivering peatland restoration on the part of partners.
- The Area Statement Process will form the basis of this work, with a national practitioner forum being used to promote best practice across all aspects of the NPAP.
- The theme will also focus on developing guidance where needed and helping in the provision of training for both practitioners and contractors to up-scale our ability to deliver restoration projects.

- A national coordinated programme of activity recording and outcome monitoring is needed, to ensure accurate reporting of project actions and outcomes, for a wide range of reporting drivers.
- This work is also needed to guide and target further effort and ensure a focus on priority locations, across the six priority action themes.
- This priority action theme is supported by a dedicated post within the NPAP structure, namely the Data and GIS Officer.

### **National monitoring and activity capture**

### **Increasing stakeholder and wider engagement in peatland restoration and its value to society**

- Peatlands are one of Wales' main environmental assets, providing an exemplary aspect of the principle of employing nature-based solutions to deliver Sustainable Management of Natural Resources (SMNR) in Wales.
- This cross-cutting theme will work to increase engagement in peatland restoration on the part of stakeholders and the wider community.
- This priority action theme is supported by a dedicated post within the NPAP structure, namely the Communications and Partnerships Engagement Officer.

## 2. Programme Resourcing

Welsh Government funding for the programme was confirmed during the last quarter of 2020/21, with £1M identified for capital restoration works to which was added an additional £0.145M from the Water Quality capital budget and £0.573M from the Biodiversity Ecosystem Resilience Fund (BERF) capital budget. A revenue allocation of £0.276M was provided for programme staffing. Welsh Government also provided a budget of £0.075M to address priority evidence needs.

### 2.1. Staffing

The Year 2 programme has been supported by six project staff appointed under FTA contracts to March 2023. Three staff continued on the programme from Year 1 with a total of three staff changes made. Other NRW staff also made a significant contribution to programme delivery.

**Table 3.** Summary of NPAP posts.

Title	Start date	NRW Directorate	Host Team in NRW	Role
Project Manager	18/5/20	Evidence Permitting and Policy	Terrestrial Ecosystems and Species	Leadership and management of project
Finance & Grants Officer	1/9/20	Operations	People and places team, North West	Budget planning, procurement and project support
Project Officer, South	1/9/20	Operations	People and places team, North West	Groundworks planning and delivery
Project Officer, North	1/9/20	Operations	People and places team, North West	Groundworks planning and delivery
Data & GIS Officer	Q2, 2021/22	Evidence Permitting and Policy	Terrestrial Ecosystems and Species	Management of SMNR data portal – data & GIS management
Communications and Partnerships engagement Officer	Q2, 2021/22 Staff change in Q3. Post occupied on 21/03/22	Evidence Permitting and Policy	Terrestrial Ecosystems and Species	Management of all aspects of stakeholder engagement and project promotion, including engagement with Area Statement process
Procurement officer (0.5) (Contractors)	Q2 2020/21		Procurement	Support for development of the two all-Wales NRW frameworks



## 2.2. Programme governance

Programme governance measures remain unchanged from those implemented in Year 1. A combination of line management by two team leaders and scrutiny through the NRW Capital Projects oversight board being augmented by a formally constituted project Board established in September 2020 and answerable to NRW's BREB (Biodiversity & Ecosystem Resilience Board) and NRM Boards.

Welsh Government's lead on peat policy is represented on the National Peatland Action Programme Board.

A wider NRW Peat Group also exists to support NPAP.

Project Governance has proceeded according to the principles of NRW's Managing our Money financial scheme of delegation, with project planning being developed through an Excel-based project plan following the Prince2 methodology.

Migration of project planning documentation to systems developed under NRW's new Portfolio Management Office was implemented to provide independent project assurance in accordance with a five-case business model approach early in 2020/21.

# 3. Funding mechanisms used to deliver the 2021/22 programme

In order to ensure effective delivery of the allocated budget within a challenging timescale and another challenging year (especially given Covid-19), NPAP made use of a variety of funding mechanisms to reduce project risks.

NPAP used the following four mechanisms to fund and deliver capital projects:

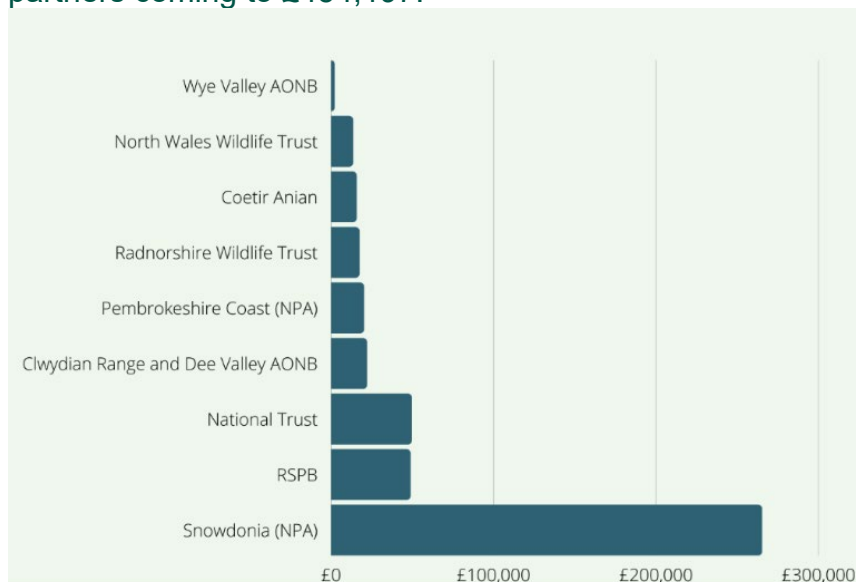
- grants,
- direct procurement,
- land management agreements, and
- Memorandum of Agreement.

## 3.1 Grant aid

Delivery of the National Peatland Action Programme will require the concerted and coordinated input of a wide range of partner bodies, many of whom have significant expertise in peatland restoration.

Grant aid represents a key means of partner engagement, enabled by NRW's new grants mechanism portfolio. Strategic Allocated Funding (SAF) was available for use in 2021/22.

**Figure 2.** Peatland Restoration funded through the Strategic Allocated Funding (SAF) Grant in Year 2. Total Allocated to partners through SAF being £598,732 and total spent by partners coming to £454,197.



NPAP sought assurance for the grants programme from the new and independent Programme Management Office that evaluates programmes against a five-case business model before gaining programme sign-off according to the Managing our Money principles.

The SAF mechanism is designed to enable delivery of NRW priority work by strategic partners, with budgets allocated between partners according to a formula based on objective criteria. In 2020/21 NPAP used SAF to allocate grants to two grant recipients (Snowdonia National Park Authority and Brecon Beacon National Park Authority). In

2021/22 NPAP re-configured the funding algorithm to include a wider range of grant recipients, 11 in total (9 recipients accepted the SAF offer: Figure 2).

Assurance was also gained for the 2022/23 grants programme, which includes both SAF and competitive grant. SAF for 2021/22 was allocated in February 2022 and the competitive grants was launched on the 4th of April 2022.

## 3.2 Direct procurement

The selection of sites for inclusion in the five-year NPAP programme was initiated late in 2019, with members of NRW's internal Peat Group and other NRW staff supporting the process with suggestions for project sites according to the six priority action themes.

Afforested peatland sites were selected following discussion with NRW's National Forest Planning Team and direction from the Land Stewardship Department to focus on areas of low yield class (<10) and existing open ground (as defined through the Forest Resource Planning process).



**Figure 3a & b.** Before (top) and after (bottom) tree clearance on the margin of Figyn Blaen Brefi SSSI on the Welsh Government Woodland Estate (WGWE). Trees have been cleared from a 5m-deep peat area.

NPAP established and developed positive working relationships with NRW colleagues working on the WGWE. This relationship-building element of the programme has been essential for a variety of reasons including: Identifying potential areas for restoration on NRW managed land, building collaboration between the new NPAP team and established forestry management/policy teams, development of further work programmes, developing ways of working and sharing knowledge on sites, identifying processes and governance (e.g. timber sales process).

This is a new way of working collaboratively for different parts of NRW. NPAP plans to continue to build positive relationships with colleagues, focussed on the management of the WGWE, to ensure the potential for delivering SMNR on the WGWE is fully realised (Figure 3).

NPAP have also funded works on SAC Natural Nature Reserves (NNRs) supported by local (NNR) and integrated workforce teams. NPAP directly purchased works by making use of both the new framework agreements (see Year 1 report) and existing NRW framework agreements.

All site works were screened by NRW's internal Environmental Assessment Team to ensure early recognition of potential impacts and to put in place avoidance and mitigation measures.

### **3.3 Section 16 Land Management Agreements**

Direct funding by NRW of restoration or management activity on third party land is generally governed by a Section 16 Management Agreement<sup>1</sup> (S16 LMA).

New S16 agreements have been established with third parties and works have been delivered through both the existing and new agreements established in 2020/21. Agreements are in place for five years and allow funding on the areas included for the duration of the agreement. Figure 4 shows an example of works delivered through a S16 LMA in 2021/22.

---

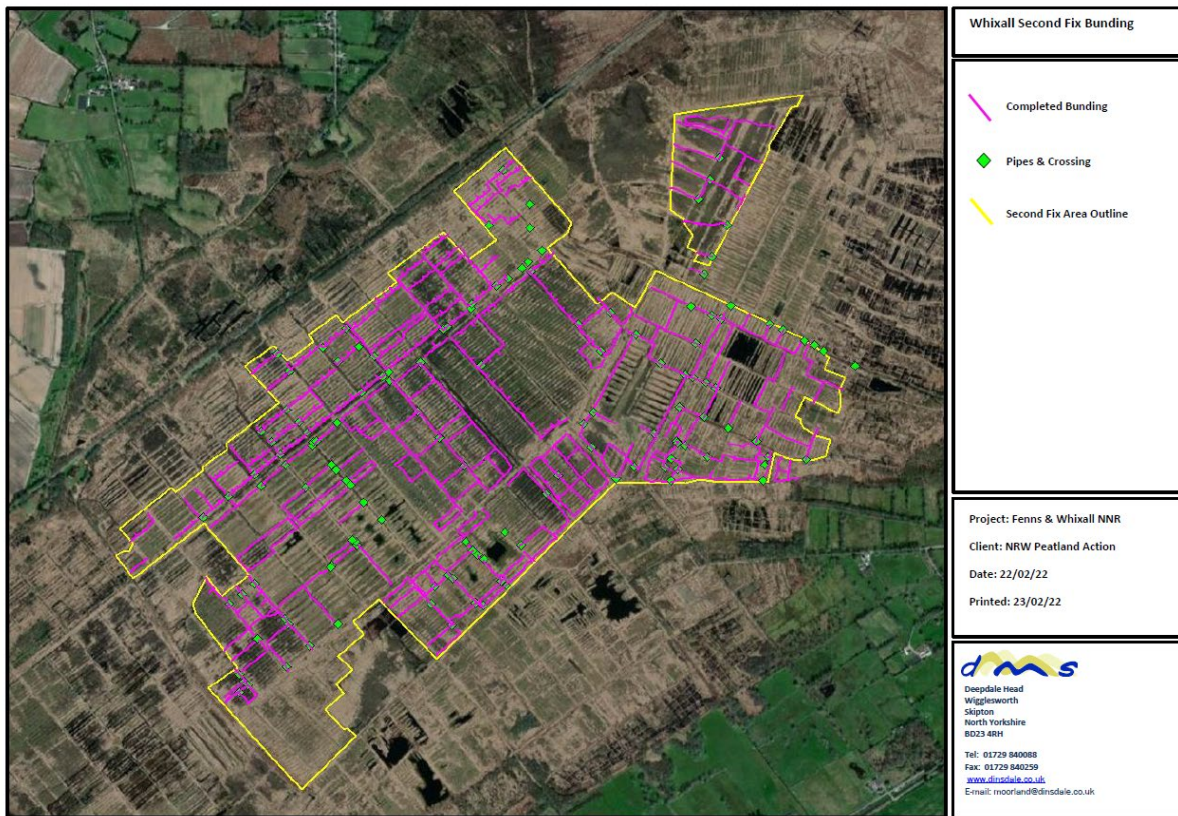
<sup>1</sup> See [Environment \(Wales\) Act 2016 - Explanatory Notes \(legislation.gov.uk\)](https://legislation.gov.uk)



**Figure 4.** Large-scale upland blanket bog restoration on Cerniau, part of Berwyn SAC. This area is included in a S16 agreement established in 2020/21, with works delivered across 2020/21 and 2021/22. The resulting pools closely mimic the natural patterning which is a feature of actively growing peatlands and of significant importance for peatland biodiversity – few Welsh peatlands now exhibit these features, with erosion and drainage likely to be key factors. *Photo: Alexander Falkingham*

### **3.4 Use of an existing Memorandum of Agreement (MoA)**

The National Peatland Action Programme used an existing MoA with Natural England (NE) to fund work on the cross-border lowland raised bog Fenn's and Whixall Mosses where both the Welsh and English components are managed by NE under an agreement with NRW. A primary focus of the work on this site in 2021/22 concerned a major phase of hydrological restoration to further raise and stabilise water levels across a large part of the Fenn's moss area in Wales.



