

Rhaglen Weithredu Genedlaethol ar Fawndiroedd: Adroddiad Blwyddyn 1

National Peatland Action Programme: Year 1 Report

2020-2021



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Cyfoeth Naturiol Cymru / Natural Resources Wales, 30 Mehefin / June 2021

Cover photo: Peat erosion addressed by gully blocking at Claerwen NNR within the Elan Valley Trust management area. This work was funded by NPAP through a section 16 management agreement set-up by NPAP. Two blue dipwells used for monitoring the success of this restoration measure are visible in the foreground. Picture credit: Dave Reed, NRW.

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Uchafbwyntiau'r flwyddyn gyntaf

Rhaglen Weithredu Genedlaethol ar Fawndiroedd – Uchafbwyntiau'r flwyddyn gyntaf

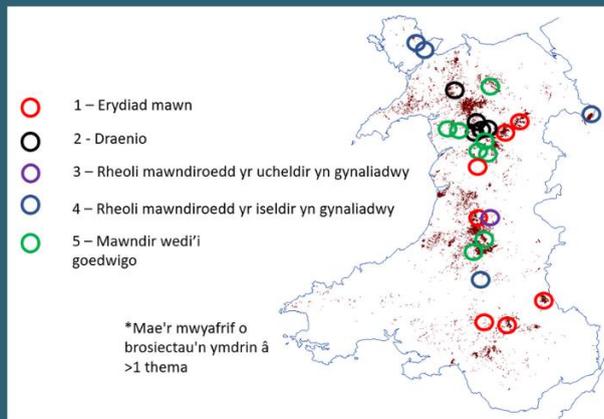
Sefydlwyd y prosiect

recriwtiwyd pedwar aelod o staff



Sefydlwyd trefniadau llywodraethu'r prosiect

Lansiwyd y Rhaglen Weithredu Genedlaethol ar Fawndiroedd



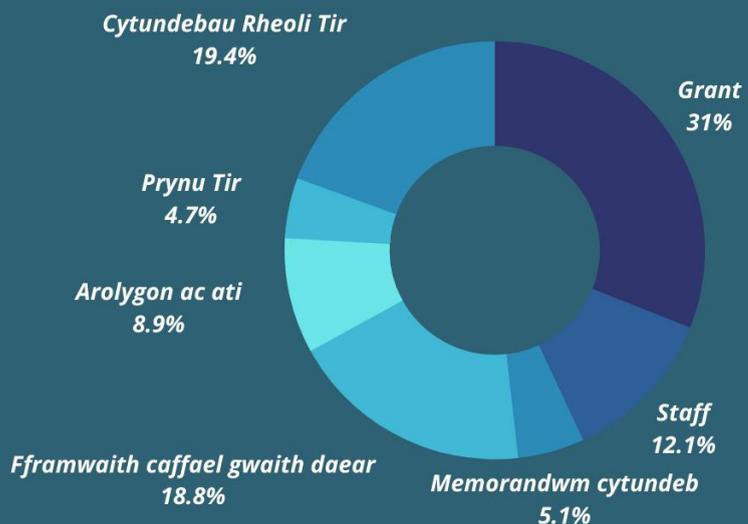
>650 ha
o waith adfer *

25

o gyflenwyr wedi'i apwyntio ar ddau fframwaith caffael newydd, wedi'i ei greu yn arbennig ar gyfer RhWGF

Cyflawnwyd 60% o'r gwariant ar weithgareddau adfer mewn cydweithrediad â phartneriaid ledled Cymru

Crynodeb gwariant



*Darperir ffigur ha eiddwadol adroddir ffigur o 1450ha, ond mae'r adroddiadau'n destun adolygiad er mwyn sicrhau eu bod yn unol â methodoleg recordio safonol RhWGF.

Year 1 highlights



Project established

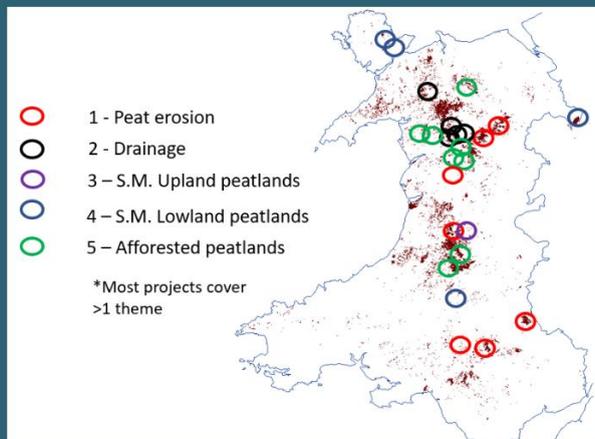
Four project staff recruited

Project governance established



National Peatland Action Plan launched

>650 ha
of restoration activity*



Spend summary

25

suppliers appointed on two newly established procurement frameworks tailored specifically for NPAP

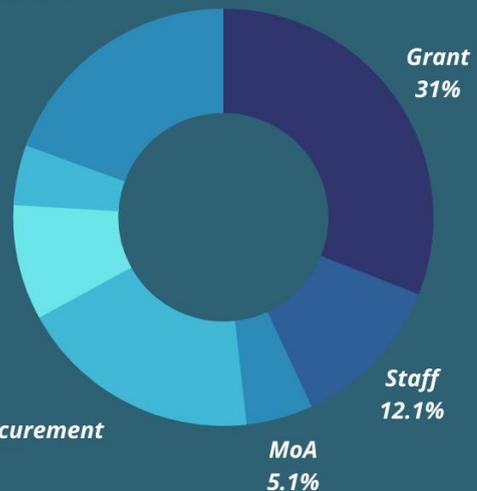
60% of restoration activity spend delivered in collaboration with partners across Wales

Land Management agreement
19.4%

Land Purchase
4.7%

Surveys and other
8.9%

Groundworks Procurement
18.8%



*Conservative hectareage figure provided, reported figures are 1450ha, 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 gwytnwch eu hecosystemau 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 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 y ddogfen [Rhaglen Weithredu Genedlaethol ar Fawndiroedd](#) a gyhoeddwyd.

Sefydlwyd y Rhaglen Weithredu Genedlaethol ar Fawndiroedd yn 2020 trwy recriwtio pedwar aelod o staff i'r prosiect, sefydlu strwythurau llywodraethu a datblygu a lansio cynllun y [Rhaglen Weithredu Genedlaethol ar Fawndiroedd](#) yng nghynhadledd Partneriaeth Bioamrywiaeth Cymru ym mis Tachwedd 2020.

Sefydlodd y prosiect ddau fframwaith caffael newydd yn ystod y flwyddyn gyntaf. Mae'r fframweithiau hyn yn caniatáu caffael sylfaenol a gwasanaethau arolygu yn fwy effeithlon sy'n hanfodol ar gyfer adfer mawndiroedd. Mae gan y fframwaith sylfaenol, yn benodol, 17 o gyflenwyr a photensial gwariant o £10 miliwn dros y pedair blynedd nesaf.

Yn ogystal â sefydlu prosiectau, yn ystod blwyddyn heriol iawn (oherwydd heriau COVID-19, yr angen i sefydlu prosesau llywodraethu, sefydlu fframweithiau caffael newydd, recriwtio staff prosiect, nodi safleoedd adfer a'u mapio i fecanweithiau cyflawni priodol a rheoli risgiau sy'n newid yn gyflym yn barhaus), cwblhawyd dros 650 hectar o weithgareddau adfer ar draws yr holl themâu blaenoriaeth a gynlluniwyd.

Cyflawnwyd 60% o'r gwariant ar weithgareddau adfer ar y cyd â phartneriaid ledled Cymru, a ariannwyd gan fecanweithiau sy'n cynnwys: grantiau, cytundebau rheoli tir a memorandwm o gytundeb.