**Figure 5.** Bunding installation on the Welsh section of Fenn’s and Whixall Mosses, Procurement by NRW and managed by NE using MoA.

### 3.5 Preparation for future years

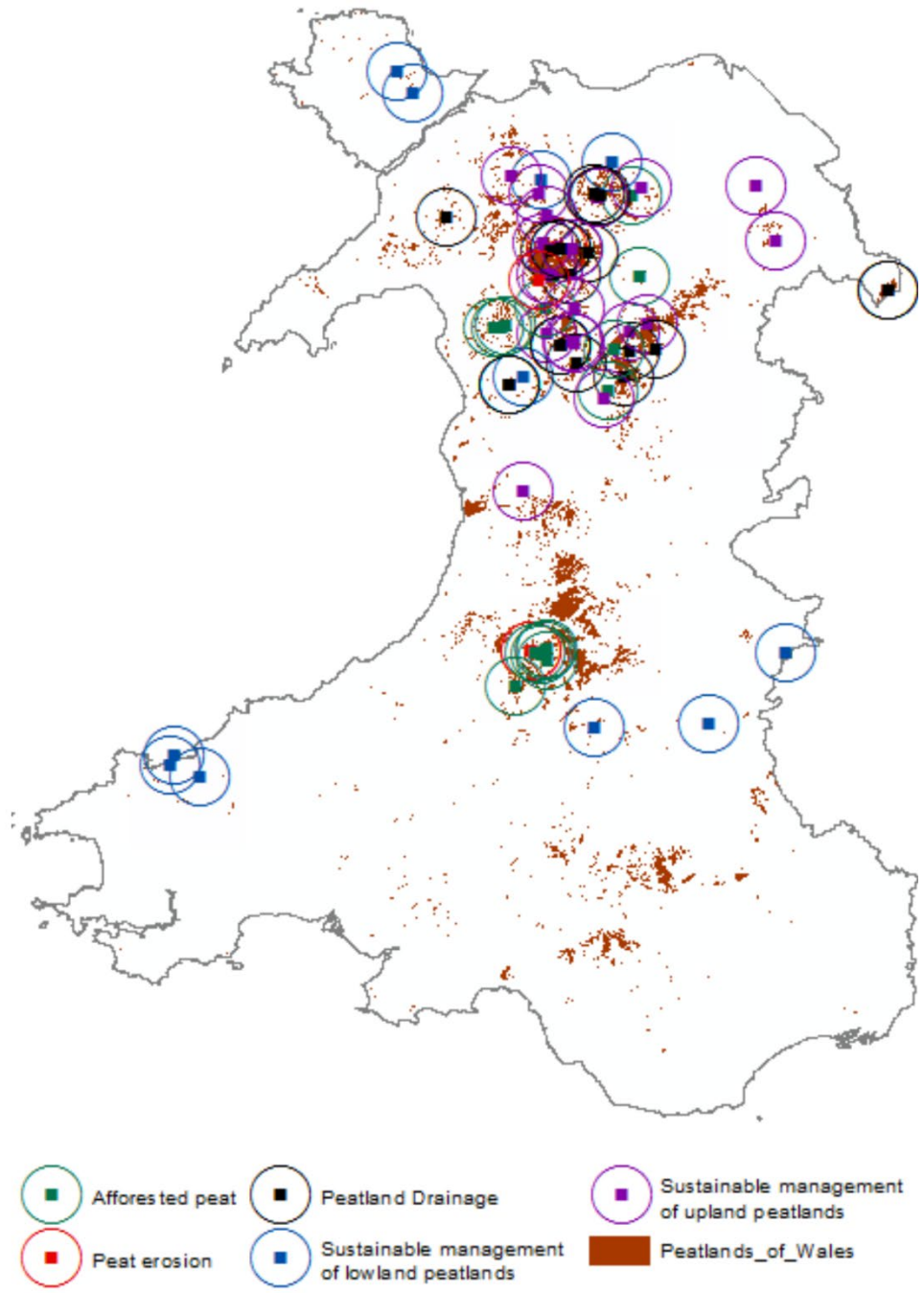
NPAP has invested in developing work plans for delivery in future years.

This includes identifying NRW-owned land requiring restoration within current forest design plans, undertaking extensive drone survey of inaccessible areas, obtaining environmental screenings for proposed sites, and addressing screening suggestions e.g. obtaining water course consents, water vole licences, peat surveys, data collation, undertaking line-checks etc. NPAP has also worked to develop further Section 16 agreements so that they can be finalised and delivered in subsequent financial years.

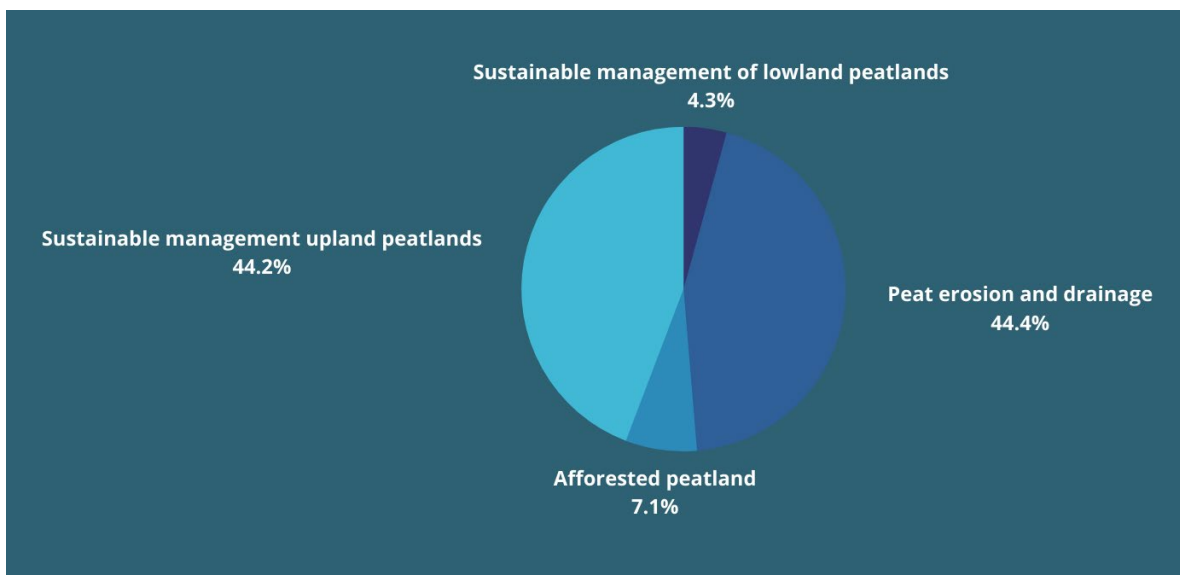
# 4. Overview of work delivered during Year 2 of the programme

Here we provide some key project summaries with figures illustrating some of the main areas of delivery achieved in 2021/22.

## 4.1 Peatland restoration through capital delivery



**Figure 6.** Map showing the location of restoration sites, and the main type of restoration activity at each, overlain on the Wales Peatland Map.



**Figure 7.** Summary of spend across the priority action themes targeted in 2021/22.

**Table 4.** Breakdown of delivery against mechanism used 2021/22.

Mechanism	Reported ha	Priority themes
Strategic Allocated Funding Grant	2237*	<ul style="list-style-type: none"> <li>• Peatland drainage</li> <li>• Peat erosion</li> </ul>
Section 16 Land Management Agreement	238	<ul style="list-style-type: none"> <li>• Peatland drainage</li> <li>• Erosion</li> <li>• Sustainable management of uplands</li> </ul>
Direct Procurement of groundworks	63	<ul style="list-style-type: none"> <li>• Afforested peatlands,</li> <li>• Lowland peatlands</li> </ul>
Memorandum of Agreement	160.5	<ul style="list-style-type: none"> <li>• Peatland drainage</li> <li>• Sustainable management of lowland peatlands</li> </ul>

*\*ha figure subject to review to bring it in-line with NPAP recording methodology with an estimated minimum figure of 1000 ha.*





NPAP - National Peatland Action Programme, for Nature and Climate



# Funded by NPAP through SAF grant 1,815 ha

\*of restoration activity

8 sites (342.82 ha) where we carried out ditch blocking works to re-wet peat and help facilitate grazing



2 sites (130.48 ha) where we worked blocking gullies and re-profiling hagsgs to re-wet peat and reduce erosion

21 sites (1604.85 ha) where we cleared conifers and scrub to improve biodiversity and help to re-wet peat



8 sites (91.52 ha) where we facilitated grazing to benefit biodiversity and improve peatland health



\*NPAP are working to improve consistency of reporting ha under restoration activity



Ymddiriedolaeth  
Genedlaethol  
National Trust

**Funded by NPAP through SAF grant**

**331 ha** \*of restoration activity

9 Sites

- Ditch blocking
- Scrub Clearance
- Monitoring



*Scrub Clearance*

*Ditch blocking*



*'Eyes on the bog' monitoring*



\*NPAP are working to improve consistency of reporting ha under restoration activity



NPAP – National Peatland Action Programme, for Nature and Climate



**Funded by NPAP  
through SAF grant  
39 ha** \*of restoration activity



\*NPAP are working to improve consistency of reporting ha under restoration activity

Photos: Alexander Falkingham

# Funded by NPAP through SAF grant

(all less than £25k in value)

## >50 ha

\*of restoration activity

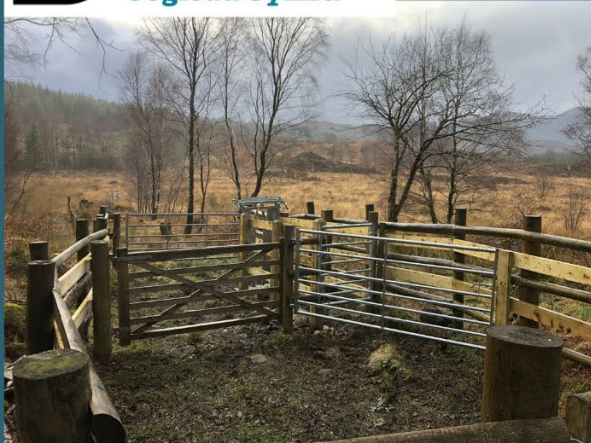


**Bryniau Clwyd a  
Dyffryn Dyfrdwy**  
Clwydian Range  
and Dee Valley

Ardal o Harddwch Naturiol Eithriadol  
Area of Outstanding Natural Beauty



**North Wales  
Wildlife Trust**  
Ymddiriedolaeth Natur  
Gogledd Cymru



**Radnorshire  
Wildlife Trust**  
Ymddiriedolaeth Natur  
Sir Faesyfed



**Parc Cenedlaethol  
Arfordir Penfro**  
Pembrokeshire Coast  
National Park



**Coetir Anian**  **Cambrian  
Wildwood**



\*NPAP are working to improve consistency of reporting ha under restoration activity