Gwnaeth y Rhaglen feithrin perthnasoedd a arweiniodd at gyflenwi'n uniongyrchol â phartneriaid allanol. Gwnaeth timau'r Rhaglen hefyd feithrin perthnasoedd newydd yn Cyfoeth Naturiol Cymru a arweiniodd at weithgareddau adfer ar Ystâd Coetir Llywodraeth Cymru (YCLIC) yn 2020-2021 a chynllun ar gyfer mwy yn ystod y blynnyddoedd i ddod. Trwy feithrin perthnasoedd mewnol fel hyn, datblygwyd cyd-ddealltwriaeth allweddol o wahanol nodau busnes, a daethpwyd o hyd i dir cyffredin a arweiniodd at ganlyniadau uniongyrchol ar rai o'r mathau o fawndiroedd a addaswyd fwyaf yng Nghymru. Mae'r Rhaglen, ar y cyd â thimau polisi coedwigoedd, yn cynnal asesiad o botensial adfer mawndiroedd llawn ar YCLIC (lle mae tyfiant coed yn gyfyngedig h.y. dosbarth cynnyrch 10 ac is). Defnyddir hyn i lywio cynlluniau adnoddau coedwig newydd sy'n nodi cyfleoedd ar gyfer adfer mawndiroedd.

Cymerodd tîm y prosiect gamau enfawr tuag at ddatblygu'r gwaith o gydlynu adferiad mawndiroedd yn genedlaethol. Mae tîm y prosiect 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 2021, a chafwyd adborth cadarnhaol iawn gan gyfranogwyr allanol a mewnol. Mae gweithdai dilynol ar y gweill i ddatblygu prosiectau penodol. Mae'r Rhaglen yn sicrhau bod pob ymdrech yn y gweithdai hyn yn arwain at gamau adfer yn unol â Deddf Amgylchedd Cymru 2016.

Mae tîm y rhaglen wedi gwneud cysylltiadau â phrosiectau tebyg eraill yn y DU, sef *Peatland Action* yn yr Alban. Nododd y ddau brosiect heriau cyffredin ac maent yn bwriadu gweithio ar y cyd i fynd i'r afael â'r heriau hyn yn effeithlon a sicrhau cysondeb ledled y DU, e.e. safonau a dulliau adrodd. Yn ogystal, mae sgysiau ar wahân gyda phrosiectau sy'n dod i'r amlwg yn

Lloegr a Gogledd Iwerddon wedi nodi diddordeb sylweddol mewn grŵp rhaglenni adfer cenedlaethol yn y DU – grŵp yr ydym yn gobeithio ei ddatblygu yn 2021-2022.

At hynny, ymgwymerwyd â rhaglen ymgysylltu sylweddol y llynedd, gyda'r Rhaglen yn cyflwyno'r cynllun a'r rhaglen mewn oddeutu 19 o ddiwyddiadau.

Mae'r Rhaglen wedi datblygu taenlen o flaenoriaethau tystiolaeth yn benodol ar gyfer cyflwyno a datblygu'r Rhaglen yn y dyfodol a sut mae hyn yn cysylltu â rhai o'r blaenoriaethau tystiolaeth a nodwyd gan yr adroddiad o gyflwr adnoddau naturiol diweddaraf (SoNaRR).

Rhoddodd y Rhaglen fewnbwn sylweddol i gefnogi cyfres o brosiectau ymchwil a datblygu Llywodraeth Cymru, sef datblygu Map Mawn Cymru newydd, asesu dwysedd swmp mawndir a chynnwys carbon, asesiadau cyflwr mawndiroedd ac adroddiadau costau adfer mawndiroedd. Mae cydweithio ar y prosiectau hyn yn gwella ein gwybodaeth am fetrigau adrodd allweddol a'n dull strategol tuag at adfer.

Gwnaed ymdrech ar y cyd i ddatblygu 'map stori' a fydd yn cynnal data gofodol am fewndiroedd sydd ar gael am ddim. Mae gwaith ar y gweill ar hyn o bryd i werthuso meta-ddata amrywiaeth o setiau data ar gyfer y potensial o fynediad agored yn ogystal â choladu data a chaniatâd cysylltiedig ar gyfer creu setiau data newydd e.e. dyfnder mawndiroedd a data am weithgareddau adfer. Bydd y porth data hwn yn caniatáu i'r holl bartneriaid olrhain pob gweithgaredd adfer yn genedlaethol ar ôl ei sefydlu'n llawn.

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 the NPAP will contribute tangible outcomes to help address both the Climate Change Emergency and Nature Emergency. Full details of how the 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.

The NPAP programme was established in 2020 by recruiting 4 project staff, establishing governance structures and the development and launch of the National Peatland Action Programme plan at the Wales Biodiversity Partnership conference in November 2020.

The project established two new procurement frameworks within the first year. These frameworks allow more efficient procurement of groundworks and survey services critical for undertaking peatland restoration. The groundworks framework, specifically, has 17 suppliers and a £10M spend potential over the next four years.

In addition to project establishment, in a very challenging year (due to covid-19 challenges, the need to establish governance processes, establish new procurement frameworks, recruit project staff, identify restoration sites and map them to appropriate delivery mechanisms and continually managing rapidly changing risks), over 650 hectares of restoration activity was undertaken across all planned priority themes.

60% of the spend on restoration activity was delivered in collaboration with partners across Wales, funded by mechanisms including: Grant, Land Management Agreements and Memorandum of Agreement.

NPAP built relationships that led to direct delivery with external partners, and 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 20/21 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 are undertaking a full peatland restoration potential assessment on the WGWE (where tree growth is limited i.e. Yield Class 10 and below). This will be used to inform new Forest Resource Plans that identify peatland restoration opportunities.

The project team made huge inroads into developing the national co-ordination of peatland restoration. The project team have developed lines of communication with each of the six Area Statement (AS) leads to identify options for integrating the NPAP with each of the Area Statements. NPAP held a joint workshop with the North West AS team in June 2021 and had very positive feedback from external and internal participants: follow up workshops are planned to progress specific projects. NPAP are ensuring that all efforts at these workshops lead to restoration action in line with the Environment Wales Act 2016.

The programme team have made connections with other similar UK projects, namely Peatland Action in Scotland. Both projects identified common challenges and plan to work collaboratively to address these challenges efficiently and ensure consistency across the

UK, e.g. reporting standards and methods. Separate conversations with emerging projects in England and Northern Ireland have also identified significant interest in a UK national restoration programmes group which we hope to progress in 2021/22.

A significant engagement programme was also undertaken last year, with NPAP presenting the plan and programme at ~19 events.

NPAP have developed a spreadsheet of evidence priorities specifically for the delivery and future development of NPAP and how this links to some of the evidence priorities identified by the latest State of Natural Resources Report (SoNaRR).

NPAP provided significant input to supporting a series of WG research and development projects, namely, development of the new Wales Peat Map, assessment of peat bulk density and carbon content, peatland condition assessments and peatland restoration costings reports. The collaborative working on these projects improves our knowledge on key reporting metrics and our strategic approach towards restoration.

Concerted effort has been put into developing a 'story map' that will host peat spatial data that's freely available. Work is currently underway to evaluate the meta data of a variety of datasets for open access potential as well as collating data and associated permissions for the creation of new datasets e.g. peat depth and restoration activity data. This data portal will enable tracking of restoration activity nationally by all partners once fully established.

1. Introduction

This report describes work undertaken during the first year (2020-2021) 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 the NPAP will contribute tangible outcomes to help address both the Climate Change Emergency and Nature Crisis.

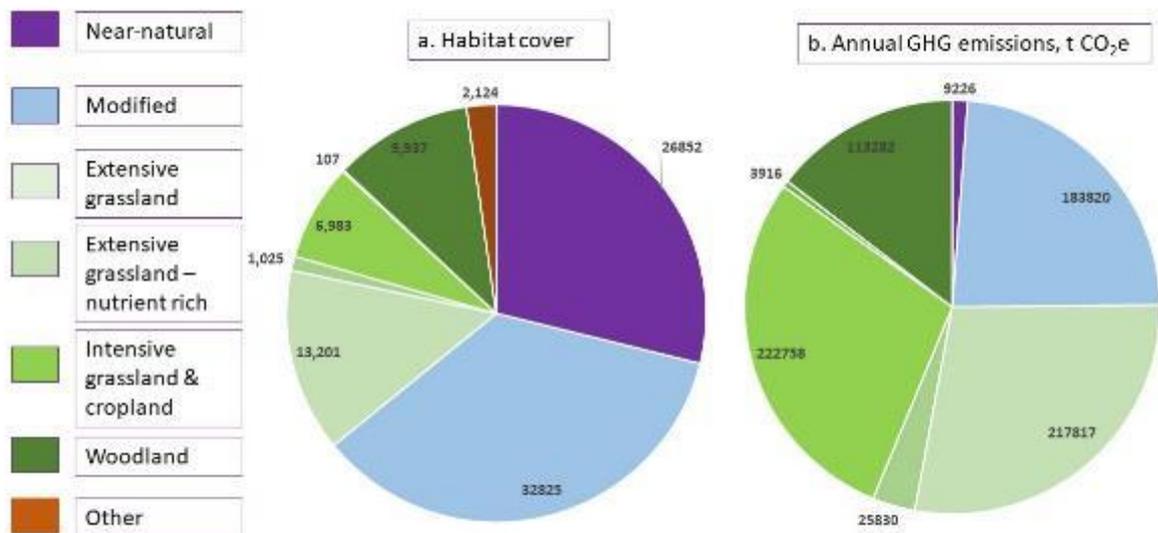


Figure 1. a). Habitat cover of Welsh peatlands based on broad land cover types, with areas of each category shown in ha. **b).** Greenhouse gas emissions from Welsh peatland soils within each of the broad land cover types based on tier 2 emissions factors data.

2. Programme development and launch

The requirement for a core funded National Peatland Action Programme in Wales had been recognised for some time and led to a commission in July 2019 for NRW to produce a costed National Action Programme which was developed between August 2019 and October 2020. The programme was formally launched by the Environment Minister Mrs Lesley Griffiths during the 2020 Wales Biodiversity Partnership Conference on 27 November 2020 (launch video [available here](#)).

In short, the national programme (Table 1) identifies a focus for restoration activity across six priority action themes which represent the primary areas of peatland degradation in Wales, with an additional three cross-cutting themes to 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.

Table 1. Summary of NPAP priority action themes and cross cutting themes.

Priority Action Themes

	<p>Peat erosion</p> <ul style="list-style-type: none"> • 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 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
<p>Peat drainage</p> <ul style="list-style-type: none"> • 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 	
	<p>Sustainable management of degraded upland peatlands</p> <ul style="list-style-type: none"> • 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.
<p>Sustainable management of degraded lowland peatlands</p> <ul style="list-style-type: none"> • 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 Peatlands

- Afforestation results in increased emissions of greenhouse gasses 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 this process 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 comprise one of our principal environmental assets and provide an exemplary aspect of the principal of employing nature-based solutions to deliver 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

3. Project establishment

Welsh Government funding for the programme was confirmed during the last quarter of 2019-2020, with £1M identified for capital restoration works to which was added an additional £0.5M from the N2K capital budget and a revenue allocation of £0.164M for programme staffing.

Welsh Government also secured a significant budget (£0.225M) to address priority evidence needs ([see section 5.2.5](#)).

The entire project was set-up from 1 April 2020 in the midst of the Covid-19 emergency. Key elements of project establishment are now described.

3.1. Staffing

The year one programme has been supported by four additional staff appointed under FTA contracts for an initial period of one year.

Recruitment followed NRW's procedure and all posts were recruited through external trawls, with Welsh Government represented on the appointment panel for the Project Manager role. Two Peatland Restoration Project Officers and a Finance and Grants Officer completed the staffing complement for the Year 1 programme.

A further two posts with agreed funding have been identified to start in year 2.

A wide range of existing NRW and Natural England staff have supported the project, with this time commitment amounting to an estimated 398 days of project support to ensure effective delivery.

3.2. Project governance

Project governance measures were put in place during the first year, with 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 BERB (Biodiversity & Ecosystem Resilience Board) and NRM (Natural Resource Management) Boards.

Welsh Government's lead on peat policy is represented on this Board.

A wider NRW Peat Group also exists to support the 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 and with project assurance provided by NRW's Financial Governance Advisor.

Migration of project planning documentation to systems developed under NRW's new Portfolio Management Office will occur during 2021-2022.

3.3. Development of NRW procurement frameworks

The significant up-scaling of effort which this programme represents has necessitated the establishment of two major new procurement frameworks covering restoration groundworks (Table 3) and all aspects of site assessment, survey and monitoring (Table 4) – Figure 2 provides a summary of the two frameworks.

Development of the peatland restoration framework and all aspects of tender evaluation and contract award were completed in year 1.

The bulk of the survey framework was developed and advertised towards the end of year one, with bid evaluation and contract award continuing into April 2021.



Figure 2. Summary of NPAP's two major procurement frameworks covering peat groundworks and peatland survey.

The development of the groundworks framework utilised work already undertaken to develop a framework for afforested peatland restoration as part of the NRW-led restoration components of the Pen y Cymoedd windfarm project, and this requirement was built into the overall framework along with all plausible requirements for the other NPAP priority action themes.

In both cases the frameworks will cover work throughout the first plan period and have a significant financial ceiling with ample capacity to absorb increased funding (should this occur) above the planned yearly budget.

The two frameworks will also be available for use by other NRW staff engaged in peatland restoration or assessment activity, and this has already taken place in the case of the groundworks framework (see Figure 3).

The development of the two frameworks represents a significant investment in time that will enable more of a focus on groundworks delivery in years 2-5.

The development of both frameworks was supported by dedicated NRW procurement staff with time recharged to NPAP.



Figure 3. Belted Galloway cattle grazing at Cors Caranod SSSI as part of a Section 16 Management Agreement following mowing works delivered through the NPAP groundworks framework by NRW's environment team in Ceredigion. The NPAP framework facilitates delivery of peatland restoration from different budgets in NRW and helps ensure high standards of delivery.

Table 2. Details of the peat groundworks and Pen y Cymoedd (PyC) Habitat Management Plan restoration works contract framework.

<i>Lot title</i>	<i>Geo-graphical sub-lots</i>	<i>Synopsis of Lot requirement</i>	<i>Number of Suppliers appointed</i>
Lot 1. Hydrological restoration, non Welsh Government Woodland Estate (WGWE)	3 - North, Mid, South	All aspects of peat groundworks needed to restore near-natural hydrological regimes, peat surfaces and vegetation structures on non-afforested peatland sites affected by a wider range of degradation impacts.	10
Lot 2. Hydrological restoration, WGWE & other	4 - North, Mid, South, PyC	All aspects of peat groundworks needed to restore near-natural hydrological regimes, peat surfaces and vegetation structures on afforested peatland sites affected by a wider range of degradation impacts.	7

afforested sites.			
Lot 3. Scrub removal	3 - North, Mid, South	A wide range of work associated with scrub removal and management and after treatment of cut stumps.	6
Lot 4. Manual vegetation management	PyC	Lot 4 is focussed on the delivery of tree felling, strimming and general manual vegetation management on restoration sites within the Pen y Cymoedd windfarm site either prior to or following the hydrological restoration operations detailed in Lot 2.	4

Table 3. *Details of the peatland survey and assessment framework.*

Lot title	Geo- graphical sub-lots	Synopsis of Lot requirement	Number of suppliers appointed
Lot 1. Afforested peat surveys	None	Assessment of the restoration potential of afforested peatlands to inform Forest Resource Planning and the implementation of NPAP priority theme #5 – Afforested Peatlands	3
Lot 2. Peatland hydrology	None	Assessment and monitoring of peatland hydrology to both inform restoration and monitor its effectiveness. This lot includes provision for a wider range of hydrological assessments which may be required across NRW.	3
Lot 3. Vegetation assessment	None	Covers vegetation and peat depth assessment, with the former including surveys of habitat composition, habitat condition and point-based quadrat assessment.	3

4. Funding mechanisms used to deliver the year 1 programme

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

NPAP used the following five mechanisms to fund and deliver projects.