NPAP – National Peatland Action Programme, for Nature and Climate



**Funded by NPAP through Section 16  
Land Management Agreements  
235 ha** \*of restoration activity



Cerniau



Rhiwargor

\*NPAP are working to improve consistency of reporting ha under restoration activity

Photos: Alexander Falkingham



NPAP – National Peatland Action Programme, for Nature and Climate

# Direct procurement by NRW

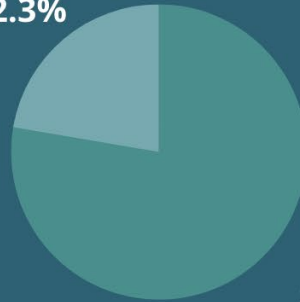


## 269 ha

\*of restoration activity



WGWE  
22.3%



SAC / NNR  
77.7%



\*NPAP are working to improve consistency of reporting ha under restoration activity



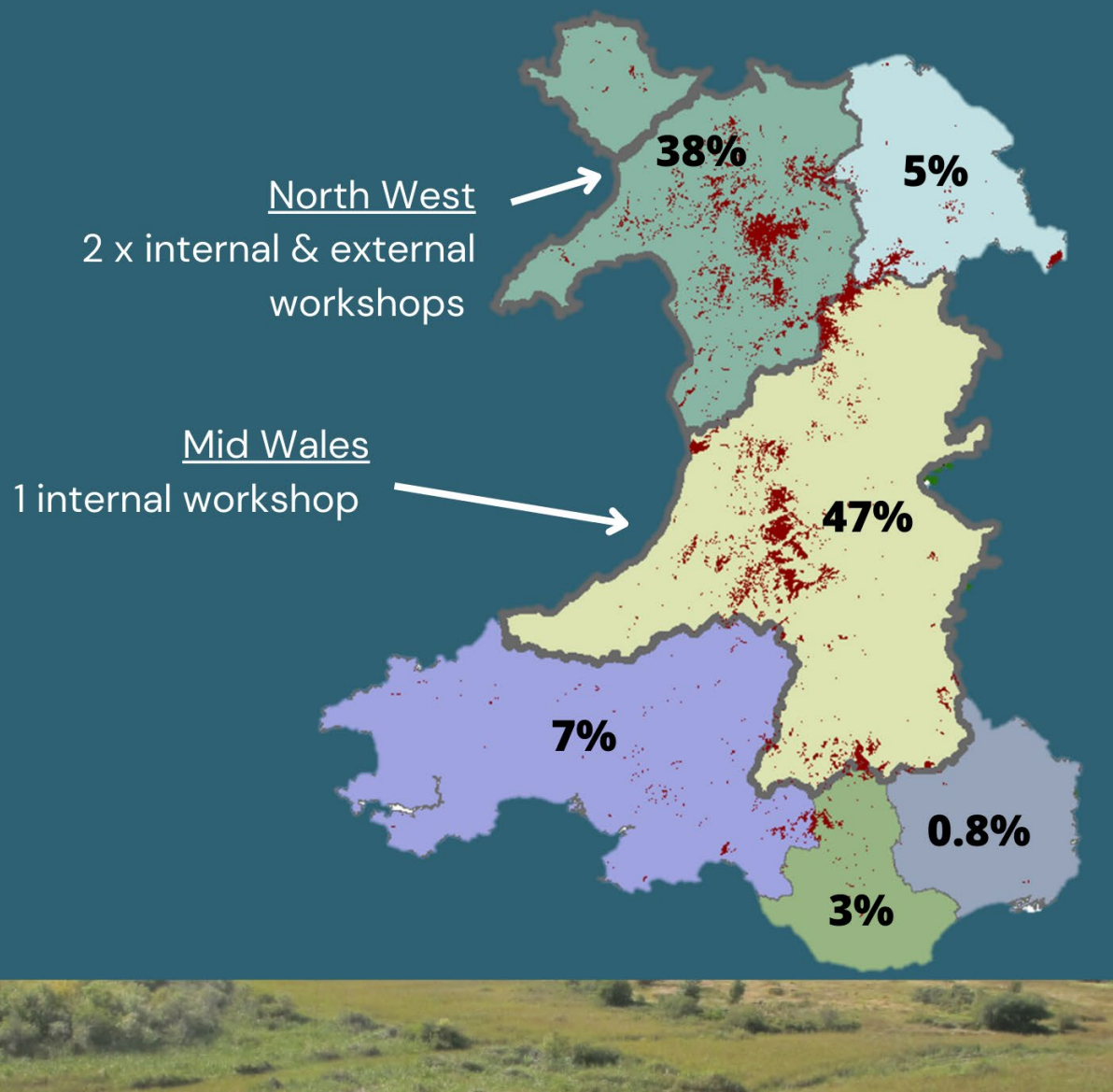


NPAP - National Peatland Action Programme, for Nature and Climate

# Area Statement engagement



North west + Mid Wales represent 85% of Welsh peatlands





Following on from initial discussions and preparation in Year 1, in 2021/22, three virtual workshops were held: simultaneous internal and external workshops with the North West Area Statement region and an internal stakeholder workshop with the Mid Area Statement region. Focus was centred on these two area statement regions because together they host an estimated 85% of the Welsh peat resource. Key outcomes of the three workshops are summarised below:

#### **North West Area Statement workshop - key outcomes:**

- Raise awareness of NPAP
- Development of a shared map of restoration priorities and opportunities between participants
- Development of a list of Frequently Asked Questions
- Discussion supported need for Development Grant
- Identified 'hotspots' and 'black spots' of activity and opportunity

#### **Mid Wales Area Statement - key outcomes:**

- Information sharing internally about scale, opportunity, and challenges to NPAP programme
- Productive discussions helped to define priority areas and projects
- Raise awareness of NPAP

### **4.2.2. National Delivery Partners Group**

Plans to establish a National Delivery Partners Group were described in the Year 1 report and the first meeting of the group took place on 24 January 2022. The purpose of the group is to support the delivery of NPAP through collaborative action and to provide a forum for information exchange on key activities and plans by partners to deliver peatland restoration, both as part of NPAP and in addition to it. The group also provides a means of supporting the identification and resolution of key blockers to improving the ecological resilience of Welsh peatlands.

A total of 16 colleagues, from 11 different partner bodies, attended the first meeting, representing each of the main strategic partners directly involved in peatland restoration in Wales. The first meeting (see Table 5) provided an overview of the National Peatland Action Programme and the context to its development and was followed by sessions covering current plans for the year ahead (2022/23), updates on partner activity, and NPAP's proposals for capturing current and historic activity data. The meeting concluded with a useful discussion on possible formats for future meetings. A second meeting of the group will be convened during 2022.

**Table 5.** Agenda for the meeting one of the National Peatland Delivery Partners Group, 24/1/2022.

Item No	Item	Lead	Time
1	Welcome and introductions	Chair: all to contribute	13:00
2	Purpose of group	Chair	13:15
3	Context to development of NPAP (National Peatlands Action Programme) and review of activity to-date.	James Cooke (WG), Dr Pete Jones (NRW-NPAP), Dr Rhoswen Leonard (NRW-NPAP)	13:40
4	Current plans for NPAP for 2022-2023, with consideration of key issues and challenges	Dr Rhoswen Leonard, Dr Peter Jones, James Cooke	14:00
5	Comfort Break (10 mins)		
6	Updates on partner activity and plans and opportunities for joint working – round table session	Chair: all to contribute please, 5-10 minutes ea.*	14:35
7	NPAP proposals for capturing historic and current/future restoration activity	Dr Esther Clews (NRW-NPAP)	15:35
8	Proposals for further meetings – format and context & AOB	Chair: all to contribute	15:45
	Meeting closes		16:00

#### 4.2.3 UK level national programmes group

Further discussions on the requirement for a national country programmes group took place with representatives of Peatland Action (Scotland) and the National Peatlands for Climate Grant scheme (England) during 2021/22, together with a presentation focussing on this topic to the Joint Nature Conservation Committee (JNCC) Chief Scientists Group in October 2021. Further progress was made at the close of the financial year and this will be reported on in the 2022/23 NPAP yearly report.

## 4.2.4 Engagement

### 4.2.4.1 Contractor Engagement

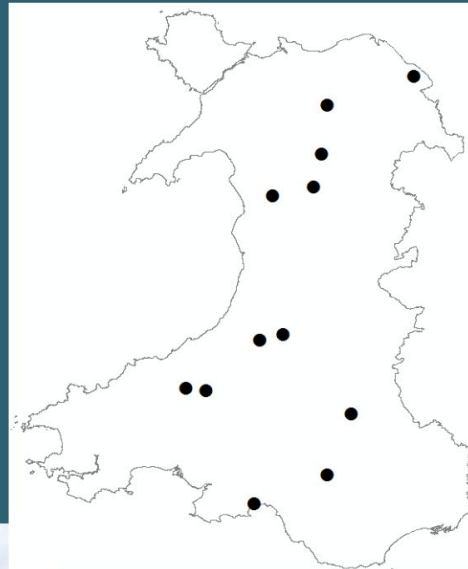


## Contractor engagement



Building trusted, collaborative and engaged supplier / buyer relationships and a shared understanding of priorities.

In person visits on live sites/ supplier base.



▲ Location map of on-site engagement.



Pro-active engagement with 10 procurement framework groundworks suppliers.

Contractor capacity was identified during our first year of operation as a key risk to NPAP delivery targets. It is placed high on the NPAP risk register and needed urgent mitigation as this risk will grow in line with increases in delivery targets. It is not just an NRW problem, many of our delivery partners have been reporting difficulty in securing contractors.

NPAP and Procurement consulted with the NRW Contract Management Team to discuss the idea of starting a contractor engagement process and an initial series of meetings with existing contractors on our Peatland's Framework. NPAP gained their support and during 2021 visited 10 of the 15 contractors on the Framework (there were many postponements due to Covid restrictions, fuel shortage, and more Covid restrictions).

Remaining meetings will be arranged in early 2022, and another round of visits planned as part of an on-going process.

**External contractor-related factors impacting NPAP's programme delivery include:**

- Peatland restoration requires specialist skills and is demanding on people and machines
- Work takes place primarily during Autumn/Winter months
- Other large civil engineering projects recruiting across the UK, paying competitive rates
- Established peat restoration projects in England and Scotland attracting operators across the border
- Other delivery organisations may 'beat us to it' as they have quicker processes for letting contracts and may have an agreed multi-year programme of works, ready to go when funding becomes available.

**Some of the mitigation measures NPAP has started to build are:**

- Collaborative engaged relationships
- Increased awareness about NPAP's plans and priorities
- Greater understanding of contractors' USPs and aspirations
- Mutual respect and trust
- Complementing NRW's structured Contract Management Process
- Improving standards (Process and Delivery).

**All aimed at...shared opportunities**

- to learn together
- to find innovative ways to grow the contractor base, developing an understanding of contractors' plans for expansion (recruitment and plant)
- to ensure delivery targets are met.

### **Early indications show the process is working:**

- All visits have been positively received, greeted typically as a 'welcome change'.
- Contractors appear to appreciate our constraints and have a better understanding of NPAP priorities.
- Relationships have become easier.
- A few contractual issues have been easier to resolve.
- NPAP has better intelligence of the capabilities and availability of contractors.
- Increased sharing of information with other NRW projects.

### **Some immediate key learning points:**

- For projects needing to be completed by March, contracts have to be let as early as possible (April/May) the previous year to ensure contractor availability.
- It would help contractors to have view of a multi-year NPAP programme, e.g. potential sites and spend per region, to inform their investment in recruitment and machinery.
- Pre-tender engagement with all contractors on the relevant lot would tap into contractors' experience and could inform the specification for the project, ensuring better outcomes and use of resources.
- Getting on the Framework is a big investment for contractors, and once it is up and running, it is closed to new contractors. A Dynamic Purchasing System (DPS) style framework should be considered to replace the NPAP Framework that runs until 2024.

#### 4.2.4.2. External and Internal engagement

Engagement was energetically pursued in Year 2. A summary of the events coordinated and contributed to is available in the table below.

**Table 6.** Summary of engagement activities undertaken during 2021-2022.

Event	Internal/ External	Date	Nature of communication
NPAP – NRW web pages	Internal	On-going	Develop content for NRW webpage and online presence. Analytics showed there were 1,223 'total page views' and 877 'unique views' to the NPAP content in 2021/2.
WG Capital Funding Board – BERF	Internal	April 2021	Attend weekly BERF steering group meetings to align / ensure separation of funded projects.
Regular Soils Policy Group Meeting	External	5/5/21	Regular Soils Policy Group Meetings aimed at NRW/Welsh Government collaborative working.
NPAP and Lost Peatland meeting	External/ Internal	24/5/21	First of several liaison meetings with the Lost Peatlands Project to ensure coordinated approach.
NPAP and Forest resource planning team	Internal	8/6/21	Forest resource planner training – guidance on peat assessment and defining priorities for restoration as part of WGWE management.
NPAP NW Workshop	External/ Internal	15/6/21	Workshop: Overview of the National Peatland Action Plan. Delivered to North West Area Statement Stakeholders.
#TeamNRW Day 2021	Internal	30/6/21	Raising awareness by having NPAP nominated and shortlisted for Award at annual #TeamNRW day.
NPAP team site visits	Internal / External	4 & 5/7/21	Site visit to see Fferm Ifan grazing trial & RSPB work at Blaen y Coed on the Migneint, Llyn Efyrynwy, and Cwrt at Trawsfynydd.
Lost Peatlands project launch Webinar	External / Internal	22/7/21	Presentation on the National Peatlands Action Programme to key Lost Peatlands project stakeholders.

Event	Internal/ External	Date	Nature of communication
World Bog Day, social media engagement	External	25/7/21	Social media engagement on Facebook and Twitter, with links to peatland video.
Biodiversity Media Release - Damselflies	External	29/7/21	Media release to 131 media contacts with news that over 130 male southern damselflies have been counted on a peatland Site of Special Scientific Interest at Cors Erddreiniog, Anglesey.
Meeting with NRW Senior Specialist Advisor, Climate Change and Decarbonisation	Internal	29/7/21	Meeting sharing information between NPAP and the Climate Change and Decarbonisation Programme.
LULUCF peat data sub-group meeting	External	13/8/21	Meeting to discuss reporting requirements for LULUCF.
Glastir Woodland Creation advisors' guidance meeting	Internal	25/8/21	Supporting Glastir woodland creation team on developing on-the-ground guidance to identifying peatland areas and interpreting guidance, aimed as Glastir woodland advisors.
Social media awareness of forthcoming ICUN Conference	External	9/9/21	Information sharing and registration details for forthcoming virtual IUCN Peatland Conference.
IUCN Conference: Four country update	External	13/9/21	NPAP presentation to policy makers, scientists, land managers and practitioners from different disciplines. Conference is an opportunity to share knowledge, experience and establish opportunities for collaboration for effective peatland conservation and management.
WG soils policy, WG Agriculture Sustainable Development Division (ASDD) and NPAP meeting	NRW - WG	27/9/21	Meeting with WG ASDD and Soils Policy team to discuss potential peatland funding in Glastir small grants scheme.
Blog & social media awareness of biodiversity on peatland	External	5/10/21	Blog and social media focus on NPAP Project Officer's identification of <i>Paludicola turfosa</i> , a member of the

Event	Internal/ External	Date	Nature of communication
			freshwater red algae (Rhodophyta), on site.
Media Release – to coincide with first part of the UN Biodiversity Conference (COP15), Kunming, China	External	12/10/21	Release to 67 media contacts on evidence of boost to nature from peatland restoration. Specialist observation reveals success of partnership project to restore the Anglesey Fens, as rare wildlife species re-establish their habitat in the re-wetted peatland.
NPAP presentation to CSG workshop (led by JNCC)	External	13/10/21	Chief Scientists Group CSG Workshop: Peatlands.
COP Cymru	External	6/11/21	Presentation and panel membership at COP Cymru hybrid (virtual and in person) event.
Podcast	External	10/11/21	Preparation and delivery of podcast interview with NPAP's site specialists Robert Bacon and Jack Simpson and SNPA. <a href="#">Podlediad Eryri / Eryri Podcast: Welsh Peatlands Project on Apple Podcasts</a>
Membership of GGR-Peat Expert Advisory Group	External	16/11/21	Attendance at Greenhouse Gases Removal Demonstrator Project (GGR) meeting.
Wales Climate Week Webinar 1 - A reflection on COP26 and an overview of climate change activity in NRW.	External / Internal	23/11/21	National Peatland Action Programme presentation in Webinar. Dr Peter Jones, Lead Specialist Advisor – Peatlands.
Pen y Cymoedd workshop on evidence priorities	External	29/11/21	Contribution to definition and prioritisation of evidence projects.
SAF 1st project meeting	External	6/11/21 to end 2022	First of regular meetings with SAF recipients.
National Peatland Action Programme – Presentation to Welsh Gov	WG	7/12/21	NPAP presentation to WG Economy Skills and Natural Resources Group staff.
Monitoring workshop	External	10/1/22	Workshop to discuss national peatland monitoring needs.



Event	Internal/ External	Date	Nature of communication
Workshop discussing research and restoration on the Migneint	External	13/1/22	Collaborate with stakeholders and to determine what research is still ongoing on the Migneint.
Introduction to Cadw & Welsh archaeological trusts on peatland. Follow-up meeting to review the current peat restoration and enhancement projects and how the historic environment can be integrated.	NRW, CADW and WATs	18/1/22	NPAP presentation to highlight potential issues that will help in peat related heritage management. Followed by the Peat projects and historic environment meeting. The meeting aim was also to review/sign off the curatorial guidance for the WATs and explore options to produce a peatlands and historic environment guidance document.
Mid Wales internal workshop about peat	Internal	19/1/22	Internal workshop on peatland restoration opportunities in Mid Wales. 53 attendees from across NRW functions working in the Mid Area Statement operational area.
DEFRA led - Devolved peat evidence catch up	External	20/1/22	Sharing of information, evidence gaps and priorities.
Welsh Peatlands National Delivery Partners Group	Internal	24/1/22	See section 4.2.2
4 Country meeting - IUCN UK Peatland Programme	IUCN	25/1/22	To identify existing and required work strands for implementing, monitoring and reporting on the UK Peatland Strategy across the four countries.
World Wetlands Day	External	27/1/22	Support of LIFE Welsh raised bogs project with focus on success at Cors Caron.
North West nature emergency mapping steering group meeting	Internal	27/1/22	Contribute information on peat mapping.
IUCN UK Peatland Programme Conference 2022	NRW & IUCN	31/1/22	Wales-hosted Conference Planning. First of recurring meetings.
An introduction to the National Peatland	Internal	14/2/22	Presentation to NRW staff on the Peat groundworks framework.

Event	Internal/ External	Date	Nature of communication
Action Programme framework			
Presentation of NPAP upscaling potential to NRW Natural Resource Management (NRM) Board	Internal	1/3/22	NRW board scrutiny and approval of upscaling proposals.
Simulating UK peatland plant biodiversity under climate change to aid landscape decision making	External	9/3/22	Meeting to take forward the potential supply of peatland data from Wales towards the above research project led by Richard Reeve (Glasgow University) and Claire Harris (Biomathematics and Statistics Scotland - BloSS).
Anglesey Antiquarian Society talk	External	18/3/22	Talk on Anglesey Fens with reference to NPAP's role.
Blue Peter – meeting with researcher for advance planning of possible peatland item	External	28/3/22	Meeting to provide information on peat to Blue Peter researcher.
Presentation of NPAP upscaling potential to NRW Executive Team (ET)	Internal	29/3/22	ET board approval of upscaling proposals.
Aligning WGWE 'Nature Networks' & NPAP programme	Internal	30/3/22	Scoping for geographical synergy between NPAP programme where NN are developed on the WGWE.

#### 4.2.4.3. Resources for engagement

Furthermore, analysis of Communication priorities at the end of Year 1 indicated a need for greater depth of understanding around peatland restoration, for potential partners and the wider public. An introduction, five partnership examples, and five priority themes, were covered in new Welsh and English video clips produced in Year 2. The 22 short informative video clips were shared openly on NRW/NPAP's YouTube channel. These video clips were viewed 798 times for a collective total of 934 minutes. See table below for a list of video clips released in 2021.

**Table 7.** Record of 22 video clips released in 2021

Theme	NPAP Video Clip	Date	YouTube url
NPAP Introduction	<i>English Versions:</i> <b>National Peatland Action Programme - Welsh Peatland Action</b>	21/10/2021	<a href="https://youtu.be/DP2Wfdp3e8E">https://youtu.be/DP2Wfdp3e8E</a>
Partnership	Peatland restoration work at the <b>Llyn Efyrnwy</b> Estate by the <b>RSPB</b>	11/11/2021	<a href="https://youtu.be/BPImCw5sMlc">https://youtu.be/BPImCw5sMlc</a>
Partnership	Peatland restoration work by The <b>Marches Mosses</b>	11/11/2021	<a href="https://youtu.be/6-B4iPkTuL8">https://youtu.be/6-B4iPkTuL8</a>
Partnership	Peatland restoration work at <b>Claerwen</b> NNT in partnership with <b>Elan Valley Trust</b>	11/11/2021	<a href="https://youtu.be/KxWHJf2uJTM">https://youtu.be/KxWHJf2uJTM</a>

Theme	NPAP Video Clip	Date	YouTube url
Partnership	Peatland restoration work by <b>Snowdonia National Park Authority</b>	11/11/2021	<a href="https://youtu.be/OrqBuHkHQT4">https://youtu.be/OrqBuHkHQT4</a>
Partnership	Peatland restoration work by <b>Brecon Beacons National Park Authority</b>	11/11/2021	<a href="https://youtu.be/jnRuia0x1IE">https://youtu.be/jnRuia0x1IE</a>
Priority 1	Addressing Peatland <b>Erosion</b> in Wales	25/11/2021	<a href="https://youtu.be/jkWt6AcgZtg">https://youtu.be/jkWt6AcgZtg</a>
Priority 2	Addressing Peatland <b>Drainage</b> in Wales – National Peatland Action Programme	25/11/2021	<a href="https://youtu.be/Rlfn_Y-pU8">https://youtu.be/Rlfn_Y-pU8</a>
Priority 3	Achieving the Sustainable Management of <b>Upland</b> Peatlands in Wales	25/11/2021	<a href="https://youtu.be/qTAFVK9J0Jw">https://youtu.be/qTAFVK9J0Jw</a>