4.1 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.

Of the three mechanisms, only Strategic Allocated Funding (SAF) was available for use at the start of the project in 2020.

This 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.

Strategic Allocated Funding Grant

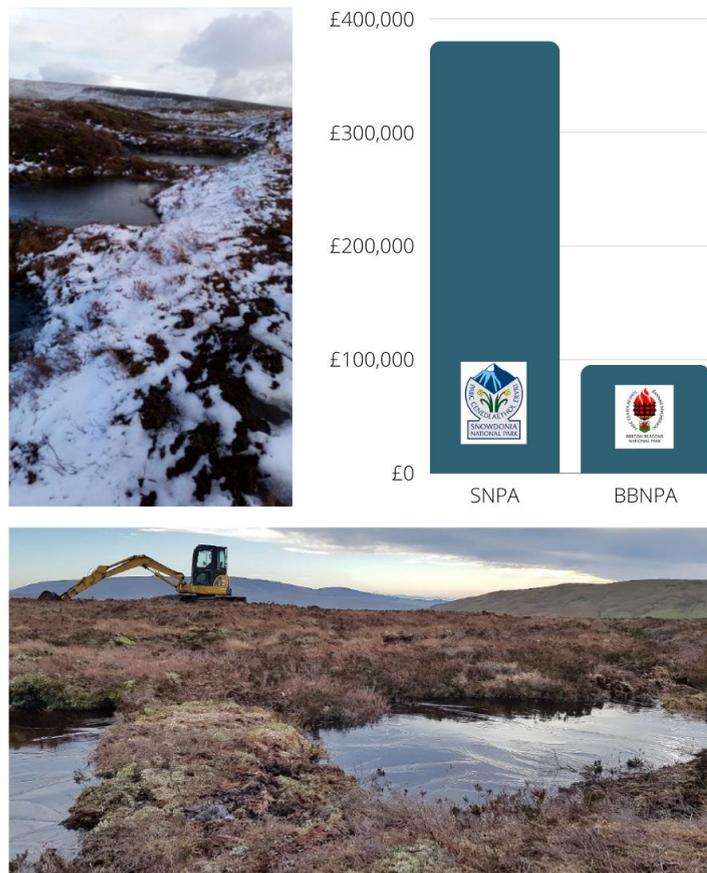


Figure 4. Strategic Allocated Funding support for partners in Year 1.

The NPAP plan to utilise other grant mechanisms delivered by NRW in future years. A consequence of only having one of the three grants processes available to NPAP in 2020-21 was that the number of partners eligible for funding was limited to SNPA and BBNPA (Figure 4).

In order to fund other partners NPAP utilised section 16 land management agreements– see section 4.3 below.

4.2 Direct procurement

The selection of sites for inclusion in the 20-21 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 5. Scrub clearance on the margin of Figyn Blaen Brefi SSSI on the Welsh Government Woodland Estate (WGWE)

The NPAP has developed strong 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, and identifying processes and governance for the efficient delivery of restoration. NPAP will continue to build positive relationships with colleagues focussed on the management of the WGWE to ensure the potential for delivering SMNR on the peatlands of the WGWE is fully realised (Figure 5).

NPAP have also funded works on SAC NNRs supported by local NNR and integrated workforce teams. The NPAP directly purchased works by making use of both the new framework agreements (see section 3.6) 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.

4.3 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 Agreement¹.

Three new major Section 16 agreements were initiated, developed and approved during Year 1 to enable funding of large-scale restoration work across two SACs (Berwyn & Elenydd) by partners (respectively RSPB Cymru and the Elan Valley Trust) who could not be scoped in to the grant-aid support mechanism during year 1 (Figure 6).

The works involved upland hagg-reprofiling, gully blocking and contour bunding (Figure 11).



Figure 6. Large-scale gully blocking and reprofiling and low elevation contour bunding underway at Waun Figyn at Claerwen NNR which forms part of the Elan Valley Trust Estate. Three excavators (encircled) emphasise the significant scale of this project. Photo: Andy Polkey.

4.4 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 (the primary part of the Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses SAC – see Figure 7), where both the Welsh and English components are managed by NE under an agreement with NRW.

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



Figure 7. Low contour bunding cells installed with NPAP funding in compartment 33 of the Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses SAC during 2020-2021. This site is the third largest lowland raised bog in the UK and work there contributes to the NPAP Lowland Peatlands Priority Action Theme.

4.5 Land Purchase

During the site selection process, multiple opportunities for land purchase (at least 4 sites amounting to 144 ha) to enable restoration were promoted by respondents both inside and external to NRW. In 2020/21 we limited this mechanism to one exceptional site (the 4.02 ha Lodge Farm compartment within Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses SAC - see Figure 8) where purchase would not only enable restoration of the land in question but also an additional 10 ha of adjacent and hydrologically linked peatland in neighbouring SAC management units.