Theme	NPAP Video Clip	Date	YouTube url
Priority 4	Achieving the Sustainable Management of <b>Lowland</b> Peatlands in Wales	25/11/2021	<a href="https://youtu.be/b-6tIQ-4T8o">https://youtu.be/b-6tIQ-4T8o</a>
Priority 5	Restoring <b>Afforested</b> Peatlands in Wales – National Peatland Action Programme	25/11/2021	<a href="https://youtu.be/p0zHHPcW_Ps">https://youtu.be/p0zHHPcW_Ps</a>
	<i>Welsh Versions:</i>		
Cyflwyniad	<b>Rhaglen Weithredu Genedlaethol ar Fawndiroedd</b> - Adfer Mawndiroedd Cymru	21/10/2021	<a href="https://youtu.be/v-QRjkbuQpQ">https://youtu.be/v-QRjkbuQpQ</a>
Partneriaeth	Gwaith adfer mawndir ar <b>Stad Llyn Efyrynwy</b> gan yr <b>RSPB</b>	11/11/2021	<a href="https://youtu.be/w2tNnSgUtlk">https://youtu.be/w2tNnSgUtlk</a>

Theme	NPAP Video Clip	Date	YouTube url
Partneriaeth	Gwaith adfer mawndir gan The <b>Marches Mosses</b>	11/11/2021	<a href="https://youtu.be/fpQTGODBUOE">https://youtu.be/fpQTGODBUOE</a>
Partneriaeth	Gwaith adfer mawndir yng <b>Nghlaerwen</b> mewn partneriaeth ag <b>Ymddiriedolaeth Cwm Elan</b>	11/11/2021	<a href="https://youtu.be/315u5GwltNQ">https://youtu.be/315u5GwltNQ</a>
Partneriaeth	Gwaith adfer mawndir gan <b>Awdurdod Parc Cenedlaethol Eryri</b>	11/11/2021	<a href="https://youtu.be/Y17wsuEc8dk">https://youtu.be/Y17wsuEc8dk</a>
Partneriaeth	Gwaith adfer mawndir gan <b>Awdurdod Parc Cenedlaethol Bannau Brycheiniog</b>	11/11/2021	<a href="https://youtu.be/t7EaIUcnKss">https://youtu.be/t7EaIUcnKss</a>

Theme	NPAP Video Clip	Date	YouTube url
Blaenoriaeth 1	Mynd i'r afael ag <b>Erydiad</b> mawndir yng Nghymru – Rhaglen Weithredu Genedlaethol ar Fawndiroedd	25/11/2021	<a href="https://youtu.be/p1UKNFJ7Y-A">https://youtu.be/p1UKNFJ7Y-A</a>
Blaenoriaeth 2	Mynd i'r afael â <b>Draeniad</b> mawndir yng Nghymru - Rhaglen Weithredu Genedlaethol ar Fawndiroedd	25/11/2021	<a href="https://youtu.be/BtAo5g-9vN8">https://youtu.be/BtAo5g-9vN8</a>
Blaenoriaeth 3	Sicrhau Rheolaeth Gynaliadwy o Fawndiroedd yr <b>Ucheldir</b> yng Nghymru	25/11/2021	<a href="https://youtu.be/QuGPgGivdlQ">https://youtu.be/QuGPgGivdlQ</a>

Theme	NPAP Video Clip	Date	YouTube url
Blaenoriaeth 4	Rheolaeth Gynaliadwy o Fawndiroedd yr <b>Iseldir</b> yng Nghymru	25/11/2021	<a href="https://youtu.be/VdyajHRAwvA">https://youtu.be/VdyajHRAwvA</a>
Blaenoriaeth 5	Adfer Mawndiroedd <b>wedi'u</b> <b>Coedwigo</b> yng Nghymru - Rhaglen Weithredu Genedlaethol ar Fawndiroedd	25/11/2021	<a href="https://youtu.be/dDzp96Qajtw">https://youtu.be/dDzp96Qajtw</a>



## 4.2.5 Evidence programme

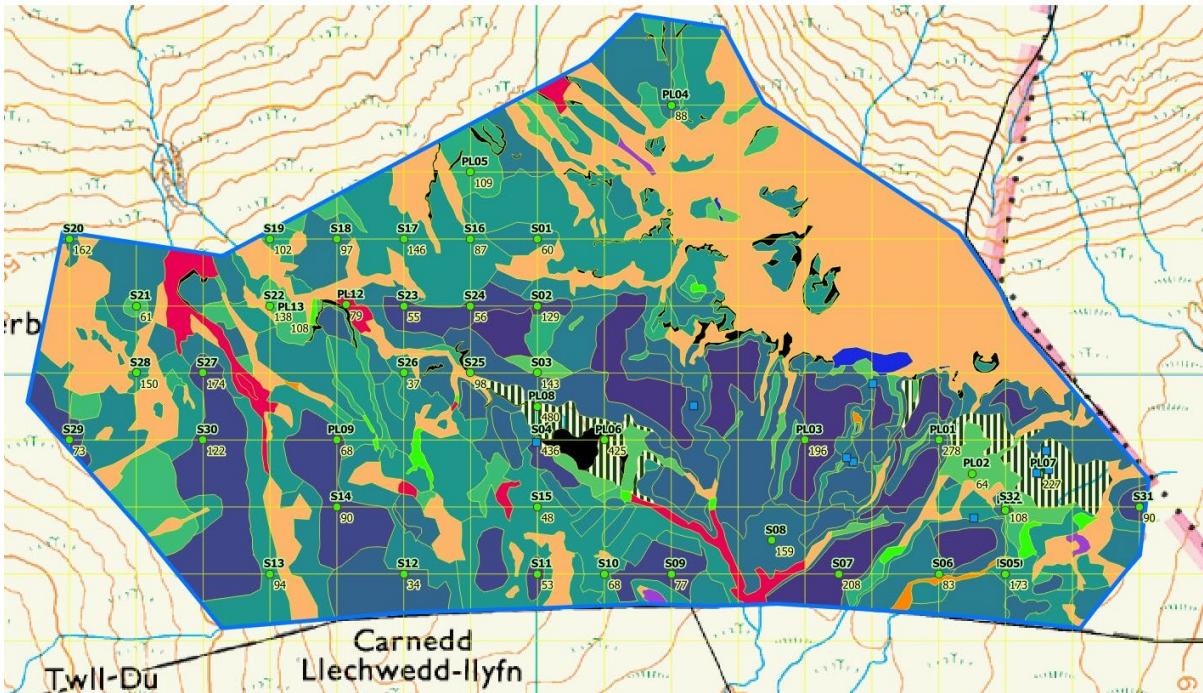
A range of evidence projects were completed in Year 2, notably, the completion of the new Peatlands of Wales Map (see section 4.2.6 below).

### 4.2.5.1. NPAP commissioned baseline monitoring

A monitoring programme for NPAP is under development and one established element of this concerns mapping the baseline condition of a selection of NPAP sites before restoration commences. During 2021/22 the programme commissioned two such assessments under Lot 2 of the Peatland Survey Framework and these have been published as Turner (2021); this methodology was based upon the earlier condition mapping contract funded by Welsh Government in 2020/21 (Forster-Brown and Shepherd, 2021). Figure 9 provides the condition map produced for Y Gylchedd. In future, NPAP will use this condition mapping approach for a range of applications, including:

- The production of baseline condition maps aligned to LULUCF reporting categories to enable assessment of baseline GHG emissions and reporting of changes in emissions resulting from restoration. These maps will also provide essential ground-truthing evidence to support future broader-scale assessments of condition based on Earth Observation evidence.
- Condition evidence to support other reporting priorities under the new Habitats Regulations Assessment and SoNaRR drivers and NRW's wider protected sites monitoring programme.
- A peat condition layer for the new Peatlands of Wales Map.
- Condition maps provide the basis for the stratified selection of permanent point-based sampling plots for assessing real change, both background and in relation to NPAP restoration.

The programme is continuing to develop an approach for monitoring hydrological responses to restoration. Hydrological metrics – particularly water table level – respond faster to restoration than changes in vegetation and habitat composition and this information also helps to assess transitions to lower GHG emissions states. During 2021/22, NPAP continued the development of an overall monitoring strategy for the hydrological monitoring needs (this will be reported fully in Year 3) and implemented through contracts the baseline monitoring and instrumentation of two sites, namely Cwrt – an afforested peatland site near Trawsfynydd, and Pentrosfa Mire SSSI near Llandrindod Wells – a complicated part groundwater-fed fen site where initial investigation is needed as a prelude to a future programme of planned restoration work. Work at the latter site was funded by NRW's Biodiversity and Resilient Ecosystems Fund rather than NPAP.



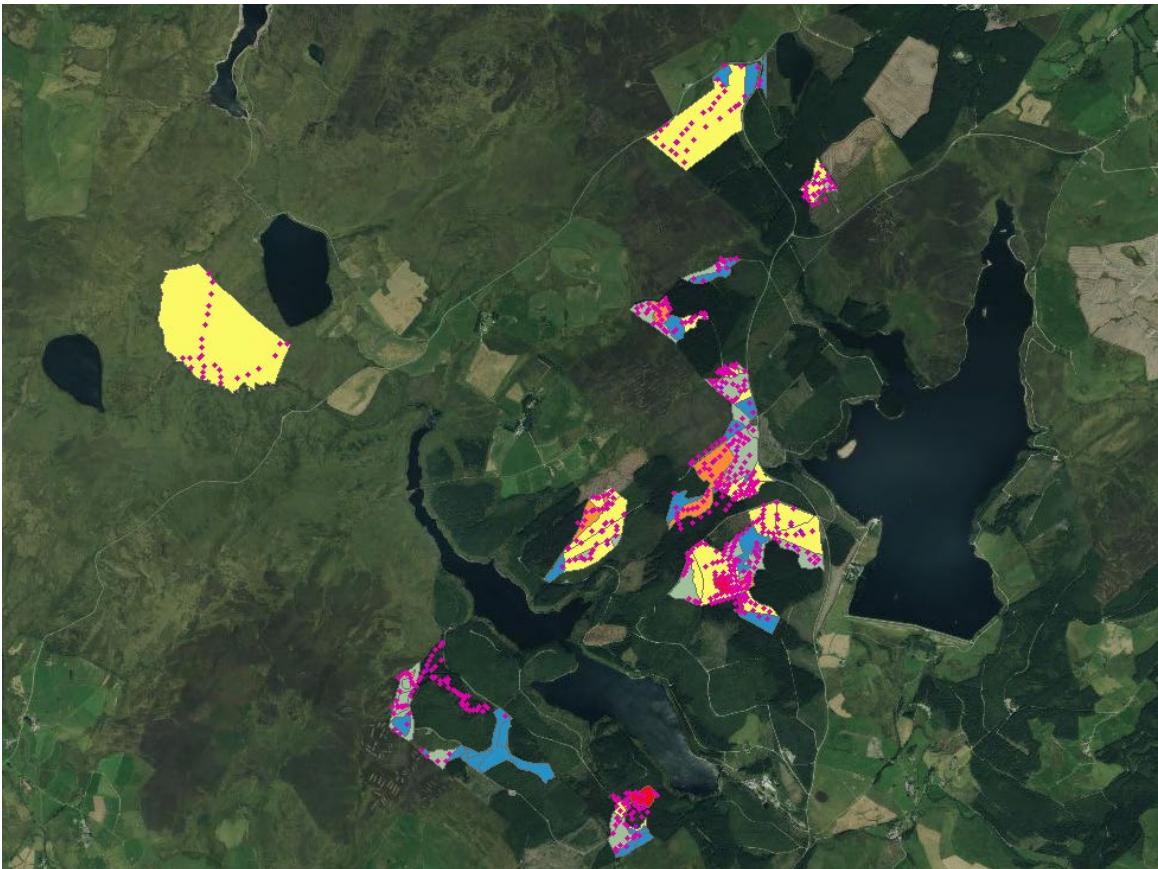
**Figure 9.** Condition map produced for Y Gylchedd. Part of trial contract for condition mapping and assessment

#### 4.2.5.2. Surveys of the afforested peatlands

The second year of the programme continued the surveying of afforested peat on the WGWE to inform the upcoming Forest Resource planning process. Every 10 years NRW reviews the long-term management plans for each forest area. These are compiled in a new Forest Resource Plan. In the first year of the programme, surveys were commissioned for the Dyfi, Coed Y Brenin and part of the Cambrian Mountains. The surveys have expanded in Year 2 to cover all or some of:

- Cambrian Mountains (finish surveying what was started in previous year)
- Alwen
- Cilcennin and Lampeter
- Rhydymain
- Gwydyr

**Figure 10.** Map example of the peat survey results for Alwen Forest Resource plan Area.



The peat survey assessment uses a version of NRW's 2017 Afforested Peat Toolkit modified by NPAP to ensure a:

- more ecologically relevant threshold for slope as a negative attribute
- specific element to assess current vegetation quality as an integrated measure of restorability
- reduced emphasis on the use of peat cracking and soil aeration depth as negative attributes.

These changes were made with the support of NRW's National Forest Planning Team and were found to work well, with positive feedback received both from the contractors and NRW Forest Resource Planners.

The survey outputs are an essential and prerequisite data source for Forest Resource Plan production.

NPAP has also liaised with and supported forest resource planners who in some cases undertake the peat assessments depending on resource availability.

As the surveys are undertaken, forest resource planners use the evidence to make recommendations and decisions which are balanced with other priorities to ultimately

deliver on the aims for the WGWE set out in 'The Purpose and Role of the Woodland Estate'.

#### **4.2.5.3 National Peatland Action Programme register of evidence needs**

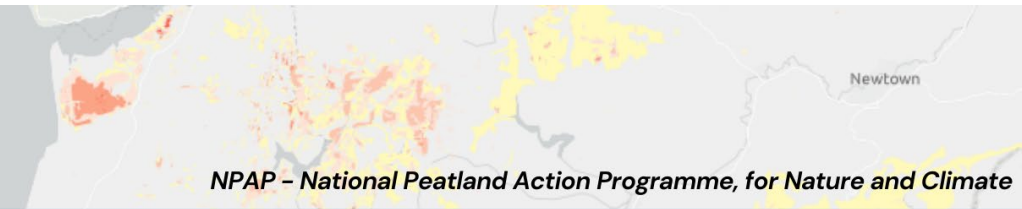
Work to develop a register of evidence needs was completed in 2021 and this will serve as the basis for prioritising work commissioned directly by the programme and also to help assess research proposals received from third parties and to help structure discussions on collaborative research with other partners. The register is cross-referenced to the SoNaRR evidence needs and identifies a total of 30 topics of which 3 were identified as potential priorities for funding in 2021/22, namely surveys of the afforested peatland estate, baseline condition surveys, and the use of Earth Observation techniques for assessing condition and restoration needs.

#### **4.2.5.4 Welsh Government funded work supported by NPAP**

NPAP's input to Welsh Government funded and commissioned evidence work in 2021/22 was dominated by the completion of the new Peatlands of Wales Map and this is considered in full in section 4.2.6 below.


## 4.2.6. Monitoring and activity recording and the SMNR data portal

### 4.2.6.1 Welsh Peatlands Data Portal



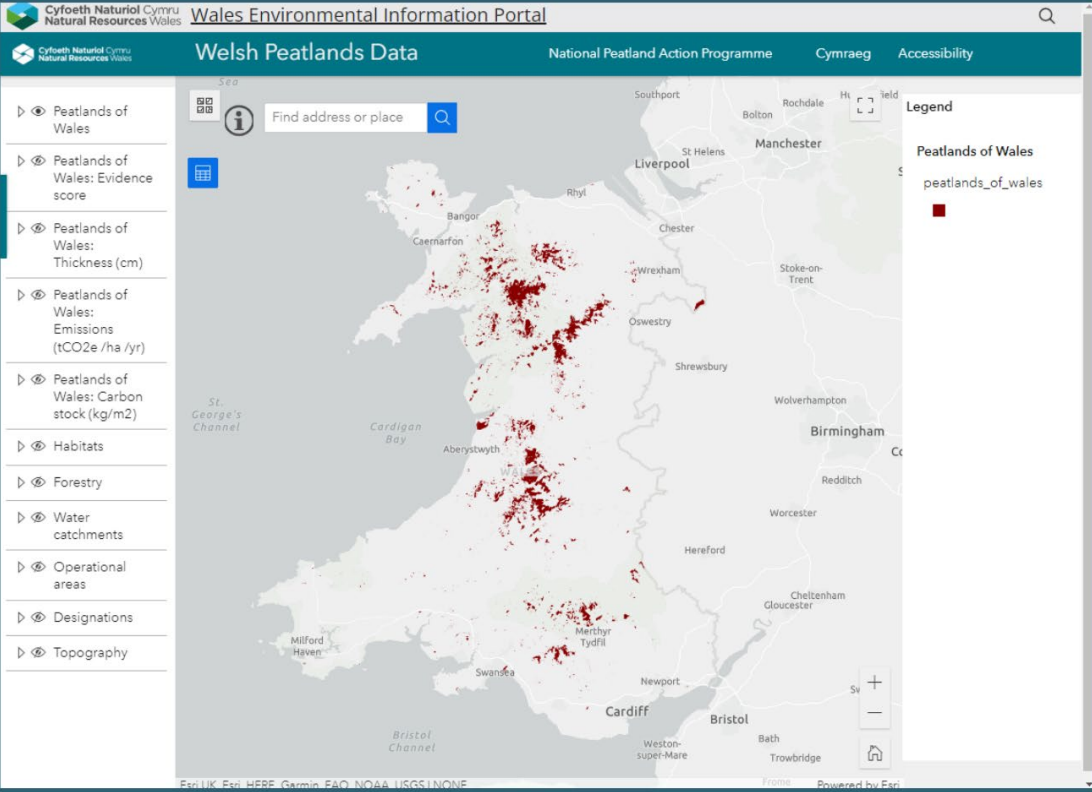
NPAP – National Peatland Action Programme, for Nature and Climate

# Data and Mapping



## Peat Portal launched

48 Spatial data layers relating to Welsh peatlands all in one place and available to the public in an accessible format.



The screenshot shows the 'Welsh Peatlands Data' portal interface. It features a search bar at the top with the text 'Find address or place'. On the left, there is a list of data layers including 'Peatlands of Wales', 'Peatlands of Wales: Evidence score', 'Peatlands of Wales: Thickness (cm)', 'Peatlands of Wales: Emissions (tCO<sub>2</sub>e /ha /yr)', 'Peatlands of Wales: Carbon stock (kg/m<sup>2</sup>)', 'Habitats', 'Forestry', 'Water catchments', 'Operational areas', 'Designations', and 'Topography'. The main map area displays a map of Wales with red and orange areas representing peatlands. A legend on the right side of the map shows a red square next to the text 'Peatlands of Wales' and 'peatlands\_of\_wales'. The portal is powered by Esri and includes navigation controls like zoom in (+) and zoom out (-) buttons.

The Welsh Peatlands Data Portal is designed as an interactive web-based mapping tool that brings together maps and associated datasets to facilitate engagement with partners undertaking or planning peatland restoration and to support NPAP's own action planning and reporting requirements.

Launched on 4<sup>th</sup> April 2022, this first version of the Welsh Peatlands Data Portal provides:

- interactive access to existing maps and data relevant to peatland restoration in Wales
- publication of the new Peatlands of Wales map series that provides current best estimates of peat distribution across Wales, a measure of the confidence we have in the presence of peat at a given location, peat depth measurements as well as carbon stock and emissions estimates across the peatland resource.

The Portal is a publicly accessible platform that allows external users to interact with, view, query and export data along with information that explains the data. It will continue to be developed and updated as a persistent resource to host information about peatlands and to track restoration activity and monitoring being undertaken in Wales.

The Welsh Peatlands Data Portal ([Welsh Peatland Data Portal \(arcgis.com\)](https://arcgis.com) / [Porth Data Mawndiroedd Cymru \(arcgis.com\)](https://arcgis.com)) is linked to the NPAP webpage on the NRW website [Natural Resources Wales / The National Peatland Action Programme/ Cyfoeth Naturiol Cymru / Rhaglen Weithredu Genedlaethol ar Fawndiroedd \(naturalresources.wales\)](https://naturalresources.wales) and integrated with the [Wales Environmental Information Portal \(arcgis.com\)](https://arcgis.com) / [Porth Gwybodaeth Amgylcheddol Cymru \(arcgis.com\)](https://arcgis.com). Information about the Peatland Data Portal Map Layers on the NRW website ([Natural Resources Wales / Peatland Data Portal Map Layers/Cyfoeth Naturiol Cymru / Haenau Map Porth Data Mawndiroedd \(naturalresources.wales\)](https://naturalresources.wales)) provides detail on the data contained within the maps as well as links to download them from Data Map Wales ([Home | DataMapWales \(gov.wales\)](https://gov.wales) / [Hafan | MapDataCymru \(llyw.cymru\)](https://llyw.cymru)).

Users of the Welsh Peatlands Data Portal are likely to vary widely in their technical expertise and access to specialist software used to handle maps. NPAP envisages that the portal will be accessed as a 'one-stop shop' for peatland data in three broad ways:

- By the general public, allowing them to explore and engage with peatlands in their local area (whether virtually or in real life).
- A means of engaging landowners and organisations in peatland restoration with scope to assess their potential eligibility for grants offered by NPAP, without the need for specialist software and data licencing.
- For those with technical expertise, such as developers, planners and peatland restoration specialists, the portal provides relevant information to support further analysis and access to download the data in relevant formats.

The Welsh Peatlands Data Portal itself also contains 'pop up' information about the map data and links to relevant survey methodologies.

The series of images below demonstrate overlaid layers within the Portal and some of the information provided about them.

**Welsh Peatlands Data** National Peatland Action Programme Cymraeg Accessibility

Find address or place

**Designations**

- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Local Nature Reserves (LNR)
- National Nature Reserves (NNR)
- National Parks
- Area of Outstanding Natural Beauty (ANOB)
- Biosphere Reserves
- Ramsar Wetlands

**Legend**

Peatlands of Wales

- peatlands\_of\_wales

**Designations**

- Sites of Special Scientific Interest (SSSI)

Powered by Feri

**Welsh Peatlands Data** National Peatland Action Programme Cymraeg Accessibility

Find address or place

Zoom to 1 of 52

**NRW Priority Habitat Blanket Bog**

Area Ha	0.25
Phase1 Habitat Code	E.1.8

Handbook for the Phase 1 Habitat Survey:  
<https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-UK-Blanket-Bog-2016.pdf>

**Legend**

Habitats

- NRW Art17 2018 H7110 Active Raised Bogs
- NRW Priority Habitat Blanket Bog

**Designations**

- Sites of Special Scientific Interest (SSSI)

**Welsh Peatlands Data** National Peatland Action Programme Cymraeg Accessibility

Find address or place

Zoom to 1 of 3

**Sites of Special Scientific Interest (SSSI)**

SSSI Name	Cors Caron
Registered Area	Spherical
Cartesian Area Ha	861.99
Spherical Area Ha	859.11
SSSI_ID	994

**Legend**

Habitats

- NRW Art17 2018 H7110 Active Raised Bogs
- NRW Priority Habitat Blanket Bog

**Designations**

- Sites of Special Scientific Interest (SSSI)

## Development of the Welsh Peatlands Data Portal

The process to develop the Peat Portal involved collaboration with Data Services, Knowledge and Information Management (KIM), Master Data, Digital Services, Communications, and Translations Service teams within NRW. Together, these teams supported NPAP to source and 'open' restricted data, build applications and integrate the portal within NRW's digital and data environments with consistency, transparency and accessibility.