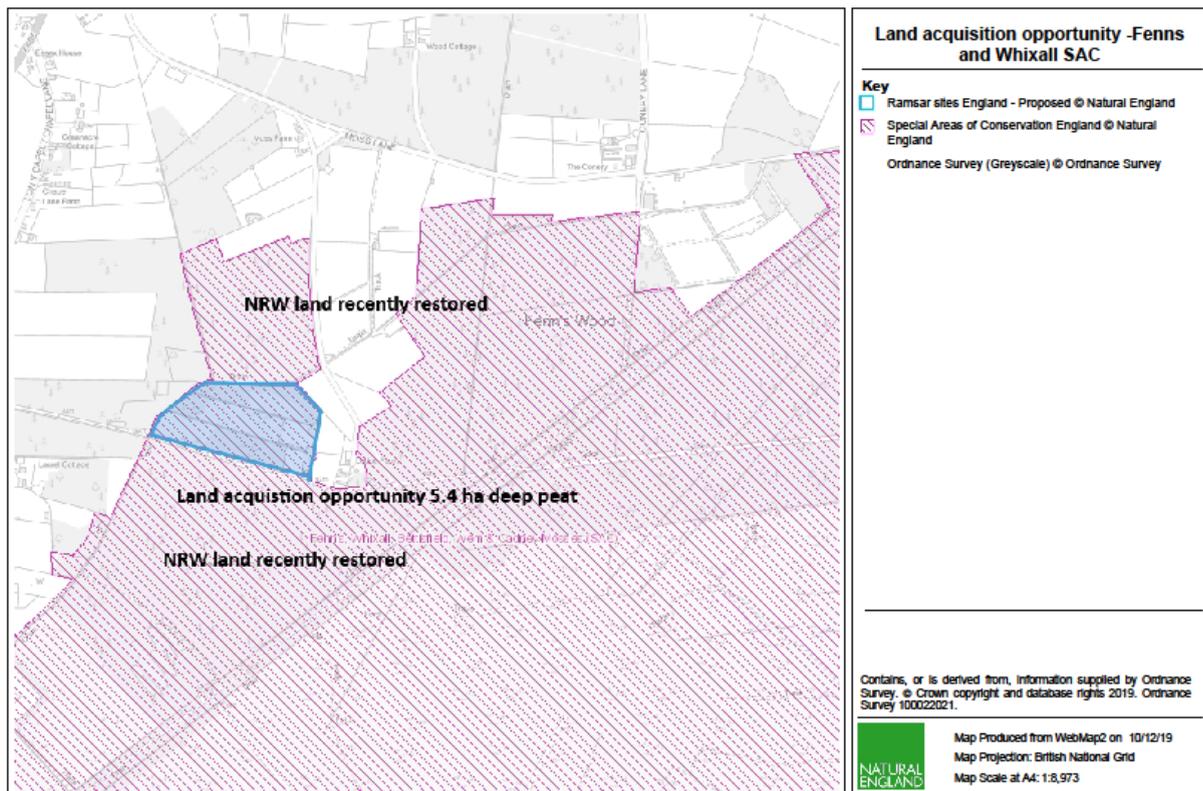


Figure 8. Land acquisition map for Lodge Farm at Fenn's & Whixall Mosses showing linkage between two peat bodies already under NRW ownership and NE/NRW management control.

4.6 Preparation for future years

The NPAP have invested in developing work plans for delivery in future years.

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

5. Overview of work delivered during the year 1 programme

5.1 Peatland restoration through capital delivery

The key outcomes of year one fall under a number of headings; plan development and the programme launch have already been reviewed in this document under section 2, with section 4 above, covering development of the main delivery mechanisms.

In total over 650 ha of restoration activity was delivered in 2020/21 across over 20 locations and spanning the full ecological range of semi-natural peatland habitats in Wales (Figure 9). Work in 2020-2021 focussed mainly on addressing drainage and erosion and also formerly afforested peatlands where scrub and seed-in conifers need to be managed in advance of work to address long-term damage (Figure 10). Grant aid, section 16 land management agreements, and direct procurement by the NPAP team accounted for the bulk of the spend in 2020-2021 (Table 5). Summary infographics of some of our key year one projects are provided below.

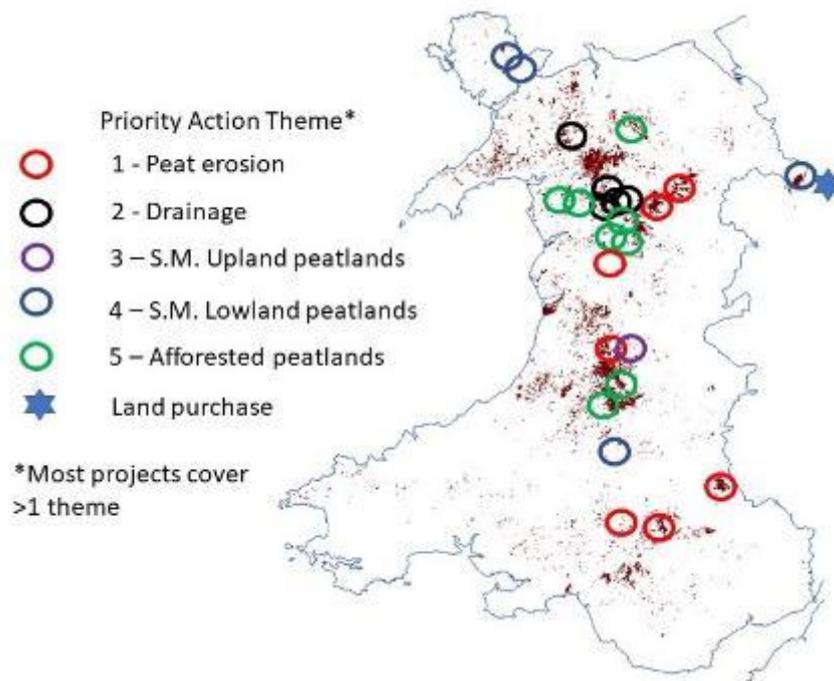


Figure 9. Map showing the location of restoration sites in 2020/21 and the main type of restoration activity at each overlain on the Unified Peat Map.

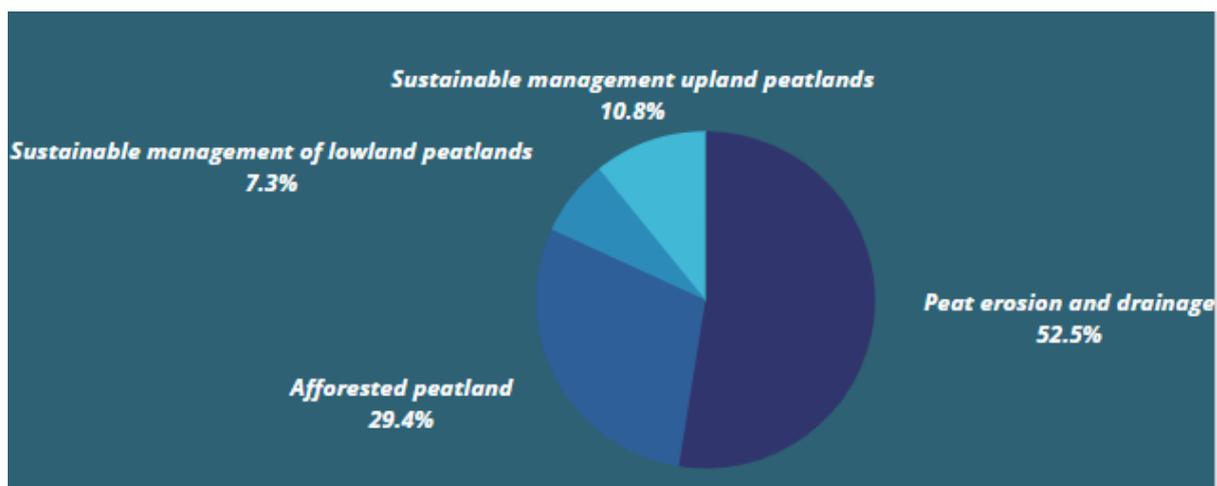


Figure 10. Summary of spend across the priority action themes targeted in 2020-2021.

Table 4. Breakdown of delivery against mechanism used.

Mechanism	Reported ha	Main Priority Action Themes
Strategic Allocated Funding Grant	1179*	Peatland drainage, Peat Erosion
SECTION 16 Land Management Agreement	164	Peatland drainage, Erosion, Sustainable management of uplands
Direct Procurement of groundworks	115	Afforested peatlands, Lowland peatlands
MoA	12.5	Peatland drainage and sustainable management of lowland peatlands
Land Purchase	4.5	Sustainable management of lowland peatlands

*ha figure subject to review to bring it in-line with NPAP recording methodology with an estimated minimum figure for the programme of 651 ha.



NPAP – National Peatland Action Programme, for Nature and Climate

**Funded by NPAP
through SAF grant**



55 ha

of restoration activity

Sites across the
Brecon Beacons:
Mynydd Du
Craig y Fan Ddu
Waun Rydd



Hagg re-profiling - Before



During



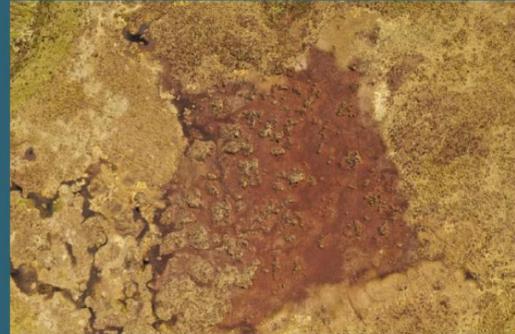
After





NPAP – National Peatland Action Programme, for Nature and Climate

**Funded by
NPAP through
SAF grant**



Restoration
activity
undertaken on

20 sites

across a reported

1,124 ha *



Unexploded
Ordnance
Surveys



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





NPAP - National Peatland Action Programme, for Nature and Climate

Direct procurement by NPAP team in NRW



115 ha
of restoration activity





NPAP – National Peatland Action Programme, for Nature and Climate

The most remote restoration project to date in Wales



Funding and technical support provided by NPAP

120 ha
of restoration activity

One of NRW's largest S16 land management agreements

Validated by peatland Code (supported by Welsh peatlands SMS)

First use of 'contour bunding' restoration techniques to address erosion in Wales.