Following the appointment of NPAP's GIS and Data lead, a technical requirement assessment was undertaken by identifying key stakeholders and their anticipated use of the new data portal alongside generic requirements for accessibility, language and data access in line with NRW protocols. This established the features that were desirable to deliver a user-friendly platform with transparency of information available to facilitate end use. A feasibility assessment then established the hosting, software and tools available that best met those requirements.

In parallel with the exercise to establish the best means of delivering the Portal and data held within it to the public, a review of peatland maps and data available to NRW was used to identify existing internal and third-party datasets that would be useful to engage and assist in the process of planning for restoration. Map layers are grouped to delineate key aspects for consideration when examining a peatland for restoration potential:

- Peat distribution
- Habitats
- Water catchments
- Operational areas
- Designations
- Topography

With partners of NPAP in mind as key stakeholders, data layers that define and describe the peatland resource in Wales were prioritised for inclusion in the first iteration of the Portal. Open data assessments on NRW's statutory survey data lifted restrictions on these layers to make them readily available to the public for the first time. This included 19 habitat layers presenting survey data collected under Article 17 of the European Habitats Directive, Priority habitats defined under Section 7 of the Environment (Wales) Act 2016, 'Phase 2' Lowland Peatland and Upland surveys, as well as NRW's new Welsh Lowland Raised Bog Inventory.

Given the historic background of many of the existing data sets held within NRW and their status as reporting instruments to Europe and the UK, many were available only in English. In consultation with the Communications and Translation Service teams as well as NRW data custodians, translation of data layers into Welsh along with the information describing them within the Portal environment established the Welsh language version of the platform [Porth Data Mawndiroedd Cymru | Porth Gwybodaeth Amgylcheddol Cymru \(arcgis.com\)](https://arcgis.com).

Metadata (information about data) providing a description of each dataset, data ownership and restrictions on its use are provided by NRW and DMW for data in their charge



respectively. This overview metadata is not currently required to provide definitions of the data contained within maps, units of measurement and methodology (which is often contained within detailed methodological reports). To provide Portal users with easy and transparent access to descriptions of what each dataset contains, this information and links to methods reports are provided on the NPAP webpage (also linked in the Peat Portal in dual language and accessible format). This makes the data readily accessible and facilitates interpretation and further analysis.

The process to identify and bring maps into the public domain via the Welsh Peatland Data Portal continues to yield new and historic datasets. Identification and acquisition of existing peatland survey, monitoring and restoration activity data collected by Partners is ongoing as are data sharing agreements and licencing to allow NPAP to publish these in national-scale maps on the Welsh Peatland Data Portal.

## The new 'Peatlands of Wales' map series

The Peatlands of Wales Maps were commissioned by the Welsh Government from Cranfield University's Centre for Environmental and Agricultural Informatics, with supporting data from Welsh Government, NRW, the British Geological Survey and the National Peatlands Action Programme partners.

The Peatlands of Wales map series provides an updated distribution of Welsh Peatlands (to 2022) based on current sources of evidence. The data layers were created on a 50m grid whereby the presence and thickness of peat are elucidated from a range of sources for each 50m grid cell across Wales. A peatland evidence score defines the level of confidence in the presence of peat in any given grid cell, with those cells scoring more than 2 on this scale of 1-10, captured in the 'Peatlands of Wales' peat distribution map. Carbon stock estimates and greenhouse gas emissions from peatland habitats were then derived from the peat distribution map. The five layers in the peatlands of Wales series are:

- Peatlands of Wales (The distribution of peat)
- Peatlands of Wales: Evidence (An evidence score indicating confidence in the presence of peat)
- Peatlands of Wales: Thickness (Thickness of peat in cm)
- Peatlands of Wales: Emissions (Emissions of greenhouse gasses as tCO<sub>2</sub>e /ha /yr)
- Peatlands of Wales: Carbon (Carbon stock as kg/m<sup>2</sup>)

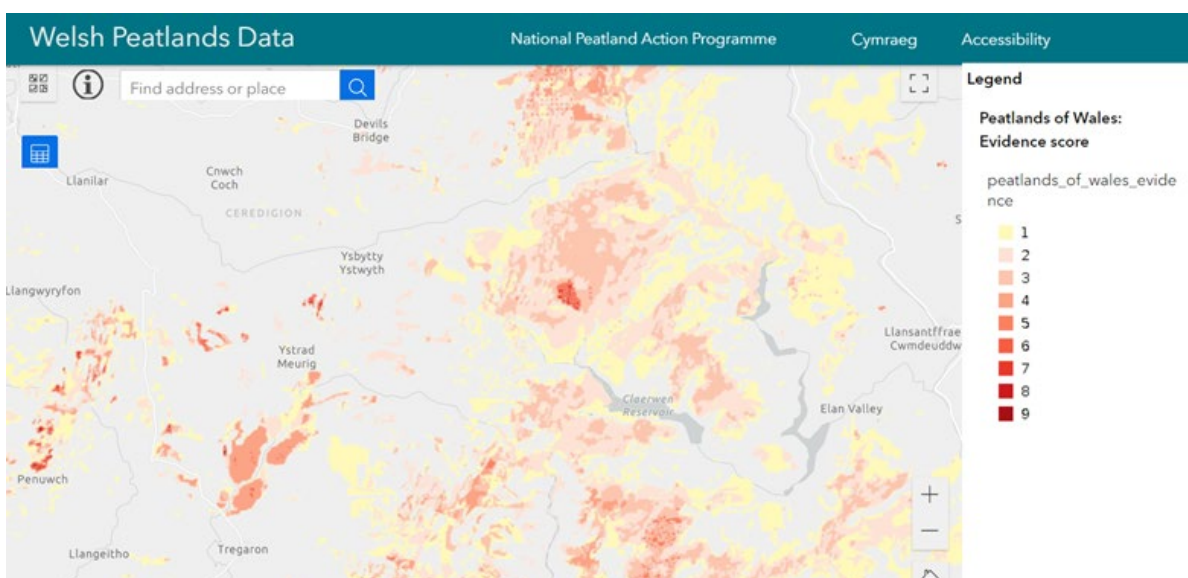
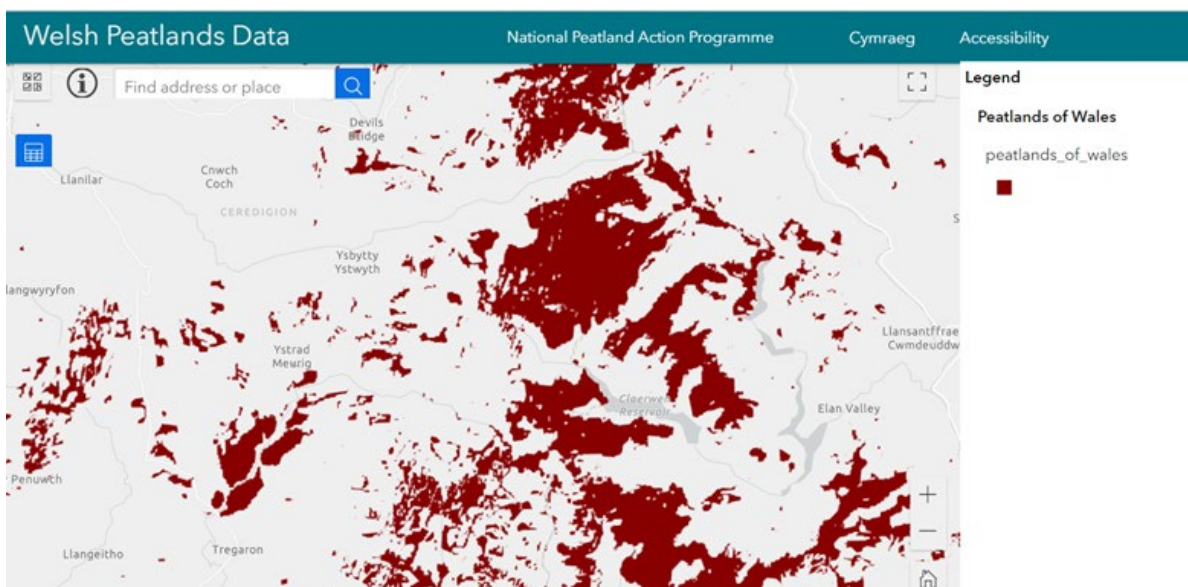
The NPAP team provided peat depth and habitat data to be used to build the new map layers and also technical support in the development of the mapping and final report. Peat depth data were first collated from a range of sources held by NRW. This amounted to over 40,000 individual peat depth measurements recorded over the last 50 years. Permissions were secured for peat depth data shared by third parties and licences were provided to Cranfield University to use data and publish the peat depth values in the resultant map series.