Preparatory Surveys



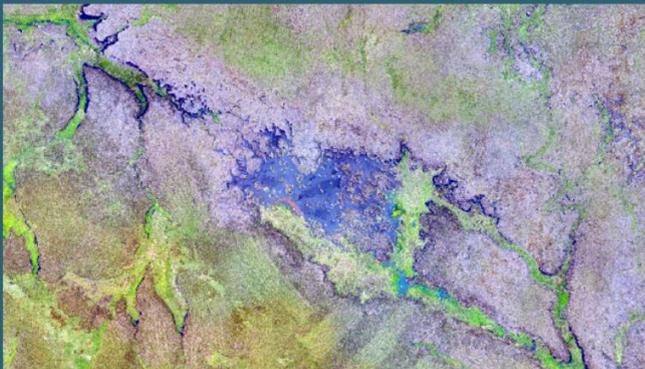
Peat depth surveys

in ditches to inform restoration methods possible on WGWE

Water vole surveys –

Traditional survey plus scent-dog trial to review efficacy of survey using scent trained dogs outside of the survey season.

Surveys are a requirement of the species licence.



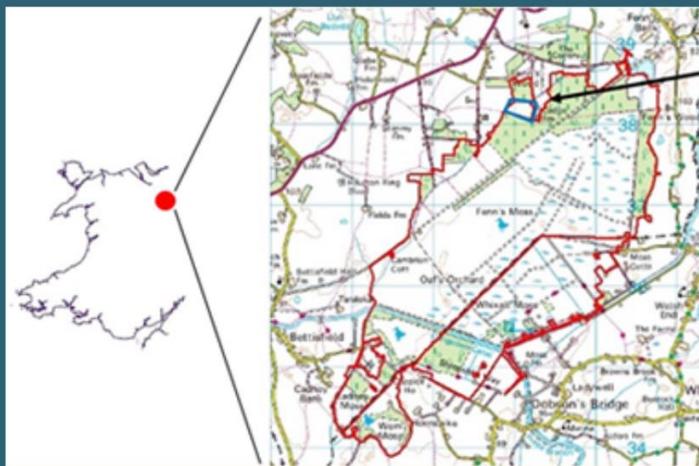
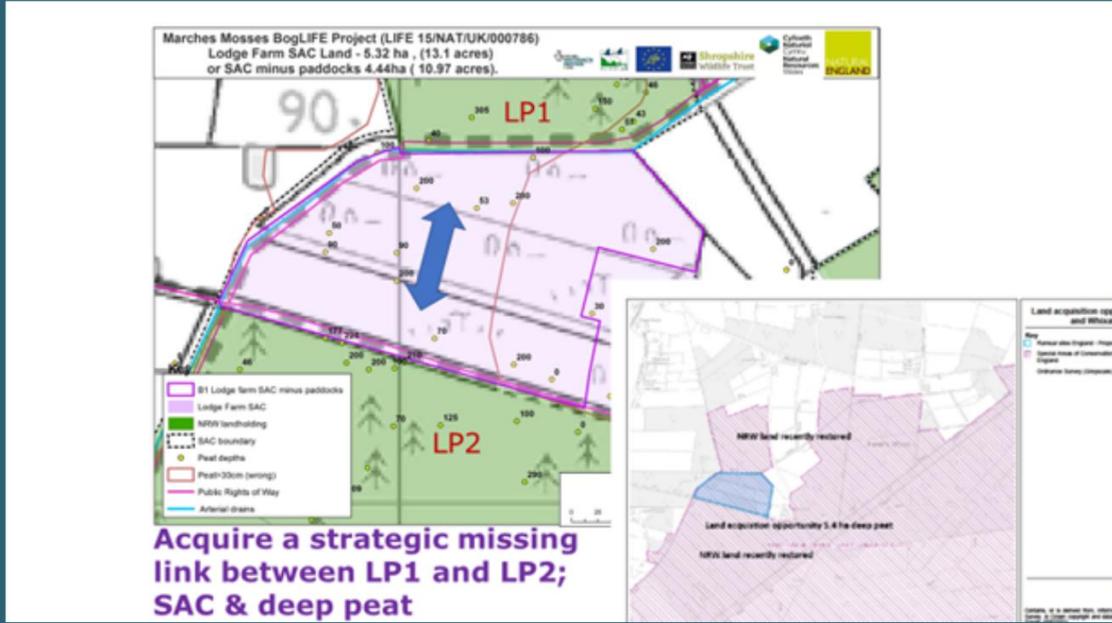
Drone surveys

and post processing of remote upland sites.

Data (left) shows hagg edges, gulleys, and bare peat areas to inform contract specifications and baseline information



Land Purchase - Lodge Farm



Annex 1 habitat 'Degraded raised bog still capable of natural regeneration' (H7120')

Connects **two** areas of deep peat already under NRW ownership

The acquisition allows re-wetting of the land itself and the NRW owned land adjacent





Bronington Manor Drain Diversion

Welsh side of a cross-border site

NPAP funded 36% of the total cost through an existing MoA with Natural England

Key restoration measure for Fenn's and Whixall
Diversion of a drain to the site margin to allow water level increase on the more central deep peat area.



Figure 11. Infographics summarising some of the main areas of project delivery in 2020-2021.

5.2. Coordinating and supporting delivery

5.2.1 Place-based working and engagement with Area Statement Partnerships

Coordinating, supporting and helping to enable restoration delivery by partners features as one of the three cross-cutting themes of the NPAP.

The Area Statement approach will form the basis of NPAPs work in this area and its importance is reflected in the location of the three groundworks project delivery roles within the North West People and Places Team.

The six terrestrial Area Statement partnerships (Figure 12) provide existing groupings of stakeholders which we can use to ensure a collaborative approach to the development of restoration programmes at the most appropriate scale and at the right locations within the overall guiding framework of the National Programme.

This place-based approach is a cornerstone of the Area Statement philosophy and will help ensure we build capacity and capability in those parts of Wales or in those sectors where relatively little activity is taking place to-date.

The importance of Area Statements is recognised in WGs Natural Resources Policy and is enshrined in legislation as Section 11 of the Environment (Wales) Act 2016. During 2020-2021 our work in this area included the following:

- Dialogue with the Area Statement Team Leaders group to raise awareness of NPAP and identify options for developing NPAP work programmes with the six terrestrial Area Statements.
- Attendance at the South Central Area Statement NRW officers and Knowledge Exchange forums, providing presentations on the NPAP and discussing options for wider partnership engagement.
- Planning for a peatland restoration workshop with the North West Area Statement Stakeholder Group (to take place in 2021-22).

5.2.2. National Delivery Partners Group.

Some partners engaged in restoration activity operate at either a national scale or at scales which span multiple Area Statement areas.



Figure 12 The six terrestrial Area Statement regions shown as blue and green shading.

To ensure specific and strategic engagement with this relatively small pool of partners we will hold an annual National Delivery Partners Group meeting to ensure sharing of information about plans for forthcoming years, including consideration of potential external funding bids and any applications for other sources of Welsh Government funding.

This will help NPAP foster better understanding of the capacity of the contractor sector and its ability to expand and adapt. We envisage the forum will also help advise on training requirements for both practitioners and contractors.

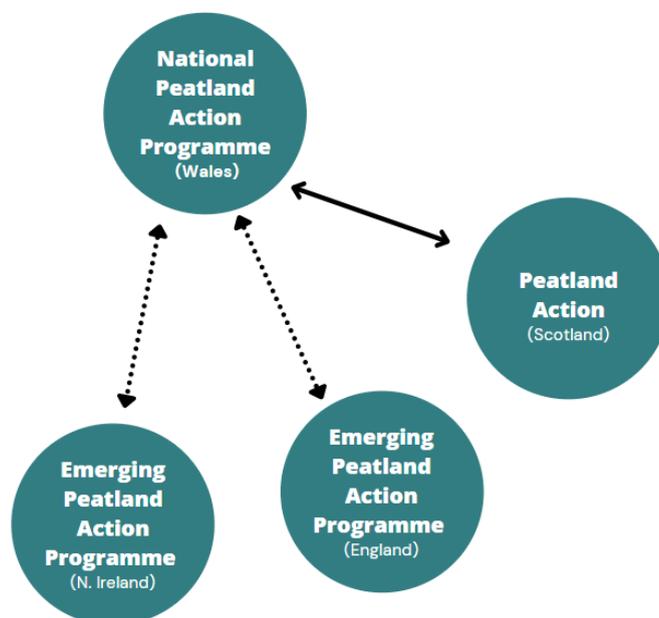
During 2020-2021 we consulted on this approach with a number of key strategic delivery partners and determined there was significant interest in convening such a group.

5.2.3 Proposed UK level national programmes group

During 2020-2021 we identified a number of key topics requiring significant coordination between the four UK countries, including the need for an agreed approach on the reporting of areas restored in relation to typical restoration activities, and the desirability of consistent monitoring protocols.

A series of meetings were held with Peatland Action in Scotland and subsequent contact with colleagues in the emerging national programmes in England and Northern Ireland confirmed there was significant interest in convening a UK national programmes group.

This work will be taken forward in 2021-22.



5.2.4 Engagement

A significant programme of engagement was undertaken in 2020-2021 (Table 6) despite the Communications & Stakeholder officer not coming into post until year 2.

Table 5. Summary of engagement activities undertaken during 2020-2021.

Event	Internal/ external*	Date	Nature of communication
Welsh Peatlands SMS Project, Project Partners Meeting	External	14/05/20	Verbal update given on programme development and future activities.
NRW/Forest Research <i>Trees, Peat & Carbon</i> event	External	02/06/20	Presentation introducing the NPAP, entitled “National Action Programme for Peatlands”.
<i>Green Recovery Wales</i> event	External	22/07/20	Recorded presentation entitled “National Priorities for Peatland Restoration”, in conjunction with New LIFE for Welsh Raised Bogs team.
NRW Habitat Restoration & Ecosystem Resilience Group	Internal	24/07/20	Presentation on NPAP as a model for ecosystem focussed resilience programmes.
UK four countries group meeting	External	10/08/20	Presentation on NPAP under heading of country-level initiatives.
<i>Resilience in the Welsh Uplands</i> Conference	External	16/09/20	Presentation entitled “Enhancing the resilience of peatland ecosystems in Wales through the National Peatland Action Programme”, with Q & A after.
Meeting with NPAP and NRW National Forestry Planning and Forestry Ops colleagues	Internal	19/09/20	Site meeting at Tywi Forest with practical discussion over restoration opportunities, priorities and issues for 20-21.
Joint site meeting with NRW New LIFE for Welsh Raised Bogs LIFE team	Internal	20/09/20	Information exchange, discussion of joint working arrangements, viewing new techniques on the ground, getting to know each other.
Wales Biodiversity Partnership – National Peatland Action Programme Launch	External	27/11/20	Formal NPAP programme launch event, with formal launch by Minister followed by NPAP presentation and Q&A session.
North-east Wales Woman’s Institute event	External	30/11/20	Presentation concerning the importance of peat and the need to eliminate extractive consumption: talk given to support proposed adoption of phasing out peat cutting as a WI campaign theme.

IUCN UK Peat Programme Annual Conference, 2020	External	07/12/20	Presentation on peatland action progress in Wales at four countries update slot – talk given by James Cooke of WG.
South Central Wales Area Statement Forum – Ecosystem Resilience Panel focussed meeting on peat	Internal	01/02/21	Presentation given of NPAP aims and elements with a view to securing engagement with Area Statement process.
NRW People & Places Team Leaders Meeting	Internal	04/02/21	Presentation given of NPAP aims and elements with a view to securing engagement with Area Statement process.
Welsh Peatlands SMS Project, Project Partners Meeting	External	17/02/21	Verbal update given on programme development and future activities.
Briefing to WG Director Environment & Marine and other WG senior management	Internal	01/03/20	Presentation about project with discussion of key recommendations for the future.
Historic Environment and Peatlands Event	External	25/02/21	Joint event between Cadw, NRW, the Welsh Archaeological Trusts, NP archaeologists and RCAHMMW: presentation given on NPAP aims, elements and links to the historic environment.
South Cntral Area Statement Knowledge Exchange Event	External	09/03/21	Presentation given of NPAP aims and elements with a view to securing engagement with Area Statement process.
Welsh Government ESNR Land, Nature & Forestry Division meeting	Internal	16/03/21	Presentation about project with discussion of ensuring input of NPAP across other WG funding streams relevant to peat.
Forest Resource Planners	Internal	24/03/21	Presenting project and advising how to determine peat restoration potential for WGWE peat surveys and determining areas for restoration in new Forest Resource plans.

5.2.5 Evidence programme

A range of evidence projects were undertaken in year one and the project also contributed to four significant pieces of work commissioned and project managed by Welsh Government (Table 8).

The most significant items of work commissioned directly by the project were two contracts to assess the afforested peat resource for the Dyfi and part of the Tywi and Coed y Brenin forest blocks (Figure 13).