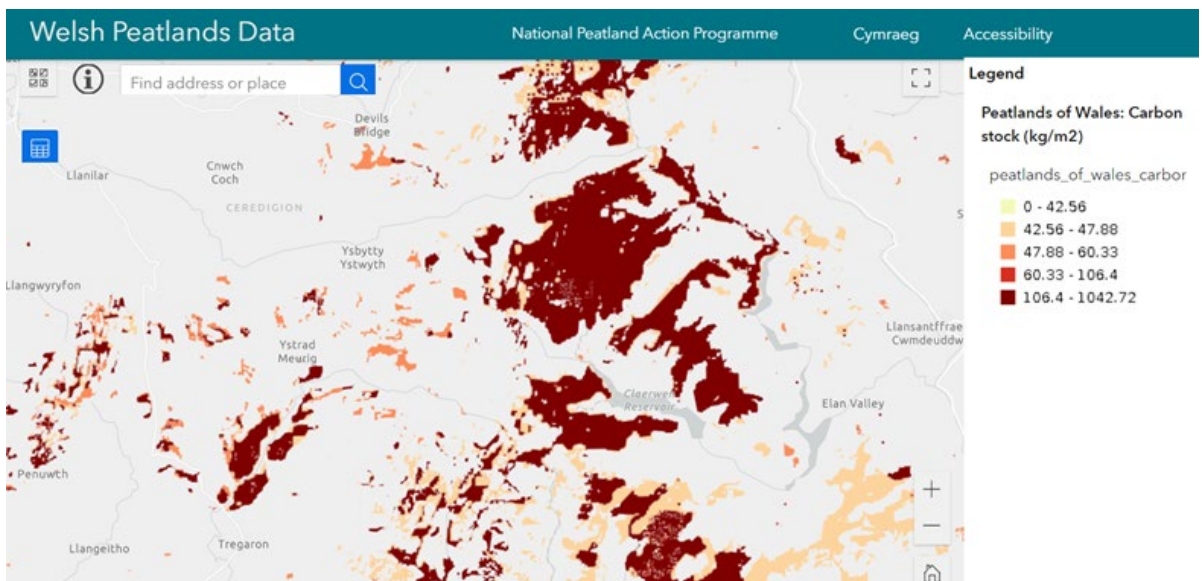
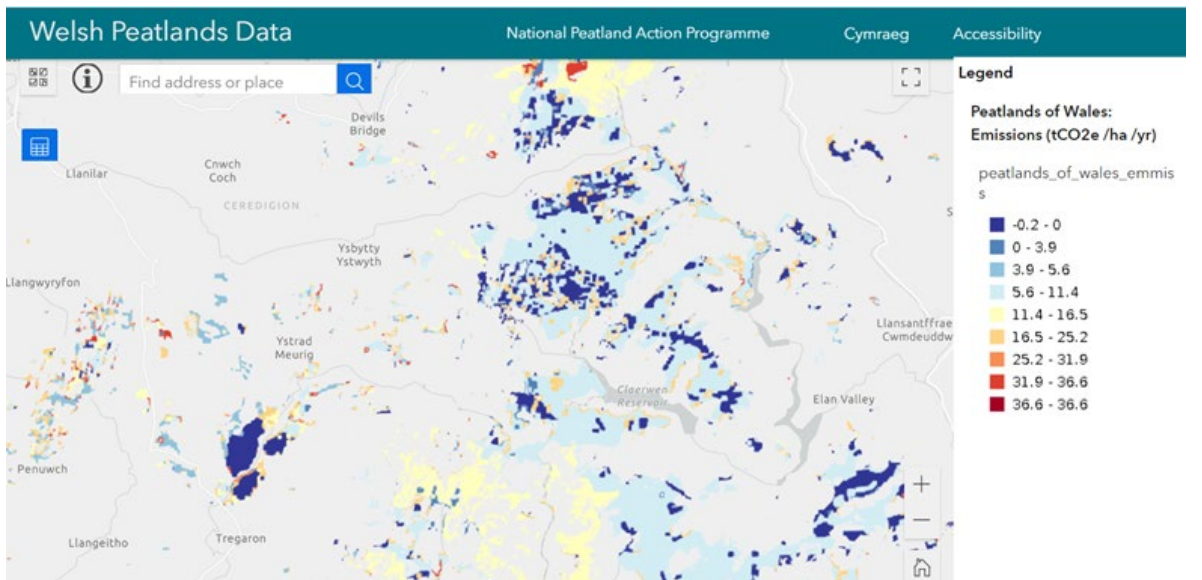
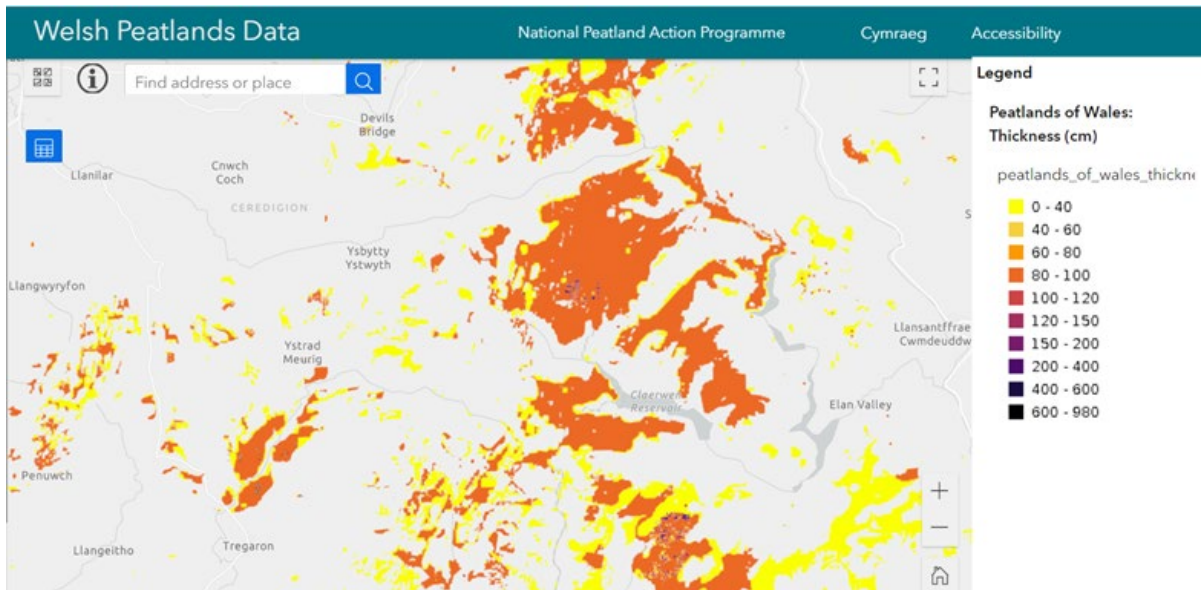
The NPAP team were fully involved in the process to review the methodology report, [Production of the Peatlands of Wales Map | GOV.WALES](#), that describes how each of five

map layers were derived. These details along with a technical hand over of the methodological steps involved to NPAP and relevant data licencing will enable future update of the maps to be done by NPAP as new peat depth data become available. A workshop and technical handover are planned whilst licences are being prepared to allow NRW permission to access all raw data used to derive the peat map.

The maps are hosted by Data Map Wales [Peatlands of Wales | DataMapWales \(gov.wales\)](https://www.gov.wales/Peatlands-of-Wales-DataMapWales) and freely available under an open government licence without restriction. The maps are currently linked to the Welsh Peatlands Data Portal from Data Map Wales directly as web services. NPAP has been working with the DMW team and NRW's Geospatial team to identify how best to integrate the new maps from DMW with NRW's platform to enable greater interaction with the peat maps.

The series of images that follow show the Peatlands of Wales map series in the Welsh Peatland Data Portal.





## 4.2.6.2 Activity Recording

NPAP has identified 105 different types of restoration activities and defined each of these in a coded checklist. This activity checklist is based on an earlier version over which members of the original SNPA-led Welsh Peatlands SMS project were consulted. Broad groups of activities comprise hydrological restoration (e.g. ditch blocking, bunds), grazing management, scrub control, vegetation management (e.g. mowing, revegetation), erosion control (e.g. gully blocking, hag reprofiling), and management of afforested peat (e.g. regeneration removal, ground smoothing). The checklist is now being developed as a glossary of restoration activity types illustrated with photographs taken of the work by NPAP and Partners.

**Table 8** showing an excerpt from the coded checklist of peatland restoration activities.

Broad Activity Group	Activity Type	Description of Activity	GIS data type	Activity code
Hydrologic restoration - Dams	<b>Peat dam peat infill</b>	Peat dams in ditches infilled with peat or reprofiled. Dams constructed of peat for the purpose of raising water levels within ditches and where the ditch is also infilled with peat or reprofiled. Lines should represent sections of ditches where water levels have been raised using peat dams and by infilling. Points can be added to record each dam location.	Polyline (and optional Points)	damppt
Hydrologic restoration	<b>Contour bund</b>	Low elevation peat bunds (often referred to as contour bunds where these follow surface contours). Features used to raise water levels over areas of peat wider than discrete drainage features. All lengths of bund recorded as lines.	Polyline	hydrocbun
Grazing	<b>Livestock introduced</b>	Livestock introduced. Record as polygons areas of peatland where livestock has been introduced to an area previously ungrazed or reintroduced after a period of absence. Type of grazing and livestock specified in the 'comments' column.	Polygon	grazintr
Grazing	<b>Physical fence</b>	Physical fencing. Installation or maintenance of physical fencing to enable grazing. Recorded as polygons for areas enclosed / exclosed or lines of fence.	Polygon / Polyline	grazfenc

Broad Activity Group	Activity Type	Description of Activity	GIS data type	Activity code
Afforested peat management (conifer plantation forestry)	<b>Regeneration removed</b>	Plantation regeneration and / or seedling removal. Removal of regenerate / reseeded plantation forestry on former clearfell or an area never previously planted.	Polygon	forregen

Templates created for mapping of each activity type as point, line or polygon shapefiles define the standardised capture of activities as maps associated with data detailing when and where activities took place. Templates and instructions are generic so that they can be applied to any GIS mapping software whilst remaining compatible with ESRI formats used by NRW for collation into national-level maps. Effort was made to make maps as quick and simple to create as possible whilst retaining key information about the activities.

Activity templates were supplied by eight Partner organisations in receipt of SAF Grant funding in 2021/22 as a condition of their grant award in addition to NPAP's own contracts on afforested peatland. In this first application of the activity tracking templates, SAF recipients were consulted during project inception meetings, to ensure that activities listed covered those that they proposed and that they had the means to create them. Technical advice and support on how to apply the templates was available to the grant recipients throughout the SAF project and delivered via Teams meetings and email, as required. Feedback from recipients is currently being used to refine communication of requirements and templates for the SAF 2022/23 grants.

In excess of 45km of ditches were blocked by NPAP and Partners in 2021/22. Over 25 different types of activity were recorded by SAF grant recipients and from NPAP led contracts. Activities captured from the SAFs included grazing controls, scrub and INNS management, erosion control measures and ditch blocking. The NPAP team's activities focused on the Welsh Government Woodland Estate so primarily dealt with afforested peat management and scrub control with contour bunding and dam blocking on areas cleared.

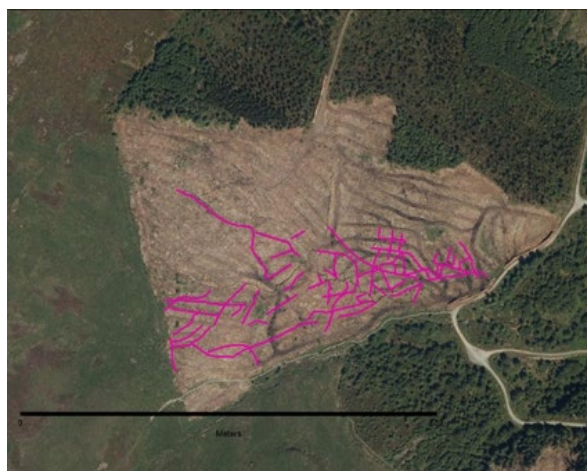
Collated, national activity maps are in preparation for publication pending finalisation of data delivery from partners and data sharing agreements. These maps will be hosted on the Welsh Peatland Data Portal and made available to download from Data Map Wales. For future Grants, the terms of the conditions of Grant Award letters have been updated to include data sharing agreements from the outset.

During 2022/23, the NPAP team are planning to expand the capture of historical activity data initiated by NRW in 2015.

**Figures 11 & 12.** Examples of Activity Maps Delivered by SAF 2021/22 grant recipients.



Snowdonia National Park Authority.  
Rhyd y Fen – ditches. Peat dams with  
peat infill. Jan/Feb 2022.



Snowdonia National Park Authority.  
Cwrt Ffridd Grugle – ditches. Peat dams  
with peat infill. March 2022.

#### **4.2.6.3. NPAP monitoring workshop, 10/1/2022**

The National Peatland Action Programme convened a workshop jointly with Dr Jon Walker (the Peatlands Evidence Research fellow at Swansea University), on 10th January 2022, to bring together key strategic delivery partners with an interest in and experience of peatland monitoring in Wales. The virtual event was attended by 26 staff from 10 partner organisations (not including NRW). The objectives for the workshop were to:

- identify monitoring needs, i.e. which outcomes of peatland restoration are we seeking to evidence?
- identify available methodologies and those in use
- identify best practice and gaps / needs
- understand the potential contribution of emerging methodologies and approaches
- progress towards agreeing a standard agreed minimum monitoring methodology for use by NPAP and partners.

These objectives were met by structuring the workshop into sessions covering (i) the need (drivers) for monitoring and the associated evidence requirements, (ii) the range of approaches in use by NPAP Partner organisations to monitor peatland restoration outcomes, (iii) consideration of specific and emerging approaches to monitoring, and (iv) a distillation of outcome requirements and best practice elements from partners. These objectives were met through a series of presentations covering monitoring activities undertaken by partners and their aspirations for the future. NPAP will write up and issue the monitoring proceedings and, in partnership with Swansea University, is considering a second workshop with a specific focus on remote sensing approaches.