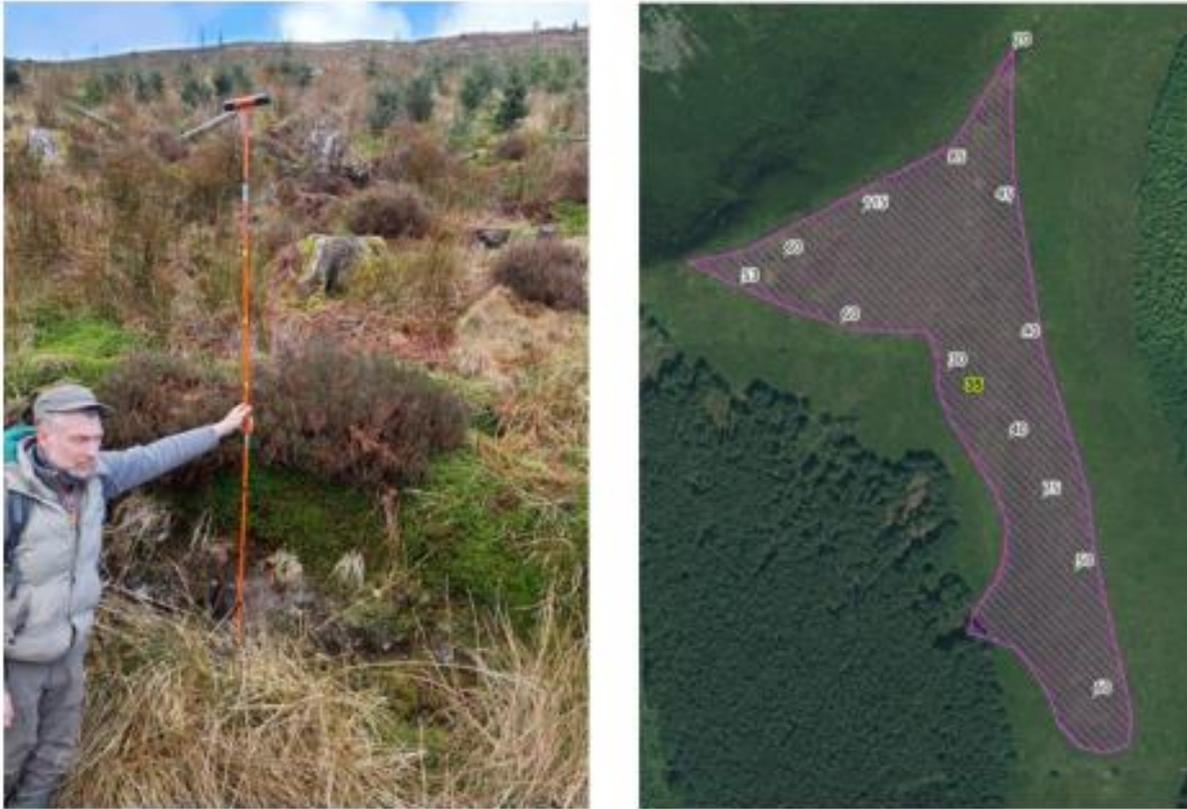


Figure 13. Assessing the restoration potential of afforested peat, with peat depth measurement in the left-hand image, and a map showing a polygon prioritised for restoration in the right-hand image.

This assessment used a version of NRW's 2017 Afforested Peat Toolkit modified by the NPAP to ensure;

- (i) a more ecologically relevant threshold for slope as a negative attribute,
- (ii) a specific element to assess current vegetation quality as an integrated measure of restorability, and
- (iii) a 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 and consequently provide the basis for identifying sites for restoration within the

overall sub Yield Class 10 afforested deep peat resource – the agreed current focus of the afforested peatlands Priority Action Theme in the National Plan.

NPAP also commissioned an expert input from Russell Anderson of Forest Research to support the development of afforested peat restoration options in year 1. Covid-19 travel limitations prevented any site visits with the contractor who is based in Scotland, but interactive Teams meetings were used to help review sites and develop prescriptions.

An advisory contract was let to a specialist wetland hydrologist contractor to support the development of a tiered suite of hydrological monitoring protocols for use by the NPAP. This is a critical requirement because key hydrological variables such as water table depth and residence time are critical environmental metrics and indicators of success and are likely to exhibit an earlier response to restoration than vegetation. No practical generic guidance covering tiered hydrological methodologies for monitoring the effectiveness of peatland restoration currently exists.

Additional grant support of £25k for evidence provided by Welsh Government in 2020-2021 enabled the purchase of a range of essential equipment for use throughout the 2020-2025 plan period, this is itemised below as Table 7.

Table 6. Summary of equipment purchased from the WG peatland evidence budget in 2020-2021.

<i>Item</i>	<i>Number</i>	<i>Purpose</i>
Russian auger coring kit	1	A specialised type of auger which enables the collection of stratigraphically intact peat samples for accurate recording of humification and stratigraphy and to enable collection of samples for further analysis, e.g. for carbon content and bulk density.
Dutch auger coring kit	2	To enable rapid collect of peat samples to determine humification and hence suitability for water retention features such as dams and low contour bunds. Also used for opening up holes for water level dipwell installation.
1m long lined dipwells with caps and end-stoppers.	100	High specification dipwells used for providing semi-permanent access to the water table to enable monitoring of the hydrological response to restoration and designed to accept automatic water level recorders where necessary.
Solinst Level Loggers (Automatic Water Level Recorders) plus Barometric pressure loggers and interfaces	51	Automatic water level recorders (x44) for continuous monitoring of water levels and thus the hydrological response to restoration. 7 barologgers were also purchased to compensate for barometric pressure, thereby enabling instrumentation of 7 widely separated sites.
GPS Geode unit	3	To enable accurate recording of locations of project sites.

Spot-tracker units	2	For use by project staff on remote sites as a lone working Health and Safety measure.
Camera	2	For site and species monitoring.

The NPAP team maintained regular contact with the Peatland Evidence Fellowship post-holder Dr Jon Walker at Swansea University.

NRW issued a letter of support for the Fellowship bid and also for a NERC innovation fund application led by Swansea to enable instrumentation of a series of peatland sites in Wales as part of the proposed national Peatland Observatory project.

5.2.5.1 Evidence needs – National Peatland Action Programme

NPAP have developed a spreadsheet of evidence priorities specifically for the delivery and future development of NPAP and how this links to some of the evidence priorities identified by SoNaRR.

5.2.5.2 Welsh Government funded and managed evidence work supported by NPAP

Welsh Government committed significant resources in commissioning a range of key peatland evidence projects in 2020-2021 – these form part of the Welsh Government Soils Policy Evidence Programme (see [Soils policy evidence programme | GOV.WALES](#)). The contribution of the NPAP team to these projects is summarised in Table 8.

Table 7. Summary of peatland evidence projects commissioned as part of Welsh Governments Soils Policy Evidence Programme in 2020-2021.

Evidence Project Title	Purpose of project	Role of NPAP team
Development of a new national peat map of Wales	Development of a new national peat map utilising Soil Survey Data accessed under OGL negotiated by WG and other new data. The new peat map follows the ALC map methodology and will provide the basis for a significant part of NPAPs planning and reporting	<p>Specialist support as member of the project steering group</p> <p>Expert review of draft outputs</p> <p>Provision of key data relating to peat depth and peat body locations. (collated >20 different data set from internal and external sources and issued appropriate data licence)</p> <p>Obtaining data use permissions from each data source (>20) and issuing a licence for use by Cranfield University.</p>
Assessment of peat soil bulk density and carbon content	Sampling of a wide range of peat soils to acquire Bulk Density and Carbon content measurements to feed into the new National Peat Map and the proposed new	<p>Specialist support as member of the project steering group</p> <p>Expert review of draft outputs and input to methodologies.</p>

	national C stock map for Welsh deep peats.	Recommending sites for sampling and arranging site access.
Assessing the condition of selected Welsh peatlands	Project to undertaken habitat condition and mapping across a total of 890 ha of peatland habitat across 10 sites. Project identified 46 condition states to feed into our national peatland condition evidence, with 34 of these types assessed as being in Favourable or Unfavourable Recovering Condition. This project will help inform the development of the planned national monitoring programme for NPAP.	Production of project specification. Specialist support as member of the project steering group Expert review of draft outputs Recommending sites for sampling
Costings	Project to collate and review the cost of a range of restoration activity types.	Production of project specification. Specialist support as member of the project steering group Provider of costings data Expert review of draft outputs

5.2.6 Monitoring and activity recording and the SMNR data portal

NPAP have been working with other NRW colleagues to develop an online GIS resource that will host spatial data relating to peatlands.

This work involved developing the use of ‘Storymaps’ which is a function of ArcGIS. NPAP have assessed the meta data of various datasets to review which layers can be hosted in a publicly accessible and downloadable space.

The ‘story map’ isn’t live yet but in development. In year 21/22 the staff resources allocated for data and GIS management will lead on this. NPAP have also worked with the data licencing team to develop standard processes for obtaining and recording data from third parties and associated use permissions.

NPAP have had initial discussion with Peatland Action to share challenges and opportunities surrounding monitoring and reporting (see 5.2.3 above) and will continue these conversations to try and align reporting metrics (e.g. how to report hectares of habitat restored figures) and monitoring assessment efforts.